R/C MODELER

THE LEADING MAGAZINE FOR RADIO CONTROL • JANUARY 1967 • 50¢

Ken Willard's Shearwater

DART III BY CAPT. CHARLES T. WINTER

PITTS SPECIAL AEROBATIC BIPE BY NICK ZIROLI

E.P.D. CAN SAVE YOUR PLANE!

A few words about me.

I am Electronic Engineer and this is my day job.

From tender age two things attracted my interest and I managed to have them in my life.

The first was electricity and the second the bluesky.

I´ve found the model airplanes hobby in October 1973.

I love the wooden structures from scratch airplanes and boats also.

I started collecting plans, articles, books and anything else that could help the hobby of many years ago and have created a very large personal collection of them.

Since 2004 I became involved with the digitization and restoration of them and started to share the plans from public domain with my fellow modelers.

Now after all this experience I have decided to digitize, to clean and to re publish in digital edition and free of all issues RC Modeler magazine from 1963 to 2005 and others books and magazines.

Certainly this will be a very long, difficult and tedious task but I believe with the help of all of you I will finish it in a short time.

I apologize in advance because my English is poor.
It is not my mother language because I am Greek.
I wish all of you who choose to collect and read this my work good enjoyment and enjoy your buildings.

My name is Elijah Efthimiopoulos. (H.E)
My nickname Hlsat.

My country is Greece, and the my city is Xanthi.

Λίγα λόγια για μένα.

Είμαι Μηχανικός Ηλεκτρονικός και αυτό είναι το αληθινό μου επάγγελμα εργασίας.
Από μικρός δυο πράγματα μου κέντρισαν το ενδιαφέρον και ασχολήθηκα με αυτά.
Πρώτον ο ηλεκτρισμός και δεύτερον το απέραντο γαλάζιο του ουρανού και ο αέρας αυτού.
Το χόμπι του αερομοντελισμού το πρωτογνώρισα τον Οκτώβριο του 1973.
Μου αρέσουν οι ξύλινες κατασκευές αεροπλάνων και σκαφών από το μηδέν.
Ξεκίνησα να συλλέγω σχέδια, άρθρα, βιβλία και ότι άλλο μπορούσε να με βοηθήσει στο χόμπι από τα πολύ παλιά χρόνια.
Έχω δημιουργήσει μια πολύ μεγάλη προσωπική συλλογή από αυτά.
Από το 2004 άρχισα να ασχολούμαι με την ψηφιοποίησης τους, τον καθαρισμό τους αλλά και να τα μοιράζομαι μαζί σας αφού τα δημοσιοποιώ στο διαδίκτυο (όσα από αυτά επιτρέπεται λόγο των πνευματικών δικαιωμάτων τους).
Σήμερα μετά από όλη αυτήν την εμπειρία που έχω αποκτήσει, αποφάσισα να ψηφιοποιήσω, να καθαρίσω και να ξαναδημοσιεύσω σε ψηφιακή έκδοση και ελεύθερα όλα τα τεύχη του περιοδικού RC Modeler από το 1963 μέχρι το 2005 και κάποια άλλα βιβλία και περιοδικά.
Σίγουρα είναι μια πολύ μεγάλη, δύσκολη και επίπονη εργασία αλλά πιστεύω με την βοήθεια όλων σας να την τελειώσω σε ένα καλό αλλά μεγάλο χρονικό διάστημα.
Ζητώ συγγνώμη εκ των προτέρων γιατί τα Αγγλικά μου είναι φτωχά.
Δεν είναι η μητρική μου γλώσσα γιατί είμαι Έλληνας.
Εύχομαι σε όλους εσάς που θα επιλέξετε να τα συλλέξετε και να τα διαβάσετε αυτήν την εργασία μου καλή απόλαυση και καλές κατασκευές.
Το όνομα μου είναι Ηλίας Ευθυμιόπουλος.(Η.Ε)
Το ψευδώνυμο μου Hlsat.
Η χώρα μου η Ελλάδα και η πολη μου η Ξάνθη.

RCM Magazine Editing and Resampling.

Work Done:

1)Advertisements removed.

2) Plans building plane removed and hyperlinked.

3)Articles building plane removed and hyperlinked.

4)Pages reordered.

5)Topics list added.

Now you can read these great issues and find the plans and building articles on multiple sites on the internet.

All Plans can be found here:

Hlsat Blog RCModeler Free Plans and Articles.

http://www.rcgroups.com/forums/showthread.php?t=2354459

AeroFred Gallery Free Plans.

http://aerofred.com/index.php

Hip Pocket Aeronautics Gallery Free Plans.

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James Hatton Blog Free Plans and Articles.

http://pulling-gz.blogspot.gr/?view=flipcard

Vintage & Old-Timer RCM Free Plans.

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Contributors:

Scanning by ser001

Editing by Hlsat.

Thanks Elijah from Greece.

RADIO CONTROL MODELER

'on Dewey Editor
'oug Tucker Assistant Editor
d Thompson Technical Editor
'ob Dance Art Editor
'ick Kidd Technical Art Editor

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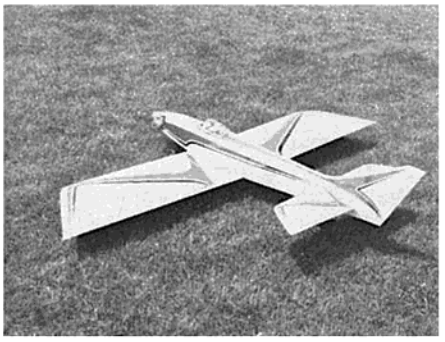

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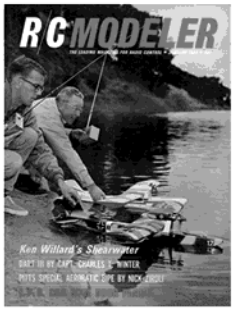

COVER

Ken Willard and Scott Christenson prepare to launch their Shearwater flying boats, a featured RCM design in this issue. Type C color print by Whitey Pritchard.

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Ken Willard, Sunday Flier
Jerry Kleinburg, Top Out
Bernie Murphy, Kits & Pieces
Chuck Cunningham, Cunningham on R/C
Dennis Ellefson, A.C., D.C., R/C
Cliff Rausin, Foreign Editor
Jim Whitlatch, Regatta
Cy Crites, Roostertail
Sally Dewey, Editorial Assistant
Bill O'Brien, Special Products
Joann Van Beber, Administration
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VIEWS from the HILL

BY DON DEWEY

SINCE this column is being written during the second week of October, the AMA elections for Academy President have not yet been held, although they will have been completed and tallied by the time you read this item.

That is, if you found the ballot in the first place.

Normally, ballots for any major election would be mailed to each and every member. In what probably will be explained as an "economy move" to save mailing costs, the Academy decided to "bury" the ballot in the Model Aviation section of the "official" publication, American Modeler. I say "bury," because I had looked through our publisher's copy of AM three times before I even noticed the coupon ballot at the bottom of the page. I mentioned this to a few other AMA members and they related that they had not even seen the ballot, although they had received and looked at their copy of that publication.

This is all quite interesting. When you add to this the fact that it was necessary to cut the mailing label from the cover of your copy of AM and glue, or tape, this to the ballot, it seemed as if the powers-to-be in Washington were utilizing a method of "economy" that would also serve to make balloting as obscure and complicated as possible.

And this, as a measure to try and correct the lack of interest on the part of AMA members in previous elections? Does this new method, in any way, serve to induce the 85% of members who did not cast their ballots in past elections to vote in this current campaign?

And when you consider that a number of Academy members do not even receive American Modeler as part of their membership, the legality of the entire ballot is in question. This point was emphasized by the fact that several local fliers mentioned that they do not receive a copy of the "official" publication, nor do they have a subscription. And they are not new members who recently joined and whose "membership subscription" has not yet had time to reach them.

This is not entirely the fault of the Academy or of the publishers of American Modeler. As with any magazine entered under 2nd class mailing permits, copies are often delayed, and many times undelivered, by the Post Office. In addition, those members who have not received their individual copies should notify the Academy of this fact — if they care enough to want to receive the publication at all.

This, however, does not relieve the Academy of its responsibility of seeing that each and every member receives a ballot in an AMA election. Whether or not the member wishes to vote is beside the point — the entire membership must receive a ballot for that ballot to be legal in every sense of the word.

As we mentioned, this method of balloting will probably be explained as an economy measure. After all, if they were all mailed by 1st Class mail, the total cost for 18,000 members would be approximately $900. Bulk mailing, however, could cut this cost substantially, but then the point might be raised concerning the legality of a ballot mailed in an unsealed envelope.

But is economy the real reason? Or is it simply that the Washington tribunal is afraid of the amount of votes they might receive from the "rebels" who suddenly cared enough to vote — and possibly for a candidate who might do more than just serve as a rubber stamp. And if it is a measure of economy — and most certainly, economy is definitely needed when everyone is being asked to help "dump the deficit" — then why did the Executive Council take a portion of contributed funds in the F.C.C. Frequency Account and transfer it to the Administrative Fund in one action, then in an action immediately following, raise the Executive Director's salary?

This is not to say that the position of the Executive Director does not deserve a salary increase, for as the publisher of that "official" publication recently stated in a letter to this correspondent, "the Executive Director works 25 hours a day and writes copy on buses." This is all well and good, but it seems that economy is to be directed to certain ledger columns, only, while the red ink can be spilled liberally on other pages.

(Continued on Page 6)

Which brings us to the point of this editorial. The method of balloting is just another one of the Academy's actions with questionable motivation. The A.M.A. officialdom has lived long enough off of the apathy of the general membership — it is time for a thorough explanation of quite a few items that should be of general interest to each and every member.

It is hoped that this present election will evidence a greater percentage of ballots than ever before cast. And if it does, it is a good beginning toward a sound future.

The greater question is — will this breakthrough in apathy result in active participation on the part of the general membership — that active participation forcing its way through to Washington and asking the question whether the end justifies any means; and whether the democratic organization "of, by, and for the common good" can be obtained by anything less than total democratic procedure; to say nothing of past action that could ulitmately lead to the extremist tactics of anarchism.

That is the most important question of all.

●

One of the most interesting aspects of this sport is that you can travel all the way across the country to see the guys from your own home town compete. We didn't do exactly that, this month, but Doug and I did drive over to Las Vegas to the LVRC Annual. After a night on the Strip, including junkets to the Sands, Ceasars Palace, The Aladdin, The Sahara, etc., we somehow found our way out to the dry lake just outside of Henderson, Nevada. There we saw members of the LARKS, Valley Fliers, BIRDS club, and other representatives from Southern California diluting the smog in their lungs with clean, dry Las Vegas air. Gil Horstman and the Las Vegas Club also hosted fliers from the Utah State Aeromodelers and from as far distant as New Mexico — the latter group including Frank Hoover from F&M Electronics, Eddie "Mad Man" Morgan, and Ted White of the newly formed Galatron Corporation.

Despite the 25 mph winds, it was a most enjoyable meet. And we were certainly ready for it. In fact, the previous night on the glittering gamut of girls and gambling didn't phase us a bit.

The fact that Doug took pictures all day only to discover he didn't have any film in the camera had nothing whatsoever to do with it. . . .

●

There has been a lot of discussion lately about the pro's and con's of the new 72Mc frequencies. And most of

what has been said has been more con than pro. Rumors have been rampant, most of them centering around the fact that it will probably be quite some time before any proportional manufacturer receives his FCC approval, and even then, the cost of the 72 MC equipment will be quite high.

Let's look at a few facts. First of all, one manufacturer has already received his FCC approval — Bonner Specialties for the Bonner proportional system. Secondly, in a discussion with one major proportional manufacturer, it was stated that the disadvantages to 72 megacycles are confined solely to the problems involved for the manufacturer of R/C equipment — these problems due in great part to the extreme difficulty in locating laboratories with the equipment necessary to run the tests for compliance with the FCC regulations for type acceptance. There are, however, no particular technical difficulties with manufacturing the equipment or in meeting the requirements of the FCC. In other words, it is just strictly a matter of the problems involved in testing the equipment. As to the increased cost of manufacture, this same manufacturer stated that approximately $1 was added to the total manufactured cost of the transmitter — this additional amount due to certain modifications necessary to meet the FCC requirements. There were no cost increases in the receiver. It should be pointed out, however, that this manufacturer had originally designed the receiver for operation of 52 mc and the problems on that band are similar to that on 72 Mc. We are certain that many of the units now on the market will not be convertible from their existing 27 MC to 72 Mc without extensive circuit modifications.

Before discussing the 72 MC band and any possible interference from TV stations, as has been mentioned, it might be well to point out that some seven years ago a number of local fliers flew illegally on 58 Mc with super-regen receivers — a spot that happens to fall between the sound and video channels of Channel 2. They had absolutely no problems. Manufacturers of proportional equipment have been testing 72 Mc equipment for the past year. One manufacturer commenced such tests in August of 1965. From the very beginning, operation of the equipment was almost unbelievably perfect. The increased antenna efficiency on both the receiver and transmitter resulted in operating range which has to be seen to be believed. Another prototype set was flown throughout the summer and fall of 1965, and in fact, was used in four contests — of which the record was three wins and one second place! The equipment was then loaned to a flier in the South because that flier's club field happened to be in relatively close proximity to Channels 4 and 5 transmitting stations. About 50 test flights were made in this area without even so much as a momentary glitch! The set was then sent on loan to a flier in Oklahoma City since their flying field was within a half mile or less of Channel 5's transmitting tower and similarly close to Channel 4's tower. Flight after flight in this area again showed up not one single problem with the RF link. According to the flier that was doing the testing, he actually circled immediately underneath the transmitting tower of Channel 5 with the airplane with absolutely no control problems.

To the best of our knowledge, and based on discussions with the major proportional manufacturers, the 72 Mc band for R/C use is undoubtedly the best available. There is no question that some manufacturers will have difficulty designing equipment for use on this frequency, but these difficulties have nothing to do with the frequency itself, but merely to the technical limitations of the companies attempting to produce equipment to operate on that frequency, or to their access to the necessary testing equipment.

●

Speaking of cats, which nobody was, I noticed in the paper today that two Japanese scientists had actually been successful in removing a cat's brain, pumping out the blood, then refilling the cells with some agent to keep the cells intact. The brain was then frozen for six months (230 days to be exact), then slowly thawed out. Circulating cat blood was then repumped into the brain and the brain functioned once again as if it were a part of the cat's body. This certainly leads to a lot of speculation as to future uses for this feat of suspended animation. It seems, however, that the big problem is finding a body in which to replace the brain, and the actual procedure of connecting it for operation.

If they ever solve this problem, I have a suggestion. After reading Ed Thompson's column this month, I know of a Technical Editor that is walking around without a brain. All we have to do is take one out of the icebox, thaw it out like a TV dinner, and voila! Instant Thompson!

●

Like the masthead photo? An actual, unretouched photo of your editor, El Supremo, as taken by Bill O'Brien. Free 8 x 10 autographed copies available upon request.

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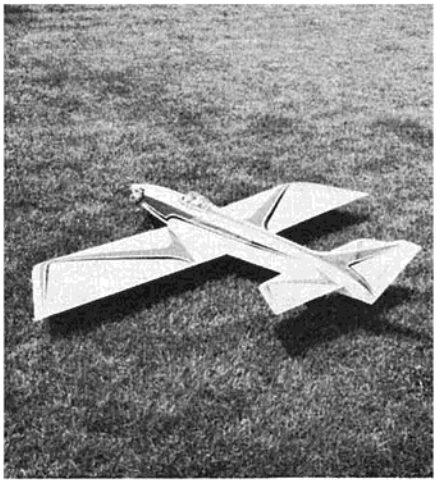


DART III

By Captain Charles T. Winter, U.S.A.F.

WHY the "Dart III"?

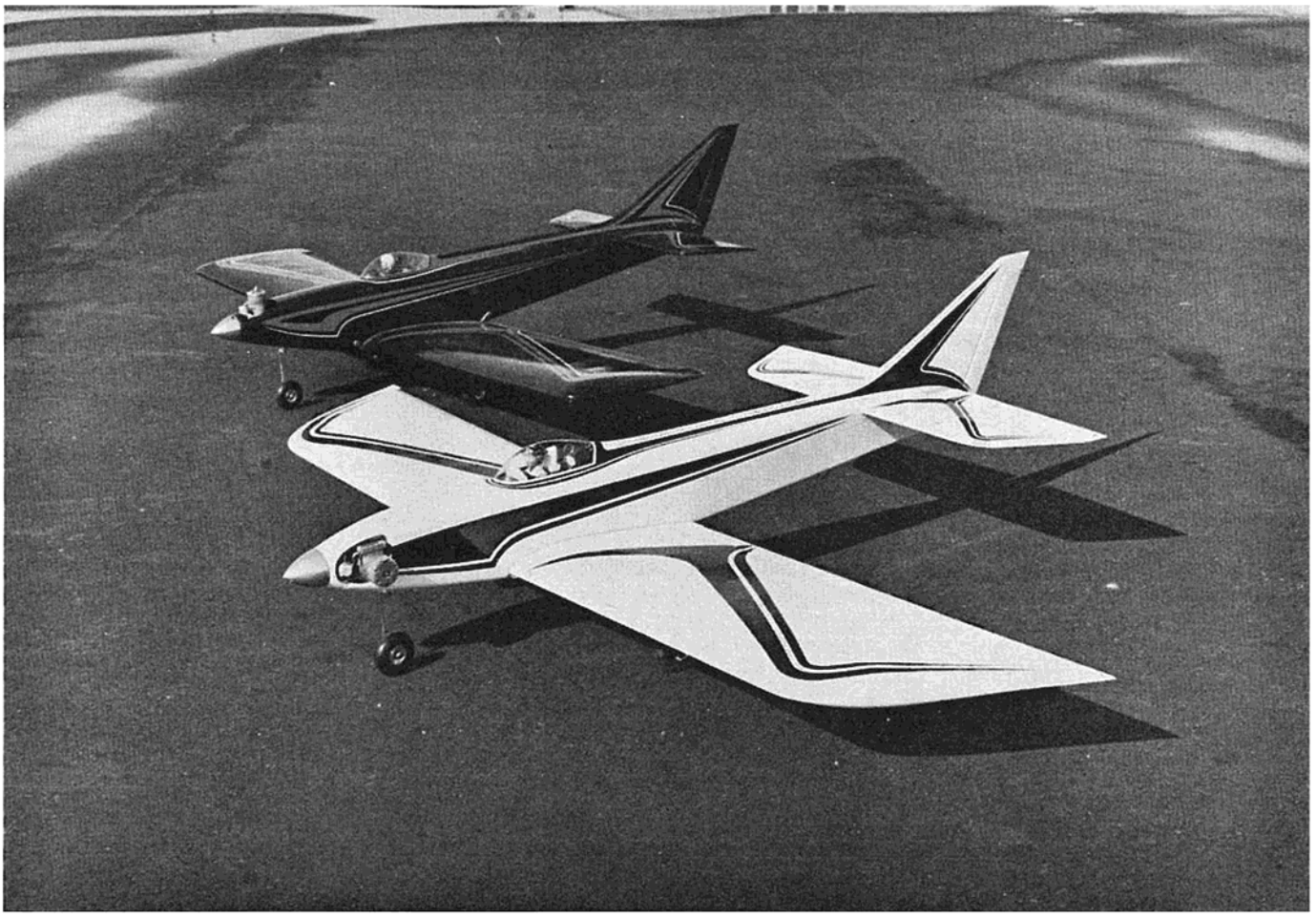
It's like asking, "Why do we need a good five-cent cigar?" The Dart III concept was originated out of the frustrations of a model builder who believed that the majority of radio control model airplanes being built and flown today are lacking both in creative design and construction.

I have been building and designing model airplanes for over 20 years. During the mid-forties, when I was an avid U-Control enthusiast, I was directly involved with the development of the aluminum speed pan. A design called the Hell-Razor, which terrorized the contest circuit for many years and reached the then unheard of speed of 159 MPH on two .016" wires for the world speed record, was designed by George Fong, Fletcher Slade, and myself.

My credentials include a college degree in Mechanical Engineering, plus a year of Aeronautical Engineering. After finishing school, I worked for Republic Aviation, Long Island, N. Y. The project to which I was assigned at Republic was development of the hydraulic and control systems of the F-84F jet fighter. After one year with Republic the jet engine roar got to me, so I tried my hand at making some noise myself by joining the U. S. Air Force. I have since logged over 3,000 hours in 13 years of flying jets.

I feel I should mention at this point that I hold the unofficial world model airplane speed record; a window-rattling 860 MPH. I accomplished this momentous feat by taking one of my Hell-Razor speed planes with me during a supersonic mission in an F-86D all-weather interceptor! I guess I hold the altitude record for model airplanes too — 45,000 feet. At present, I'm flying F-106 all-weather interceptors and could easily increase my speed and altitude record, were they ever challenged!

Let's get back to the reason for this article, "Why the Dart III?" During the preliminary design layouts, I wanted an airplane into which any radio control equipment could fit, plus additional room for those thick, clumsy fingers that can never reach that elusive little do-dad that needs adjusting or tightening. The radio and servo compartment measure a spacious 3½ inches wide, 13½ inches long, and plenty deep. It is also designed to allow the servo tray to extend into the fuel tank compartment. This permits



mounting the battery pack on the servo board. You can now change the entire radio-servo package from one plane to another without that unpleasant job of digging the battery pack out from under the fuel tank.

The question most frequently asked by fellow model-builders is why I have designed the wing and horizontal stabilizer with swept tips. My first reply to this question is, "Why not?" The aerodynamic reason is that I have combined the desirable characteristics of both the swept and straight wing. The low speed handling of the "Dart III" is nothing short of outstanding. The swept tips aid in yaw stability by increasing the drag on the tip that may move further forward due to yaw or slip encountered accidentally or on purpose. At high speeds, the "Dart III" will fly a perfectly straight line, called "grooving" by many model builders.

The over-all flight stability is enhanced by the effective vertical stabilizer area which starts from the rear of the canopy and develops from that point rearward. The length of the Dart fuselage is deceiving. It measures a surprising five feet from the nose to the furtherest aft point on the vertical stabilizer. A look at the horizontal stabilizer will reveal nothing earth-shattering. The feature worth mentioning is the location of the horizontal stabilizer with relation to its moment from the aircraft center of gravity. The tail moment has been designed to be short. This takes full advantage of the proportional type radio control equipment available today.

The fuselage construction is only slightly different than most. The engine was side-mounted to give a more aerodynamically clean appearance. I deplore inverted engines with their starting problems, and digging dirt out of the carburetor and cylinder head after an unscheduled bad landing. The side-mounted engine offers no problems. You can mount the engine on either side by simply flip-flopping the two engine mounting bulkheads when building the forward section of the fuselage.

A close look at the nose gear installation will reveal that it is mounted slightly off center to allow it to clear the motor mount. This offers no problem and is visually undetectable to anybody admiring your aircraft. Contact cement is used to hold the 3/16" plywood doubler to the balsa sheet sides. White glue is used extensively throughout the airplane except in areas that would allow the glue to create problems with the final painting. I will discuss preparation and painting techniques later in the article.

Initially, the fuselage is assembled by gluing the two plywood bulkheads that make up the radio servo compartment in place. You can also have the servo rails in place during this operation. Allow the glue to dry completely before continuing. Temporarily put the forward nose gear bulkhead and motor mounts in place. The aid of "C" clamps are needed for this step. Use caution by placing pieces of scrap balsa under the "C" clamp contact points to eliminate the possibility of denting or crushing the balsa wood sides. Check all parts for alignment at this point. Adjust and trim motor mounts and plywood bulkheads to give you the recommended 0 (zero) degree engine placement. When you are satisfied that all parts have the proper alignment, white glue them. This last step is critical because once glued, you are committed to the position of your motor mounts. Allow these parts to set, in position, for at least 12 hours. From this point on, the basic fuselage construction is nothing more than installing and shaping balsa blocks. The canopy and dorsal fin installation will be covered with painting techniques.

The construction of the wing and horizontal stabilizer are straightforward and follow well-established construction principles. The wing airfoil is symmetrical, which I believe to be the most desirable airfoil for a Class III stunt aircraft. Theoretically, if you could have an airplane with the wing and horizontal stabilizer along the thrust line and a symmetrical airfoil with no wing dihedral, it should fly just as well inverted as right side up. An airplane as I have just described is what most good control

line stunt aircraft are designed around.

This so called (zero zero) designed airplane is not totally desirable for our radio controlled airplane. Most of our maneuvers are started and completed right side up. This means that it is desirable to give our aircraft more stability during its normal right side up flight. This is accomplished by slight wing dihedral (the Dart has the minimum amount of dihedral necessary for right side up stability). From the construction standpoint, the low wing is the most desirable. It allows for strong and efficient one piece wing with simple landing gear installation. The fuselage has a large cavity which allows for any type of radio control installation.

During inverted flight, the small amount of wing dihedral is not detrimental to flight stability. In fact, the fuselage weight is now located under the wing which has a stabilizing effect much the same as a standard high wing airplane. Filling the wing leading edge area with Polyurethane (Sig Super Foam) helps prevent wing damage transmitted by the fuselage, during that "one-in-a-million" bad landing! A precaution well taken when putting the Polyurethane mixed concentrate in restricted areas is to use less concentrate than necessary to fill the area in question. If too much concentrate is used in a restricted area, it will expand and bulge or possibly cause an open break in the area. It is safer to fill the area with two or more applications and monitor the expansion closely. It takes approximately one teaspoon of each chemical to fill one leading edge cavity.

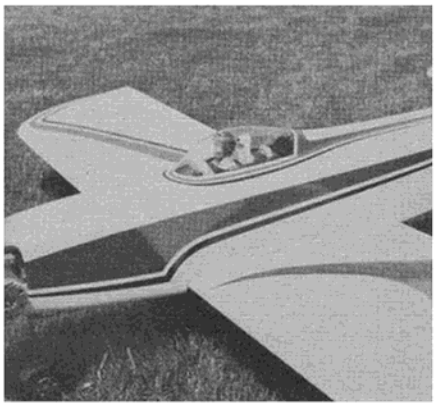
Cam-Locks are used for ease of wing installation. I believe the installation I have in the Dart to be extremely strong and easily constructed. Dowels are prepositioned in the wing by drilling through the balsa wood, plywood, and foam. The positioning of holes in the fuselage bulkhead for engagement of the dowels is done as follows: cut dowels oversize — in length — by approximately ½ inch, trim and sand points on one end of each dowel (easily done with a pencil sharpener), temporarily install the dowels in the wing with the points protruding from the leading edge approximately ¼ inch. Now rub some dark wax from a common crayon on the dowel points and place the wing into the position you wish it to be for final assembly. If care is taken, the crayon tipped dowels will leave marks that should be the exact center of the holes that will be needed in the plywood bulkhead.

Installation of the Cam-Locks is accomplished by first gluing the plywood Cam-Lock pin and sleeve holders to the underside of the wing and drilling holes in the location specified on the plans. When the Cam-Lock pin and sleeve are in place in the wing, complete the unit assembly by pressing on the bracket portion of the Cam-Lock assembly. You now have the Cam-Locks all assembled but dangling in the wing. Place the plywood bulkhead doubler into position behind the Cam-Lock brackets and mark, with a pencil, where bolt holes will have to be made to hold the brackets to the plywood doubler. With the brackets bolted to the doubler, re-assemble the Cam-Lock units. You should now have the entire Cam-Lock assembly and plywood doubler hanging in place. By making some basic measurements, you should be able to preposition the plywood doubler on the permanent fuselage bulkhead. Temporarily install the doubler with two small wood screws.

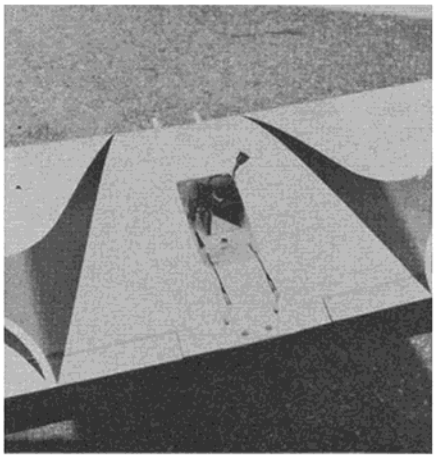
Assuming that you have the two wing dowels in position and inserted in their respective holes in the forward bulkhead, carefully press the Cam-Lock area down into position in anticipation of hooking up the Cam-Lock units. A note of caution. You may need minor reshaping of the receiving dowel holes to permit seating the wing in its final resting position. Another factor to keep in mind is the thickness of the gasket material used between the fuselage and wing. Material such as "Fu-Seal" compresses to approximately 1/16 inch, but should not be overlooked when trimming the dowel holes. The permanent installation of the doubler bulkhead is made with four wood screws. This will be more than adequate and will allow you a shear point in case of a holocaust.

During my many years of model building, I have developed a weakness for a particular area on a model airplane. Let me explain this statement by saying, "Fillets" and "Concave Surfaces." I believe that any model builder worth his weight in balsa wood should be able to make a presentable fillet between two adjoining surfaces; for example: The vertical and horizontal stabilizers. Without a lot of fanfare or "Playboy Philosophy," I will give you my approach to the perfect fillet, and one which is not affected by dope shrinkage. Dart III has a fillet that goes around the canopy and runs the full length of the dorsal fin before it blends into the vertical and horizontal stabilizer surfaces. Without exception, every model builder that has looked at the Dart and has run his finger along those three foot fillets says the same thing: "How do you do it?" My reply is always very enlightening: "It's easy!" The specifics follow. Buy a ½ pint-size can of epoxy auto body filler. Get the variety with a metallic base. Your first impression of the material as you lift the can from the shelf is that the guy who told you to get this stuff must be a nut. The weight of that small can feels like 50 pounds.

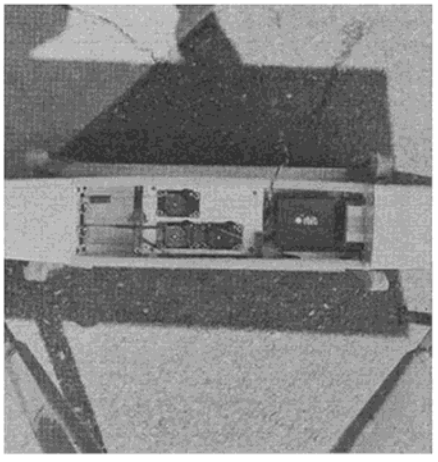
In application, the total weight of epoxy filler used on the Dart is about ½ oz. It will give a lighter and stronger surface than any dope and balsa filler



Dart III and friend.

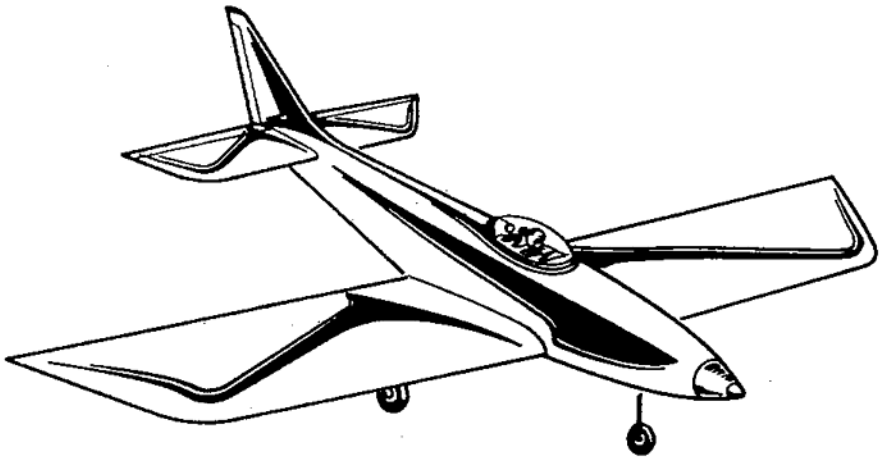


Aileron servo installation.



Orbit propo installation.

Capt. Winter and Dart III.

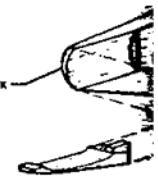


CONSTRUCTION NOTES:

1. Cut two identical fuselage sides from 3/32" x 6" x [illegible]
2. Cut two identical plywood fuselage doublers from a [illegible]
3. Glue plywood doubler to fuselage side with contact [illegible]
4. While glue balsa wing support doubler in place.
5. While glue stab support doubler & stiffener strips in place.
6. While glue both servo support plywood bulkheads in place [illegible] sides to bulkheads with wood clamps allow to completely [illegible]
7. While glue servo rails in place.
8. While glue upper & lower 1/2" x 45° longeron that [illegible]
9. Temporarily clamp toward nose gear bulkhead in place. [illegible] mounts into position. Check alignment of all parts. [illegible] correctly and alignment is good, while glue all parts. [illegible]

3/4" x 3-1/2" BLOCK

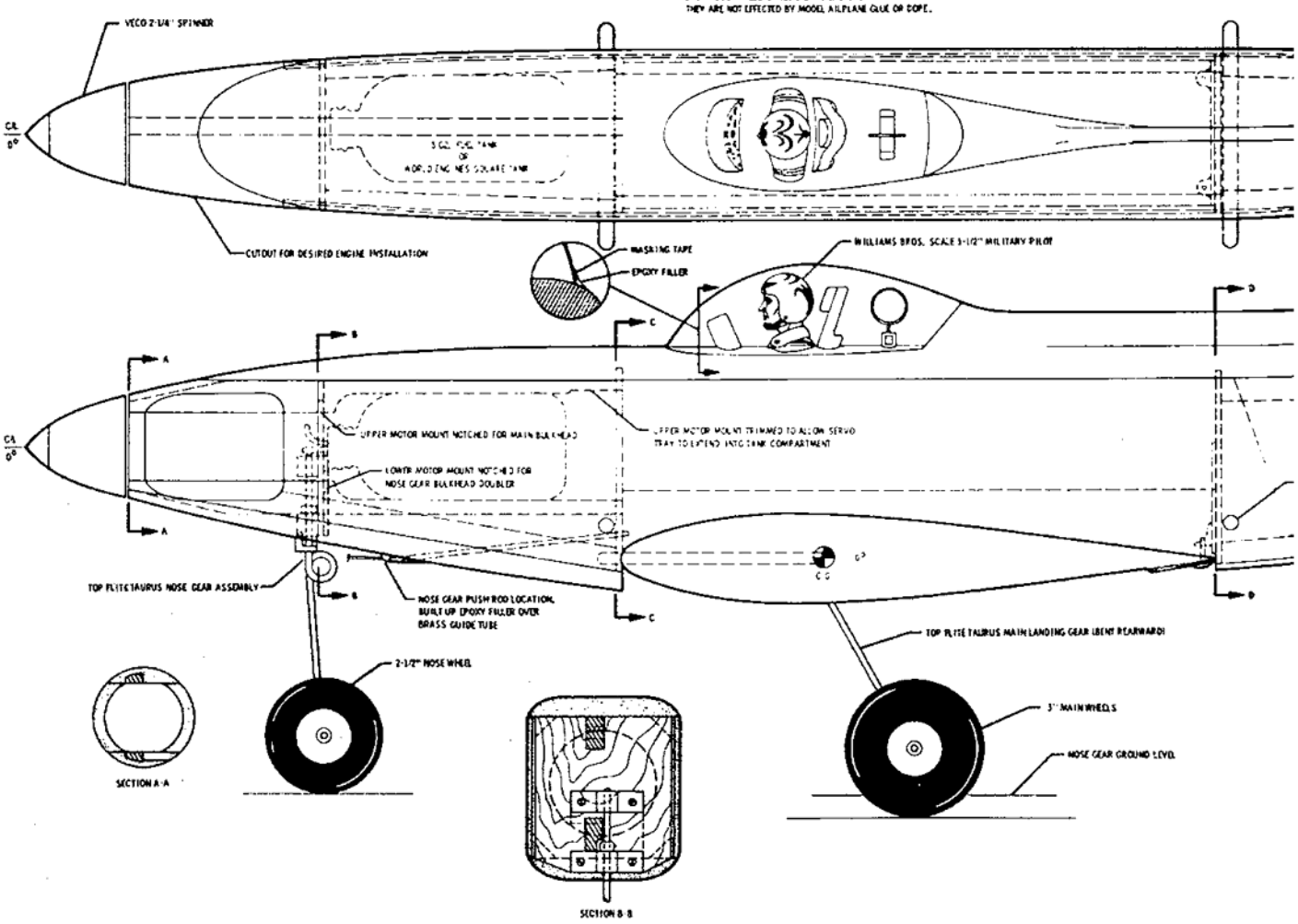
NOTE: A NUMBER OF SMALL FILLER BLOCKS FROM AROUND ENGINE AREA OMITTED FOR CLARITY.

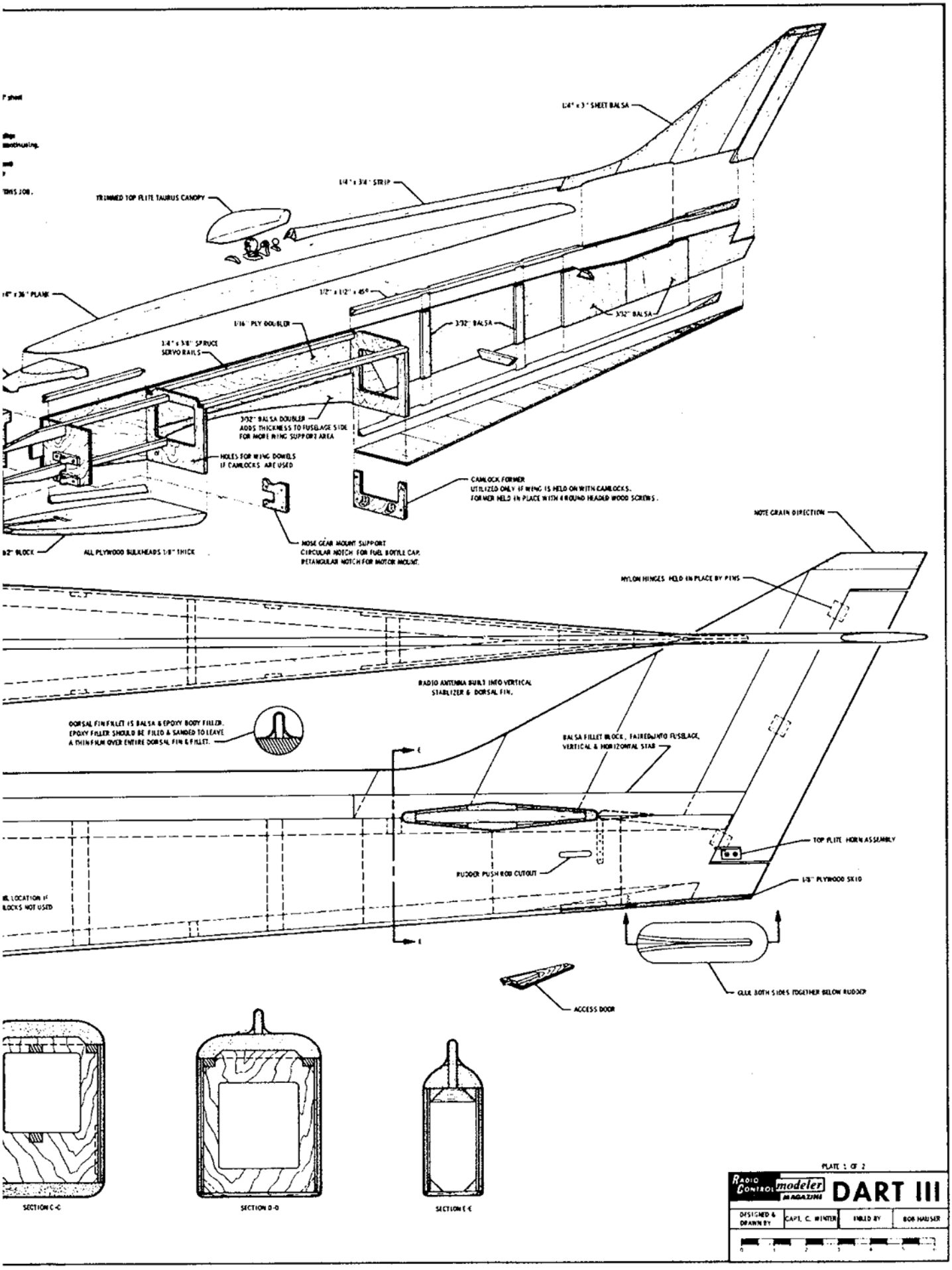


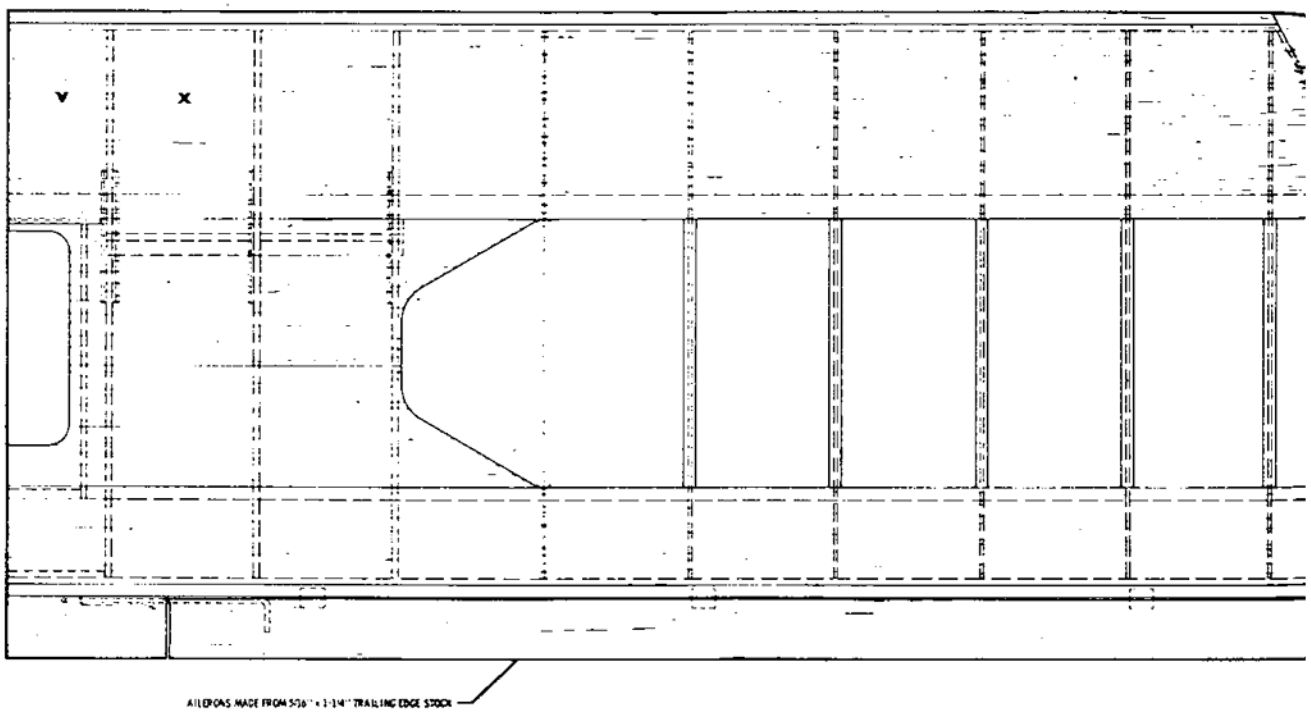
ENTIRE FUSELAGE IS SILK COVERED EXCEPT: [illegible] FIN & FILLET.
COLOR SCHEME IS WHITE WITH RED [illegible] & BLACK STRIPES

TOP FLITE CANOPY CUT TO FIT FUSELAGE. CANOPY SPOT GLUED TO FUSELAGE. MASKING TAPE APPLIED SO THAT WHEN REMOVED, FILLET WILL HAVE A STRAIGHT EDGE ON CANOPY.

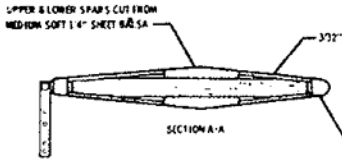
SUGGESTED FILLET MATERIAL IS EPOXY TYPE AUTOMOTIVE BODY FILLER. EPOXY BODY FILLERS FILE & SAND EASILY. THEY ARE NOT EFFECTED BY MODEL AIRPLANE GLUE OR DOPE.

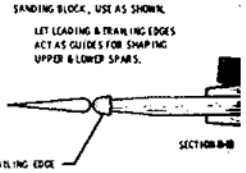


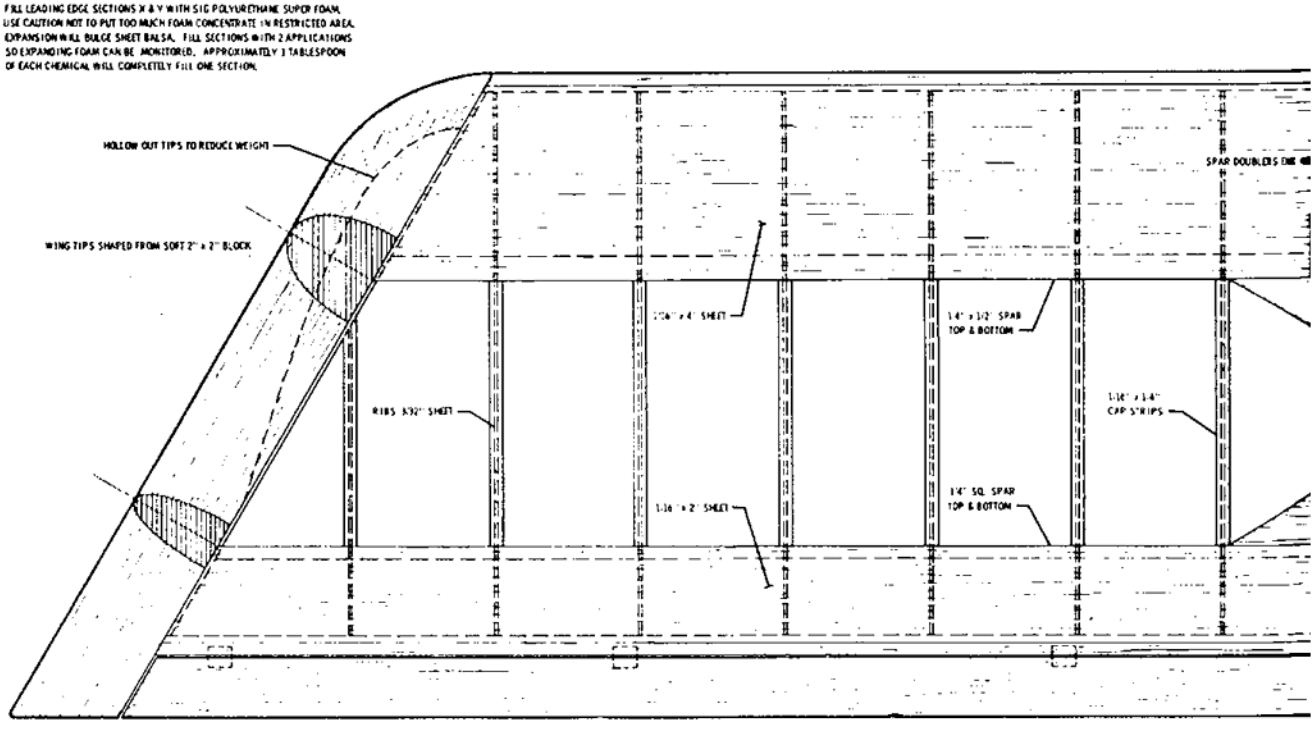

1/4" x 3" SHEET BALSA
1/4" x 3/4" STRIP
TRIMMED TOP PLITE TAURUS CANOPY
1/2" x 1/2" x 45°
3/32" BALSA
1/16" PLY DOUBLER
1/4" x 3/8" SPRUCE SERVO RAILS
3/32" BALSA DOUBLER ADDS THICKNESS TO FUSELAGE SIDE FOR MORE WING SUPPORT AREA
HOLES FOR WING DOWELS IF CAMLOCKS ARE USED
CAMLOCK FORMER UTILIZED ONLY IF WING IS HELD ON WITH CAMLOCKS. FORMER HELD IN PLACE WITH 4 ROUND HEADED WOOD SCREWS.
NOSE GEAR MOUNT SUPPORT CIRCULAR NOTCH FOR FUEL BOTTLE CAP. RETANGULAR NOTCH FOR MOTOR MOUNT.
ALL PLYWOOD BULKHEADS 1/8" THICK
NOTE GRAIN DIRECTION
NYLON HINGES HELD IN PLACE BY PINS
RADIO ANTENNA BUILT INTO VERTICAL STABILIZER & DORSAL FIN.
DORSAL FIN FILLET IS BALSA & EPOXY BODY FILLER. EPOXY FILLER SHOULD BE FILED & SANDED TO LEAVE A THIN FILM OVER ENTIRE DORSAL FIN & FILLET.
BALSA FILLET BLOCK, FAIRED INTO FUSELAGE, VERTICAL & HORIZONTAL STAB
TOP PLITE HORN ASSEMBLY
RUDDER PUSH ROD CUTOUT
1/8" PLYWOOD SKID
GLUE BOTH SIDES TOGETHER BELOW RUDDER
ACCESS DOOR
SECTION C-C
SECTION D-D
SECTION E-E
PLATE 1 OF 2
RADIO CONTROL modeler MAGAZINE
DART III
DESIGNED & DRAWN BY
CAPT. C. WINTER
INKED BY
BOB HAUSER

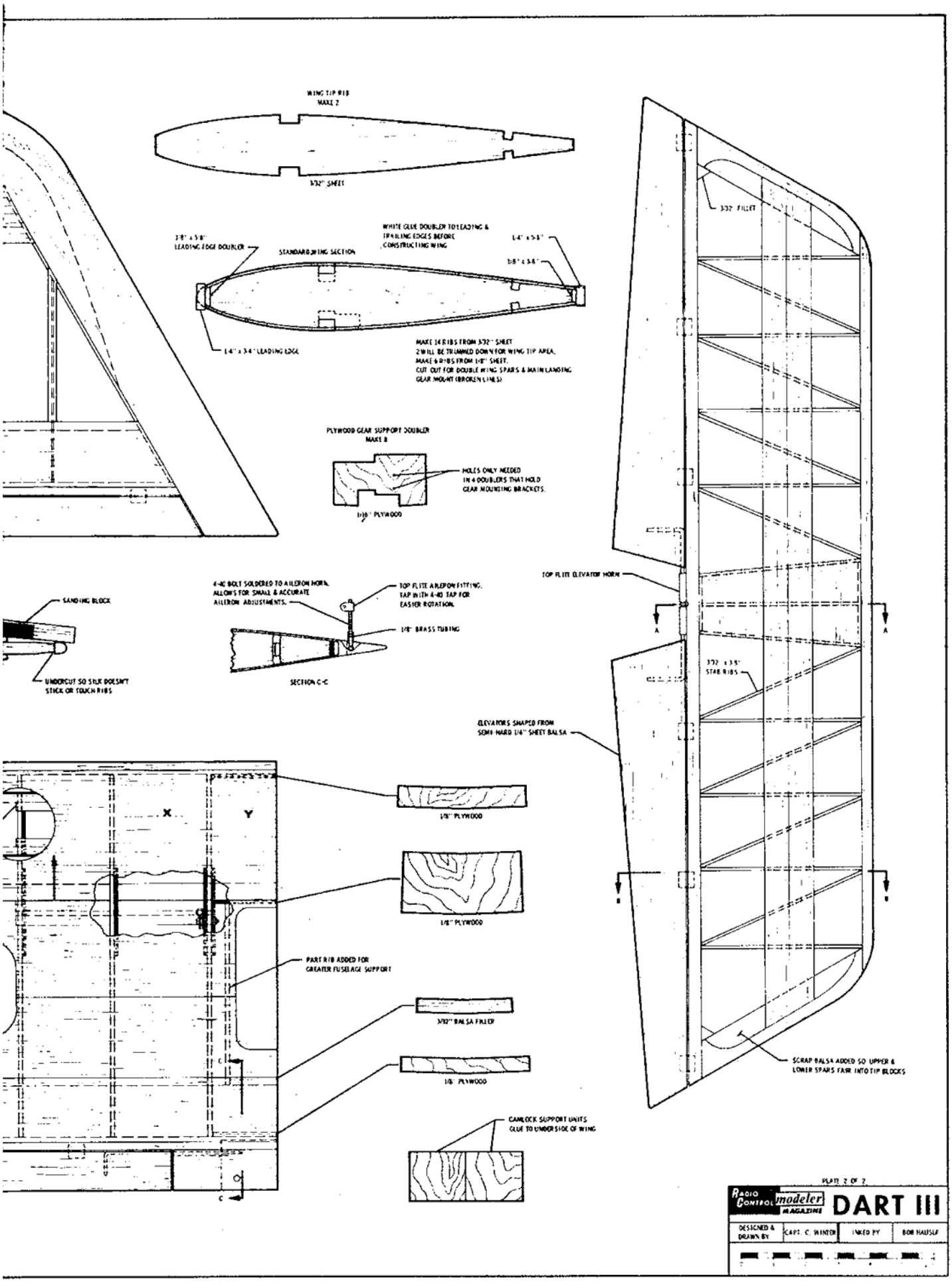

V
X
AILERONS MADE FROM 5/16" x 1-1/4" TRAILING EDGE STOCK

2 INCHES
WING DIHEDRAL


UPPER & LOWER SPARS CUT FROM MEDIUM SOFT 1/4" SHEET BALSA
3/32" SHEET
SECTION A-A
3/8" x 3/8" LEADING & TRAILING EDGE


SANDING BLOCK, USE AS SHOWN.
LET LEADING & TRAILING EDGES ACT AS GUIDES FOR SHAPING UPPER & LOWER SPARS.


FILL LEADING EDGE SECTIONS X & Y WITH SIG POLYURETHANE SUPER FOAM. USE CAUTION NOT TO PUT TOO MUCH FOAM CONCENTRATE IN RESTRICTED AREA. EXPANSION WILL BULGE SHEET BALSA. FILL SECTIONS WITH 2 APPLICATIONS SO EXPANDING FOAM CAN BE MONITORED. APPROXIMATELY 1 TABLESPOON OF EACH CHEMICAL WILL COMPLETELY FILL ONE SECTION.
HOLLOW OUT TIPS TO REDUCE WEIGHT
WING TIPS SHAPED FROM SOFT 2" x 2" BLOCK
1/16" x 4" SHEET
1/4" x 1/2" SPAR TOP & BOTTOM
SPAR DOUBLERS
RIBS 3/32" SHEET
1/16" x 1/4" CAP STRIPS
1/4" SQ. SPAR TOP & BOTTOM
1/16" x 2" SHEET


WING TIP RIB
MAKE 2
3/32" SHEET
3/8" x 5/8"
LEADING EDGE DOUBLER
STANDARD WING SECTION
WHITE GLUE DOUBLER TO LEADING & TRAILING EDGES BEFORE CONSTRUCTING WING
1/4" x 5/8"
1/8" x 3/8"
1/4" x 3/4" LEADING EDGE
MAKE 14 RIBS FROM 3/32" SHEET
2 WILL BE TRIMMED DOWN FOR WING TIP AREA.
MAKE 6 RIBS FROM 1/8" SHEET.
CUT OUT FOR DOUBLE WING SPARS & MAIN LANDING GEAR MOUNT (BROKEN LINES)
PLYWOOD GEAR SUPPORT DOUBLER
MAKE 8
HOLES ONLY NEEDED IN 4 DOUBLERS THAT HOLD GEAR MOUNTING BRACKETS.
1/16" PLYWOOD
3/32" FILLET
TOP FLITE ELEVATOR HORN
A
A
3/32" x 3/8"
STAB RIBS
ELEVATORS SHAPED FROM SEMI-HARD 1/4" SHEET BALSA
SCRAP BALSA ADDED SO UPPER & LOWER SPARS FAIR INTO TIP BLOCKS
SANDING BLOCK
UNDERCUT SO SILK DOESN'T STICK OR TOUCH RIBS
4-40 BOLT SOLDERED TO AILERON HORN. ALLOWS FOR SMALL & ACCURATE AILERON ADJUSTMENTS.
TOP FLITE AILERON FITTING. TAP WITH 4-40 TAP FOR EASIER ROTATION.
1/8" BRASS TUBING
SECTION C-C
X
Y
1/8" PLYWOOD
1/8" PLYWOOD
PART RIB ADDED FOR GREATER FUSELAGE SUPPORT
3/32" BALSA FILLER
1/8" PLYWOOD
CAMLOCK SUPPORT UNITS GLUE TO UNDERSIDE OF WING
C
C
PLATE 2 OF 2
RADIO CONTROL modeler MAGAZINE
DART III
DESIGNED & DRAWN BY
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INKED BY
BOB HAUSLE

combination. Mixing the epoxy filler is nothing more than adding a few drops of the catalyst that usually comes in a little tube with the can of filler. You can increase or decrease the pot life by varying the amount of catalyst. Normal working time with the filler is approximately 5 to 10 minutes before it sets and hardens. The method I use for making a fillet is to first build up the desired area with balsa wood to the general size and shape of the final product. All you do now is wipe the epoxy filler on with your finger in such a manner that your finger assumes the radius of the fillet. You do not have to prepare the balsa wood with dope or anything else before applying the epoxy filler. Try to keep the thickness of the filler at about 1/16 inch. This is not extremely important so if it is thicker or bumpy in spots, don't worry, you will sand this all down to the desired thickness and shape later. I recommend that on the Dart you spread a layer of epoxy filler over the entire dorsal fin and have it extend over the upper fuselage block.

The canopy must be permanently glued in place so the dorsal fin fillet will blend in with the canopy fillet. This necessitates the installation of the pilot, instrument panel, headrest, and loop antenna in the final painted condition. Masking tape is put around the canopy about 1/8 inch up from all edges. The tape will be removed after the epoxy filler is filed and sanded to give the desired fillet radius. The epoxy filler on the canopy is trimmed down to the thickness of the masking tape to allow removal of the tape without breaking or lifting the installed filler material. Blending-in the horizontal and vertical stabilizers with the dorsal fin is accomplished in a similar manner by wiping on the epoxy with your finger.

Filing and sanding epoxy filler is very easy and makes for enjoyable work. Use it once and you will see unlimited possibilities for this material in model building. To aid in sanding the epoxy filler to a desired radius, I have cut small two-inch lengths of different size dowels to be used as sanding blocks. On small radii such as around the canopy, I use small rat-tail files. The preparation of the fuselage with dope, silk, and filler can now be started.

Be sure that the epoxy-filled areas are sanded so they blend smoothly into the balsa areas. Use light pressures when accomplishing this step because the epoxy filler is harder than the adjoining balsa. Before applying the first coat of clear dope on the fuselage, I have every crack and dent filled with a balsa filler and sanded smooth. To ensure that the canopy does not get dope on it, I have it covered with masking tape up to where the epoxy filler starts.

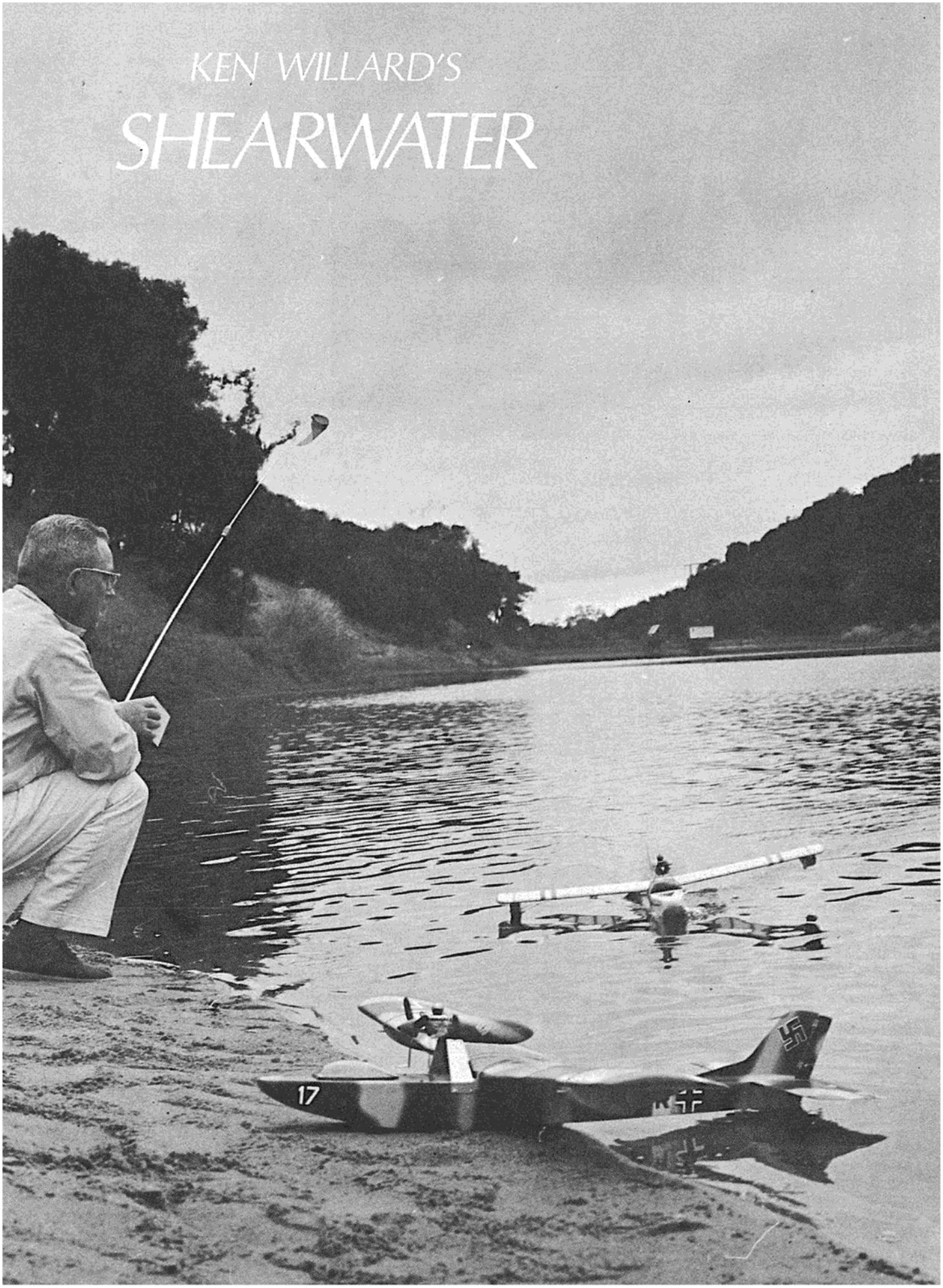
Now, put on your first coat of dope. Let this dry for about one hour, then apply the second coat. Let this combination dry for at least six hours. The theory I work under to get a good paint finish on my airplanes is to completely fill all balsa wood surfaces so they are no longer porous before applying the silk covering. I use Sig Super Fill thinned down so it flows on easily. Each coat is allowed to dry thoroughly before it is dry-sanded with 320 wet/dry paper. Two or three coats should do the job. The entire fuselage should be smooth and without a blemish prior to silking.

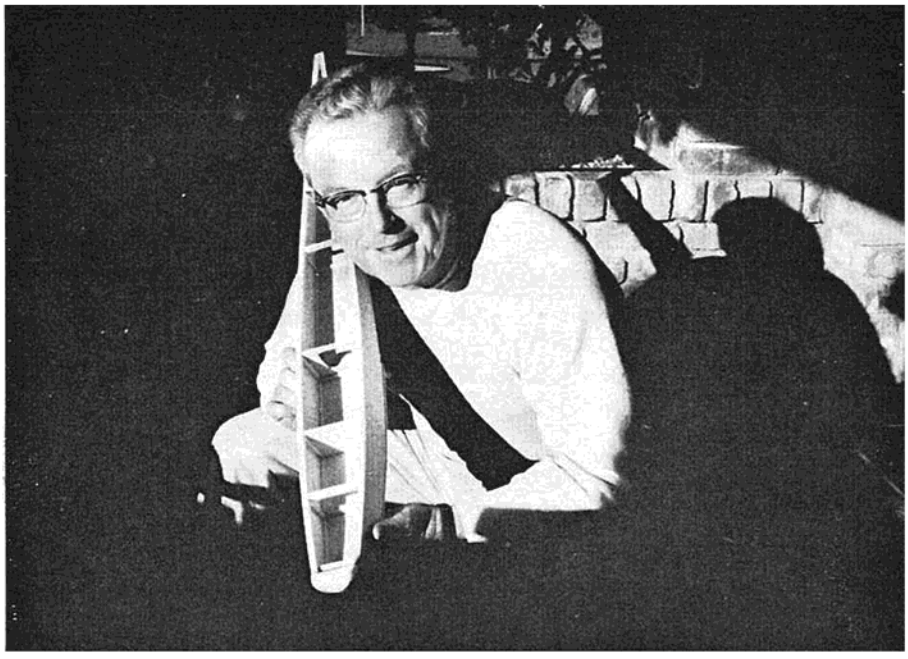
The silk is applied wet and in a manner to give you the least amount of overlapped seams. Do not silk over the dorsal fin. As a guide, do not apply silk to any concave surface; these areas should be the ones with epoxy filler. Clear dope is applied over the silk while still wet. Two coats of clear dope should be adequate before the thinned-down Super Fill is applied. Patience is a prerequisite when one wants a professional paint finish. If you use, as a guide, a maximum of two coats of clear or pigmented dope and a minimum of six hours drying time, you will be rewarded with a finish that will retain its shine and smoothness for years. I have rushed paint jobs only to do the job over a month or two later. The shine and smoothness fall victim to the slow drying and shrinking of the bottom layers of fillers and dope. I have never had to use rubbing compound on any of my aircraft to get a smooth, glossy finish. It is accomplished by allowing paint to dry thoroughly and, with a light touch, wet sanding with 400 paper before each spray application of paint. The final gloss is achieved by two coats of clear dope.

The method I use to achieve sharp lines on my trim is the old reliable technique of applying two coats of clear dope on the edge of the masking tape that makes up the edge of the trim. Allow the clear dope one hour drying time before applying the color. Apply as many coats as needed to give a deep rich color. Allow the paint to dry for at least one hour. If you wait too long, i.e. overnight, you could have trouble removing the tape and getting that desired sharp edge. Remove the tape by pulling it off level over the tape that is still in place. The two coats of clear dope, that I mentioned in a previous paragraph for final gloss, can now be applied over the entire airplane.

In conclusion I would like to say that the Dart III is a full-fledged stunt aircraft. The power plant presently being used is a Super Tigre 60 which will make the Dart fly straight up. I am using an 11 ounce fuel tank, more than adequate for the full AMA stunt pattern. Initially, aileron and elevator throw should be kept to a minimum.

KEN WILLARD'S SHEARWATER





RCM's Chief Sunday Flier with semi-completed Shearwater fuselage.

BY KEN WILLARD

RCM CONTRIBUTING EDITOR

FLYING boats have always had a special appeal to me, and judging from the number of requests I get for flying boat designs, a lot of you modelers are similarly inclined.

There's nothing prettier to see in aeromodeling than the sight of a model flying boat taxiing out from the shore, with the bow wave curling out and leaving a rippling wake, then, as full power is applied, the boat surges up on the step, picks up speed, skips a couple of times, and then lifts into the air with the water dripping off the hull and punctuating the end of the boat's wake with a series of little splashes.

Or, maybe it's just as pretty at the end of the flight to watch the flying boat gliding in over the water, particularly if the latter is smooth, and seeing the boat come down, meet its reflection and destroy it with the wake as the ship slides over the water, slows down, and sinks into floating position to taxi back to shore.

In between the takeoff and landing, the sleek appearance in flight with no landing gear hanging down, adds to the overall beauty of the flight of the flying boat. No wonder they're popular. And there are some real beauties on the market, too. Jetco's "Navigator" is a classic, and you can still find a Berkeley "Privateer 15" in some shops. But man! The work involved! Great for the dedicated modeler who loves construction detail, and a chore for those who don't! I'm one of the latter — a disciple of simplicity in construction.

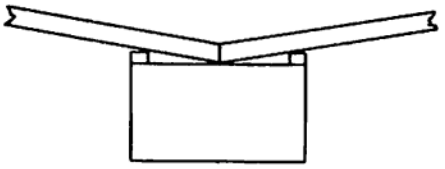
So, I established an objective for a new flying boat design — it should be as simple as possible to build, yet be seaworthy and airworthy. And pretty, too!

What's the simplest fuselage to build? The "box" type — sides perpendicular to the top and bottom. Okay. Do away with the sloping side and "V" bottom of earlier flying boat designs like the "Dreamboat" and the "Li'l Swell." I knew the flat bottomed hull would work — the "Hydrohoney" proved that — so a profile was sketched.

A flat bottom makes a bow wave that doesn't curl away until the boat is on the step. Instead, the wave breaks forward, like the bow wave on a barge. So, a long nose with a gentle upswing on the bottom will minimize the spray from the bow wave when the boat is taxiing. It also helps the model to rise to the step.

The corners between the sides of the hull and the bottom should be sharp, but the corners at the top can be rounded to minimize the boxy appearance. ¼" longerons the full length of the hull allow you to round the corners off — and suddenly the hull doesn't look boxy! Like so:

Next simplification — mount the engine pylon directly to the hull instead of the wing. Makes it easier to set up engine control and easier to build the wing. Then, put runners along the top of the hull so the wing is cradeled to allow a simple dihedral joint. Like so:



Sheet balsa for the tail surfaces is as simple as you can get, so use it.

One of the easiest wings to build is the Schoolmaster wing, so that's what's shown on the plans. However, you'll note from some of the photos that I used a built-up wing. Why? Because I had it on hand. It is the prototype wing for the Schoolmaster before we went to the full sheet construction. Like I say — do it the easy way.

Before going into the construction, let me tell you about the name. I showed the profile to my son, Don, and said "How do you like that? Don't you think it'll slice through the water real nice on takeoff?"

Don is interested in shore birds, such as Terns, Curlews, etc. He disappeared into his library, and came back in a few minutes and said — "You should call it the Shearwater. That's a fast flying bird that lives around water and is sorta' long and sleek."

So I did. It fits.

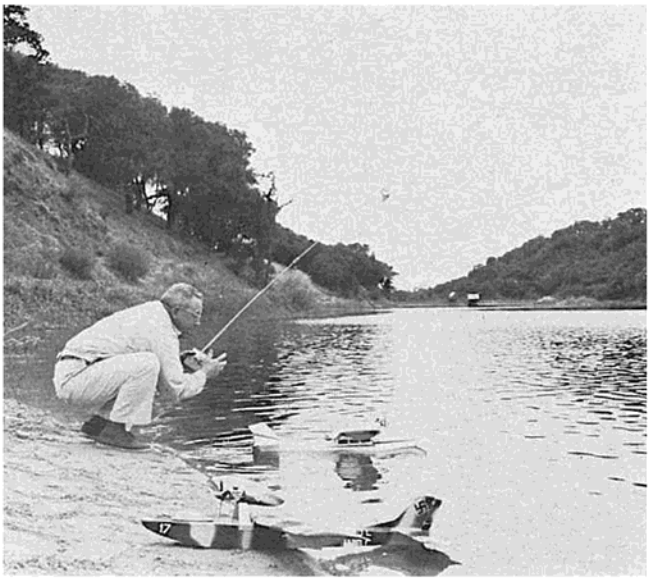
You'll also get a kick out of the story behind the beautiful Shearwater in German patrol boat markings. Scott Christensen, a local modeling friend, built it, without plans, by copying mine — and then he drew the plans after the plane was finished! And we're using his plans because they're excellent to work with.

Now, a few words on construction.

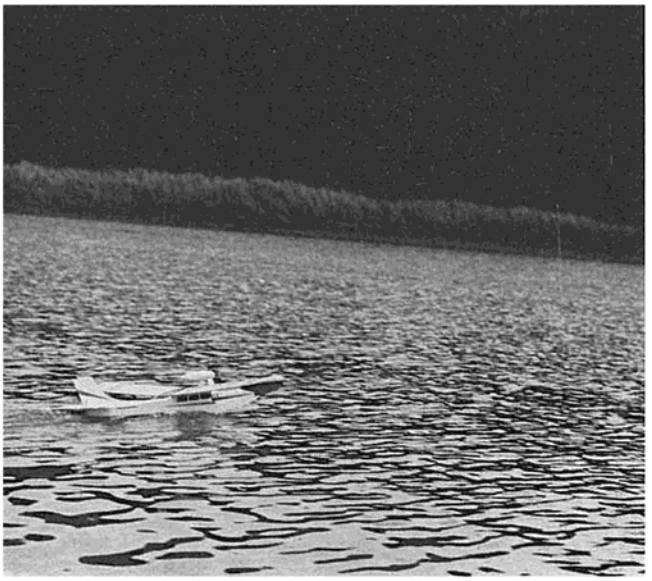
Hull

This goes together real easy. Only one part is a little tricky, and that's pulling the sides together at the nose. The two sheet sides should be of the same consistency balsa so they will bend equally. But, to be absolutely sure the forward bend is equal, pull the sides in, hold them tight against the crossbraces at the nose, either clamped or with rubber bands as the photo shows, then check the curvature of both sides. If it's not even (mine wasn't), then put in a temporary diagonal brace which is just long enough to force the sides to equal curvature. Now, glue the crossbraces and the nose block firmly in place and let dry thoroughly. Leave the brace in until you've sheeted the bottom of the hull — and thus the equal curvature is assured.

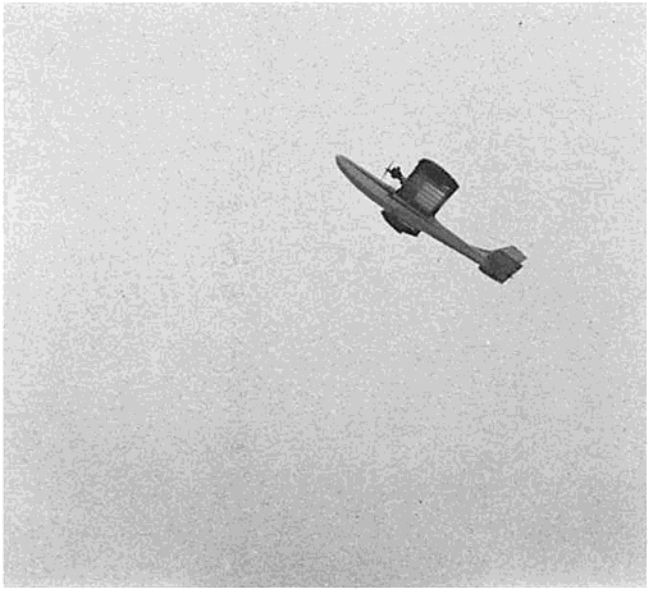
Leave the top of the hull open until you've mounted your guidance equip-



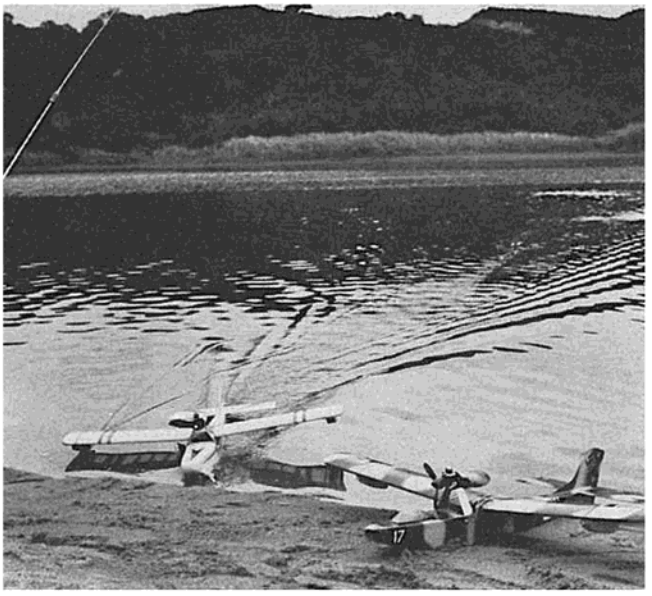
The start of a flight. Note bow wave along hull.



Taxiing out, the Shearwater gains speed for lift off.



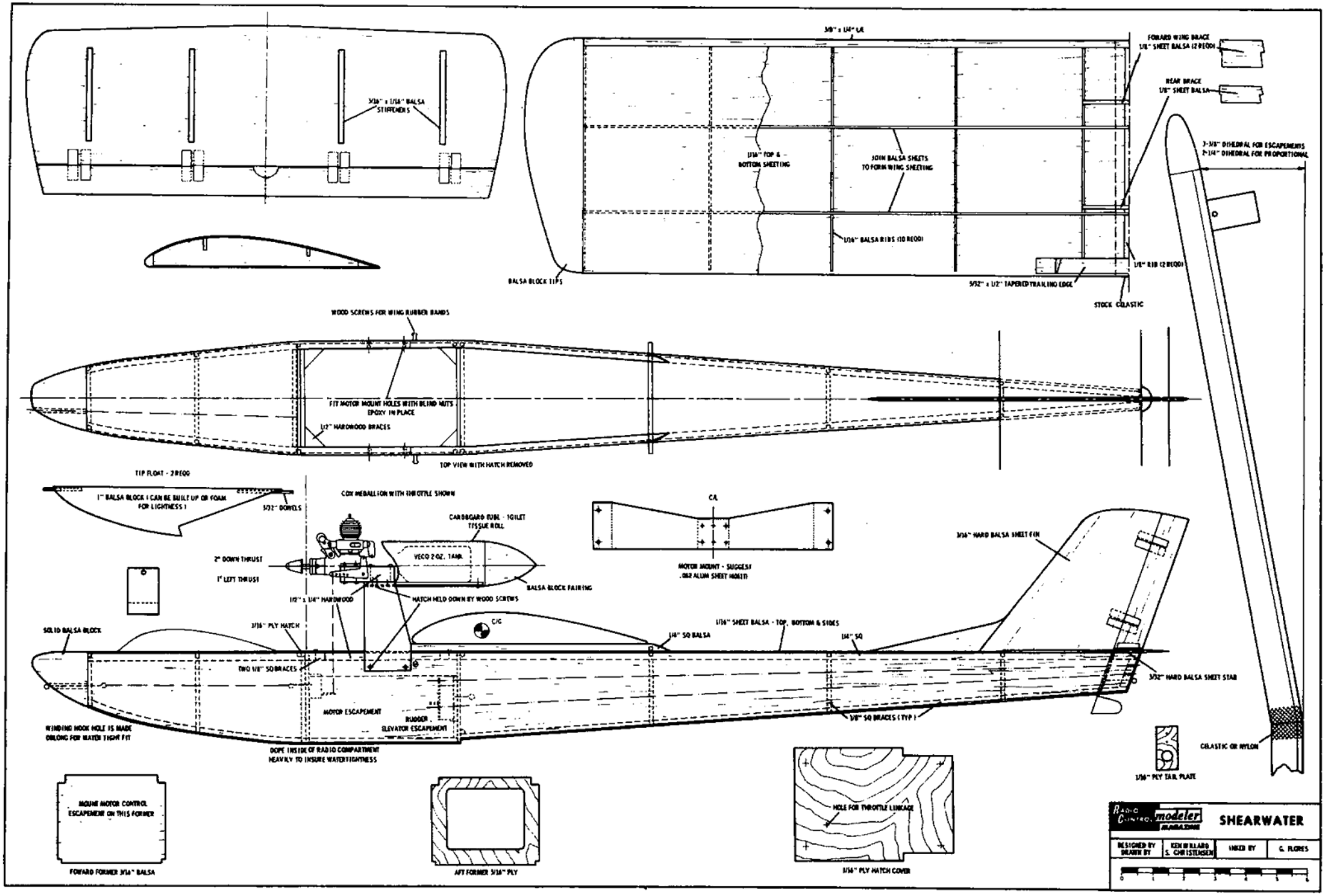
Airborne — up and away.

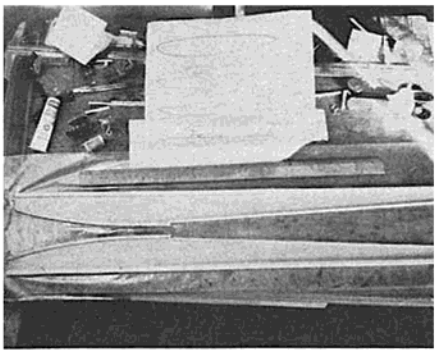


The return to shore after the flight.

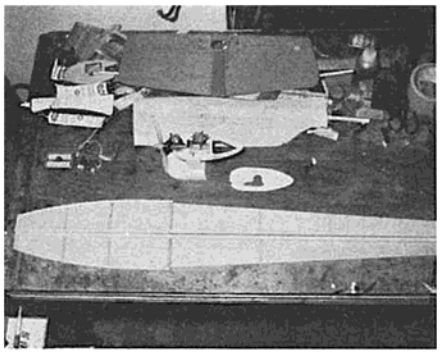
Two happy flying boat fans.

Closeup of Scott Christenson and Shearwater.

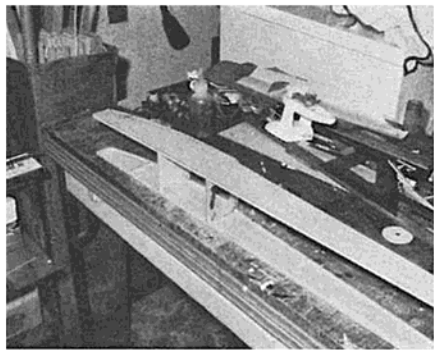

3/16" x 1/16" BALSA STIFFENERS
3/8" x 1/4" L.E.
FORWARD WING BRACE 1/8" SHEET BALSA (2 REQD)
REAR BRACE 1/8" SHEET BALSA
1/16" TOP & BOTTOM SHEETING
JOIN BALSA SHEETS TO FORM WING SHEETING
1/16" BALSA RIBS (10 REQD)
1/8" RIB (2 REQD)
BALSA BLOCK TIPS
5/32" x 1/2" TAPERED TRAILING EDGE
STOCK CELASTIC
2-3/8" DIHEDRAL FOR ESCAPEMENTS
2-1/4" DIHEDRAL FOR PROPORTIONAL
WOOD SCREWS FOR WING RUBBER BANDS
FIT MOTOR MOUNT HOLES WITH BLIND NUTS EPOXY IN PLACE
1/2" HARDWOOD BRACES
TOP VIEW WITH HATCH REMOVED
TIP FLOAT - 2 REQD
1" BALSA BLOCK (CAN BE BUILT UP OR FOAM FOR LIGHTNESS)
3/32" DOWELS
COX MEDALLION WITH THROTTLE SHOWN
CARDBOARD TUBE - TOILET TISSUE ROLL
VECO 2 OZ. TANK
2° DOWN THRUST
1° LEFT THRUST
BALSA BLOCK FAIRING
1/2" x 1/4" HARDWOOD
HATCH HELD DOWN BY WOOD SCREWS
C.G.
CA
MOTOR MOUNT - SUGGEST .062 ALUM SHEET HOLED
3/16" HARD BALSA SHEET FIN
SOLID BALSA BLOCK
3/16" PLY HATCH
1/16" SHEET BALSA - TOP, BOTTOM & SIDES
1/4" SQ BALSA
1/4" SQ
TWO 1/8" SQ BRACES
3/32" HARD BALSA SHEET STAB
MOTOR ESCAPEMENT
RUDDER
ELEVATOR ESCAPEMENT
1/8" SQ BRACES (TYP)
WINDING HOOK HOLE IS MADE OBLONG FOR WATER TIGHT FIT
DOPE INSIDE OF RADIO COMPARTMENT HEAVILY TO INSURE WATERTIGHTNESS
CELASTIC OR NYLON
1/16" PLY TAIL PLATE
MOUNT MOTOR CONTROL ESCAPEMENT ON THIS FORMER
FORWARD FORMER 3/16" BALSA
AFT FORMER 3/16" PLY
HOLE FOR THROTTLE LINKAGE
3/16" PLY HATCH COVER
RADIO CONTROL modeler MAGAZINE
SHEARWATER
DESIGNED BY DRAWN BY
KEN WILLARD S. CHRISTENSEN
INKED BY
G. FLORES



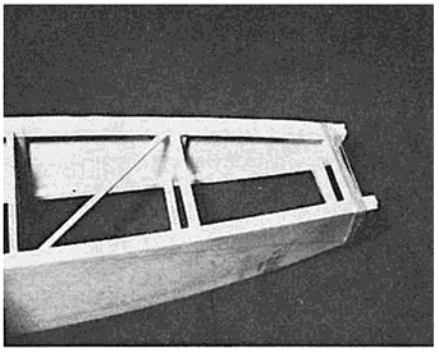
Layout sides and glue on longerons.



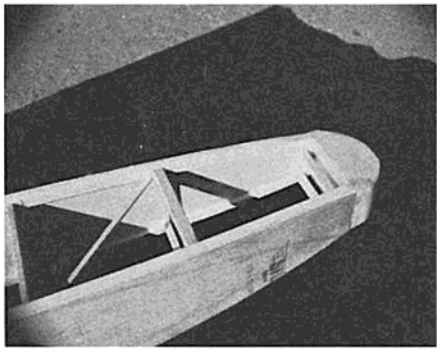
Add all uprights to sides.



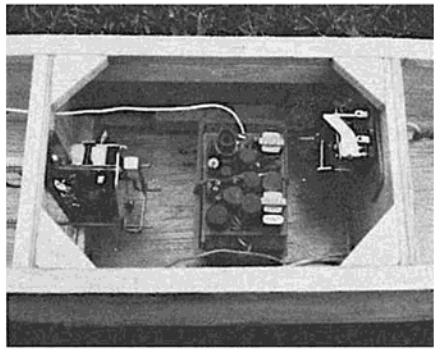
Join sides together with bulkheads.



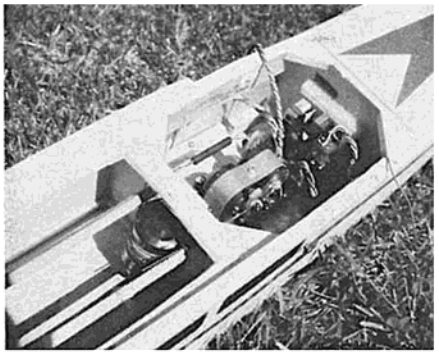
Pull nose together and glue.



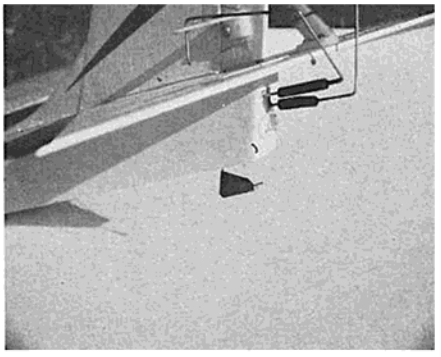
Add noseblock and pull tail together.



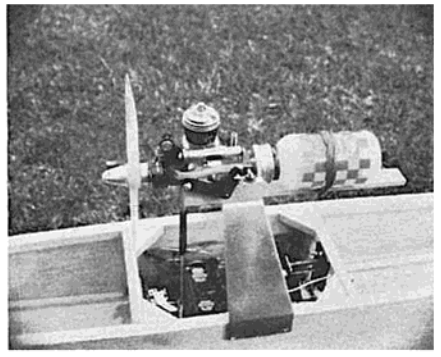
Install equipment (escapement version).



Install equipment (Airtrol version).



'Jury Rig' pushrod for Airtrol. Adjust by slipping wire into tubing.



Make and file pylon.

ment and checked it out to be sure everything works without binding.

As for the guidance, you have many choices. My original installation is shown in one picture — Babcock Mk II escapement, C&S 'Finch' receiver, O.S. Minitron motor control escapement. The other photo shows the more recently installed Airtrol RE-1 setup. But the compartment is big enough to take any of the galloping ghost units like Rand, Tomoser, World Engines, etc.

The engine pylon takes a little doing, unless there's a machine shop near you with a cutter and press to cut and shape the aluminum. If not, you can make up a pylon from 3/32" plywood and aluminum cut from a landing gear blank.

Note the photo showing details of the engine, tank, and exhaust control linkage. It shows how the engine bearers bolt to the aluminum. With a one ounce tank, the .049 runs long enough for sport flying, and the mounting behind the engine just fits inside a standard

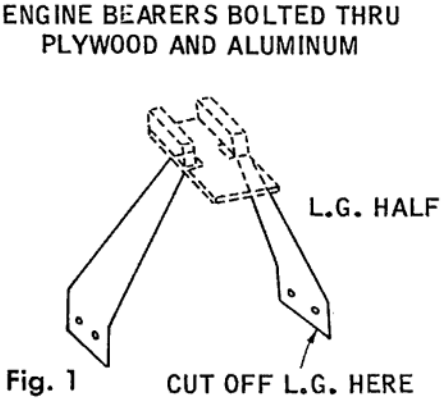


Fig. 1

toilet paper cardboard roll. Add a balsa tapered block at the rear, and Voila! Instant cowl.

Wing

Nothing new or difficult here. Just decide whether you'll use escapement or servo control for higher dihedral, or GG proportional for lower dihedral as shown.

Tail Surfaces

Straightforward sheet construction. Longitudinal stiffeners in stab add strength.

Wingtip Floats

These are made from soft block balsa, carved to shape, and held on with rubber bands. If you use the dihedral for escapements, drop the float lower with ½" spacers so the tip of the stab doesn't drag

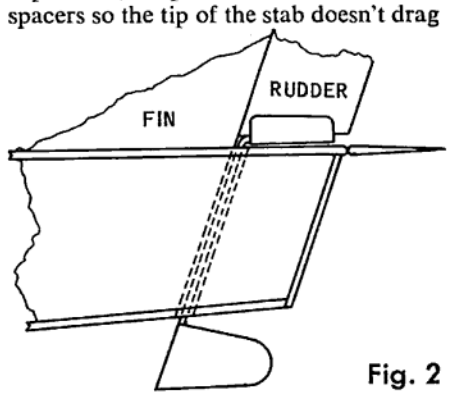


Fig. 2

(Continued on Page 21)

SHEARWATER

(Continued from Page 20)

when the model lays over and rests on the tip float.

Finish

Optional. My original prototype was HobbyPoxy. Scott's camouflage job is sprayed AeroGloss dope, purposely kept at a matte finish for realistic appearance. (A flat finish can be accomplished by mixing talcum powder with colored dope.)

Just one thing. Make sure the finish is completely sealed so the balsa won't soak up water. You'd be surprised how much water will seep through a pinhole! Also, make sure the hatch fits snugly when screwed down in place. Coat the bearing surface for the hatch with a thin layer of Vaseline before tightening down — it'll help keep water out.

Control Rod Exits

A slot is impractical on a flying boat for control rod exits. Too much water will enter these areas, so some other means is required. No problem with escapements since the rods merely turn in the bearing holes and a little Vaseline will both lubricate the bearing and make it water resistant as well. The photo shows how I "jury rigged" pushrods to use the same holes for my RE-1 proportional installation that I used with escapements. Not very neat, but very practical.

Another way to keep the control rod exit hole snug would be to use the new flexible shafts in nylon tube housing. The tubing could be epoxied to the hull where it passes through.

Be sure and waterproof the guidance compartment under the hatch. Water is bound to seep in there a little bit, no matter how snug a fit you have.

Cockpit-Canopy

This is an appearance feature that is optional. Most of the time I flew the prototype without the canopy installed. I have one which fits just forward of the wing and behind the prop, and fairs the leading edge down to the hull. But Scott chose the Dornier type — out in front of the prop as shown on the plans. Take your pick.

Flying

Since the Shearwater is designed for both water stability and air stability, a certain amount of compromise is necessary. The long nose is necessary for good water characteristics, but it does tend to make the model hang in a turn when airborne. You'll find it necessary to fly it out of turns, and when you do, the air pressure on the bottom of the upswept hull makes the recovery have an attending zoom. You can overcome this with a little down elevator if you're using the Airtrol RE-1 proportional system or a Galloping Ghost setup. With an escapement, you'll learn to bring it out of the turn part way, then let up for a second before bringing the model all the way out.

But let's talk about water handling first. Using a setup with motor control, turns can be made at idling speed if your rudder throw is around 20 degrees in either direction. At cruise or high speed, the long aft section of the hull tends to overcome the rudder action. You can make gentle turns, but if the model gets headed downwind, it goes through the water so fast that you have to reduce to idle in order to turn into the wind. When I installed the Airtrol RE-1, which doesn't provide for engine control, I also added a small water rudder tied in with the air rudder, by running an aluminum tube through the hull in line with the rudder axis. A wire was then inserted, and bent to fit the bottom of the rudder. Then I soldered a thin sheet copper rudder to the wire, like this: *(see Fig. 2 on page 27.)*

This makes the Shearwater very maneuverable on the water, but it added a lot of drag, and the model would not take off until I changed the cylinder and piston on the Medallion to the higher power combination that is on the Tee Dee .049. Then there was no trouble in taking off, but two things happened — the idle characteristics became very poor, and at full power, after the Shearwater is airborne, she really scats! These characteristics can be minimized by using a GG setup where you can adjust power as needed.

Try to keep the all up weight of your model at 24 ounces or less — then the stock Medallion .049 will be fun for takeoffs and flying. If you use medium weight balsa and don't "overdope" or "overpoxy" you should hit pretty close to 24 ounces. Scott Christensen's Shearwater came in at 28 ounces — but as you can see from the photos, he really put a finish on his model. No problem — you just need a little more power like the Tee Dee .049 will give.

The Shearwater is very sensitive to elevator trim. And if you happen to trim out a little tail heavy, watch out! She'll take off, nose up sharply, stall, and dive back in before you can correct. However, with the CG as shown on the plans, the elevator should trim right out in line with the stab. About 2 degrees downthrust also helps the trim.

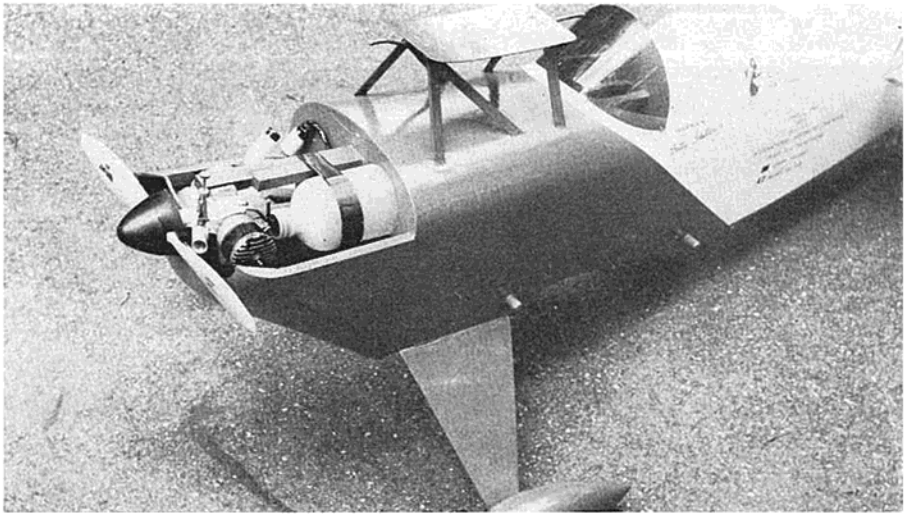
In contrast to some single channel designs, which will do a pretty good job of free-flighting, the Shearwater has to be "flown" when under power, since the big fin and long nose tend to make the model want to spiral once it gets into a turn. In the glide there's no problem, though. Just get it headed into the wind and it will land on the water without having to be flared, although if you have proportional elevator, a flared landing is beautiful to watch.

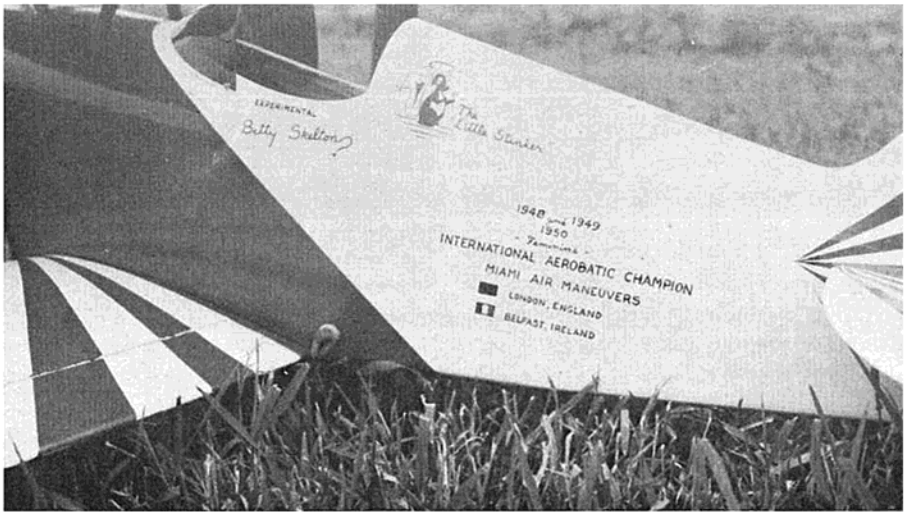
So, build yourself a Shearwater. It's simple to construct, relatively easy to fly — a little harder with escapements than with proportional or GG — and one of the most thrilling models in the sport category that you'll ever build.

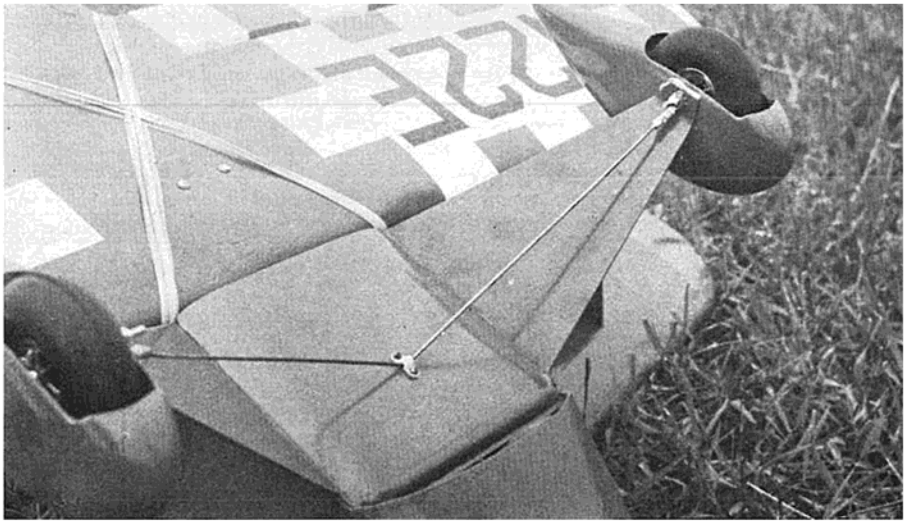
Tell me about yours.

Pitts Special

Nick Ziroli's R/C version of Betty Skelton's colorful 'Little Stinker.' Fully aerobatic Class III design.







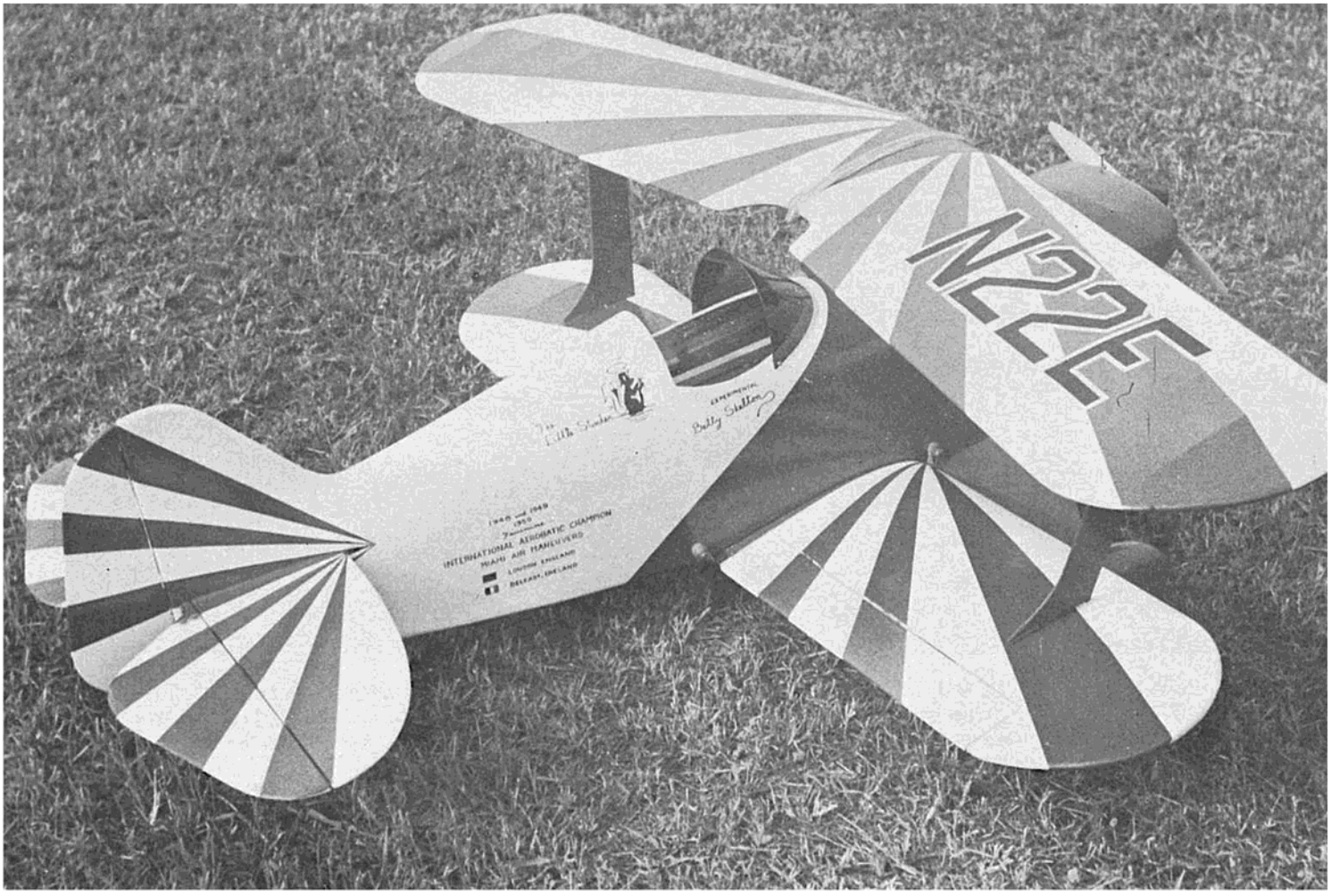
BIPLANE models have always enjoyed a fair amount of popularity. Being partial to biplanes myself I have built and flown a number of them as controlliners. Although I must admit I never enjoyed building and finishing that extra wing, especially when that wing could be going into a new plane! This was in the days when I would build every brainstorm I had, or design that I liked. Now I build fewer planes and pick only the designs that appeal most to me.

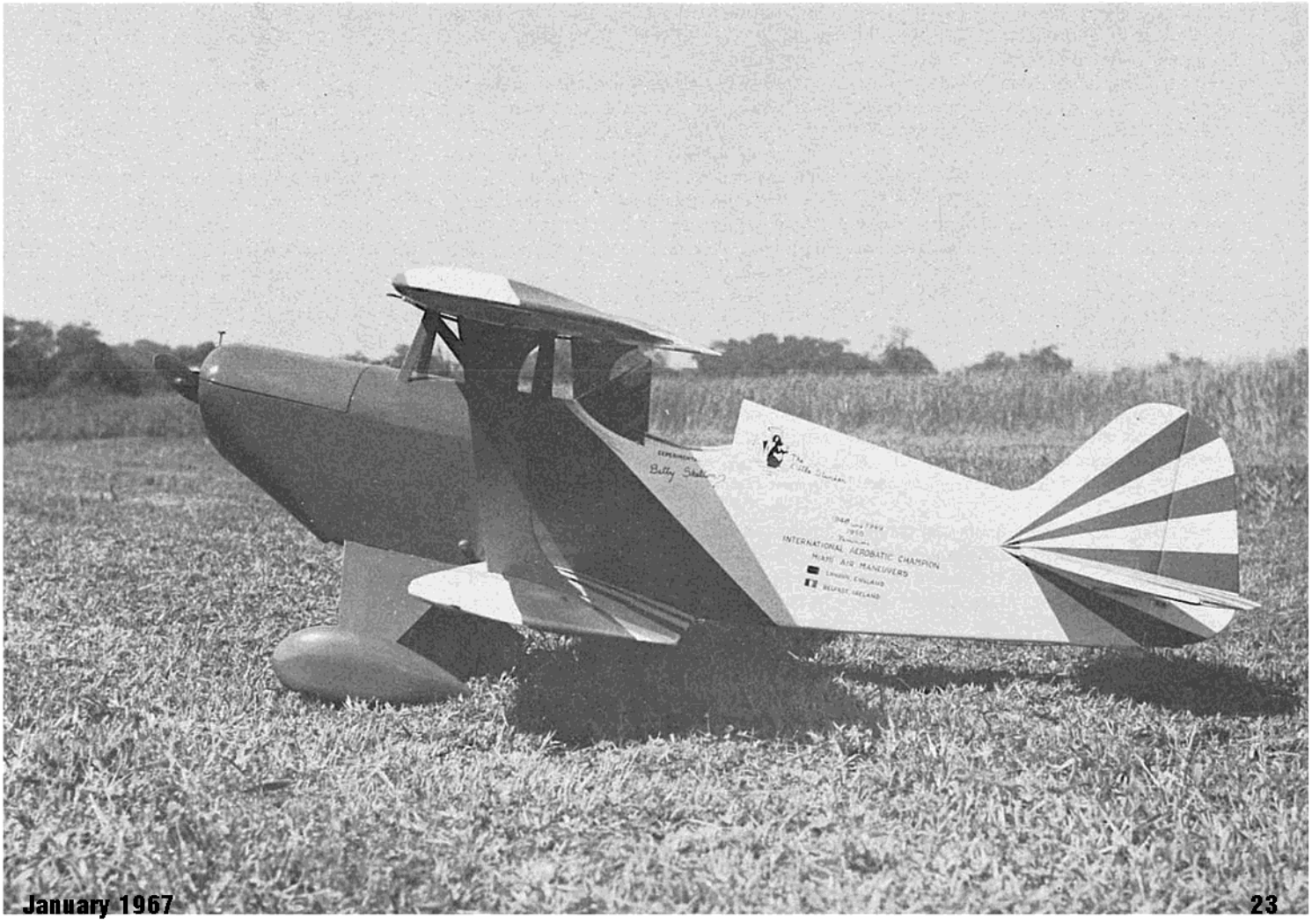
Feeling that there must be something to this sudden popularity of R/C biplanes, I felt I had to try one and find out what I was missing. As I build mostly scale or semi-scale, I wanted a design with nice lines that could be adapted to R/C without too much modification.

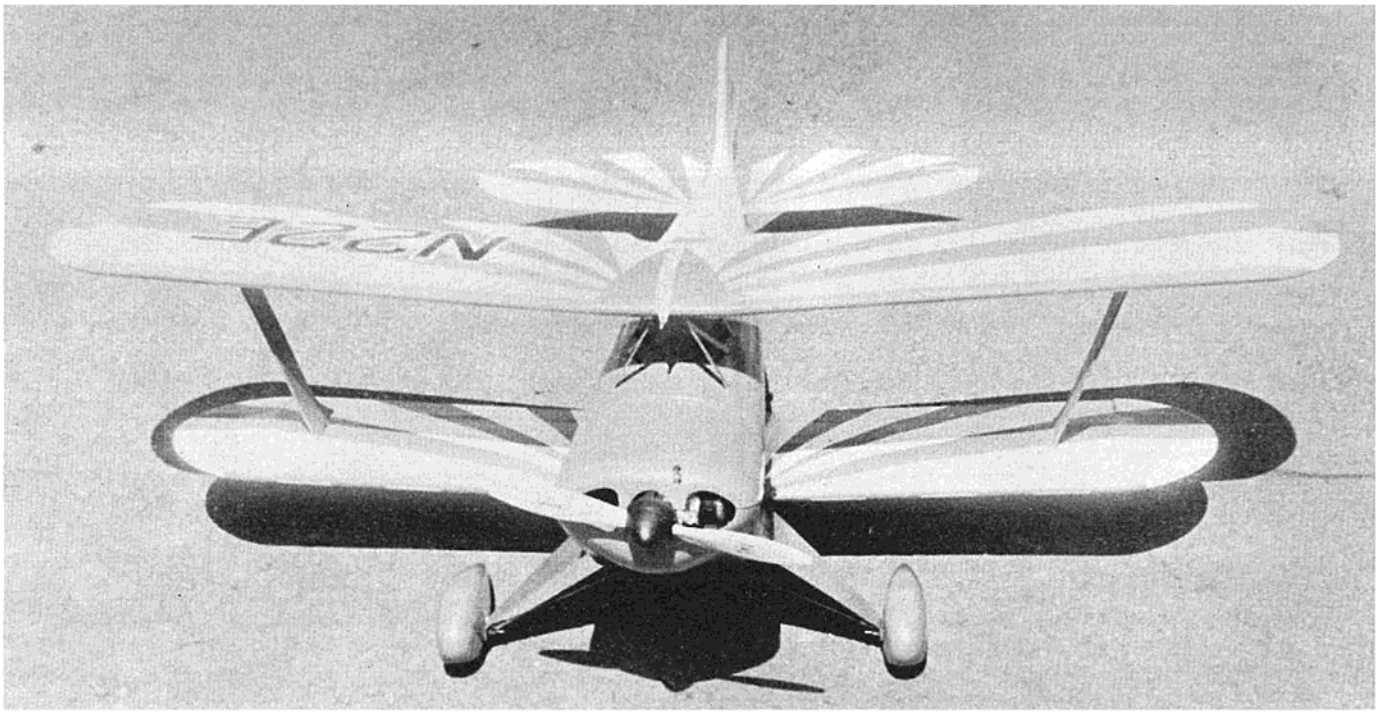
After much searching and thought I decided that Betty Skelton's colorful Pitts Special, "Little Stinker," was just what I was looking for. It has the lines and color scheme that make it stand out at any flying field. Plans were drawn up in a size I felt would accommodate a .45 to .60 engine and full house multi. Wing area wound up at 760 sq. in. with a span of 52 inches. With a height of a little over 16 inches it looks much larger than it actually is. A K&B 45 with a 12-5 prop was used for power on the prototype. This proved to be ample but also the minimum recommended engine size. Radio equipment consisted of an Orbit 10 and Transmite servos. I am sure that a 6 channel with coupled ailerons and rudder would more than keep things under control.

Although not to exact scale, there is no mistake that this is a "Pitts Special." One change that was felt to be necessary was to move the wheels closer to the center of gravity in order to improve ground handling. Nothing is more discouraging than to have a plane you can't get off the ground! This I found out from experience with a J-3 Cub that loved to chase its tail all over the field! Come to think of it, I don't believe it ever did make a successful take off. The Pitts, on the other hand, seldom fails to get off the ground on the first attempt.

Construction is all common practice with no special tools or techniques required. That is, except for the cabane struts. These are fabricated from steel strips and joined with "Pop" rivets. I found this much easier and more accu-


N225E
INTERNATIONAL AEROBATIC CHAMPION
MIAMI AIR MANEUVERS


INTERNATIONAL AEROBATIC CHAMPION
MIAMI AIR MANEUVERS



rate than using music wire and solder. If you don't own a "Pop" rivet gun you should invest in one now, as they are inexpensive and very useful.

Start construction with the wings. Although there are two to build they are not difficult and go together quite rapidly. Cut out all the wing ribs from medium 3/32" sheet. I made 36 W-ribs by stacking between two templates and carving to shape. These are modified for sheeted areas and ailerons. Pin the ribs in place over the plans. Cement top spar, leading edge and upper trailing edge sheet in place. On the lower wing add the trailing edge cap in the aileron area.

Notice that all leading and trailing edge sheet is 2" wide except for the lower wing trailing edge. This is a stock size or can be made by splitting 4" wide sheets. Cement 1/8" sheet wing tips in place followed by top spar pieces between the end ribs and tips.

Now, remove from the plans and turn the wing panel upside down on the building board. Cement the lower trailing edge sheeting in place, pinning through the top sheet into the board. This should assure a straight trailing edge with no bows or curves. Add the 1/4" square lower spars.

Join the wing panels using necessary joiners and stub spars. The top wing has no dihedral, the bottom 1 1/2" under each tip. Sheet the leading edges and center sections. Cement the wing tip fairings in place and round off, blending into the leading and trailing edge sheets. Shape the leading edges and sand the legs off bottom of ribs.

Build up the ailerons from 3/32" sheet. Don't forget to install the hinge anchor blocks in both ailerons and wing. Bend the aileron torque rods to shape with 3/32" I.D. bearing tube in place. Cut a groove in the top center section sheeting and epoxy the torque rod assembly in place. Standard strip aileron linkage is used to tie them to the servo.

Cut the stabilizer outline pieces to shape from 1/4" sheet. Lay the 1/16" bottom center section sheet over the plans. Pin spars and outline pieces down on the plans with 1/16" shims under the 1/4" outline pieces. Block up the rear of the trailing edge so that final airfoil will be symmetrical.

Cut to length and cement in place all 3/32" x 3/8" ribs. Glue hinge blocks and gussets in place followed by the 3/32" x 1/4" center section ribs and top sheeting. When glue has dried, remove the assembly from plans and sand to airfoil shape. Cover stabilizer, elevator, and wings with silk. Join the control surfaces with nylon hinges.

Fuselage sides are cut to outline shape from medium hard 1/8" sheet. Notice how one side of the removable cowl runs farther down the side than the other. This should be on the side that the engine cylinder will face. If you prefer, the engine may be mounted upright or inverted simply by relocating the motor mount holes in the formers. For accessability and simplicity of operation the upright position is generally favored, so if you don't mind the cylinder protruding out of the cowl, mount it upright. In this case a removable cowl would not be necessary, just a larger hatch in order to get at the fuel tank and batteries below.

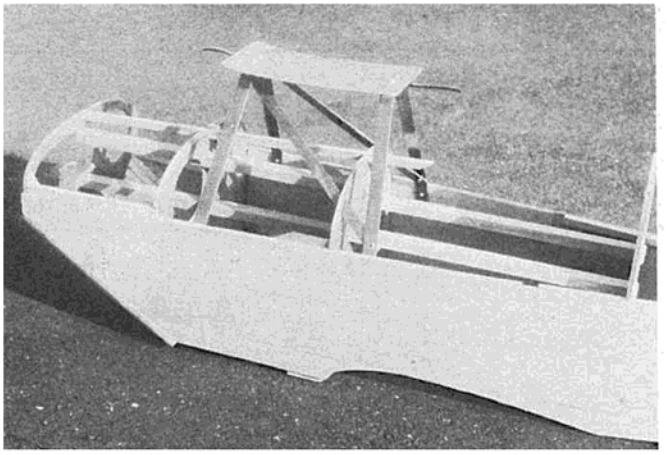
Mark the location of all formers and uprights on the fuselage sides. Remember, one right and one left! Cement 1/4" square stringers and uprights in place followed by the 1/4" x 1" lower doubles. While the sides are drying cut out all fuselage formers. Join the sides at the tail and former F-4. Epoxy firewall F-2 in place and hold with rubber bands until dry.

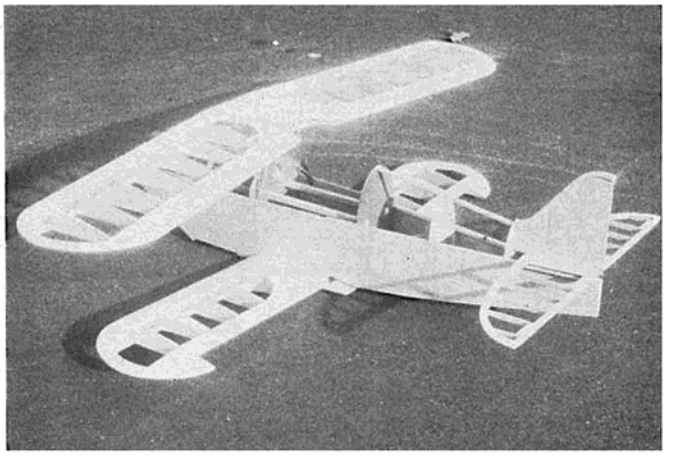
The cabane strut assembly is partially built as a separate unit and epoxied to the fuselage sides. A more conventional strut assembly may be fabricated of 3/32" diameter wire if the 1/16" x 3/8" steel strips are not available to you. I obtained this material and the 3/32" aluminum for the landing gear from a local machine shop. The owner was good enough to cut the landing gear to shape, saving me a lot of work. These shop owners are usually very willing to give a few minutes of their time to someone with a problem such as this. They, more than likely, have built models themselves.

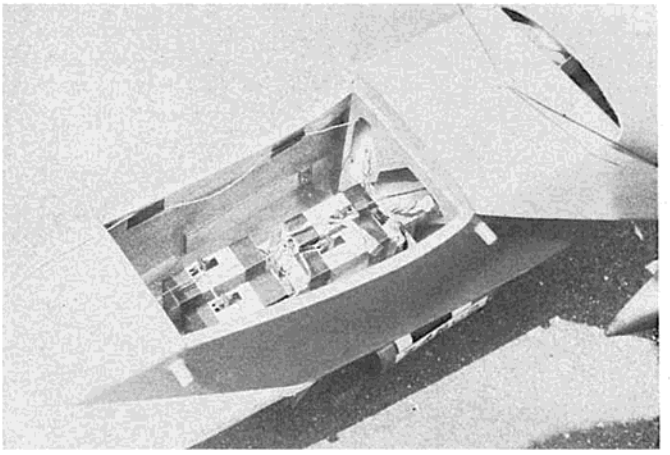
Cut the strut legs to length and drill all the holes. Bend to shape to conform to the front view. Prepare the 1/8" plywood doubler. Pop rivet the struts to the plywood maintaining the correct angles and alignment. Do not rivet the diagonal brace in place now as this must go through a hole in F-3.

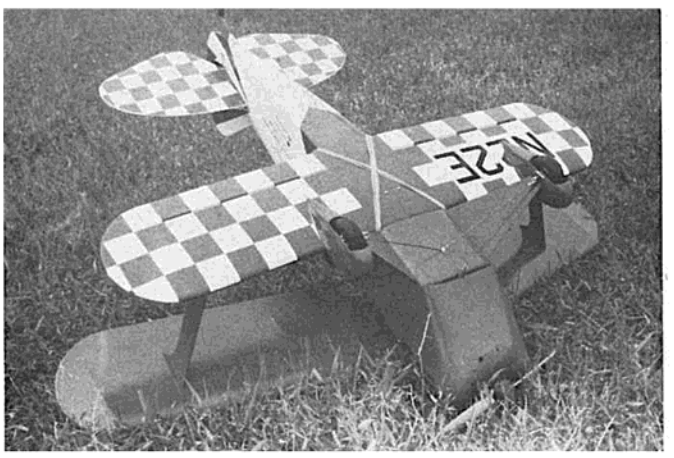
Place the strut assembly in position in the fuselage and press the rivets against the inside of the sides. Remove and gouge out enough material to clear each rivet head. Epoxy in final position and hold with clamps. Check the incidence angle with an airfoil template placed on top of the struts. Measure from leading and trailing edge down to a strip placed across the top of the fuselage. There should be between 0 degrees and +1 degrees of incidence. Adjust front or rear of plywood doublers up or down, to obtain this angle.

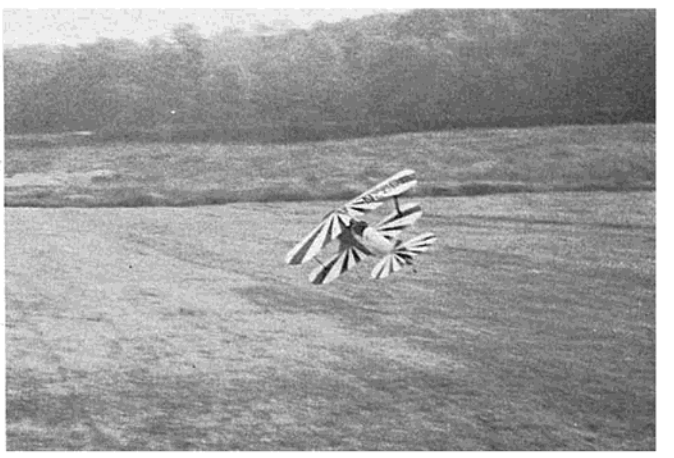
When this has cured add the remaining formers, crosspieces and stringers. Epoxy the 3/8" x 1/2" hardwood motor mounts, landing gear mounts and servo











board rails in place.

Rivet the diagonal cabane struts to the uprights now but leave the wing platform and holdown wire off until the fuselage is completely finished. Plank the lower nose section with 3/16" x 3/8" strips. Do not cement planking to F-2-B as this will be removed after sanding the outside to shape. A layer of fiberglass and resin on the inside will add strength.

Cement the completed stabilizer in place. Check alignment before cement dries. Cover the fuselage top and bottom with 1/8" sheet balsa. Partially cut through each strip at the cowl separation line. After the planking is sanded to shape the cowl may be easily cut free. Cut cockpit opening to shape. The nose may be carved from balsa blocks or made of fiberglass. Fiberglass was used on the original model. This was molded over a form using the "easy does it" method, with which I am sure most everyone is familiar.

Cement the fin and tailpost in place and align very carefully. The leading edge doublers and brace are next, sanded round when dry. Cover each side of the fin with silk. This will be easier if the silk is applied wet.

Bolt the landing gear legs in place. Keep the bends where the legs leave the fuselage parallel to each other and center line of the fuselage. Epoxy the 3/8" x 1/2" hardwood landing gear strut hold-down in the center of the bottom. Fit and carve the 1/2" bottom blocks to shape. Cement securely in place and bring to final shape. Drill holes and install lower wing hold-down dowels.

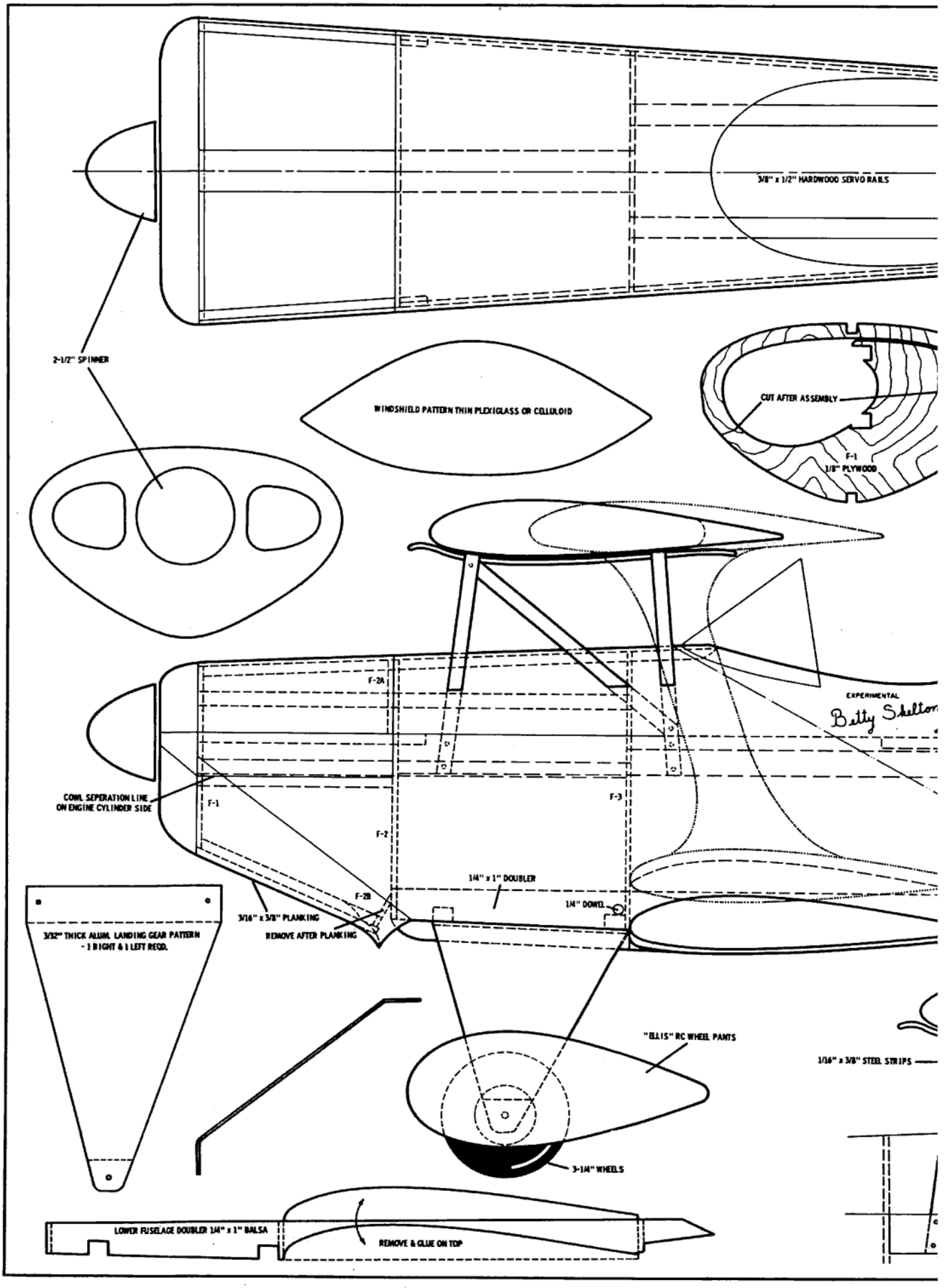
Cover the entire fuselage and rudder with silkspan or silk, if you prefer. Silkspan was used on the original with satisfactory results. Hinge the rudder with nylon hinges.

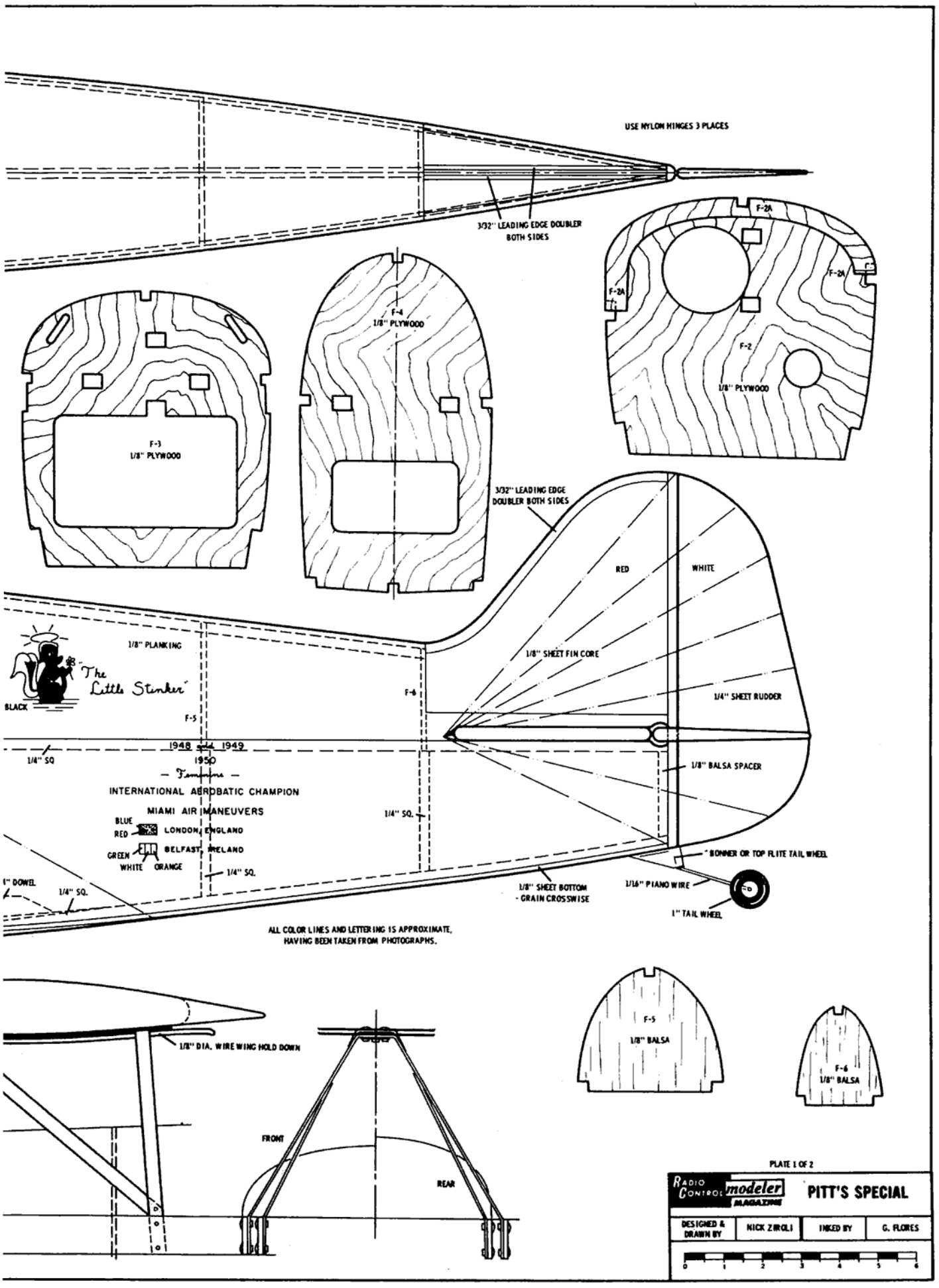
Apply as many coats of clear dope as necessary to the fuselage and wings to make a good base for the final finish. Sand between coats.

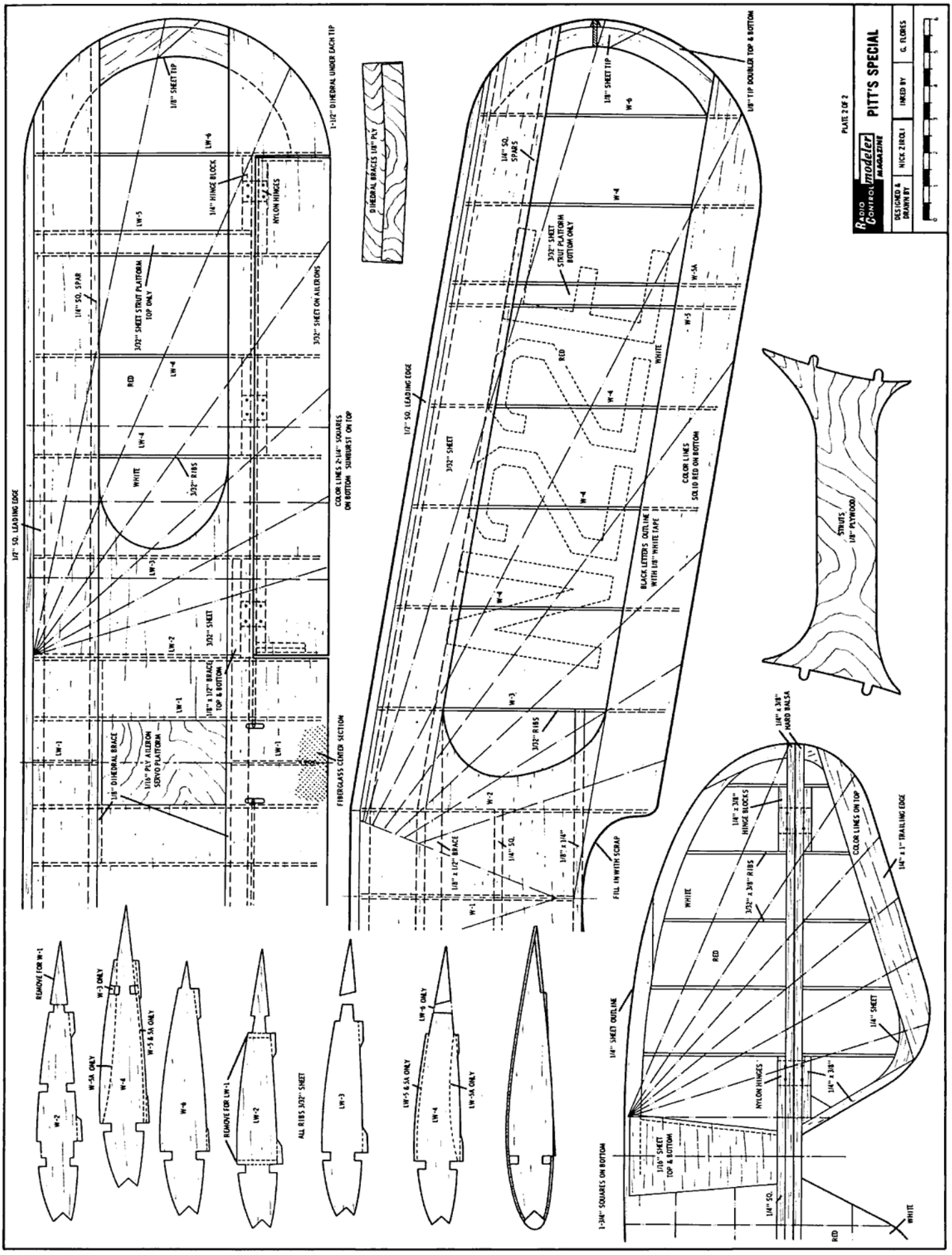
At this time install the upper wing platform and hold-down wire with clips and "pop" rivets.

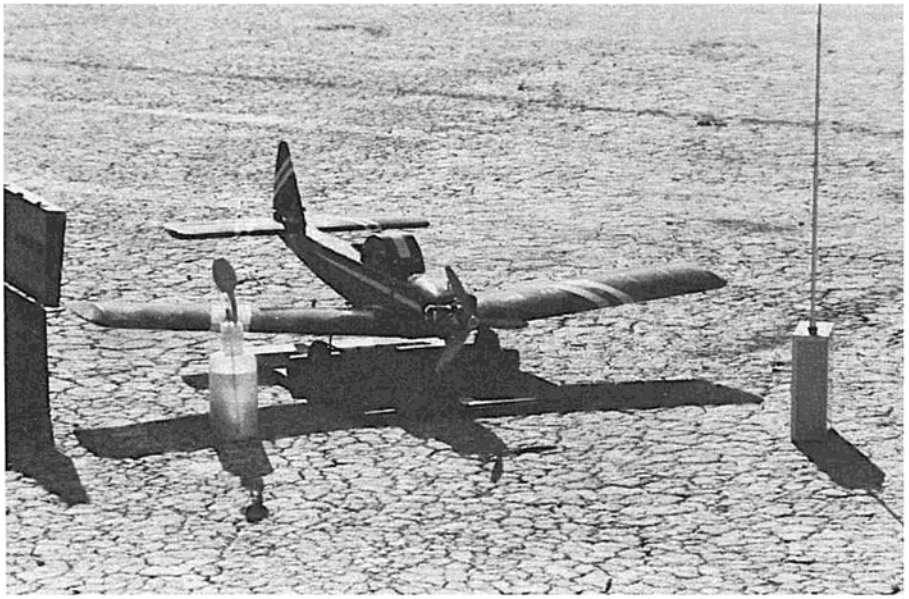
Mount the wings on the fuselage and make the gap between both upper and lower wing tips the same. Hold them in

(Continued on Page 33)


3/8" x 1/2" HARDWOOD SERVO RAILS
2-1/2" SPINNER
WINDSHIELD PATTERN THIN PLEXIGLASS OR CELLULOID
CUT AFTER ASSEMBLY
F-1
1/8" PLYWOOD
F-2A
EXPERIMENTAL
Betty Shelton
COWL SEPERATION LINE
ON ENGINE CYLINDER SIDE
F-1
F-3
F-2
1/4" x 1" DOUBLER
F-2B
1/4" DOWEL
3/16" x 3/8" PLANKING
REMOVE AFTER PLANKING
3/32" THICK ALUM. LANDING GEAR PATTERN
- 1 RIGHT & 1 LEFT REQD.
"ELLIS" RC WHEEL PANTS
1/16" x 3/8" STEEL STRIPS
3-1/4" WHEELS
LOWER FUSELAGE DOUBLER 1/4" x 1" BALSA
REMOVE & GLUE ON TOP


USE NYLON HINGES 3 PLACES
3/32" LEADING EDGE DOUBLER BOTH SIDES
F-2A
F-2A
F-2A
F-2
1/8" PLYWOOD
F-4
1/8" PLYWOOD
F-3
1/8" PLYWOOD
3/32" LEADING EDGE DOUBLER BOTH SIDES
RED
WHITE
1/8" SHEET FIN CORE
1/4" SHEET RUDDER
1/8" PLANKING
"The Little Stinker"
BLACK
F-6
F-5
1948 and 1949
1950
1/4" SQ
INTERNATIONAL AEROBATIC CHAMPION
MIAMI AIR MANEUVERS
BLUE
RED
LONDON, ENGLAND
GREEN
WHITE
ORANGE
BELFAST, IRELAND
1/4" SQ.
1/4" SQ.
1/8" BALSA SPACER
BONNER OR TOP FLITE TAIL WHEEL
1/16" PIANO WIRE
1" TAIL WHEEL
1/8" SHEET BOTTOM - GRAIN CROSSWISE
1" DOWEL
1/4" SQ.
ALL COLOR LINES AND LETTERING IS APPROXIMATE, HAVING BEEN TAKEN FROM PHOTOGRAPHS.
1/8" DIA. WIRE WING HOLD DOWN
FRONT
REAR
F-5
1/8" BALSA
F-6
1/8" BALSA
PLATE 1 OF 2
RADIO CONTROL modeler MAGAZINE
PITT'S SPECIAL
DESIGNED & DRAWN BY
NICK ZIROLI
INKED BY
G. FLORES
0 1 2 3 4 5 6


PITT'S SPECIAL
RADIO CONTROL modeler MAGAZINE
PLATE 2 OF 2
DESIGNED & DRAWN BY
NICK ZIROLI
INKED BY
G. FLORES
1/2" SQ. LEADING EDGE
1/8" SHEET TIP
1-1/2" DIHEDRAL UNDER EACH TIP
LW-6
1/4" HINGE BLOCK
NYLON HINGES
LW-5
1/4" SQ. SPAR
3/32" SHEET STRUT PLATFORM TOP ONLY
3/32" SHEET ON AILERONS
RED
LW-4
WHITE
3/32" RIBS
COLOR LINES 2-1/4" SQUARES ON BOTTOM SUNBURST ON TOP
LW-3
LW-2
3/32" SHEET
1/8" x 1/2" BRACE TOP & BOTTOM
LW-1
1/8" DIHEDRAL BRACE
1/16" PLY AILERON SERVO PLATFORM
FIBERGLASS CENTER SECTION
DIHEDRAL BRACES 1/8" PLY
1/8" TIP DOUBLER TOP & BOTTOM
1/4" SQ. SPARS
W-6
W-4
3/32" SHEET STRUT PLATFORM BOTTOM ONLY
W-5A
W-5
COLOR LINES SOLID RED ON BOTTOM
BLACK LETTERS OUTLINE WITH 1/8" WHITE TAPE
W-3
3/32" RIBS
W-2
1/8" x 1/2" BRACE
1/4" SQ.
1/8" x 1/4"
W-1
FILL IN WITH SCRAP
STRUTS 1/8" PLYWOOD
1/4" x 3/8" HARD BALSA
1/4" x 3/8" HINGE BLOCKS
3/32" x 3/8" RIBS
COLOR LINES ON TOP
1/4" x 1" TRAILING EDGE
1/4" SHEET OUTLINE
1/4" SHEET
NYLON HINGES
1/4" x 3/8"
1/16" SHEET TOP & BOTTOM
1-3/4" SQUARES ON BOTTOM
1/4" SQ.
REMOVE FOR W-1
W-3 ONLY
W-5A ONLY
W-5 & 5A ONLY
REMOVE FOR LW-1
ALL RIBS 3/32" SHEET
LW-6 ONLY
LW-5 & 5A ONLY
LW-5A ONLY



E.P.D.

BY RALPH SAWYER

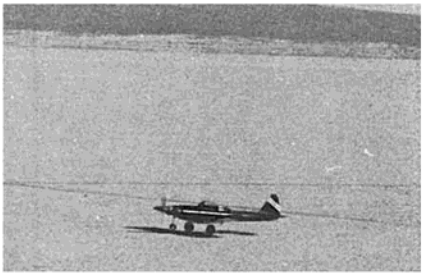
GLITCH? . . . FAILSAFE? . . . Emergency Parachute Deploy Can Save Your Multi!

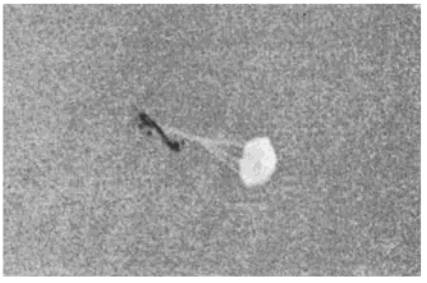
HIGH above the desert floor a small plane glistened in the early morning sun as it circled and climbed for altitude. Suddenly, the left wing dropped, and on the ground, the pilot frantically bent the transmitter stick to the right. The aileron servo, however, had already run full left to its end limit and had no intention of returning to neutral or answering a right command. This became increasingly apparent as the plane assumed the attitude of a graveyard spiral, rapidly approaching terminal velocity. The pilot, after trying all other controls and finding them questionable and of little value, muttered a few choice words, and wrote the $400 plane off as a loss. He, and a handful of spectators, watched the death dive terminate in a spectacular and heartbreaking crash.

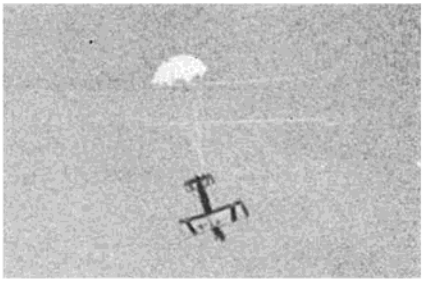
Sound familiar? It's enough to make a grown man cry, and for the pilot, who has to finance the entire disaster as well as act as a one man board of inquiry into the causes of the crash, it is not so easy to gloss over with a smile and a flip comment! After sending the R/C equipment to the manufacturer as salvage to help cut the cost of repair and/or replacement, the RC'er may have to acquire another engine and build another plane before he can fly again. This procedure usually requires a great deal of time, to say nothing of the financial expenditure involved.

"So what?" you say, "it's all part of the R/C sport." This is not necessarily so — especially for the majority of this type of crash. And if you could save a majority of crashes, your enjoyment of this hobby — to say nothing of the monetary savings — would be greatly increased. You can — it's called EPD — Emergency Parachute Deploy.

Experiments with EPD started by installing a four foot nylon parachute on my eight pound Peashooter which had, at that time, about ninety flights to its credit. This plane is equipped for research with a Bonner Digimite 8 control system and seven servos. This, by the way, accounts for the eight pounds of weight, and provided an excellent subject for the emergency chute tests. The latter were conducted on the southeast corner of Rosamond Dry Lake, Rosamond, California. Altitude is approximately 2300 feet above sea level. Ambient temperature was 68 degrees F. Surface wind was approximately 2-3 M.P.H. The parachute installation had been made just aft of the C.G. and accounted for a slightly steep climb out







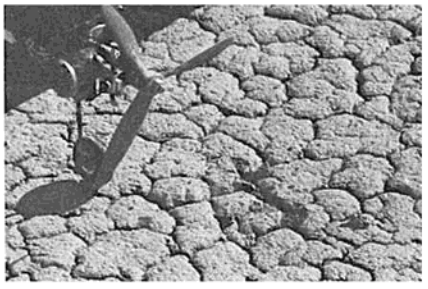
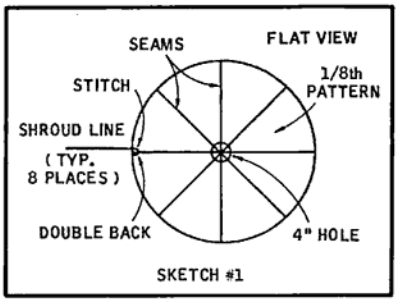
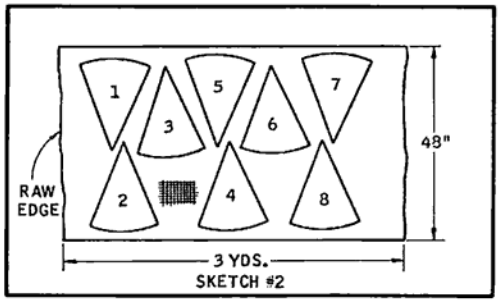


Photo sequence shows author's P-Shooter, equipped with EPD, during demonstration flight for RCM. Chute deployed at 200 feet. Final photo shows nick in desert floor from prop. Plane saved by EPD — no damage!





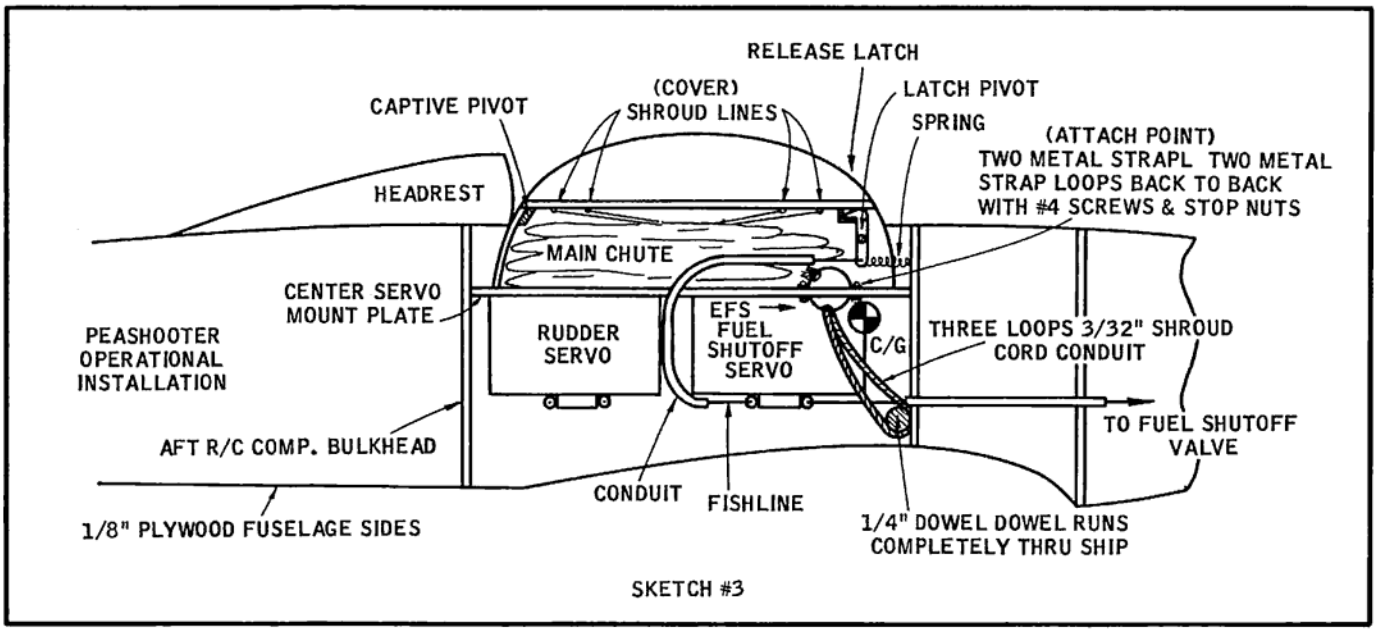
Artwork illustrates proper method for constructing an emergency parachute deploy system. Photos on opposite page pictorially illustrate actual installation in P-Shooter 'flying laboratory.'

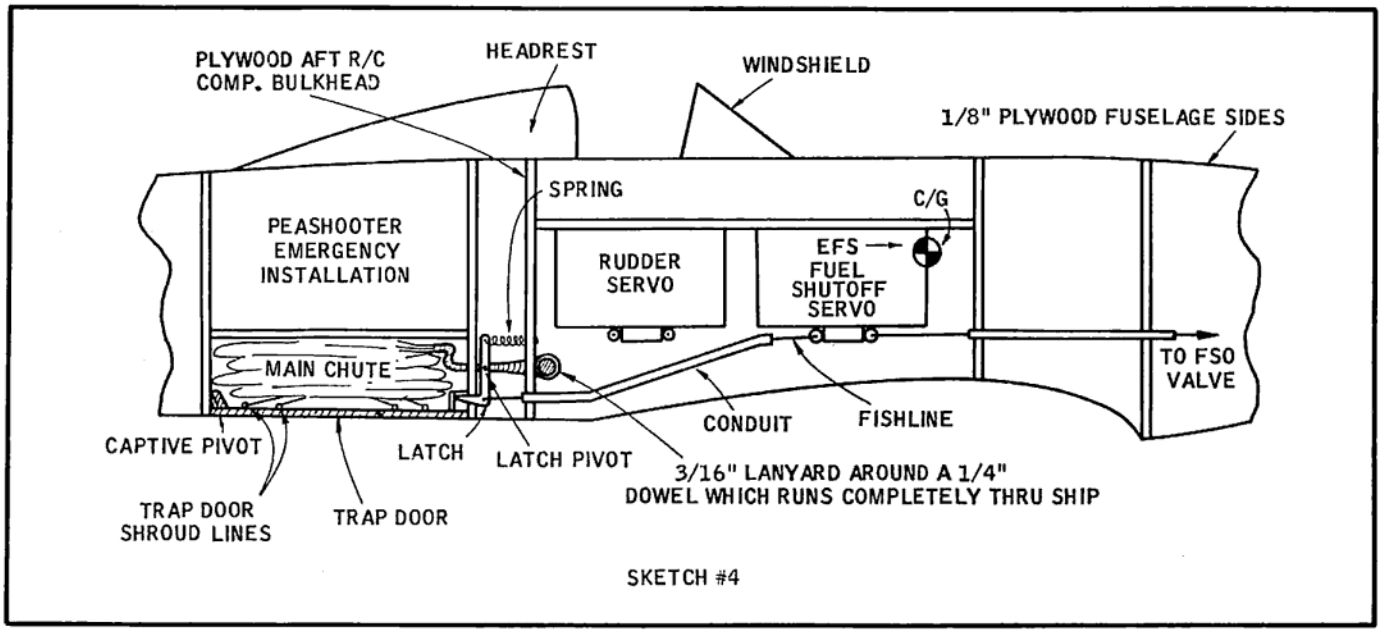
after take off. In addition, the external chute installation slowed the plane's speed somewhat. When an altitude of approximately 400 feet had been reached, the throttle was retarded and the parachute deploy control actuated. The parachute was pulled out by the chute compartment cover and the four foot chute blossomed out as anticipated.

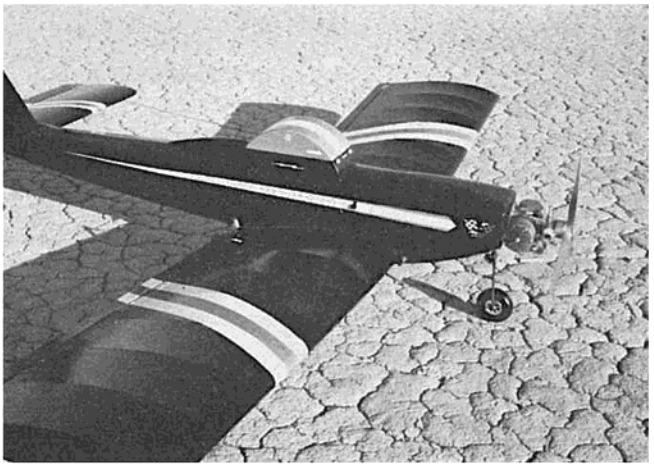
My immediate concern was now the rate of descent and the plane's attitude during that descent. The rate was estimated at between 8 to 10 feet per second with an attitude of about 60 to 70 degrees nose down from level attitude. After the Peashooter had dropped about 100 feet the engine died due to the nose down attitude and the resulting surge of fuel to the engine. As the plane dropped to the 200 foot level, I decided to jettison the parachute and deadstick in for a normal landing. My jettison system had been designed to release up to about a four pound pull on the parachute, and was to be used if the chute failed to blossom or if the rate of descent was too fast due to improper chute size. The jettison control failed to function!

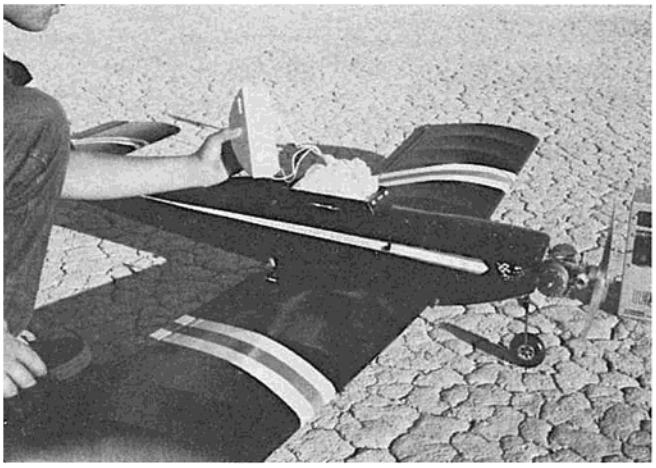
The Peashooter was now about 150 feet above ground level and now committed to finish the test to its conclusion. The jettison system, by the way, was now armed, and I could only hope it would not release until after touch

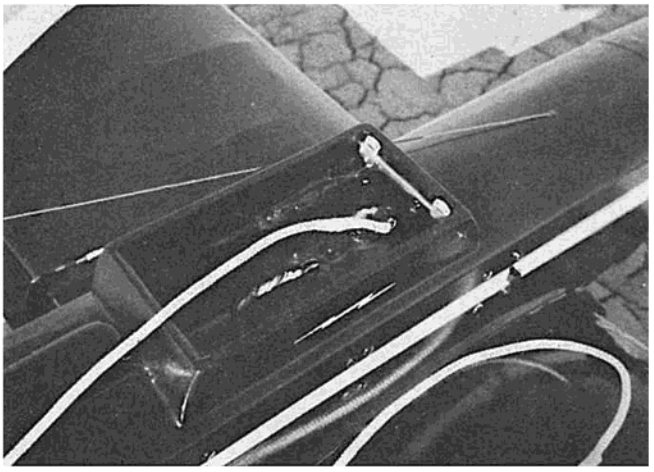
(Continued on Page 32)

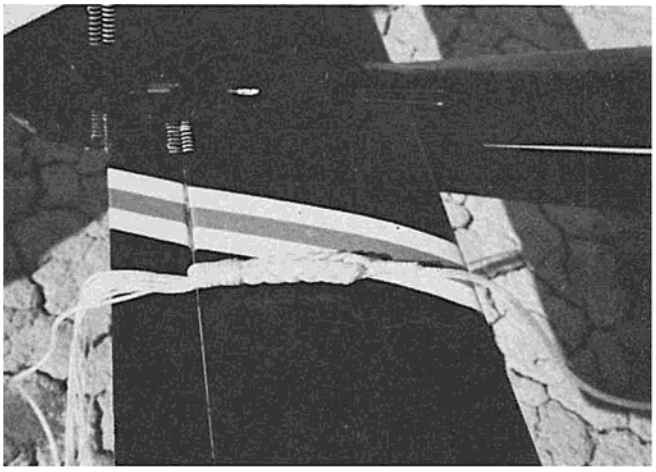


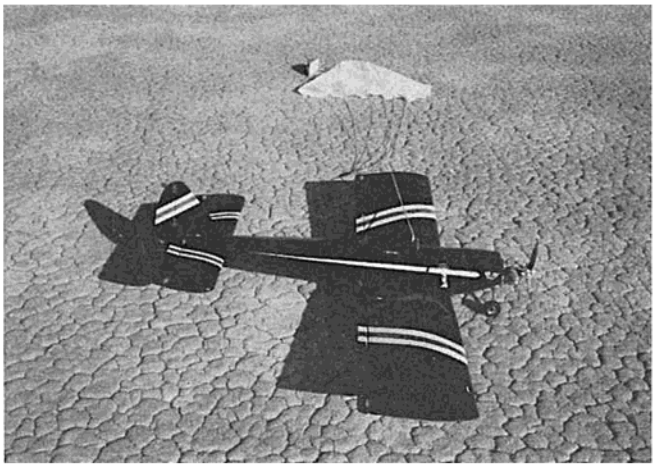












The photo sequence on this page, from left to right, top to bottom illustrates: (1) external chute installation; (2) chute cover acts as pilot chute; (3) lanyard attach point and release mechanism; (4) shrouds to lanyard connection; (5) plane, chute, and boy: perspective; (6) view of plane and chute immediately after impact; (7) total damage: broken prop!

EMERGENCY PARACHUTE

(Continued from Page 30)

down. As the plane descended the rate of descent appeared to increase, but I realized that this viewing error is normal when observing a falling object at a close range. With more than my share of luck, the jettison mechanism held intact until impact, which did not seem to be too severe.

Following touchdown, an examination of the plane revealed a broken prop tip and throttle spray bar, the latter which protrudes from the lower side of the horizontally mounted Veco .45. The Peashooter did not have a scratch on it and the nosegear strut was not even bent back. Total damage: $2 for prop and spray bar replacement.

This, and subsequent tests demonstrated beyond all doubt that the emergency parachute was well worth the time, effort, and expense to fabricate and install. It had, in fact, saved a $550 plane which had gone out of control at 400 feet altitude — a plane that was now on the ground, intact, without the help of the proverbial 'haystack' which never seems to be around when you need it! Incidentally, the impact area was a dry lake bed which has all the elasticity of concrete in its solid state!

Following the establishment of the theory and value of the emergency parachute system, I have eliminated the jettison system and made a permanent installation of the shroud lanyard in the plane. In fact, I will install this system in all future aircraft I construct. Naturally, the emergency chute would be useless if your control system became completely inoperative, or if you do not have a Fail-Safe feature in your proportional system. On the other hand, the great majority of crashes I have witnessed were not caused by complete system failure, but usually by partial failure of the control system, pilot error, loss of part of the plane, engine failure at a critical moment, and I have even heard of mid-air collisions! A big panic button on the transmitter to deploy an emergency chute could have saved most of these planes. It will save **yours** if you will install one on your ship prior to your next disaster!

The idea of a chute on an RC aircraft is not new — in fact, the Denny Drones I flew in 1945-46 were equipped with them and used each flight due to the absence of landing gear on these military aircraft. The recollection of near perfect Denny TDD-3 Drone chute operations were, in fact, what prompted this experiment and subsequent article. If you decide to try one on your plane, proceed as follows:

Construction

First, obtain the following materials from your local yardage store: 17 yards of 3/32" diameter nylon cord; 1½ yards of 3/16" diameter nylon cord; 3 yards of 48" wide close weave nylon; and two spools of heavy nylon thread. This material will be enough for a 4 foot diameter parachute. After determining the chute size according to the size and weight of the aircraft and desired rate of descent, use a piece of cardboard and make a pattern equivalent of ⅛th of the circle you have decided upon. Using this template, cut out eight pieces from the nylon cloth as shown on the diagram, making sure that you keep the grain of the cloth constant on all eight pieces. If you don't have a girl friend, or wife (Ed's note: If you've got both, Buzz, you're in trouble!),you will have to sew the darn thing together yourself. My wife used a french seam to sew mine and it looked terrific. Seam all edges as well as seaming in about a 4" hole in the center. This will reduce blossom shock.

Now, cut eight 5-foot shroud lines from the 3/32" cord stock and firmly sew one end to each seam at the outer radius end. Double back about one inch of the shroud line at this connection and hand stitch it to the seam. If one shroud line pulls out of the chute, the rate of descent will go up rather sharply! With the eight shroud lines the same length, gather the ends together and double back about three inches to form a loop. Now wrap the sixteen shroud lines with the nylon thread until a smooth loop termination is obtained. Run the 3/16" cord through this shroud line loop and serve it in the same manner as the shroud loop itself. This will attach the shroud lines to the shroud lanyard which, in turn, fastens to the plane. The length of the lanyard is optional, depending upon the attach point of the plane, and will allow the shroud lines to clear the plane completely when the parachute is blossomed. The lanyard is fastened into the plane in a manner so as to pick up as much structure as possible. Beef up the attach area with plywood and/or balsa doublers and cover as much area as possible with them. The blossom shock will increase with the plane's speed and can, in some cases be quite severe.

The chute installation and release mechanism will vary with the type of plane, its size and weight, and builder's own preference. In addition, the type of operation will also be a determining factor, e.g. emergency or operational. For these tests I chose an operational installation, therefore the plane had to come down right side up and the chute had to be easily repacked on the field for photograph repeats. Since the Peashooter was already constructed, extreme structural modifications were out of the question.

For the emergency type of operation, I prefer the belly door mounted chute, hinged on the aft end and slip stream opened when the hatch on the forward end is servo released. This dumps the chute out into the slip stream with no obstructions aft to cause possible malfunction. This type of installation will result in a vertical plane attitude during descent. Another advantage to this type of installation is that most planes have pleny of room in the aft fuselage and a close fitting belly door would effectively conceal the entire installation.

On my operational chute installation, the parachute compartment cover serves as a pilot chute to pull the main unit out and over the vertical stabilizer, and is attached to the main chute with four shroud lines to the four inch hole seam. On the emergency installation, the trap door can be used the same way by substituting the hinge with a captive pivot to release the door as it opens.

From the illustrations you will notice that the ¼" dowel and steel straps used to transmit loads via the 3/32" cords three loops. The cover pops up when commanded due to the spring action of the parachute. A word of caution at this point — **do not roll, twist, or ball the chute!** Fold the eight panels together with the shroud lines straight, then fold the lanyard, shrouds, and chute, in that order, back and forth in the chute compartment until the cover shroud lines lay on top of the material. This will insure deployment when released without danger of entanglement.

The question has come up during operational tests as to what would happen if the chute is released inadvertently. As an example, such accidental triggering of the system might occur during take off, landing, or even during maneuvers. As with any emergency system on real aircraft, provisions have to be made to prevent this, particularly on an escape system. On the RC installation of this chute, a well designed latch and positive lock and unlock function is a must. If the control system is proportional, all RF noise sources must be eliminated in order to prevent so-called "glitch."

At this point, I would like to mention that after 18 months of research flight operation involving hundreds of flights with three separate RC aircraft equipped with three separate Bonner Digimite 8 and Digimite 4 control systems, I have yet to experience "glitch." I am convinced that the elimination of RF noise sources in these three planes is the direct reason for this pleasant absence of "glitch." This also speaks well of the three Bonner systems. On the other hand, a friend of mine, flying a

(Continued on Page 33)

EMERGENCY PARACHUTE

(Continued from Page 32)

Bonner 4 in a Senior Falcon, was experiencing "glitch" at full throttle until all RF noise sources were removed from the plane. He has not had a recurrence since that time and the plane now has many, many flights to its credit.

This may all sound like a product report for Bonner, but this is not the point. What I am trying to say is this: This chute system **will** operate on "glitch" if you have Fail-Safe, or if the glitch runs the chute servo to the deploy end of its travel. While this may cause trouble in some cases, it will save your plane in others. You may look at it in this way — without the chute, if you should lose all or part of your control response, the result will be disaster in most cases. But, with the chute system installed and working, a similar set of conditions could result only in minor damage or, quite possibly, no damage at all.

As the banker, builder, and pilot of your RC operation the final decision is yours. Happy landings . . . soft ones, that is!

PITTS SPECIAL

(Continued from Page 25)

position with temporary spacers pinned between tips. Due to the many variables built into the plane it is doubtful that the interplane struts will fit exactly as shown on the plans. Make a pair from heavy cardboard a little longer than shown and trim these to fit. They should be under a little tension. When you are satisfied that they are correct trace them on to ⅛" plywood and cut out. Round off the leading and trailing edges and prepare surface for final finish.

If at all possible the final finish should be sprayed on. It is much easier and faster than brushing and requires less dope. This is especially true in the case of the white areas. I first painted the entire plane white, applying more coats in the areas that would remain white. The bottom of the top wing and the front half of the fuselage were then masked off and sprayed red. The remaining red was masked off and painted with a brush. This was found to be faster as everything does not have to be covered against overspray. License numbers may be cut from decal sheets or, as on the original, masked and painted black. White trim tape was applied to the borders of the numbers on the upper wing. Red decal sheet was cut into squares and applied to the bottom of the stabilizer. Decals could also be used on the bottom of the wing but I chose to paint the checks on. The black skunk on the sides of the fuselage was sketched on with a soft pencil and hand painted using a fine brush. All the lettering on the fuselage was applied freehand with a #3 Rapidograph ruling pen and India ink. A coat of clear fuel proofer was brushed over the lettering and decals when they had dried.

Install the wheels and wheel pants. I used the axle bolt to hold the pants so that in the case of a hard knock they could turn rather than break. Takeoff and landing was not hindered by the pants in all the tallest grass, at which time they were removed for flying. They may be carved from laminated blocks, molded of fiberglass or purchased ready made. I used a pair of Ellis R/C wheel pants. These are plastic and have proved to be very durable.

Mount the tail wheel bracket and tail wheel. Couple to the rudder.

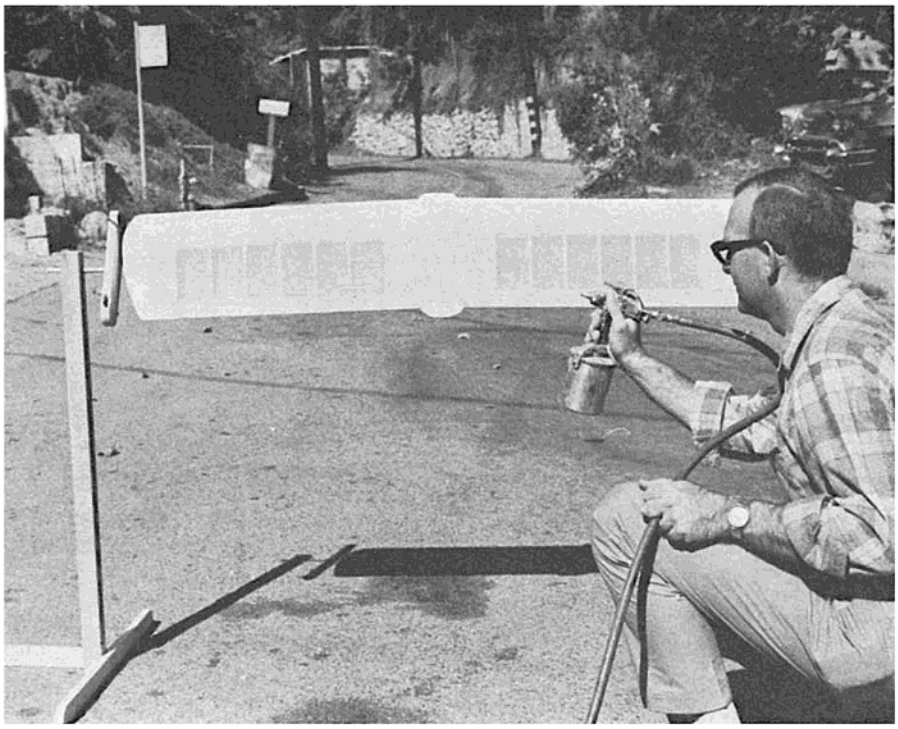
Install the engine with about 3 degrees down thrust and right thrust. The fuel tank is strapped to the motor mounts and protrudes through the firewall.

Radio equipment, servos, and the required linkages are installed to complete the model.

If you have even a small amount of multi flying time you should not have any trouble with the "Pitts." It is very stable with good control response and a real pleasure to fly. I enjoy **watching** it fly as much as I enjoy flying it. On a low level pass the only thing missing is a pilot's head behind the windshield! I've tried all my kids' dolls but can't find one that looks quite right.

I'm sure you will get as much enjoyment from flying and watching the "Pitts" perform as I have.

Good luck.



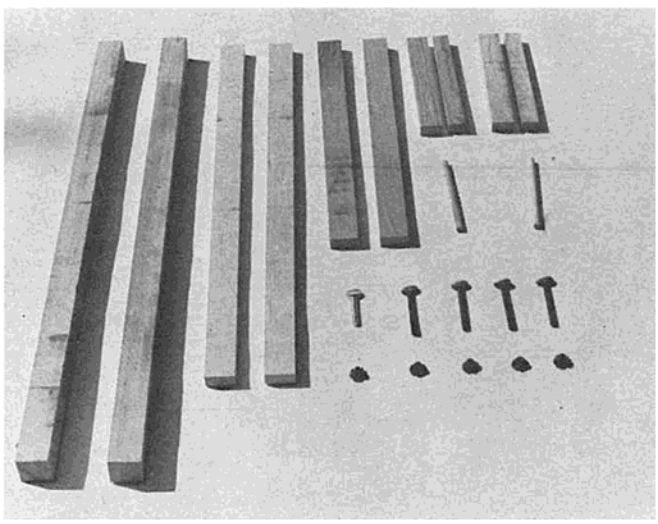
THE photographs and drawings show the construction details for a simple, quickly built painting fixture, designed to simplify and speed up the painting of your R/C aircraft.

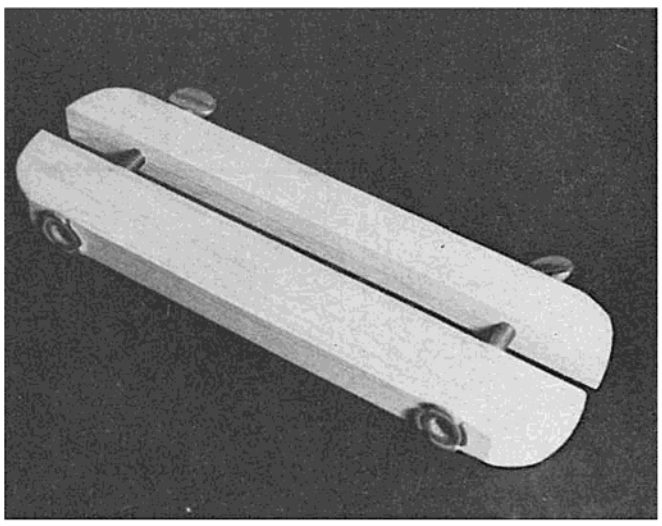
No special tools are required for this project since all parts can be cut to exact size by your local lumber yard for a nominal mill charge. If you have access to a table saw, the entire project can be built in an afternoon's time. All hardware items are readily available at local hardware stores.

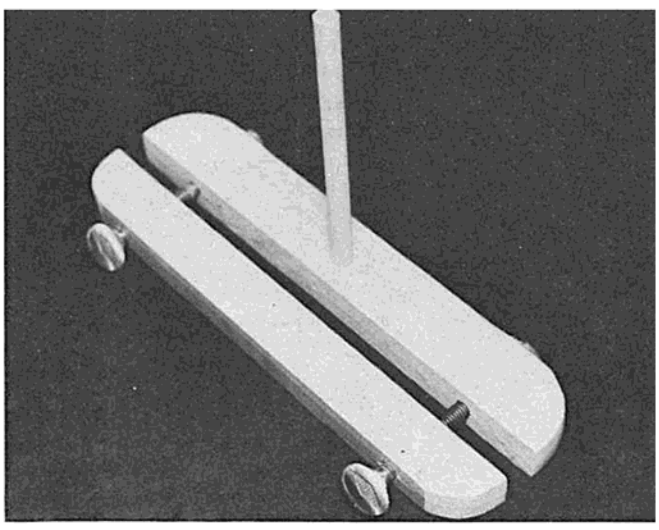
When completed, straight pins or small nails are driven into wing tips, or front and rear of the fuselage, and then clamped between the revolving blocks mounted on the tripods. The fixture enables you to paint an object in one session instead of waiting for one side to dry before being able to turn it over and paint the other side. An additional bonus is that the angle of the item to be painted can be adjusted to the desired deflection for proper spray application. The lock insures that the object will not rotate while being painted.

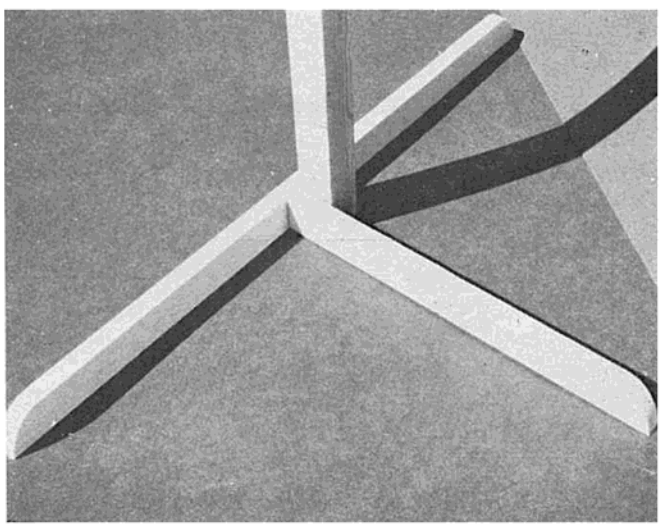
RCM PAINTING JIG

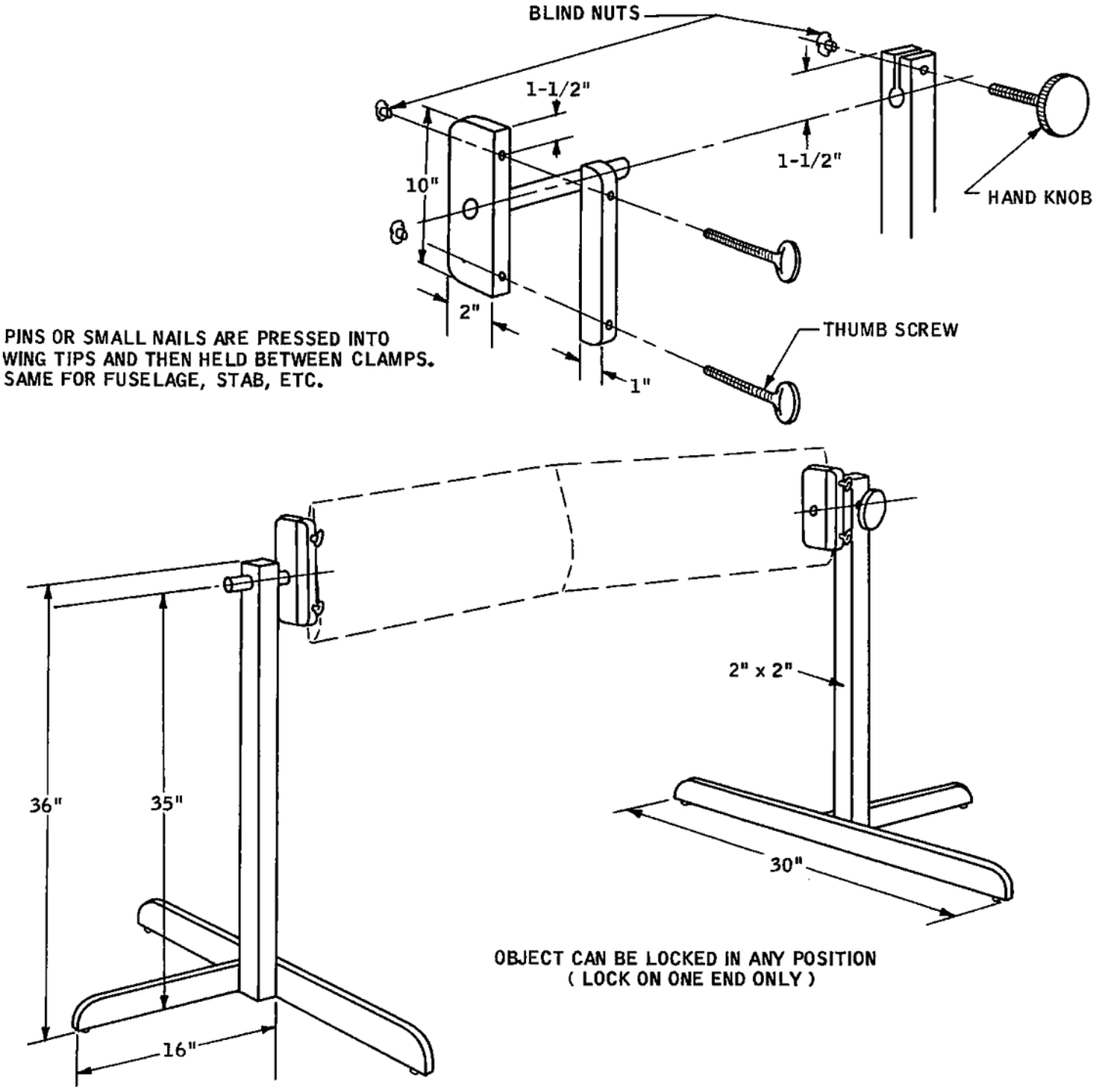
BY CLARK ROSS

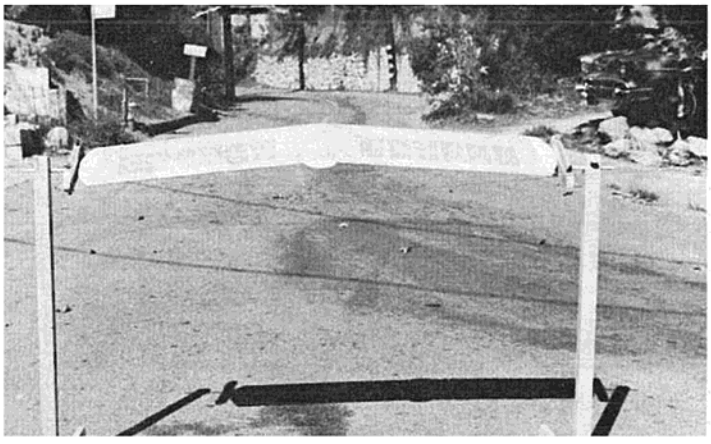


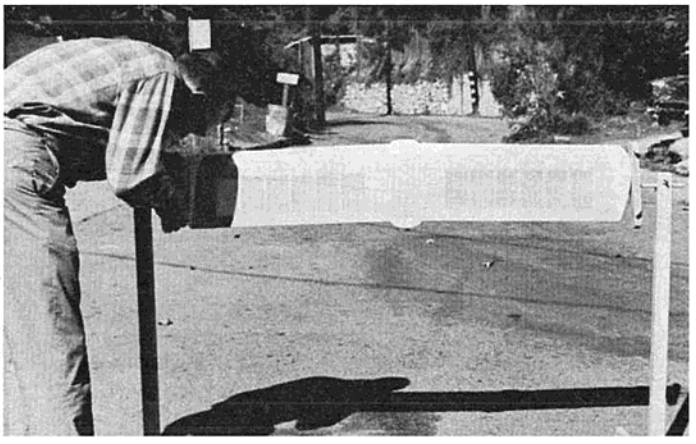


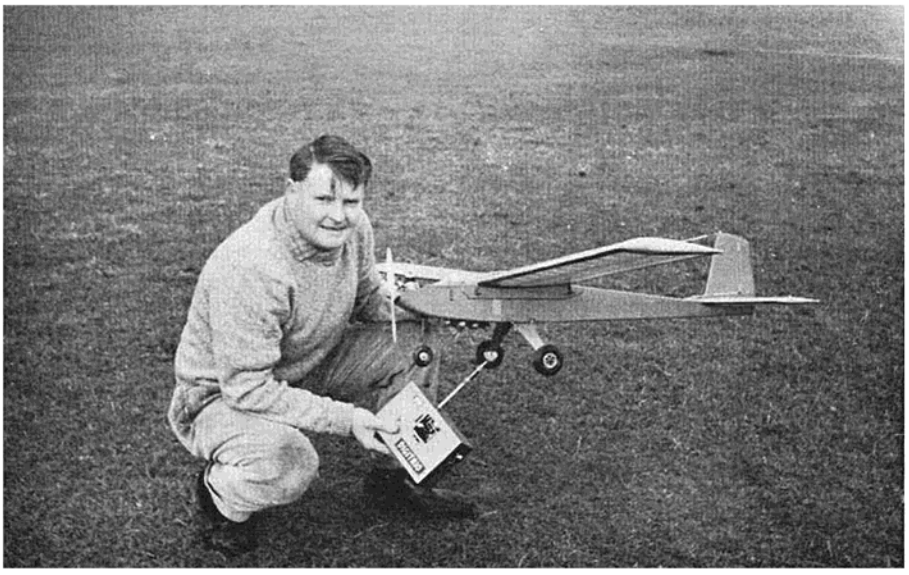





BLIND NUTS
1-1/2"
1-1/2"
10"
HAND KNOB
2"
THUMB SCREW
1"
PINS OR SMALL NAILS ARE PRESSED INTO
WING TIPS AND THEN HELD BETWEEN CLAMPS.
SAME FOR FUSELAGE, STAB, ETC.
2" x 2"
36"
35"
30"
16"
OBJECT CAN BE LOCKED IN ANY POSITION
(LOCK ON ONE END ONLY)







Russ Johnson, Palmerston North Aeroneers MAC, New Zealand, with his OS .19 powered Falcon and Digitrio.

By ED THOMPSON, RCM TECHNICAL EDITOR

PREFACE

HERE I sit all broken hearted . . . ! Once again trying to write a literary masterpiece in 1500 words or less. As usual I'm well behind schedule and past the deadline for the month. Fearless Leader has tolerated my laxity in the past but I feel a change coming on. There have been small indications of this for the last few months. For example, the term "shape up or ship out" has crept into our conversations several times lately. While this may appear harmless at first glance, when it's followed by "this is your last chance" and, "or else," it causes me to wonder. That doesn't bother me particularly though, as my wife, Donna, often says such things, and I'm sure Don may just be trying to make me feel at home.

The fact that I haven't been paid for three months has been explained also. Seems that Don forgot that I moved to Denver and has been sending my checks to Phoenix for three months. I don't want to infer that Fearless Leader shows partiality either. Although he constantly reminds me that Bernie finds time to write his articles on time and how well he looks dressed in his suit really doesn't bother me. Also, the fact that Don sent an airplane to Bernie for Xmas last year while all I got was a card was not too important, either. As Don explained, this was caused by a mailing label mixup. I was really supposed to get the airplane.

I can also remember the nice things Don has done for me. Most of all, the first time I visited him in California (especially after I drove all night and was dead tired upon arriving) he flatly refused to allow RCM to put me up in some plush out-of-the-way motel — about six blocks away! He wanted me to feel at home and really touched my heart by allowing me to sleep on the floor. Even though I had disrupted his sleep, he took time to show me where all the paperwork was located so I could do the "paste up" for the following month's magazine while I was unwinding from my long trip. As Don explained, it wasn't the money — it was the principle! I didn't get much sleep that night as Don's dog kept growling at me and I finally slept sitting on top of the refrigerator. Don indicated his concern by screaming, "you're going to get it if you hurt Irving." Poor Don was so upset and sleepy he forgot my name was Ed.

I was treated royally the next day, however. Don had Sally, his wife, bring me coffee and a sandwich while I worked so that I wouldn't lose time eating dinner with them. One cup of coffee and a sandwich may not seem like a lot to eat in a day, but as Don explained, "staying slim is the key to good health!" Boy, are his wife and son healthy!

I found out just how thoughtful FL is about his family. He insists that Sally take in washing and ironing in order that she feel that she is contributing to the family's welfare as well as giving her a sense of belonging. Michael, although only four years old, designs airplanes and writes editorials for Don in order to make extra money. He designed the Royal Coachman and the Wolfmeister LR-3. I asked Fearless why Michael didn't get credit for the designs and he explained that due to his son's age he felt that the publicity might affect his ego in later life. Don also generously bought Michael a paper route for his efforts, to teach him the importance of earning one's own way in life. He makes a lot of mistakes (which Don lets him know about) but will improve as soon as he learns how to read house numbers. Of course Don takes it upon himself to handle the money Sally and Michael earn and wisely invests it in automobile stock for their future. So far he has 100 shares of "Edsel" and "Tucker" stock he bought at a bargain.

I could go on and on about the virtues of RCM's self-sacrificing Editor-in-Chief, or El Supremo, as his wife and son are forced to call him, but I don't want anyone to think I am deliberately pointing out some of his better traits. In conclusion, just take it from me that anything you might hear about Fearless Leader is probably true.

GENERAL

I have spent most of my time this month surveying past Radio Control articles looking for something to steal as my next project. Since the articles worth stealing have been stolen so many times, and so recently, I've decided to wait awhile and try to come up with some-

(Continued on Page 37)

Kent Dailey, Leesburg, Virginia, stands guard over dad's J-3 and Digitrio. Don Dailey has over 115 flights with S.T. .46 up front in Cub.

thing original, or at least well disguised. My latest attempts have been on galloping ghost (pretty hard to disguise). This "Mickey Mouse" kick started when I received some Rand actuators for a product review. Not having a transmitter to test them I started to design an encoder. After a couple of dismal failures I stole a circuit from "Grid Leaks" that worked right off. It's been many years since I "played" with rate/width circuits and I soon found that I was learning new things. One of them was that someone had finally produced a decent "mechanical decoder" for rate/width information.

Let me interject here that several new mechanical rate/width decoders are presently on the market and work well. I am not familiar enough with the others to compare them to the Rand. It's obvious that I'm not alone in my discovery since rate/width systems are presently selling like "hot cakes." After seeing the LR-3 in action I looked through a couple of back issues of RCM at Fearless Leader's proposed "Mickey Mouse Goodyear event" which I had previously passed off as another of "Dewey's Follies" and thought what a natural it would be. (Ed's note: Your apology is accepted, Ed.) The real clincher was when Herb Abrams of Rand, Inc., visited me and brought along the RCM "Name the Plane Model." To say that this plane "turns on" would be an understatement. I was so surprised at the speed and maneuverability of this little bomb that I forgot to notice whether it galloped or not. Herb later verified that it does, but you have to **look** for it in order to notice it. While talking to Herb about the mechanics involved I found out that he is as articulate as his LR-3. In fact when I look at the LR-3 in action it reminds me of him! (Ed's note to Herb: I'm not responsible for anything Ed says!)

I am not going to attempt a product review, as such, on the LR-3 at this time, as it is mostly a mechanical device and I couldn't really do it justice without further tests. A product review will be published later. As a modeler, though, it is the best rate/width mechanical decoder I've used. This brings me back to where I started. I still haven't decided on my next project but don't be surprised if it's a "Mickey Mouse system" of some sort. Lest I get letters about not working up some digital circuits, let me say that I have several breadboards full of **new** circuits that you wouldn't believe which are getting their share of attention.

Here are a couple of notes on the Digitrio that may answer a few letters. Ed Means and Jack Albrecht of Colorado Springs were up last Saturday. Ed brought along a Digitrio-4 that he is building, for a look-see on the scope. The equipment worked well as checked with a FSM and multimeter. The transmitter scoped out perfectly and the power output was measured as higher than average. When we scoped the receiver, however, it also appeared a little "hotter than average." However something didn't seem quite right. At certain signal levels we would get double output pulses. Also the diode load output had a "rabbit" running through the pulse trains. This "rabbit" had no direct relationship to either the individual pulses or the sync pause. It just drifted through the pulse train at a very slow rate. This led to several hours of trouble shooting, and finding nothing wrong, it seemed obvious that our problem was in the scope connections. But, regardless of how we isolated the scope leads the problem persisted. By this time all the desire to "play" with this "damned Digitrio" was dissipated. Ed and Jack left for Colorado Springs mumbling something about sticking something somewhere!

The next couple of days I would turn the receiver on occasionally and check to see if the trouble had cured itself. My prayers to the "Electronic Fairy" were not working and the "radio rabbit" was still running. I tried ignoring it for a couple more days by "de-mothballing" the Digifli and installing a new ringed Max 40. After a successful day of flying the Digifli (bringing it home in one piece), a thought struck me — "Thompson, when was the last time you brought a plane home in one piece?" I thought for awhile and said to myself, "I don't remember, it's been so long!" I checked with my neighbor, Tom Wyatt, and he said, "It must have been when you were still in Phoenix." After a few calls to Phoenix Bob Burand reminded me that one time last February I had forgotten to take my transmitter to the field.

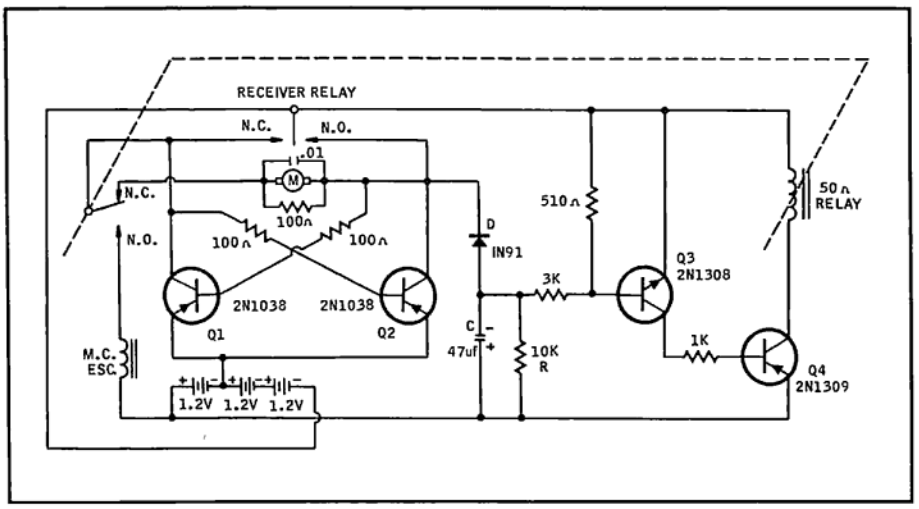
What I'm getting at is this. With what I had just accomplished I knew that a simple receiver problem would be "duck soup." First of all I pulled the receiver out of the Digifli and looked at it with the scope. I saw the "rabbit" but it was insignificant. I took it out of the case to look at the IF stages and the "rabbit" came on strong. There was my answer, the receiver should be in the case for testing. But then I remembered that this hadn't happened before so I got out my old scope and ran similar checks. The "rabbit" was gone, whether it was in the case or not. I then tried to figure out what was causing the problem when I used the new scope. I never really came to a concrete conclusion although several things were contributing:

1. A local broadcast station was entering my new scope — apparently through the A.C. line and modulating the scope trace.

2. A power line leak was emitting a pulse-type electrical noise with a 20 DB over S9 signal on my communication's receiver. I later verified that it was showing up in the Digitrio receiver output. I did find a way to eliminate the problem though. With the receiver in the case and grounded to the case no trace of the "rabbit" is evident on either scope. The receiver case is grounded when the case halves are together because the decoder board is grounded to its case half. However with the case halves separated there is no ground between the receiver board and its case half. The easiest way to supply a ground is to notch the mounting hole in the receiver board case half. Solder a bare piece of wire to the +5.1V land at the junction of the two 40 mfd electrolytics and let it stick through the notch in the mounting hole. Insert the mounting screw and wrap the wire around it one turn and tighten it down. The "rabbit" appeared to be causing the double-pulse output and was cured before the grounding process by replacing R15 (10K) with a 47K. Whether this was necessary or not I don't know as Ed has his receiver back now and I didn't change it back. A check of my receiver indicates no change in resistors is necessary but I am passing it on as something to try in case you have similar trouble. Based on the fact that the trouble I experienced is possible, whether real or induced, I recommend that the receiver board be grounded as described to preclude troubleshooting confusion.

I receive letters frequently asking questions pertaining to RCM technical articles written by authors other than myself. I mail these letters on to the original authors for a first-hand reply. I also get letters pertaining to subjects other than technical which I also pass on. I don't mind doing this as it doesn't involve much time or trouble. However, it will slow your letter's arrival. For your letter's best possible route, address it to the attention of the original author. If the letter doesn't pertain to a particular article look in the front of the magazine, usually page 4, and address it to the attention of the contributing editor most closely related to the subject of your letter.

I am including a circuit for a pulse proportional actuator submitted by Jack Busch of Ann Arbor, Michigan. I have been sitting on this for quite a while trying to find time to build one and, as yet, I haven't found time to do so. Mr. Busch states that he has used this circuit for two flying seasons with exceptional success. He used the circuit with a Kraft Commander transmitter and a Controlaire SH-100 receiver. While not presented as a complete construction article, it should be easy to duplicate with the information supplied.



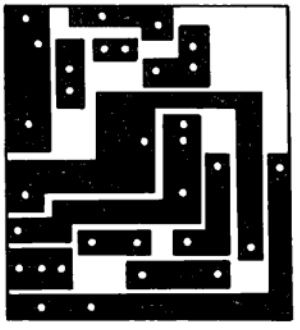
THIS proportional actuator uses 3.6 volts total, is failsafe, and the rudder is neutralized during motor control changes. The receiver relay armature is at negative 2.4 volts and switches the "Mighty-Midget" motor and the flip-flop made up of Q1 and Q2. Notice that one side of the "Mighty-Midget" is hooked through the normally closed contacts of the motor control relay. The pulsing receiver relay also charges capacitor "C" via diode D. The diode does not rectify as in other pulse omission detectors; it keeps C from discharging through Q2. This negative charge keeps Q3 off which holds Q4 off. When pulsing stops, C discharges very quickly through R, Q3's base becomes forward biased, and Q3 conducts, turning on Q4 activating the motor control relay. The armature of this relay switches out the "Mighty-Midget" and switches in the motor control escapement. I use only 2.4 volts on the "Mighty-Midget," but 3.6 volts can also be used.

R/C MODELER

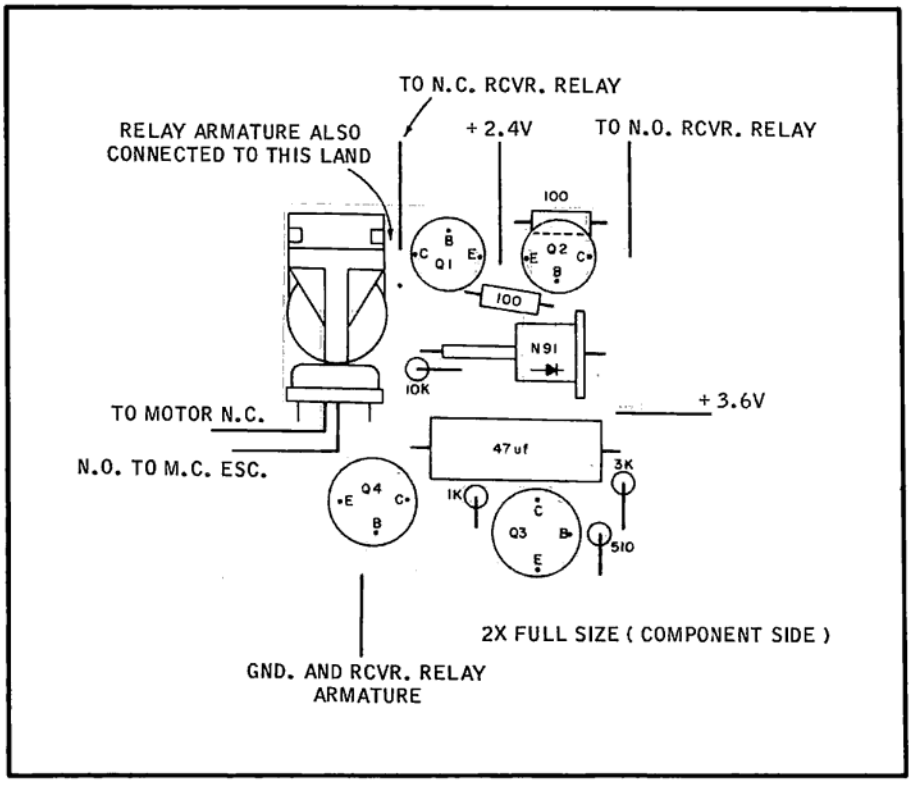
TECHNICAL FEATURE

SINGLE CHANNEL PROPORTIONAL ACTUATOR

BY JACK BUSCH



FULL SIZE
(COPPER SIDE)



With a three position escapement, properly adjusted so that there is little or no difference between the low motor position and the intermediate position, you have a very reliable fail safe (assuming you were not on low motor when you lost signal). If anything happens and pulsing stops you get low motor and neutral rudder. The entire circuit, except of course, for the Mighty-Midget motor, noise suppressor (100 ohm resistance and .01 capacitor), receiver relay and the escapement, is packaged on a printed circuit board 1½" x 1⅝".

All resistors are ¼ watt. Q1 and Q2 could be GC 4008's and the relay is the 50 ohm O.S. I haven't used anything else for Q3 and Q4 except 2N1308's and 2N1309's but any good NPN, PNP with a gain of 50 or more should work. I believe all components are available at World Engines.

If you have any questions write me in care of RCM.

TOP OUT

JERRY KLEINBURG

— and the winners! Kraft, Spreng, and Weirick — otherwise known as KP-6, Micro-Avionics, and PCS — make like a picket fence after exciting finish to FAI elims to select U. S. team for World Meet in Corsica in 1967.

SPECIAL TO R/C MODELER: FAI ELIMS GREAT! WINNERS 146, 186, 131 . . .

WHILE the above at least telegraphically sums up events of September 23, 24, and 25 in Oklahoma City, it's doubtful whether these or other words are sufficient or adequate to cover the excitement, color, drama, and superb flying that was the spirit and fact of the first R/C FAI eliminations held at Cimarron Field located in the flatland heart of the Sooner State of Oklahoma! Usual superlatives somehow miss the mark and fall flat when measured against the flying, frolic, fellowship, and feast that made the meet an unforgettable experience for all who were fortunate enough to be there. Suffice to say that all essential elements — organization, flyers, equipment, and hospitality—were prime, ready, and perfect as they converged together in time and space to produce THE R/C event of the Year!

The eventual winners, Phil Kraft, Doug Spreng, and Cliff Weirick, all made nerve-racking late surges to overtake early leaders of the 32-pilot field, with Kraft and Spreng really nailing the door on opposition in the 6th and final round of the 3-day affair. Weirick posted consistent scores and showed strength earlier in the 2nd and 4th rounds as well as in later stanzas. Nevertheless, it was a cliff-hanger all the way among the gathering of R/C greats as Doc Brooke, Jim Whitley, Hal Coleson, Paul Good, and company kept competition even, warm, and spirited. Here are total scores and positions of the first ten placers:

Phil Kraft	3853.50
Doug Spreng	3582.00
Cliff Weirick	3436.75
Hal Coleson	3349.75
Jim Whitley	3291.50
Paul Good	3276.25
Ralph Brooke	3247.00
Larry Leonard	3212.25
Ed Izzo	3165.25
Hal deBolt	3119.25

For those unfamiliar with "K" factors and other FAI scoring novelties, these scores represent only an average flight difference of 24 judge-points between first and tenth place! It was a tight race, all right. . . .

Oklahoma City weathermen must have worked overtime to stage manage a set of meteorological conditions that could have done proud to a Hollywood scenario! Friday, ZERO wind was served, Saturday had 18 mph wind, and Sunday saw moderate 8 knot zephyrs to add still another varient to exercise the finalists. Temperatures were perfect, 55 to 80 degrees, and humidity just right for the alcohol fueled mills which, in the experienced hands of the assembled aces, gave performances that would have gladdened the hearts of motor manufacturers if any had been there. Kraft's Kwik-Fli (RCM plan #146) was powered by an unfaltering Enya 60 as were 12 ships of the 32 FAI contestants, making this newcomer mill — dubbed the gangbuster, the way it came on — the most popular power plant of the meet. Spreng's Thunderstormer (RCM plan #186) and Weirick's Candy (RCM plan #131) both sported VECO 61's, the second most used engine seen on 7 entries. Merco 61's found service on 5 ships, Supertigre 60's were on 4, Fox showed on 2 entries, while a Supertigre 56 and a Max 58 gave good accounts on a single plane each. Jim Grier's power plant, a rear rotor Supertigre, received knowing attention from the assembled experts and fans who noted the zip it put into Jim's green, black and white "Anonymous."

Radio gear manufacturers were well represented with winners Kraft, Spreng, and Weirick really spelling their names, "KP-6," "Micro-Avionics," and "PCS." Orbit, nevertheless, was most popular at Cimarron with 12 flyers — including 3 of the top 10 — using Bob Dunham's black boxed 7-14D's. Equipment of all brands was digital propo with Kraft gear being used for 8 entries (5 of the top 10),

The judges — how they looked **after** their work was done. Heavy responsibilities were well carried. . . .

The TORKS — covered the scene 24 hours a day to assure meet success.

Moment of appreciation — Ed Izzo does honors, meet promoter Maurice Woods receives.

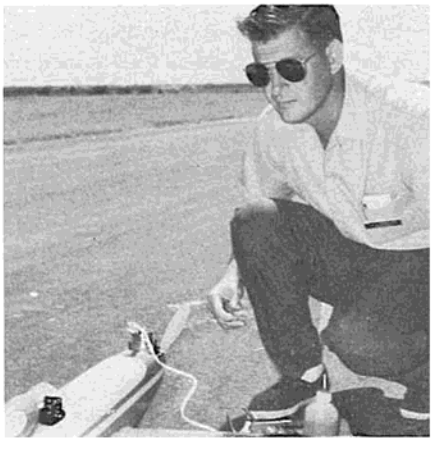
Thanks went also to Randy McGee with Maxey Hester making presentation.

The boss pushes — George Wells, AMA publicity man, gets go-cart sendoff from AMA director John Worth during Saturday night funtivities.

Above: "Aw-pshaw, it twarn't nuthin'." Pappy deBolt accepts go-cart trophy from meet promoter Maurice Woods. Right: Dr. Ralph Brooke — Seattle dentist. Enya & Orbit in Crusader. MonoKote covering. Lead for 3 rounds, finished 7th. Far right: Jack Butler — Salt Lake City contractor. Enya & Orbit, retracting gear. Xmtr switch off on takeoff!

Don Ballreich — Tiffin, Ohio, potato chip mfgr. Veco & Digimite. Toledo Weak Signals Club. Beautiful finish . . .

Tony Bonetti — Emerson, N. J., auto repair service. ST 60 & Orbit. Delay freight cost points . . .



Above left: Ron Chidgey — Pensacola engineer. Caydet with Merco & Kraft. District V RC Contest Board. Left: Curt Dimberg — Palatine, Illinois, business forms developer. ST 60 & Logictrol. Chicagoland RC Club . . .

Left: Hal Coleson — Atlanta, Ga., Delta Airlines pilot. Widget with Enya & Kraft. Placed 4th. . . . Above: Hal 'Pappy' deBolt — Cheektowaga, N. Y. "Chief" with Merco & Orbit. Finished 10th. Also had fastest Goodyear . . .

Above: Jim Edwards — New Albany, Ga., dentist. Enya & Kraft. First to fly . . . Upper right: Paul Ennis — Salisbury, Md., Chris-Craft engineer. Fox 59 & Digimite. Prettiest Hobbypoxy finish. . . . Right: Gorden Gabbert — Dallas food broker. Merco & Orbit. AMA Secretary-Treasurer.

Above: Paul Good — Seattle airline mechanic. Enya & Orbit. Placed 6th — the student outpointed the teacher. Below: Jim Grier — Chicago abrasives mfgr. Anonymous with rear rotor ST 60 & Orbit.

Micro-Avionics by 4, Bonner Digimite on 4, Logictrol — a respected performer — was seen on 2 ships, while PCS and Galaxy, had one user each. Incidentally, Ted White and Ron Anderson took the opportunity afforded by the Finals to introduce their latest entry into the radio market, the Galaxy. It performed well, not only in Pattern but also in Goodyear, which is the tougher test of radio equipment. During one of the Goodyear heats Ted's Midget Mustang suddenly cut a mad dido as the new gear fail-safed at the far pylon. Ted's skill and quick reactions brought the speedy racer through two such excursions after which he landed it and found the trouble was an unattended transmitter on his frequency inadvertently left on!

Flying technique among the talented 32 showed a ready grasp of FAI pattern requirements with newly added maneuvers such as the Double Stall Turn and the Rolling Circle being given special attention as flyers sought to find what form and timing and presentation attracted most points. Over all styles ranged from fast and tight to rangey and sweeping with winners showing a combination pattern leaning somewhat to the latter approach. A more than usual emphasis on throttle control was noted as pilots sought to bring all forces to bear to achieve best maneuver symmetry and position for each of the 18 parts of the FAI pattern. Flying showed a highly developed sense of presentation and timing which observers felt could be a valuable American strong point in Corsica during the 1967 World Championship Meet.

The gathering wasn't all serious pattern work during the three-day flying fiesta. A large serving of Goodyear racing each day provided an R/C change of pace while evenings brought congenial relaxation at the Chateau Inn motel on U.S. 66 in suburban Yukon where all flyers found comfortable quarters a convenient few minutes from Cimarron Field. Cimarron, by the way, was a primary pilot training field during WW II and we were sure the cooperative spirit and comradeship of the R/C fraternity was cheered on by the earlier host of Flying Cadets who had once orbited their blue and yellow PT-19's around the historic field as wings were grown that later soared and fought in skies around the globe during that world conflict. . . .

Each day Maurice Woods — the compleat host — brought on buffet lunches to flyers, officials, and their families so that flying could continue without pause. This brand of hospitality was topped by a barbeque rib feast on Saturday night at Maurice's Wedgewood Amusement Park where RC'ers were whirled and twirled on a bevy of rides and attractions. It was also the place where Pappy deBolt defended his unofficial go-cart crown first bestowed at the 1965 Tournament of Champions. It seems Maurice isn't simply satisfied with promoting one of the country's best R/C meets each year but goes all out to assure the get-togethers are a social success as well.

In recognition of the considerable organizing effort Maynard Hill was also saluted for his work in bringing the entire FAI program to a successful culmination. John Worth, AMA Executive Director, did the honors during Saturday evening's festivities and presented Maynard with a well earned AMA Fellowship. The party was further heightened by presentation to Maurice and to Randy McGee — pack leader of the unmatchable TORKS — of engraved silver serving trays by appreciative RC'ers. . . .

Judging chores for the precedent-setting finals were competently handled by a 12-man team of established flyers from across the country. Here's the line-up:

Ray Downs
Don Mathes
Chuck Waas
Dale Willoughby
Bud Atkinson
Curt Brownlee
Norbert Dembinski
Jack Josaitis
Bill Knost
Randy McGee
Howard McEntee
Bill Northrop

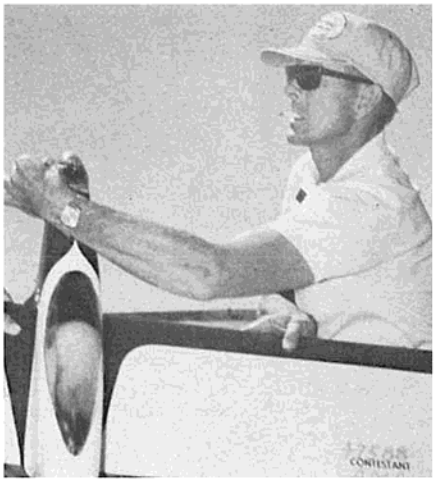
As in all ambitious and energetic affairs, a good deal of the success depends upon many behind-the-scenes people and organizations. The FAI Finals were no exception in this way and we would like to underscore the yeoman work of the TORKS of Oklahoma City as well as those of many of the City's aviation people who aided in this and previous meets. The record should also include those of the hobby industry who contributed financially to the Finals Operating Fund: American Modeler, Andrews Aircraft Model Co., Bonner Specialties, deBolt Model Engineering Co., Hobbypoxy Products, Kraft Systems, Inc., Micro-Avionics, Proportional Control Systems, Rand Manufacturing Co., R/C Modeler, Sig Manufacturing Co., and Top Flite Models.

Left: Chuck Hayes — Garden Grove., Calif. Original ship with Enya & Orbit. Glen Spickler, co-designed. . . . Above, left: Maxey Hester — Des Moines, Iowa. Stratus IV with Enya & Kraft. Sig Mfg. Co. rep. . . . Above, right: Ed Izzo — Dewitt, N. Y. Javelin with ST 60 & Kraft. Finished 9th. Louise helped . . .

Larry Jensen — Armstrong, Iowa, farm equipment mfgr. Enya & Micro-Avionics. Taurus still popular . . .

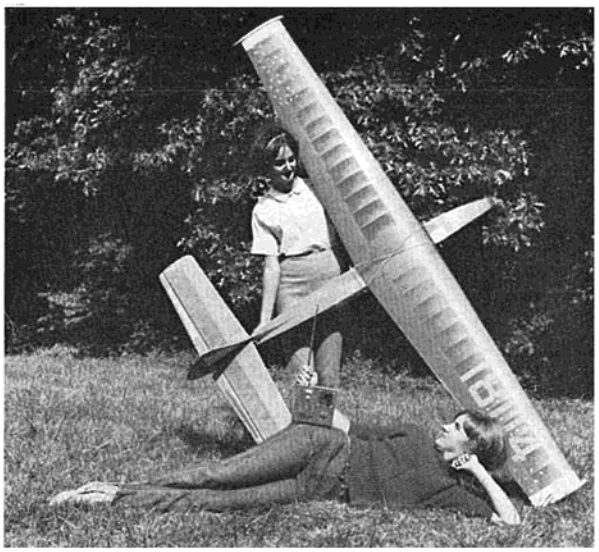
Above: Ed Keck — Webster, N. Y., tool engineer. Chief with Merco & Orbit. Ship a prototype, well done. . . . Left: Rob Kelly — Denver High School student. Veco & Orbit. Youngest, had good mechanic. . . . Below: Neal Kilby — Decatur, Ga. Enya & Kraft. 2nd at 1966 Nats . . .

Above: Phil Kraft—Monterey Park, Calif. Enya & Kraft (natch). Placed first, a habit . . . used original design, Kwik Fli. . . . Below: Gerry Krause — Fountain Valley, Calif. That's EK partner Bob Elliott on left. Enya & Logictrol in C-100. Placed 4th in Goodyear.



Left: Doug Spreng — Pasadena, Calif. Thunderstormer with Veco & Micro-Avionics. 2nd place. Mr. Bounce-back. . . . Right: Cliff Weirick — Los Angeles. Candy with Veco & PCS. Flew consistent, placed 3rd . . . and then we ran out of room. Photos not used were of Larry Leonard, Don Lowe, Zel Ritchie, Jerry Nelson, Leonard Roe, Jim Whitley, Ted White, and Loren Tregalles.

FLIGHT LINE



THERE isn't any doubt that every modeler is proud of his latest creation. Sure, many ships look as if they were put together by a left-footed anthropoid, and most of us wish that we could turn out a beauty like Dave Platt's T-28B in the last issue of RCM, but we all have a lot of pride in our own efforts, nevertheless. Those of you who are especially proud of your ships, or of what you are doing, take the time to drop us a line so that we can share your doings with the rest of the R/C world. Good clear pictures are the best advertisements of your efforts. One thing, though — be sure and send them to R/C Modeler Magazine, c/o Chuck Cunningham, 5333 Wooten Drive, Fort Worth, Texas, 'cause if you send them out to old fearless leader (note the small capitals, FL), they may get lost in his vast batches of mail and take a little more time to filter down this way.

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As we mentioned last month, we were going to try an F&M 3+1 rig as the commander of a full-house multi to see just what are the problems and the rewards. Obviously, the reward is a lower price, since you don't have to pay for the extra channels. If you are going to use two servos on the rudder/aileron controls, then you will have about three hundred and seventy bucks invested, but if you couple the rudder/ailerons mechanically, then your investment is only three hundred and thirty three dollars. However you do it, it is a good system, and it works very well. The tests were made on two ships, my low wing Scimitar and a fiberglass Taurus. On both, the results were the same — good control if you watch out for one thing: you've got to remember that if you couple the controls you must cut down on the rudder movement. It might be advisable to chop out some of the aileron throw as well. My first flight on the Scimitar was the result of not heeding my own advice, and you've never seen such a hairy takeoff! With the 3+1 system, there are some of the AMA pattern maneuvers that you will not be able to do, but most of them can be done perfectly (if the stick twister can do 'em!), and it is a fine piece of equipment for the average flier. Currently, I am using the 3+1 in my stunt delta with the extra servo being used for nose wheel steering only.

●

We mentioned earlier that there is a lot of pride among model builders, and although this is certainly true, it should be pointed out that not every ship should be a thing of beauty and joy forever, 'cause they won't always last as long as you might think they should, cuzzin'. Take Ed Rankin's beautiful Copperhead, for instance. This ship was powered by a Fox .59 with a Bonner Digimite providing the control. Ed's ship was a yellow and black beauty, and a fine flier to boot. The next day, after this picture was taken, Ed and Bob Pearce had a mid-air collision, and the results were just little pieces of confetti drifting down from the Clear Blue. 'Nuff said on this thing of beauty and joy biz?

●

The elongated toothpick sticking out of the smiling teeth belonging to Dan Carey is really the wing on his 'Lil Pinto, souped up with a Max .10 for the Midwest-RCM Air Races. Dan reported that it goes like a bat out of the bat cave until the engine quits, and then, due to the high wing loading, charges for mother earth like a starving hawk. (Ed's note: That entire last sentence is for the birds, Chuck.) The shiny surface that Dan is leaning upon is a status symbol Mustang which makes a great takeoff surface.

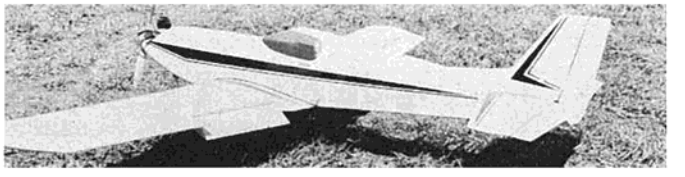
●

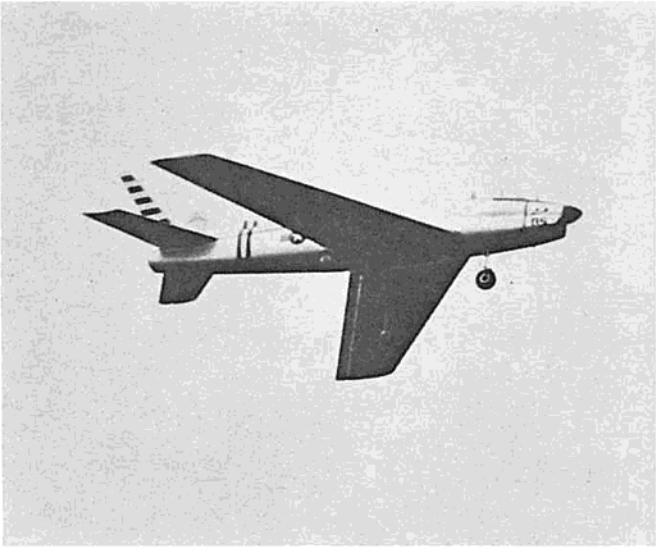
The photo of the realistic looking jet fighter making a fly-by is not a low-flying full scale aircraft, but the work of F. W. Biesterfeld of West Germany. Radio gear is a full house propo rig designed by Helmut Bruss who also dubbed as the photographer.

●

Jim Grier and his ship make up the smiling duo (kinda' like the Dynamic Duo, ain't it, Robin?). Jim took a 2nd in Class III and a 1st in Free Style at the West Suburban RC Club of Elmhurst,

Masthead photo: Foo Goo-less, fastest glider in the world and the two offspring of Willie-the-Fink Northrup and Don Brown — standing is Julie, 13 and prone is Edith, 15. Left: Don Carey of MRAR. Below: Copperhead on Flight Line, flaps down, and ready to go.





Above: Helmut Bruss of West Germany sent the photo of F. W. Biesterfeld's realistic multi making a landing approach. Helmut also designed the full house propo rig used by Biesterfeld. Right: Smiling Jim Grier, 2nd in Class III Expert and 1st in the Free Style event at Chicago.

Illinois contest held during the middle of August. Vic Husak, flying his behemoth King Altair (to be presented in RCM) took first with Bob Schultz coming through with third in Class III. First in Novice went to Bob Roseler, with Cal Speerly and Charley Fox picking up second and third, respectively. Class II saw Charley Williams taking first place, Bill Senter second, and Mike Mueller, third. All in all, 36 contestants had a great time at this two day contest. Next year, at the Fifth Annual, the pace and the prizes (a bit over $650 worth!) promises to be even more!

●

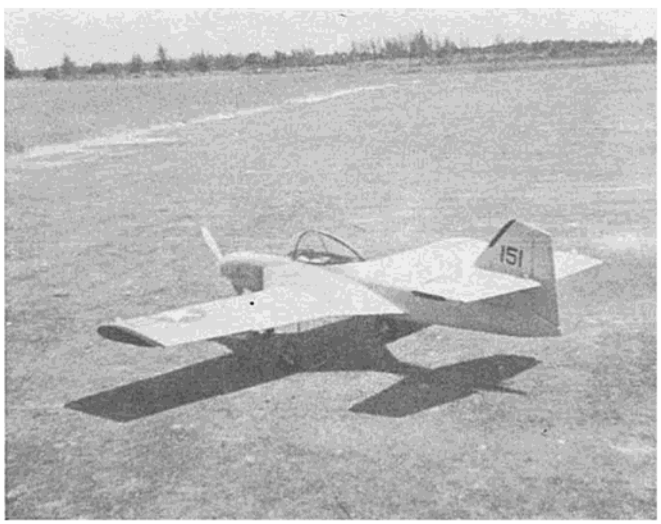
One of the more interesting things about putting this column together each month is browsing through the many newsletters that show up. I think that California must hold the record for "windy clubs" since the number of newsletters emanating from that sunny stronghold is astronomical! Most newsletters are edited by fliers that would much rather spend their time building and flying rather than try to get out a lot of poop for the group. The one theme that I notice running through all of the newsletters is a plea for more information from the members on what is going on and who is flying what. It's a brave individual that takes on the thankless task of editing a club publication, and I, for one, take off my hat to you. And now that little bit of backpatting is finished, you editors get busy and help me get this column written!

●

The Glow Plug is the official bulletin of the Middle Tennessee Radio Control Society, and is edited by Frank Schwartz. The August/September issue contained one of the most interesting bits of reading that I have come across, and with their permission, will pass it along to you.

On September 3rd, a group of RC'ers decided to try their hand at cross country flying. Bob Reuther, Jim Martin, Frank Schwartz, Gil Hahn, R. D. Baker, and John Woodward were the culprits. Two Taurusi (?) were the ships to be used for the experiment. Flights were controlled from a convertible with a driver and coordinator in the front seat and the pilot in the back. It was found to be easier to fly the ship in front of the car rather than have the model follow the auto. The first lesson learned was that a Taurus accelerates MUCH faster than a Chevy II convertible! Five flights were flown with an average of nine minutes per flight. Here are some observations on the combined effort.

"A Taurus with a .56 or .60 in the nose maintains a straight and level air speed at full throttle of exactly 75 mph. As you go over a hill, the plane may slow



Left: D. M. Wood's 50" Cessna T-37 uses a KB .45 for 90 MPH! Wing permanently fastened to fuse with access through canopy. Photo taken at West Palm Beach, Florida site. Below: Dick Demlow, Adrian, Michigan, uses a Max .10 in his C. G. Skylane. Airtrol RE-1 propo system.

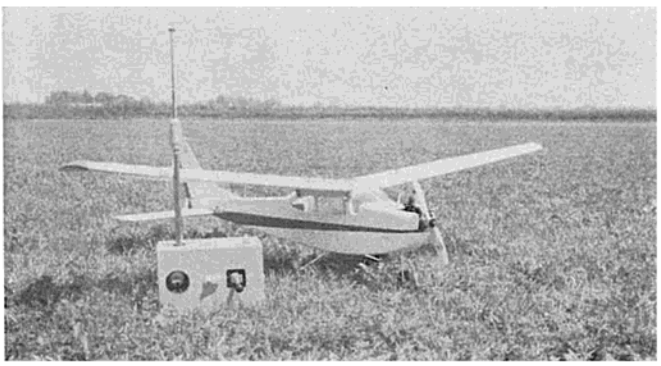


Photo of the three winners in Class III at recent Hawaii R/C Club contest, October 1966. Front to rear, Major Ken Collins, USAF, Kwik-Fli and Enya .60, 1st; 1/Lt. Jan Sakert, USMC, original design with ST 56, 2nd; Capt. Bob Barnes, Hawaii Airlines, Kwik-Fli and ST 60, 3rd. Picture taken at abandoned Marine Corps airstrip at Ewa Beach, Oahu, Hawaii, which was obliterated on Pearl Harbor Day, and now used by RC'ers with permission of U. S. Navy.

down to 70 as you go up and speed up to 80 as you descend.

"Pulling the plane into a climb of about 20 degrees results in an immediate sharp reduction in speed down to about 60 mph. Conversely, a dive results in an immediate increase in speed which cannot be caught by an automobile.

"The plane is extremely responsive to throttle settings. When the car was slowed down to about 65 mph it was very easy to hold formation position with the car by jockeying the plane's throttle. Corrections of less than a foot backward and forward can be easily made by using the throttle. If you advance to full throttle, the plane leaps ahead of the car at almost unbelievable speed!

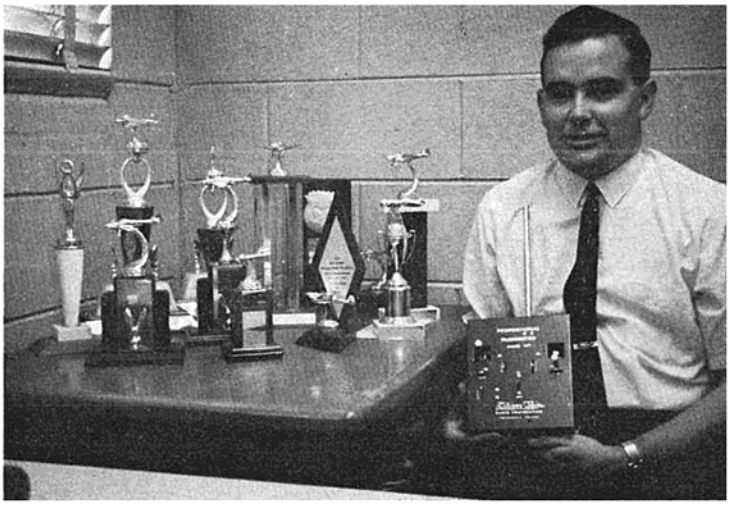
"What looks to us, on the ground, as perfectly straight and level flight is actually a series of rather violent bounces and yaws of the airplane. We had the feeling that flying straight and level was like walking a tightrope! It was not hard to do, but you had to constantly make minute corrections.

"Our axial aileron rolls are not axial at all! When you have the perspective of hanging right under and behind the plane, you realize that in order to do a true axial roll you would have to apply rudder during the roll. We actually are doing barrel rolls when we say we are doing axial rolls. The tail of the Taurus describes spirals during the rolls.

"Flying under bridges **looks** easier than it turned out to be! Part of the trouble is that above the highway there are hundreds of tiny power lines that you never notice when you are simply driving. An attempt was made to go under a bridge, but had to be aborted when some power lines showed up. There was a woman walking across the bridge dur-

(*Continued on Page* **46**)

Below, left: Dan Egelhoff, Pomona, California, with his P-Shooter and Orbit gear. Dan, an active Junior, taught his father to fly R/C! Below, right: Bill Welker, and his collection of trophies won this past summer with the Citizen-Ship Digital equipment.



ing this attempt. She looked down at the speeding convertible passing under her bridge. Right at the moment she looked down, a model airplane going about 80 mph passed over her head. My picture in the rearview mirror after we passed under the bridge was of a woman with her hair standing straight out while she executed about a ten foot leap—straight up!

"Loops are a panic maneuver. As long as the plane is going away (ahead) of the car, everything is okay. But, the back side of the loop as the plane is going in the opposite direction gives about a 160 mph speed differential!

"If you try this highway gambit, be sure to allow yourself a three minute fuel reserve so you can pick a landing spot with plenty of time. We landed on the highway between traffic, and at times the traffic was heavy and we had to hold."

So much for the lighter side of the news. We don't recommend this procedure for Joe Average RC'er! And when those lads get out of the Middle Tennessee State pen, the state of the art in RC will be much advanced. You know, it is interesting to contemplate just how you might feel when your ship is moving in the other direction at 160 mph!

●

One of the most outstanding clubs in the country is the WORKS of Dayton, Ohio. Ron Van Putte is the editor of the Worksheet, and his editorial in the September issue is well worth repeating:

"We recently had several incidents in which people turned transmitters on when an airplane on the same frequency was in the air. In every case, proper frequency flags were being used, so it was simply a matter of momentary negligence. The reaction of the guilty party was invariably — "When did you go up? I didn't even see you!"

"These unfortunate occurrences happen very seldom, but the person whose airplane is splattered all over the place can only see that it **did** happen, and it happened to **him!** Our hobby is expensive enough without having to pay for that kind of an accident.

"We must have a foolproof method of avoiding inadvertent interference with each other. Inevitably, any method of controlling a particular frequency causes inconvenience. However, I think it is worth it.

"The problem is to find a satisfactory method of controlling frequencies which cause a minimum of inconvenience. The best one I have seen so far is the colored clothes pin idea. The problem with that method is that the person with the set of pins must be first at the field. We can make several sets to be distributed around the club, or we could leave a set at each flying field.

"Let's do something to eliminate the problem, and do it now!"

Right you are, Ron — it's a big problem and will grow much bigger in the coming years. Take steps now to prevent "inter-freq."

●

The RAMS, Radio Airplane Models of Seattle, will be holding their 2nd Annual Northwest RC Symposium on the first weekend in February, 1967 at Olympia, the capitol city of the State of Washington. This will be a full two-day presentation with model displays, technical papers, manufacturers' displays, RC movies, plus a banquet and awards dinner with trophies for the best technical presentation, most original model, best finish, and best in scale. All Saturday events will be held at the large Tyee Motel just south of Olympia on Washington's Interstate Hiway #5. Advance reservations have been made for a substantial number of persons requiring overnight lodging. However, "out of staters" and manufacturers anticipating attendance should contact the RAMS as soon as possible in order to expedite proper reservations.

One of the sidelights of the technical symposium will be a tour to the nearby Olympia Brewing Company on Saturday for those who might be so inclined. (Ed's note: Yeah, yeah!)

Manufacturers and RC'ers who are interested in attending the Symposium are invited to contact George E. Hickson, 11809 18th SW, Seattle, Washington 98146.

●

The recent Las Vegas meet was marked by clear blue skies, unlimited visibility, and 25 mph plus winds! Despite the fact that Fearless Leader and Doug Tucker, RCM's new Assistant Editor, didn't recuperate sufficiently from a 'Saturday On The Strip' to make it until Sunday morning, Class III Expert saw Larry Leonard, Ted White, and Jim Oddino take the first three slots. In the Novice category, Joe Bridi, Glenn Henley, and Harry Gould were the winning trio. Willie Gardner made it a two-way win by capturing a first in both Class II and Class I. Randy Mytar and Don Kinard were the runners-up in the REM event, while Walt Staff and John Adair followed in the Rudder category. Jack Stafford topped the entrants in Scale, while Don Menzimer, Bud Crane, and Joe Bridi were one-two-three in Goodyear.

The LVRC Annual is one to attend — beautiful climate, and the scenery is truly outstanding. Not at the desert dry lake, but during the evenings. On the Strip, that is. I mean, those girls. . . .

●

Time to close up the typewriter and get back to the balsa block. But, before we do, here's a plea for help from Prince Edward Island:

Sir:

I don't quite know how to start this letter, so I think that you will have to excuse me for the errors in the construction of the King's English.

Actually, I was reading your April 1966 issue of your magazine, tonight, and I have a few problems which I would like to discuss with some of you people out there regarding the construction and flying of Radio Controlled Model Airplanes.

Around here there are no Clubs, and very few people that fly R/C jobs, so I am pretty well on my own. That is why I am writing to you tonight hoping that you will insert a small article in your magazine, possibly of the "Correspondent Wanted" type, so that I could Correspond with people having experience in this field of our hobby, in order to get technical help from them. I would like to correspond with a Flying (Model) Club in this area, but there are none, so that is why I am searching in the States now. Actually, I don't see why the "Brotherhood of R/C Flyers" couldn't go International!

Hoping that you can help me, I remain yours always.

A Canadian Friend,
Andy Le Gourrierec.
99574 LAC Le Gourrierec, D.A.J., P.O. Box 245, C.F.B. Summerside, Prince Edward Island, Canada.

Hisat Plans
H.E

CUNNINGHAM ON R/C

UNLIKE the past several issues, this month we are not going to jump up and down with golf shoes on some of the problems of our sport. Rather, let's take a good look at the fun side of it. After all, the reason that we spend countless hours gluing sticks, sanding balsa, doping fabric, and tuning radio gear is for the fun of it all.

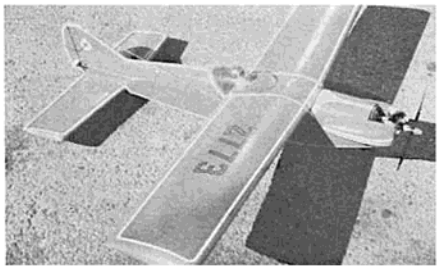
Several months ago we laid down the rules governing the newest class of R/C ships, the Midwest-RCM Air Racers. Since that time a lot of you fliers have been having a ball flying the little ships and polishing the pylon turns. A lot of wordage has been devoted in all of the publications on all kinds of racing, most of it slightly noncomplimentary to the sport of racing. But stop and think a bit. What is called the Sport of Kings? No, not chess, but Horse Racing! What is the Gold Cup race, but an outing for boats, a pretty regal name. Almost all of the sporting functions that really grab the interest of modern man is in the form of a race. For that matter the Romans were pretty interested in Chariot races as a pastime. I don't know which they considered more fun, races or watching lions gnaw on a Christian leg bone, but I'll bet the races held top place. After all, "you've seen one leg bone, you've seen 'em all!"

But, the point is this — for most continuing interest a race will hold more appeal for both the participant and the spectator. Not necessarily a race as most of us have been flying them, but an honest to gosh, pull-out-all-stops race against another flier.

This past summer saw a terrific amount of contest activity in almost all parts of the country. Here in the Texas area there was someplace to go fly in a contest almost every weekend. Some were good contests, with big prizes and a good attendance, and some were pretty small, with but a few fliers, but most of them included a pylon race, and when this was held, the fun was really had!

I don't know how many of my flying partners have mentioned that the most fun flying they had this past summer was in a race. The beauty of it is that you don't have to practice three or four hours every day to perfect your flying. Sure, you have to practice, but the practice is simpler, and if you lay off for a month or two, you can still go out and turn a pretty good account of yourself.

And, you can start small and work up as you grow better and more relaxed. The perfect place for a beginner to compete is in a Midwest-RCM Air Race. He can start with a .049 or .10 and graduate to a .15 with the same radio gear, and almost with the same aircraft. The Goodyear races are a larger, more powerful, and somewhat harder class to fly,



Fearless Leader's TD .049 powered Midwest-RCM Goodyear racer. This modified Owen Kampen design uses Airtrol's RE-1 on rudder-elevator.

but for sheer fun, they are hard to beat! Certain rule mods are in the wind, and by the time this makes it to print in the dead of winter, they may be an actuality. Changes are needed, the things are moving out just a little too fast for comfort. But wait, you haven't even got to the Open Pylon, or Unlimited Pylon class! This is the most popular class of all since it is generally flown with a standard stunt ship. Most stunt ships can almost keep up with a hot Goodyear racer, but think how much faster the unlimited class would be turning the pylons if the ships were designed for speed rather than for stuntability.

The AMA put out a tentative set of rules governing the Open Pylon class. These rules were to merely serve as guide lines and to allow the AMA insurance to be written, but they are pretty reasonable. These rules simply limit the

Ed Rankin's modified Hustler delta uses Veco .45, speed prop, and sleek fins — adds up to a potent machine.

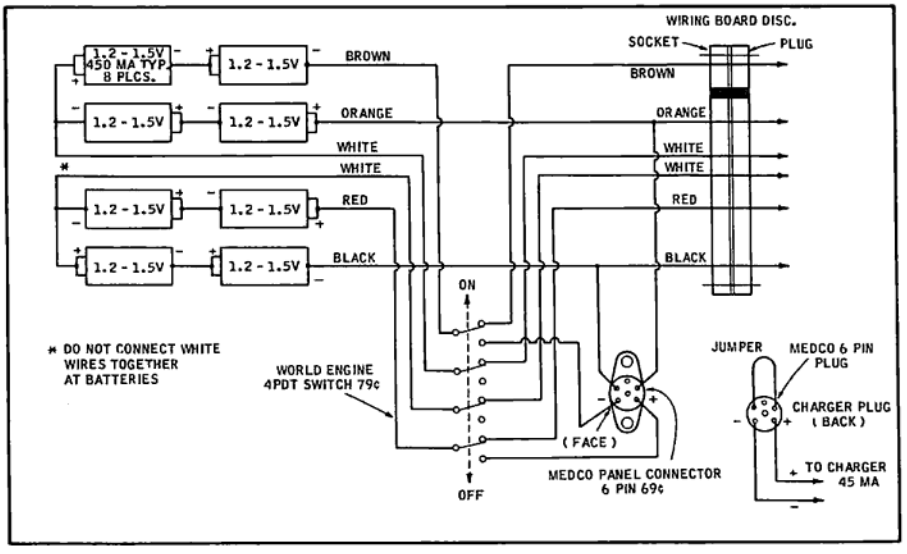
minimum wing area based upon the displacement of the engine. They begin at 450 sq. inches for a .40 ship (the same as an NMPRA ship) and end at 660 sq. inches for a .61 powered beast. The formula is simple, the displacement of the engine translated to square inches plus 50 sq. inches for insurance. Therefore, a .51 would have to tote 510 inches plus 50 inches or a total of 560 sq. inches.

If you are thinking of this class and your thoughts run towards the scourge of the pylon class, the delta, then you must add 50% to your allowable wing area per engine. This isn't as much as you might think, since a .61 ship would only need a Delta of a little larger than a stock Hustler.

Speaking of the Hustler delta brings

(*Continued on Page* **48**)

This circuit is designed for the Citizen-Ship AP system flyer who wants an external switch handle and does not desire to disconnect the battery plug each time the battery pack is charged. **Leave** the wiring board switch **on** and use the external switch only. The latter must be in the off position to charge batteries. Circuit designed by Ralph V. Sawyer.



me to something else. If you haven't tried a delta, by all means do so! You have missed something in your model education if you haven't tried one. They really are fun! I acquired a Hustler kit last winter and put it aside for a project sometime in the future. The bug to build it hit me just at the same time as it did to Ed Rankin, one of my long time flying partners, and unknown to each other we both started to put together these deltas.

I built my Hustler stock, according to the plans, and put a Super Tigre .40 in the nose, while Ed modified his somewhat and bolted a Veco .45 to the snoot. His also sported tip stabilizers rather than the standard fins, and looks a bit more racy. Both of us installed proportional gear, Ed with a Bonner 8, and mine with a F&M 3+1. If you go back and read the original article on this delta, which appeared in January, 1962 MAN, you'll find out that they were pretty hot stuff then with a .19. Believe me, with a hot .40 or .45, they really turn on! But, the biggest bonus of all is that they are a lot of **fun** to fly. Ed shoots consistent touch-and-go's and can really make that ship perform! The only hard part is to learn to "see" it in the air. It looks different, and it is. And talk about roll rate, it's something to see! So, if you're looking for something to race, don't overlook the delta. And they are strong; much, much stronger than the normal ship.

Since you are all hepped up to go out and race with your best new stunt ship, let's back up again and hear a few choice words from Herb Abrams, the pappy of the Rand Actuator. I wrote to Herb requesting info on why my Rand would not get throttle control. I messed around with the spring, added more batteries to each side, and still was not getting good throttle. So let Herb tell it:

"I shudder every time someone tells me he has stretched the spring on the LR-3 trying to get throttle control. We carefully calibrate the tension on each spring and check the linear relationship between the actuator output and control stick motion. The actuators are checked for reliable operation on as little as 2 volts. I hope you don't have the same problem as another flier did when he couldn't get motor control. I tried to solve his problem, but he admitted with a red face that in the meantime he found that he had not provided sufficient movement of the elevator, which is necessary during motor control.

"I believe the key lies in your statement that the actuator works with the push rod disconnected.

"Chuck, the push rod connections and hinges must allow the actuator to work equally well with them connected. This is a flea-powered device. Look for these areas of possible friction: Hinges on the surfaces should be free enough to allow them to FLOP of their own weight. I suggest thread hinges which have not been doped or otherwise stiffened. I prefer nylon tubing and wire hinge-pin hinges as the most reliable. Thread hinges have a habit of shrinking and becoming tight without your realizing it. Please do not use nylon strip hinges. They fight the actuator. Quick links are another source of friction. The holes in the control horns should be drilled out to .067" or 0.70", because the pins are several thousandths larger than the 1/16" hole provided. The link should be spread carefully so it does **not** GRIP the horn even with the rubber safety tubes in place. As a matter of fact, vinyl tubing provides a better safety loop than rubber because it will take a set on the quick link. This can be accomplished after installing the quick link on the horn by twisting a screw driver in the link to spread it. The link should flop freely on the horn if it is disconnected from the push rod. The rest of the push rod must, of course, be routed through the fuselage to avoid rubbing or binding.

"I hope you don't mind my going into so much detail on this point even though I know it is very familiar to you. (It wasn't, Herb. Ed.) But if your unit will not work even with three batteries on each side the problem must be in the linkage. You might make a further check by measuring the voltage at the actuator during the attempt to obtain motor control. It should be at least 2.2 volts.

"I will end with this parting shot — we are able to obtain adequate motor control on a .35 powered Tauri."

And there, is the word from the horse's mouth!

I talked to Frank Garcher of Midwest a few weeks ago and Frank told me that he was getting ready a whole fistful of new ships aimed at the Midwest-RCM Racers. Among them is a ship named the Wind Song designed by none other than old Fearless Leader, and Frank claims (note the word "claim," Don, Buddy,) that it will even fly inverted! Must be pretty strong sauce they serve up in Indiana. 'Course it was harvest time for the corn crop and maybe Frank had just come in from the squeezing mill. His big problem in bringing these kits to the market is the lack of a draftsman that can get the pictures drawn so that all of you can understand them.

Since this is the January Issue, published at the end of November for distribution the first of December, this must be the Christmas Issue. Since I'm on the merry bandwagon of mixed up dates this is creeping from my typewriter in September, but at any rate, let me add a very Merry Christmas to all fellow sports fans, and I'll leave you with one last thought. While Ed Thompson is shoveling snow in Denver, and Bernie Murphy is shoveling snow in Maryland, and old Fearless is simply shoveling it in Los Angeles, Jerry Kleinburg and I will be basking in nice warm Texas, flying up a storm every week end.

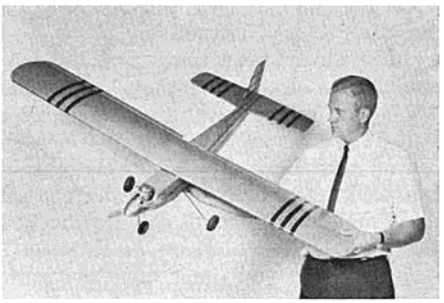
See you at the flying field, Jerry.

Partial Show Case

Happy Wings. We are pleased to announce that Happy Wing solid core foam surfaces are once again available from Custom RC Products, 3231 47th Street, Metairie, Louisiana 70001. Tested and approved by RCM, Custom RC Products 'Green Dot' material is performance proven and allow rapid, light, strong, and true wing and stab construction. Precut dihedral angles, servo and dihedral brace cutouts provided. Landing gear mounts included with all low-wing types. Available for virtually every popular design, prices range from $9.95 for most high and shoulder wing designs to $11.95 for low wing types. Matching stab cores are $3.95 each. Kwik-Stick Foam-Balsa cement is $2.50 per pint. For information on the complete Custom RC line, **Circle #5 on the Reader Service Card.**

Lafayette Catalog. Lafayette Radio Electronics Corp., 111 Jericho Turnpike, Syosset, L.I., N. Y. 11791 announces its new 1966 Christmas gift catalog, #671, with the latest in electronics and associated items, now available free upon request. This catalog is yours for the asking — and asking is simple, just write to Dept. RCM at Lafayette.

American Products, Inc. Two new models and a full line of partially assembled kits have been added to the radio control division of American Products for 1967, according to Ron Hornung, company Vice President and general manager. New to the American air line are Models Mark I and II, joining 1967 Models Tempest and Hawk. These are completely finished with wing panels joined, full symmetrical airfoil, flat stabilizer and dorsal fin. The Mark I is for the competition flier while the Mark II is built for the intermediate sport flier. The 1967 Hawk is a shoulder wing model for the beginner or Sunday flier, while the Tempest is a low wing model for the competition-minded. Both new models are finished in fuelproof white or brilliant orange paint, allowing the buyer to individualize a model with his own stripe design. For further information on the American line, **Circle #6 on the Reader Service Card.**



Free Sale Bulletin. If you're a model builder who likes to save money then you should send for the Bargain Bulletin #AB966 that is offered by America's Hobby Center. A free bonus gift offer is printed as part of the bulletin where you can get free gifts with any purchase you make. For your free copy of this new Bargain Bulletin #AB966, send an unused 5c postage stamp to America's Hobby Cen-

Steve Stevens Tops 50 M.P.H. at Western Regional

BY JIM WHITLATCH, RCM REGATTA EDITOR

THE "old master" shows 'em how again, as Lewis A. "Steve" Stevens of the Modeleers Club in Los Angeles becomes the first model boater to go over 50 M.P.H.! Six other West Coast R.C. Boaters use Steve's "draft" to set International records of their own. Lots of action, lots of records set in the City by The Bay.

The San Francisco Model Yacht Club was host for the Western Regional IMPBA — WAM R.C. Boat Meet held Sept. 3 & 4, 1966 at Lake Merced in the City by the Golden Gate. Protected by trees and in a depression, the prevailing S.F. wind was no problem, and the size of the lake made it ideal for the 1/16 mile record runs so popular in the West. Of course the inevitable fog and cold were there too, providing quite a change from So. California weather. All the Coast boaters are hoping that the 1967 IMPBA Internationals will be held at Lake Merced and plans are being made to do just that!

The same problem encountered at Wheeling, Ill., at the Internat's was right back with us at San Francisco — too many boats trying to run in too many events for a two day meet. To say that things got rather hectic would be the understatement of the year! When you have so many potential record breakers waiting to run, it's getting late, the small boys rowing the pickup boat are pooped, a boat with no chance of setting a record loses its throttle control and seems to have a gallon of fuel aboard, then tempers get short and relations strained. Despite these minor handicaps the boaters enjoyed themselves, and in the process, set some outstanding records.

Steve Stevens' new record didn't come easily this time. His first run was all bad. Bad needle valve setting, wrong fuel for the cold damp air and a new prop which made the Sidewinder handle badly as well as porpoise. He finally got everything sorted out and on his record run was going downwind 51.5 M.P.H. on almost each pass with the upwind run only a little slower. He had six clockings of over 50 M.P.H. with a final two way average of 50.78! Steve was using his own hand made prop, a mixture of K&B Speed and 1000 Fuel, Fox heavy duty glo plug, F&M superhet reed radio and a racing model Rossi 60 on pressure. The engine is strictly stock, no internal filing or smoothing of any type, the exhaust baffle and low speed fuel metering secondary needlevalve are "bolt-ons." Steve was first over 40 M.P.H. and now first over 50 M.P.H. I guess he's saving the hop up treatment and high compression head so he will be first over 60 M.P.H.! Also in the .60 Class E-2, Tom Micklin of Los Angeles turned 43.19 with his original design hydro and Del Park's new boat, the Cobra, turned over 38 M.P.H. with a bad prop and with the engine running in a full four cycle, so Stevens may have some tougher competition in the months ahead.

Jim Henry of the San Diego Argonauts really had his modified Hornet Hydro moving. Powered by a new square port front intake Super Tiger .19 Jim turned 35.88 M.P.H. to take the B-2 record away from fellow Argonaut Karl Offerman. Bob Foley, also of the Argonauts, posted 39.13 M.P.H. with his

original design hydro running a three bladed prop. Bob used a Min-X reed set and a K&B front intake .29 for his C-2 record. On one of his down wind passes he hit over 42 M.P.H.! Joe Barazota of the San Francisco Club set a new F-2 record of 43.10 M.P.H. using an alternate firing twin McCoy 60 in a Del Park hydro hull.

The mono-plane classes were hotly contested, too. In the 1/16 mile .19 Class B-3 Steve Muck of the Modeleers Club averaged 19.56 M.P.H., a fine time but not a new record. Second place went to Bob Foley, the present B-3 record holder at 16.55 M.P.H. There was some fierce competition in the .29 Class C-3 between Frank Snowden of San Francisco and your R.C. Modeler reporter Jim Whitlatch of the Modeleers. Final results were Snowden 29.76 and Whitlatch 29.29 with Ray Price third at 26.50 M.P.H. — old record 24 M.P.H., some showing! In the 1/4 mile oval C-3 event the same contestants and the same order of finish. Snowden 44.28 seconds with ol' slow poke Whitlatch 44.78 seconds. No new record though, those Easterners just go around corners faster than we do. Frank Snowden was running a new Bara Boat fibre glass Ski boat hull by Joe Barazota who also manufactures a .60 size kit. Beautiful kits with outstanding design, good looks, good handling, practically built for you, and workmanship equal to those fibre glass fuselages the fly boys use. We'll be doing a construction article on these.

In the .40 Class D-3 1/16 mile event Snowden didn't have an entry so Jim W. had a chance. A new record at 30.73 M.P.H. using a Super Tiger .40 Rear Rotor, Fox Plug, K&B Speed Fuel, F&M Digital-3 proportional radio in a Jack Krohn designed Mandella type Ski boat. No new records in the other mono classes but some darn good times; Tom Micklin 27.67 M.P.H. and Del Silva even faster at 30.60 both in the 1/16 mile and both using Rossi mills. And who said electrics wouldn't go fast? The McAllister brothers of San Francisco turned over 25 M.P.H. with their 24 volt monoplane and didn't even break their own record!

The Sunday afternoon multiple boat races were divided into two classes only, all engine sizes were combined with the monoplanes competing for the Silver Cup and all hydros for the Gold Cup. After many exciting heat races the monoplane run-off was between Del Silva's Rossi 60 powered original and Bill Young of the Bakersfield Blue Dolphins running a Super Tiger powered original design. Cubic inches and screamin' Rossi paid off as Del walked away with the Silver Cup.

The final heat in the hydro class was between Bob Foley's record holding little yellow buzzer (can't remember whether

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West Coast workmanship and a scale trailer!

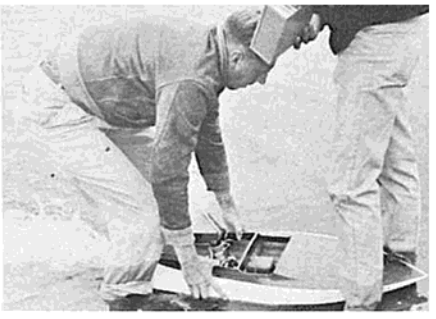
Spreckels Lake after the fog lifted.

Tony Chiboucas of Sacramento and scale cruiser.

Tony, again, and he says he has two more years of work to do on it!

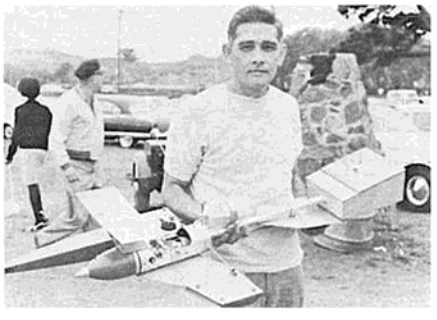
Joe Barazota's record setting Class F-2 hydro, the Houdini. Del Park hull, twin McCoy 60 and 43.10 MPH.

Tom Micklin of Los Angeles with original design hydro. 43.19 MPH and ski boat, 27.67 MPH. Both Rossi powered.



One of the true 'old timers' and pioneers in West Coast R/C boating, Bob Gregory of L.A. with original ski boat.

Del Silva of San Francisco with original design Ski boat, Rossi 60, RCM Digitrio radio. Boat was clocked at 30.60 in the 1/16 and won the Silver Cup race for monoplane hulls.



Ernie Jabonata of San Francisco, noted for his "way out" designs. But is it a boat? Rossi 60, aluminum tubing hull (or is that a fuselage?). Clunk tank radio is in the triangle shaped box over the prop. Ernie won the Gold Cup race beating all the hydros in multiple racing!

REGATTA

(Continued from Page **50**)

he had the K&B 29 or 35 in it in the multi event) and Ernie Jabonata of San Francisco and his wild "water bug" creation powered by a Rossi 60. They had a bigger handicap than engine size though, they were both on the same frequency! So the run off was against the clock. Ernie won the Gold Cup by six tenths of a second better time on a six lap run! So you wonder how much advantage the larger engines really have in the multi events.

One of the high points of the meet was the presentation to Steve Stevens of a Special Award Trophy. The award was not just for his record setting feats but even more for his over all contributions to R.C. boating and assistance to other modelers. It was hard to tell whether Steve was more pleased with his new all time speed record, the special award or being on television on Saturday night. Some taped high lites were shown on local T.V., this along with good coverage in the newspapers brought out a very large crowd on Sunday. Lots of potential boaters too!

Comparing the Western Regionals with the Internats held in the Chicago area pointed up some differences in designs, type of construction and use of radio types too. The monoplane, or Ski boat hull type, is the predominate one used in competition out West, as at least 75% of the boats entered were of this type. Construction follows real boat methods too. Plywood with glass cloth used primarily for finish and reinforcement not as molded kit hulls of back East. More use of proportional gear was seen in the Mid-West. Engine use has pretty much standardized, with the Italian imports dominating large and small classes. Can't help but comment on the many outstanding scale cabin cruisers seen at the meet. Unbelievable workmanship, detailing and fidelity to scale. I asked Tony Chiboucas of Sacramento how long he'd been working on his and was told, "Oh two or three years I guess 'course there's another two years to go to **really** put in all the finishing details." I'm sure there has to be an event for this type of R.C. boat modeler to compete in. Why not an event similar to the Scale Event at the R.C. Plane Nationals?

Everyone always has a good time when they go to San Francisco and this year was no exception. Sure hope we can get the Internats in '67. See all you Easterners and Mid-Westerners out on the Coast, O.K.? Charter a plane, start it in New York with stops in Detroit, Chicago and St. Louis — bring your families and warm clothes!

Next month an article on West Coast Ski Boats with pictures and discussion of hulls, engines and mounts, props, weight and balance, trimming tips, etc.

The Roostertail

The Official Publication of the International Model Power Boat Association
General Office:
3638 S. 61st Court, Cicero, Illinois

THE results of the I.M.P.B.A. Regatta are detailed in an effort to pass on to R/C boat builders the type of equipment and hulls that win in an event of this type. You will note that the number of places awarded were geared to the number of entries. Looking to the future, it would be beneficial to all of us for the developers of hulls and equipment to present their plans in R/C Modeler Magazine. Based on the multitude of hulls, drives, and unreported improvements, there is plenty of information that could be put into print. We do not suggest that you give up your "secrets," but there are many hundreds of readers that would appreciate some detailed descriptions of hulls, engines, drives, and electronic innovations.

STRAIGHT SIXTEENTH

1st Place, Class B: Time 7.89 seconds.
R. J. Foley; San Diego Argonauts.
Engine — Supertigre G. 15.
Prop — Submerged modified Sorrell D. 1 3/16", P. 1½".
Drive — Straight 10°.
Flywheel, D. 1⅜", wt. 3.5 oz.
Radio — Orbit 4, rudder and throttle controls.
Remarks: Ski-Boat 24" flat bottom, hard chined hull. 1/32" plywood skin, ⅛" plywood frames, mahogany veneer on deck, rails, transom. Chrome-plated brass turnbuckles, pads. Plate on transom and adjust attitude. Stainless steel strut, shaft, and rudder.

2nd Place, Class B: Time 10.94 seconds.
Richard Hanson; De Vry Dolphins.
Engine — Supertigre .15 (modified).
Prop Surface — #1 Octura, D. 1¼", P. 2.5".
Drive — Articulated parallel (home made).
Fuel — K&B 1000.
Radio — CitizenShip 6 channel, rudder and throttle controls.
Remarks: Hydro hull, the engine is on side with exhaust port facing up.

1st Place, Class C: Time 6.65 seconds.
R. J. Foley; San Diego Argonauts.
Engine — K&B .29 series 64 front rotor.
Prop surface — Modified Sorrell, D. 1⅝", P. 4".
Drive — Straight flywheel, D. 1⅝", wt. 4 oz.
Radio — Min-X 6, rudder and throttle controls.
Remarks: Hydro hull, 1/16" skin except deck which was 1/32" plywood, 10 frames 3/16" plywood, **many** spruce stringers.

2nd Place, Class C: Time 6.75 seconds.
Dan Kane; Chicago Model Engineers' Association, Chicago, Ill.
Engine — Supertigre .29 (stock).
Prop surface — California, D. 1¾", P. 1¾".
Drive — straight flywheel, Octura 29.
Fuel — Home brew "Bat Fuel."
Radio — Controlaire, rudder and throttle, reed pulser.
Remarks: Hull was built of balsa, silk covered, no fiberglass. Hobbypoxy finish. Reed pulser is used to keep boat from prop walking into a right turn.

3rd Place, Class C: Time 9.56 seconds.
Lee Pender; Minute Breakers, Lombard, Ill.
Engine — Supertigre 2.9 (modified).
Prop — Model Craft, D. 1½", P. 3".
Drive — Steering strut.
Fuel — Missile Mist.
Radio — CitizenShip, rudder, throttle.
Remarks: G.E.M. fiberglass Challenger Jr.

1st Place, Class D: Time 6.81 seconds.
R. J. Foley; San Diego Argonauts.
Engine — K&B .35 series 61 front rotor.
Prop — Surface, modified Sorrell 3 bladed. D. 1⅝", P. 4".
Drive — Straight 9.
Flywheel — D. 1⅝", wt. 4 oz.
Radio — Min-X 4, rudder and throttle.
Remarks: Hydro hull, 1/16" skin except deck. Deck is 1/32", 10 frames of 3/16" ply. Many spruce stringers.

2nd Place, Class D: Time 7.73 seconds.
James Keedy; Individual member, Chattanooga, Tenn.
Engine — K&B .40, stock.
Prop — Surface, Alwood, D. 1¾", P. 4".
Drive — Straight.
Fuel — Home brew.
Radio — Orbit 4, rudder and throttle.
Remarks: Hydro hull, plywood 32" x 15".

1st Place, Class E: Time 6.07 seconds.
Ron Buck: Minute Breakers, Lombard, Ill.
Engine — Rossi .60, stock.
Prop — Submerged Octura X55. D. 2⅛", P. 3⅛".
Drive — Steering.
Fuel — Missile Mist.
Radio — Orbit 3+1, rudder and throttle.
Remarks: White Heat 4-60.

2nd Place, Class E: Time 6.16 seconds.
Jack Peterson.
No data received by Roostertail.

3rd Place, Class E: Time 6.40 seconds.
Randy Vitek; Marquette R/C Boat Club of Chicago.
Engine — Rossi .60, stock.
Prop — Submerged Octura X55, D. 2⅛", P. 3⅛".
Drive — Steering, 7° downthrust.
Flywheel — D. 2", wt. 9 oz.
Fuel — Duke's.
Radio — Orbit 3+1, rudder, throttle, needle valve.

Remarks: G.E.M. Challenger with added sponson area and length.

4th Place, Class E: Time 6.71 seconds.
Dick Carr; Buffalo Model Power Boat Club.
Engine — Mac .60, modified.
Prop — Submerged Octura X55, D. 2½", P. 3⅛".
Drive — Straight.
Fuel — Missile Mist and gasoline.
Radio — Min-X 4, rudder and throttle.
Remarks: Scratch built 3 point hydro, all plywood.

1st Place, Class F: Time 7.13 seconds.
Ron Buck; Minute Breakers, Lombard, Ill.
Engine — TAS, modified.
Prop — Submerged Octura X70.
Drive — Straight.
Fuel — Missile Mist and gasoline.
Radio — Orbit 3+1, rudder and throttle.
Remarks: G.E.M. Super Challenger.

2nd Place, Class F: Time 7.21 seconds.
Gene Milasius; Marquette R/C Boat Club of Chicago.
Engine — O&R Compact, modified.
Prop — Surface, D. 5 1/16", P. 4".
Drive — Articulated parallel with rudder.
Fuel — Castor oil 15%, alcohol 75%, nitro 10%.
Radio — Orbit 3+1, rudder, throttle, kill.
Remarks: Octura 4 point hydro, plywood with fiberglass cowling. O&R Compact III engine has Octura rotary valve, water cooled. Home made carburetor with Supertigre .29 spraybar, slightly modified porting, and runs on magneto ignition.

3rd Place, Class F: Time 8.05 seconds.
Al Seidenberg; Nassau Model Power Boat Society, N. Y.
Engine — O&R Compact, stock.
Prop — Surface, Octura X70, modified.
Drive — Steering.
Fuel — Home brew.
Radio — Kraft 6, rudder, throttle, kill.
Remarks: Bow is covered with silk like the wings of a plane.

4th Place, Class F: Time 8.10 seconds.
Sam Newman; Skippers, Chicago.
Engine — Octura 1230.
Prop — Submerged, Octura, D. 3½", P. 3½".
Drive — Articulated parallel.
Fuel — Missile Mist.
Radio — CitizenShip, rudder, throttle.
Remarks: Hydro, fiberglass hull.

5th Place, Class F: Time 8.48 seconds.
Marianne Preusse; Minute Breakers, Lombard, Ill.
Engine — TAS, stock.
Prop — Octura X70.
Drive — Articulated parallel.
Fuel — Missile Mist 60%, gasoline 40%.
Radio — Astroguide, rudder, throttle.
Remarks: G.E.M. Cobra, fiberglass hull.

¼ MILE OVAL

1st Place, Class B: Time 61.59 seconds.
Richard Hanson.
For boat data refer to 1st place 1/16th boat above

2nd Place, Class B: Time 62.59 seconds.
Marianne Preusse, Minute Breakers, Lombard, Ill.
Engine — Supertigre .19, stock.
Prop — Submerged, D. 1⅜", P. 1⅜".
Drive — Steering.
Fuel — Missile Mist.
Radio — Citizenship, rudder, throttle.
Remarks: G. E. M. Challenger Jr. fiberglass hydro hull.

1st Place, Class C: Time 45.73 seconds.
Jim Whitlatch, Modeleers, Los Angeles, Calif.
Engine — Supertigre .29, modified.
Prop — Submerged, Model Craft, D. 1½", P. 3".
Drive — Straight flywheel, Octura 30.
Fuel — K&B speed.
Radio — F&M digital 3, rudder throttle.
Remarks: Ski hull designed Jack Krohm of Modeleers Club, plywood with fiberglass covering.

2nd Place, Class C: Time 45.96 seconds:
Ralph Snyder, Minute Breakers, Lombard, Ill.
Engine — Supertigre .29, stock.
Prop — Submerged, Octura #1, D. 1⅞", P. 2½".
Drive — Steering, Flywheel, Octura .29.
Fuel — Missile Mist.
Radio — Digitrio, rudder, throttle.
Remarks: Octura white heat 30, plywood, Hobby poxy finish.

3rd Place, Class C: Time 49.67 seconds.
Lee Pender, Minute Breakers, Lombard, Ill.
For boat data refer to 3rd Place 1/16th Boat Above.

1st Place, Class D: Time 44.23 seconds.
Jim Whitlatch, Modeleers, Los Angeles, Calif.
Engine — Supertigre .40, modified.
Prop — Submerged, Model Craft, D. 1 9/16", P. 3½".
Drive — Straight.
Flywheel — Octura 30.
Fuel — K&B 1000.
Radio — F&M Digital 3, rudder and throttle.
Remarks: Same hull as used in 1st place Class C oval but engine and prop are changed.

2nd Place, Class D: Time 49.38 seconds.
Carver Penwell, Minute Breakers, Lombard, Ill.
Engine — Supertigre .40 RV, stock.
Prop — Submerged, Cameron, D. 1¾", P. 1¾".
Drive — Straight.
Flywheel — Octura .29.
Fuel — Missile Mist.
Radio — CitizenShip, rudder and throttle.
Remarks: Ski-Boat.

1st Place, Class E: Time 38.34 seconds.
Ron Buck, Minute Breakers, Lombard, Illinois.
For boat data refer to 1st Place, Class E 1/16" boat above.

2nd Place, Class E: Time 40.70 seconds.
Randy Vitek, Marquette R/C Boat Club of Chicago.
For boat data refer to 3rd Place, Class E 1/16th boat above.

3rd Place, Class E: Time 41.60 seconds.
Jack Peterson — No data received by Roostertail.

1st Place, Class F: Time 37.76 seconds.
Donn Jordon, Minute Breakers, Lombard, Ill.
Engine — TAS, modified to glow.
Prop — Modified Octura #11.
Drive — Steering.
Fuel — Gasoline 40%, Missile Mist 60%.
Radio — Orbit 3+1, rudder, throttle, needle valve.
Remarks: G.E.M. Super Challenger, fiberglass hydro hull.

2nd Place, Class F: Time 39.03 seconds.
Scott Jordon, Minute Breakers, Lombard, Ill.
Engine — TAS, Modified.
Prop — Submerged, Octura #9.
Drive — Steering.
Fuel — Missile Mist 60%, gasoline 40%.
Radio — Orbit 3+1, rudder, throttle, needle valve.
Remarks: G.E.M. Super Challenger, fiberglass hydro hull.

3rd Place, Class F: Time 44.26 seconds.
Gene Milasius, Marquette R/C Boat Club, Chicago.
For boat data refer to 2nd Place, Class F 1/16th boat above.

4th Place, Class F: Time 45.96 seconds.
Marianne Preusse, Minute Breakers, Lombard, Ill.
For boat data refer to 5th Place, Class F 1/16th boat above.

5th Place, Class F: Time 46.39 seconds.
Fred Goodman, DeVry Dolphins, Chicago, Ill.
Engine — O&R compact, modified.
Prop — Submerged, Octura, D. 2½", 3".
Drive — Straight, built up using needle bearings for prop shaft.
Radio — Kraft, rudder, throttle.
Remarks: Original design of ski boat, length 48½ x beam 16½. Hull is built of plywood, with pine stringer. Three main bulkheads, ¼" ply, bottom ⅛" plywood. Finish is automotive synthetic enamel.

PRECISION STEERING

1st Place, 106 Points
Frank Toth.
Motor — Pittman, Panther, Electric.
Remarks — A small electric boat featuring bow and stern rudders, multi channel control.

2nd Place, 65 Points
Cy Crites, St. Louis Model Power Boat Association.
Motor — Super Monoperm, Electric.
Remarks: A semi-scale Bartender, (double-ender with cabin), single channel control.

3rd Place, 45 Points
Ron Buck; Minute Breakers, Lombard, Ill.
For boat data refer to 1st Place, Class E 1/16th boat above.

MULTI BOAT 1 MILE

1st Place, Class B: Time 499.08 seconds.
Jay Brandon, Individual membership, Tucson, Ariz.
Engine — Veco 19, modified.
Prop — Submerged, model craft, D. 1½", P. 1½".
Drive — Straight.
Fuel — Thimble drone.
Radio — F&M Digital 3, rudder, throttle.
Remarks: SK Daddle Too, wood hull.

1st Place, Class C: Time 168.26 seconds.
Jim Whitlatch, Modeleers, Los Angeles, Calif.
For boat details refer to first place, Class E in ¼ oval above.

1st Place, Class D: Time 185.71 seconds.
Frank Toth, Chicago Model Engineers Association.
Engine — Supertigre .40, stock.
Prop — Submerged, Octura D. 1⅞", P.

(*Continued on Page* 55)

DISCUSSION

RCM readers are invited to comment, pro or con, on articles or topics of interest to RC'ers. Address RCM Discussion, P. O. Box 487, Sierra Madre, California. Letters published will be selected by RCM Editors and none can be acknowledged or returned.

MORE ON GOODYEAR

At the present time, I am a 16-year-old junior in high school. I consider myself an avid R/C fan, both in the flying and technical field, for I plan to be an electronics engineer. When Goodyear racing came about, I felt that R/C got a much needed shot in the arm, for it provided a high **visible** caliber of **competition** coupled to a high rate of spectator interest, which adds up to a **GREAT** event if pursued properly. This is quite an interesting facet, for no doubt you all have seen many a good event go by due to lack of proper management or participation. The management leaves nothing to be desired, but participation, or should I say lack of it, is quite evident. This is an event designed for the members of the NMPRA, or anybody who so desires to build a plane. The rules were designed to keep the initial aims of the event, so why change them? As soon as we, the people for whom this event was designed, begin changing the rules, so we change the aims of the event. The plain man was included in the original set of rules and bylaws, now as the rules are changed, he is left out, and as Mr. deBolt pointed out, we lose interest and participation, hurting both ourselves and the event.

Therefore, even though it may take a little more time to build and finish a Goodyear racer, the compliments and pride of owning such a ship is well worth the effort. I should know, for I have a Shoestring (plans) and an Aeolus plus a Denight Special in the works. Please think this over; any comment would be appreciated.

John E. Weaver
Arlington, Virginia

Dear Sir:

At this time the AMA Contest Board is considering proposals for modification of NMPRA rules prior to adoption of "Goodyear" racing as an official event. I feel that some discussion is in order at this time and wish to submit my opinions which I believe to be basically in line with other flyers in the Gulf Coast area.

The main obstacle to a good "Goodyear" race is lack of entries. The present formula makes long, hard surface runways highly desirable, if not mandatory. Since at least 50% of the active fliers have short grass strips, theoretically we could double our entries by changing the formula to permit a competitive racer which could use the same facilities as popular aerobatic designs. These changes should include increased wing area, emphasis on engine low speed operation, cool fuels, and other things to lower the landing speeds and increase low speed maneuverability.

Many fliers fly Goodyear in addition to aerobatic competition. In this case building time is a primary limiting factor. The present number of appearance points forces the flier to spend an undue amount of time keeping his racer attractive looking. Appearance points should be reduced. The advantage for scale models should be left as is. This is a scale event and besides, it is a good method of deriving a take-off interval. We should strive to keep the airplanes simple, therefore, pressure fuel systems should be outlawed.

Don, I don't believe the Midwest/RCM proposals will work in practice and are not an answer to problems in the Goodyear event. They will not work because they are not specific, and when a plane is designed to win (which is the object of a race) it will be a monster. For example:

Class C:
Engine: S.T. 15 RR
Fuel System: Pen bladder. Hot fuel.
Guidance system: 2 channel proportional, no motor control.
Airframe: Ultra light. Very thin wing. Small wheels, etc.
Speed: 100 mph plus.

I think there will be room for a junior racing event when Goodyear is more generally accepted and when rules are expanded to limit the racers to reasonable designs. Simple rules do not make a simple event. Any popular racing event, whether it be auto, boat, airplane, or horse, is governed by rather complicated rules.

In closing I would like to say "Let's work on Goodyear!" Others will follow **naturally.** By the way, Don, we sure miss the NMPRA column in "R/C Modeler."

Best regards,
Paul Byrum
Ft. Walton Beach, Fla.

Your comments are well made, Paul. The Midwest-RCM Air Races are not a part of the NMPRA however, but simply a "fun" type of event for the sport flier. As such, it is catching on rapidly in many parts of the country, with several successful events already held. Insofar as the NMPRA column is concerned, we will resume it as soon as Goodyear fliers send in data and photographs on their ships and contests. At present, simply no material.

Sir:

I would like to say a few words about the article by Phil Kraft about the Goodyear event.

I'm glad that Phil admits he is a "lazy" modeler, so as not to confuse his words with that of an enthusiastic model builder. There are many people it seems, that are for the "simplified" airplanes. But when you simplify the event down to an airplane that can be built and flown for Sunday and pattern flying as well as racing, you are talking about an event that has no "special interest." The present planes take more work to build and are specialized, but you can tell by the envious look on the modeler's face that doesn't have one that there is a lot more attraction there than in any Class III plane on the field. Look at the spectators, they enjoy the Goodyear races more than any other event, which is evident by the applause after each heat race. What I'm saying is that Phil's rules only form a new class of "open pylon" and will not take the place of the fine, specialized, N.M.P.R.A. planes now flying.

I wrote a letter to the Fresno Radio Modelers Newsletter in which I said that I felt that "Mr. Average Modeler" could build and fly Goodyear. I still feel that the average modeler can participate but he becomes a better than average modeler in doing so. It all seems to be in answering the challenge. How do modelers get to be experts in any class? At the present time we have an event that does have the challenge. It seems to me that the people that are speaking out for new rules have not participated in Goodyear except to prove it is not practical for anyone other than experts like themselves. In fact, it seems to boil down to the fact that certain people were not the originators of the event and are trying to discredit the event.

As for safety, I think that the C.D.'s will have to take care of most of this problem. A Goodyear racer is no more dangerous than a class III plane. In fact you will find less flying over the crowd in Goodyear than in Open Pylon.

This to me proves that the pilots have better control of the Goodyear planes than does the average open pylon pilot. Where is this safety problem?

Phil seems to feel that the 525 sq. in. plane will be an answer in slowing down the planes. I have been told by several people with some aerodynamic experience that it would be possible to exceed the present speeds. There seems to be the feeling that the 525 sq. in. plane would be easier to land. Most of the present bad landings are caused by the pilot not having enough practice with the plane. See how many good landings you get with a 700 sq. in. conventional geared plane. Practice is the thing that cures bad landings, not more wing area. There is no reason for anyone who feels that he needs the extra area can't do so under the present rules. Actually, they could start out with a larger wing until they felt able to go to the minimum area plane.

I don't understand why the event needs to be brought down to the "average modelers" level. The average modeler has the ability to come up to Goodyear and he should do so if he wants to be a part of this "Gentlemens" event. The event is a *racing* event with class. There is always an element of risk in any racing, or for that matter, any competition event. I would like to think that pilot skill would have something to do with it too. After all, the real race pilots are professional and have many, many hours under their seats belts. So why shouldn't the same thing hold true in modeling? The expert that everyone talks about will win any event he enters until someone comes along that is better than he is.

I can't think of any way to handicap an expert that can be fair and let the "average modeler" win. It's up to the "average modeler" to get with the practice and become an expert himself. I intend to.

Gil Horstman
Las Vegas, Nevada

NEW A.M.A. PATTERN?

THE new rules proposal as outlined in the November R/C Modeler is receiving wide acceptance in the mid western area where members of the committee for its acceptance have been able to reach R/C Clubs and explain its operation and classes. We find that to realize its full worth some further explanation is necessary beyond the rules themselves.

First, many people see the proposal as a diabolical scheme to kill rudder-only flying. This is not true, as Classes I and II of the rules are expressly designed with only maneuvers in a flat plane or flat plane and inside looping maneuvers; to enable them to be accomplished with rudder aircraft in Class I; and rudder and kick up elevator, or the present Class I aircraft in Class II. These classes will open the door for escapement and single channel servo aircraft to again be acceptable competition aircraft. Galloping Ghost equipment should become an ideal beginner's system as it could compete in Classes I, II and III as the pilot's skill increases.

Class III, a common ground with the present Class III will give the advanced flyer a springboard into the more interesting and demanding Class IV. Aircraft with any kind of equipment will find a place in this contest spectrum. It is natural to assume that as the flyer progresses he will acquire more advanced equipment (as is now the case). The only thing these rules do, is give him a place to start contest flying without going to the expense of bi-simul reed equipment or proportional as is the case in the present Class I.

There is an extremely strong and logical feeling among our supporters that the new rules will lead to new and more dissimilar designs, as each aircraft will now be able to have an individuality of its own.

We of the committee feel that our sport will gain prestige through spectator interest which will certainly grow and be held with the great field of new maneuvers open to the Class IV flier.

If there are any questions on this new rule proposal address your inquiries to:

Al Seidowski, Chairman
Ted Blase, Vice Chairman
2117 Abbey Road
Cleveland, Ohio 44113
Telephone 216-SU-1-0102

Sir:

I notice that the latest issue of R/C Modeler has an article titled "Improving the A.M.A. Pattern." This one is supposedly geared toward instilling some competitive interest in the so-called Sunday flier.

Even though some of his ideas are good, the article, like so many others, really doesn't hit on what I consider the real problem.

The real problem is that the A.M.A. pattern is out of date; and what's worse, boring! It's so boring and monotonous that the contestants seldom watch a fellow contestant perform.

This year at the Glenview Nats, the contestants and spectators who were assembled among the tents were practically indifferent to the activity directly outside. Some even turned their chairs around so not to be disturbed while talking, sleeping and etc.

The largest congregation of model flying talent ever assembled in one area, and I've seen more interest at an Edsel owners reunion.

O.K., so why don't we wise up? Isn't the name of the game "model airplanes"? Let's consider a real stunt contest. A competing stunt pilot submits a prescribed flight plan to the judges which may include any series of maneuvers in any sequence he desires. He is then judged on complexity and perfection of each maneuver performed, compliance with flight plan, framing, and symmetry of presentation, all in a maximum time limit. In other words, he is judged on his total flight from taxi to touchdown, not just a particular segment of flight which is judged only when the contestant is ready.

The stunt pilot's performance is interesting because each pilot can create based on his own individuality. There is no end to the variations that can evolve.

Also, this would generate fresh model designs. Models might be designed to perform a series of maneuvers with a minimum loss of altitude (climbing back to altitude can cost points). Other models might be designed to fly slow enough to complete a series of maneuvers without leaving a particular framing area, and so on. . . .

I don't profess to have all the answers, but if you want a god start toward improving the A.M.A. pattern, just watch the real ones. After all, that's what makes Goodyear model racing fun.

Darrell G. Bobzin
Des Moines, Iowa

A PLEA FOR CREATIVE R/C DESIGN

Sir:

I've been a modeler for about fifteen years off and on. One of my "off" periods lasted for several years, and I had no intention of ever building another model. That is, until I encountered a model belonging to a friend — a huge, 8-foot thermal soarer with unusual lines and a streamlined grace I hadn't seen before, even in the old Curtiss Condor. I was hooked again. The ship was Don McGovern's "Imperial," and was my first R/C model.

Today, when my interest lags, and the problems and responsibilities of everyday life leave me with little energy or desire to build, or collect all the necessary paraphernalia and drive twenty miles to the nearest good flying site, I find it is the **different** model — the unique, the truly beautiful, or the really spectacular ship that picks up the flagging energy and gives me something to aim at and to look forward to — that elusive perfection of line and grace and function that is the real motivation and goal of all modelers.

My point is this: Modeling, our kind of modeling, will never be really vast in its appeal. It's too painstaking, and too much work for the kid raised on (at best) plastic control line models and slot cars. How many times have you heard from an admiring audience — "I had one of those plastic control line things once. It was fun, but it broke, and I sorta' lost interest," or, "I race slot cars. **They**

don't fly off and get lost." Meanwhile, the kid stands there, mesmerized!

I believe that the future of a truly rewarding hobby depends to a great extent upon the availability of magazines that present not only the small, easily built and easily trimmed "cute" ships, and not only the minor variations in Class III design that come along occasionally (and often mean so much in Class III work), but the huge, majestic thermal soarers; the multi-engine, flap-equipped monsters; the seaplanes; ski-planes; helicopters, and all the other attempts at beauty and originality that catch the eye of modelers young and old. **These** are the articles one sees preserved in scrapbooks, or taped to a kid's workshop wall, or in the bottom drawer of a busy executive's desk. These are the articles that start the 17-year-old modeler stashing away the loot for that proportional rig.

Only through radio control can true realism in flight be achieved, and only by seeing other's attempts to achieve these goals can we judge our own, and be able to see where to go next in our own modeling.

Gentlemen, this is a plea to see a little more "dream stuff" in your magazine. I occasionally see a really imaginative idea in the pages of RCM, which is why I continue to read it. I read most of the articles just to keep up with other's ideas on design, structure, new gear, etc., but I am certain that somewhere in America, or in the world, or even in your own county, someone has come up with a real lulu of a ship. Not necessarily new in principle, but fresh and new in artistic intent and execution — something that will set us all back on our ears and give us something to shoot at.

James B. Miller
U.S.S. Sabine
Istanbul, Turkey

COMMERCIAL FLYING SITE

Sir:

For many years I've been outside of the U. S. but have managed one way or another to keep up with the coming and goings on of the model aircraft world to some extent. The one thing that bothers me very much at present is the complaints being voiced all over the so called civilized world about the noise of model aircraft engines and as a result many flying sites being lost.

I say I'm concerned about this being on the other side of the world on the edge of the jungle in the heart of Thailand because I'll be returning to the U. S. to settle down in about 2 years. At that time if not before I'd like to open up my own flying field, say about 10 or 20 acres as a business. I plan on returning to the area of Southern Wisconsin or Northern Illinois.

So my question to you or your readers and many model flying friends and acquaintances that I've come in contact during the last 25 years of model building, is — Would a venture like this help the modeler or make a good business?

My idea is a large site of land preferably bordering on a river or lake with a camping site, hobby shop and flying field for all types of model flying.

I would like to hear any comments, suggestions and correspondence from any one interested.

Thank you,
C. E. Brooks
Air America AMD
APO, San Francisco
96237

ROOSTERTAIL

(Continued from Page 52)

1⅞".
Drive — Straight.
Fuel — "Speed Fuel."
Radio — Orbit, rudder throttle.
Remarks: None.

2nd Place, Class D: Time 232.48 seconds.
Douglas Nystom, San Diego Argonauts.
Engine — Supertigre .35, stock prop submerged — all wood H-3, D. 1⅞", P. 2½".
Drive — Sorrell 10.
Flywheel — Octura.
Fuel — 25% nitro, synthetic oil.
Radio — Min-X 6, rudder, throttle, kill.
Remarks: ¼" Birch plywood frames, spruce stringers. 1/16" birch plywood skin and 4 oz. Glass cloth on bottom and sides. Original design ski-boat.

1st Place, Class E: Time 164.05 seconds.
Ron Buck, Minute Breakers, Lombard, Ill.
For boat details refer to first place, Class E in 1/16th above.

2nd Place, Class E: Time 197.72 seconds.
Randy Vitek, Marquette R/C Boat Club, Chicago.
For boat details refer to 3rd place, Class E 1/16th above.

3rd Place, Class E: Time 203.73 seconds.
Roy Miller, Minute Breakers, Lombard, Ill.
Engine — Rossi .60, stock.
Prop — Octura #55.
Drive — Articulated parallel, Octura.
Fuel — Missile Mist.
Radio — Orbit 3+1, rudder and throttle.
Remarks: White Heat 4-60, plywood and epoxy glue.

1st Place, Class F: Time 166.19 seconds.
Ron Buck, Minute Breakers, Lombard, Ill.
For boat details refer to 1st Place, Class F 1/16 above.

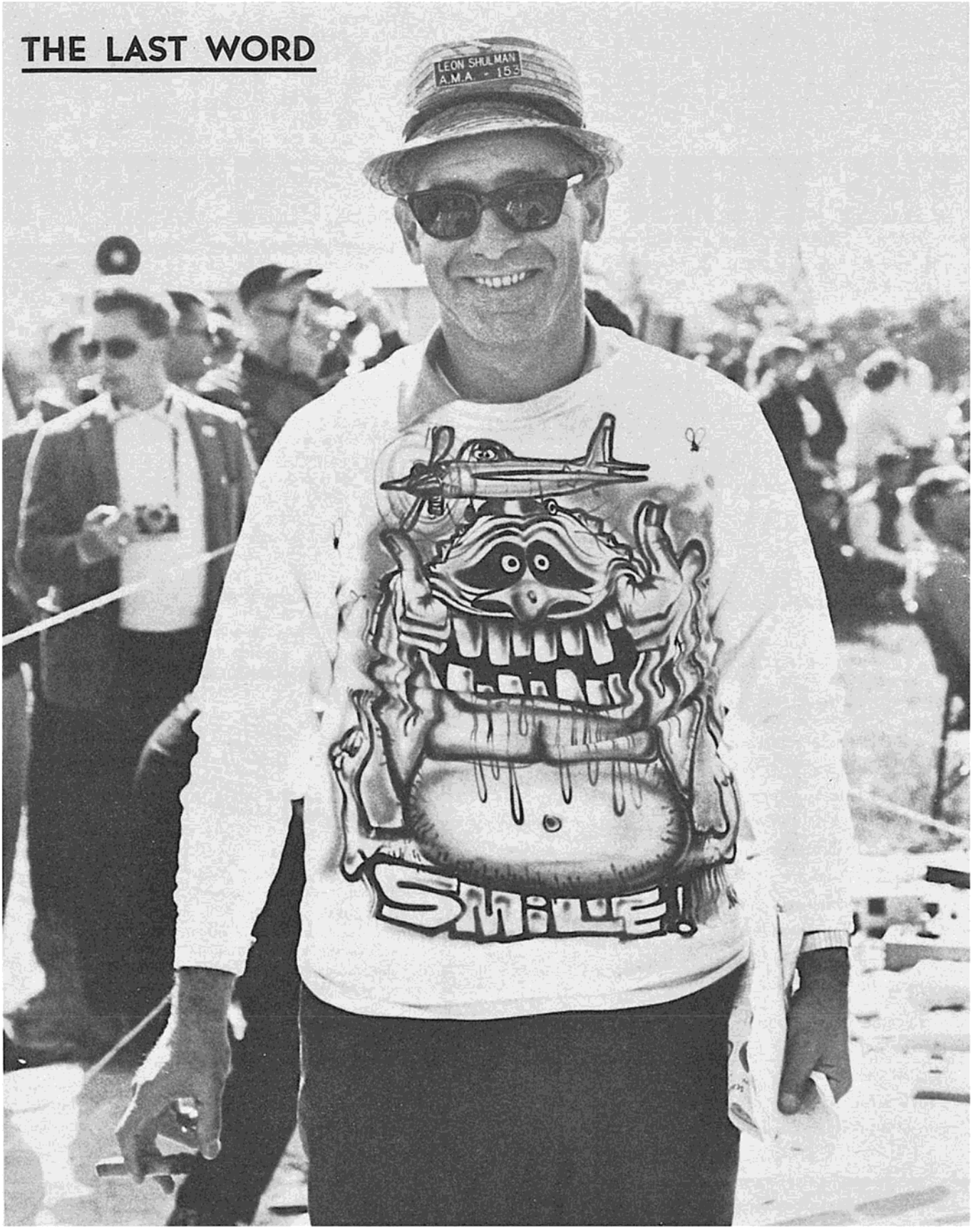
2nd Place, Class F: Time 186.57 seconds.
Marianne Preusse, Minute Breakers, Lombard, Ill.
For boat details refer to 5th Place, 1/16th above.

3rd Place, Class F: Time 203.58 seconds.
Fred Goodman, DeVry Dolphins, Chicago.
For boat details refer to 5th Place, ¼ mile oval above.

In the next Roostertail we will present all of the current IMPBA records, the St. Louis Regatta results, and some rule change proposals.

His Plans * H.E *

THE LAST WORD



The last word in men's sportswear for R/C sports enthusiasts. Leon Schulman models this original creation (?) while serving as contest director at the Central Jersey R/C Eastern States championships. Photo by Nick Samardge.

Greece City Xanthi by Night

Old City Xanthi Street

Old City Xanthi House

Xanthi Central Square

Xanthi Lake Vistonida

Xanthi River Nestos

Xanthi Old House M.Xatzidakis

Hisat * H.E * Plans