

This lifelike Fairchild monoplane was built by Alfred Rusher of Olympia, Washington. Wing span is 8 feet 8 inches. Motor a $\frac{1}{4}$ h. p. James.



Over the waves. Joe Dellaire's 9-foot webfooted gas job takes off at a Detroit hydro contest. Note how model is planing on pontoon steps.

Model matters

Gordon Light's Dope Can. Moon's On The Field.

THE DOPE CAN. (By Gordon S. Light.) Stop watches for contest timing had always been a problem for the East Bay Aeroneers of Oakland, Calif. So they cooked up a special contest for club members with a fifty-cent entry fee and paid-up dues. In this way they were able to distribute five stop watches as prizes. Since it was a closed meet, the watches are still in the club, and the flight-timing bottle neck for large invitation meets has been cleared away.

Model building continues to gain recruits among the recruits. The Air Corps News Letter reports that the model club of the First Materiel Squadron of the Sixteenth Air Base Group, France Field, Canal Zone, has been working on a couple of "hush-hush" designs behind closed doors which should soon be in the air.

If he'll stop mumbling formulas and using that slide rule, we'd like to tell Professor Herr Foil that his "Flipper" glider in the September issue logged a flight of over a minute for Edwin Smull of Wilton Junction, Iowa. We wouldn't dare tell the prof that Douglas MacIntosh and Phil Klintworth of Lansing, Mich., do not believe he's a real person. They suspect some well-known model builder is merely using the name. Such nonsense!

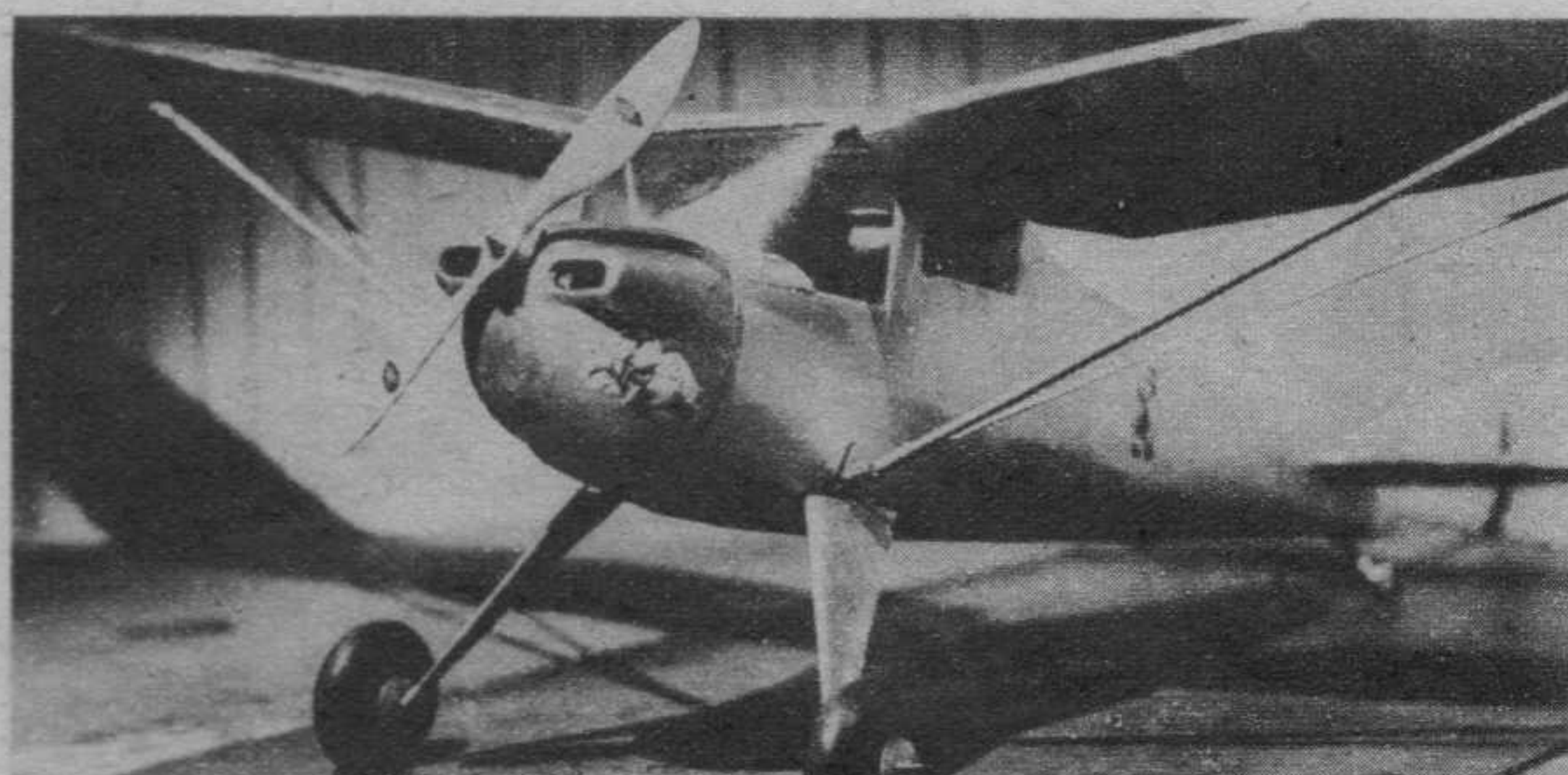
September Dope Can cast plenty of doubts about the model effort of the Tulsa (Okla.) boys by saying the Kansas City crowd took away all the prizes at the Tulsa contest early in the summer. That was the Kansas City side of the story, and it didn't make the Tulsans feel very happy—as Bill Eddy of the Cloud Chasers pointed out. He said if we had looked at the complete results we'd have noticed that the local (Turn to page 50)



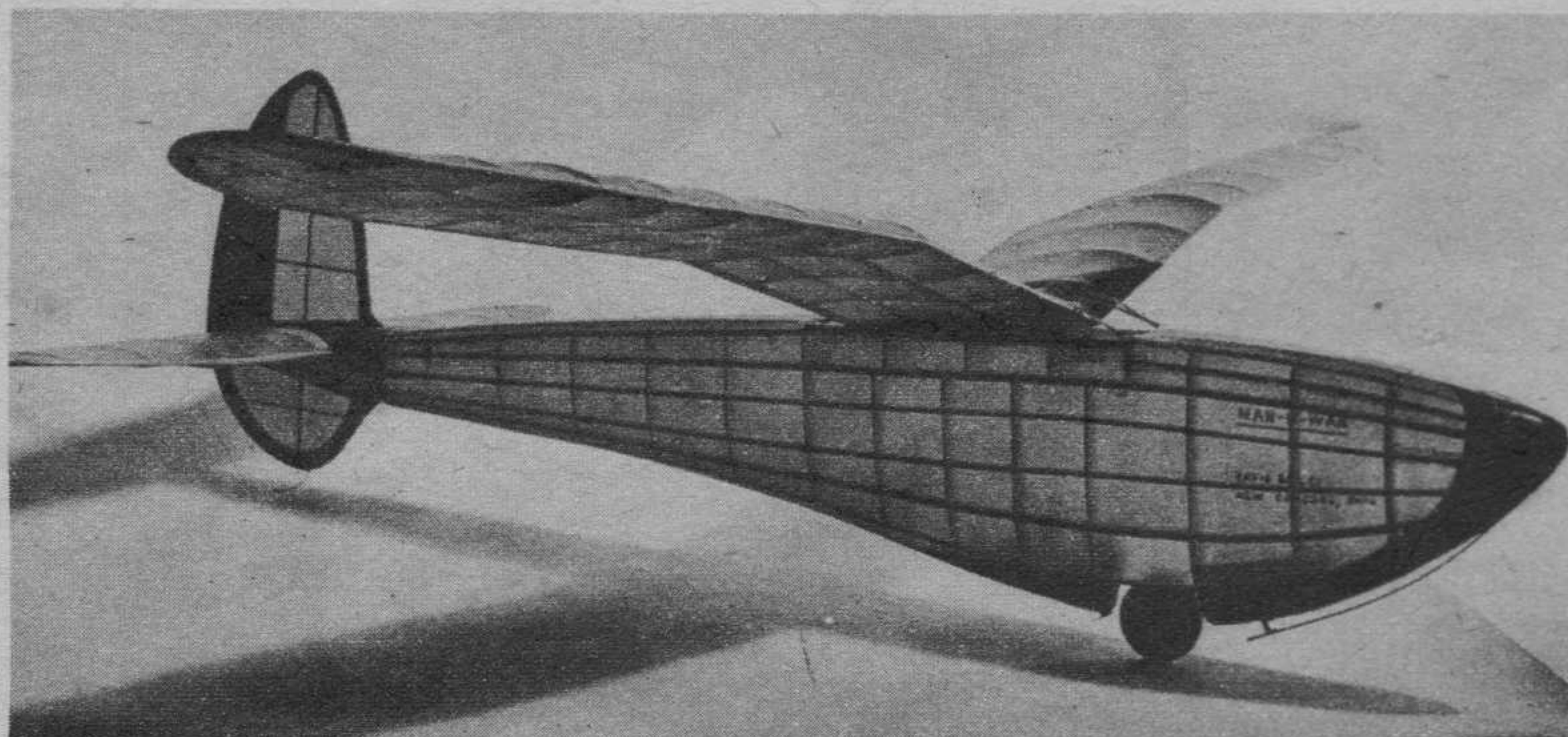
An Atom engine flies this novel biplane gas job. Edward Voss, its builder, reports some exceptionally fine flights.



The Buzzard Bombshell seems more adaptable to odd-size ships than other designs. This A Class job uses Atom.



"Why Not Scale Gas?" in recent issue prompted Frank Drzymala to send photo of his gas-powered Luscombe.



Super Soarer, by David Bailey, Cleveland, is really converted Cahill Clodhopper. Has made hundreds of flights, both hand and tow-launched.



Still another scale gas model. This five-footer is a Rearwin Speedster. It has movable controls, plush upholstery, and detachable wing panels.

SPORTSTER

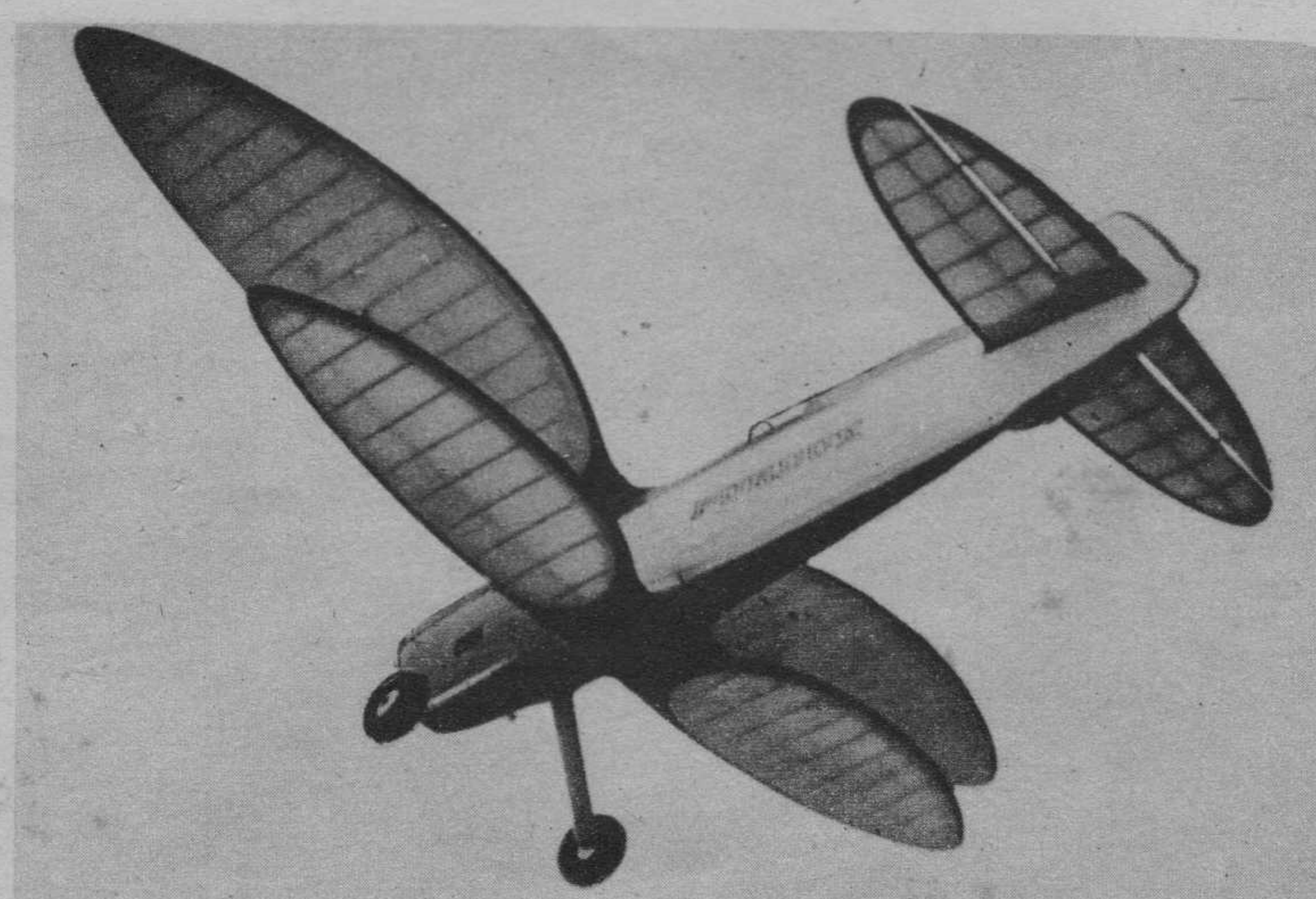
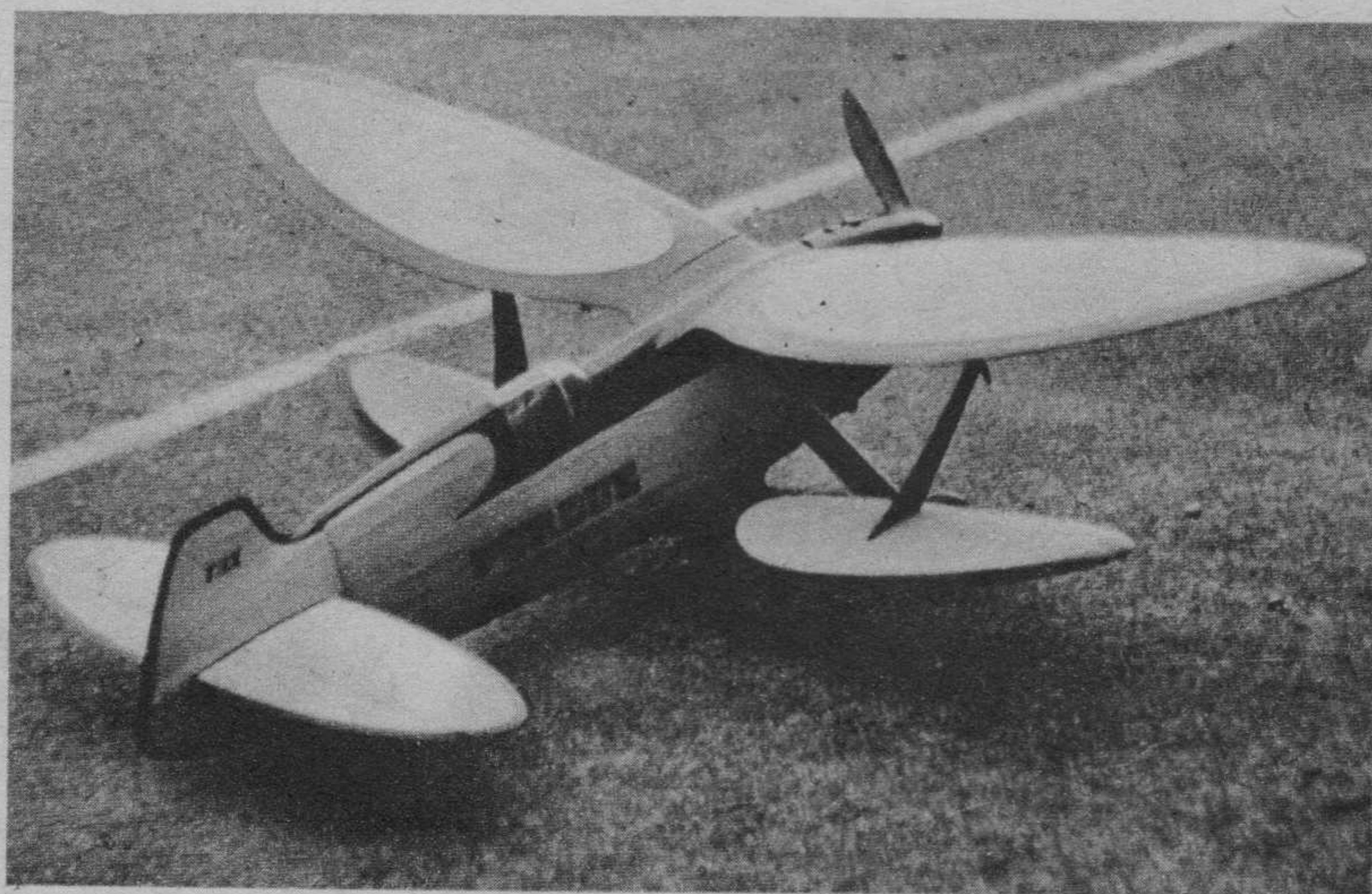
BY FRED TUXWORTH



For those who like gas models to look like real airplanes, this sturdy performer is just about tops.

THE construction of the fuselage is quite conventional. It is built in halves and assembled in the usual manner. No full-size layout is necessary. By placing the cutout formers and keel strips, which are given full size, in their respective positions on a reference thrust line, the lines of the fuselage are automatically decided. The heavy dashes on each former template indicate its position relative to the thrust line. All formers and keel strips are of $\frac{1}{16}$ " medium-hard sheet, except where otherwise specified. Formers F-10, F-11, F-12 are of double thickness (laminated with the grain running at right angles) above the thrust line to give strength to the wing stubs. By drawing two reference thrust lines and position lines for the formers, both halves of the fuselage may be built at the same time.

Place the formers and keel strips in their respective positions on the thrust line. The keel strips should project $\frac{1}{16}$ " above and below each former. Neglect all hatches and removable sections. These are cut away after the fuselage halves are assembled. The forward $\frac{3}{16}$ " square and $\frac{1}{8} \times \frac{3}{16}$ " members are of hard balsa and are made flush with the edges of the formers with a sandpaper block. The fairing strips are $\frac{1}{16} \times \frac{3}{16}$ " medium balsa and are allowed to project $\frac{1}{16}$ " beyond the edges of the formers so that the covering will not contact the formers—that is, except where a former is adjacent to the removable section or at (Turn to page 56)



Top—Best-looking model of the year. Above—Biplane wings may be fitted.

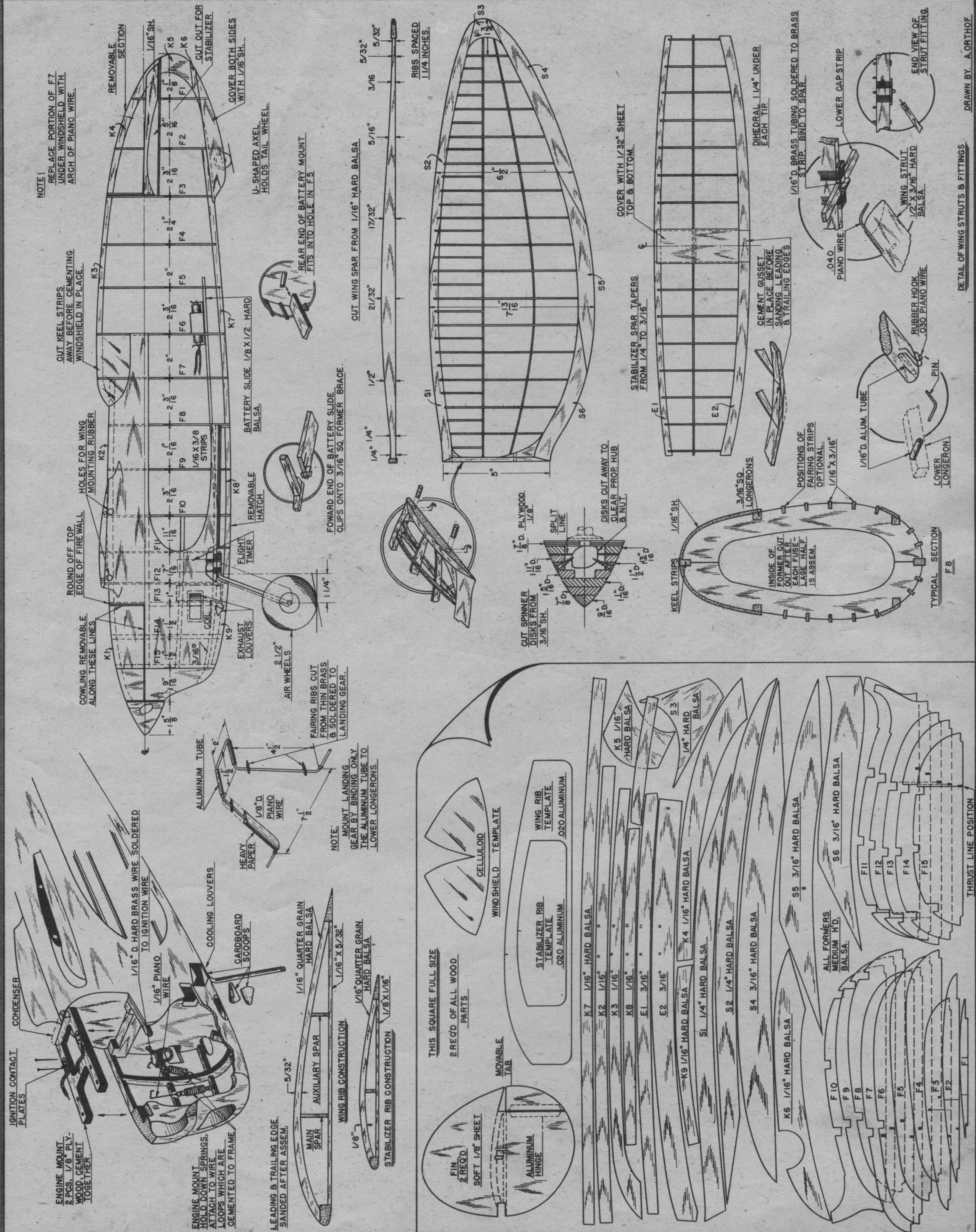
This gives you a good idea of the Sportster's size. Note the optional tail.

FULL-SIZE PLANS one sheet 22½ inches x 28½ inches

No more need to enlarge plans or to make your own working drawings. Now you can get full-size plans identical in detail to the scaled-down drawing on this page. This is one of a series. Be sure to tell your friends and fellow club members. Only a limited number of these full-size plans will be printed, so order immediately. Send ten cents per plan to

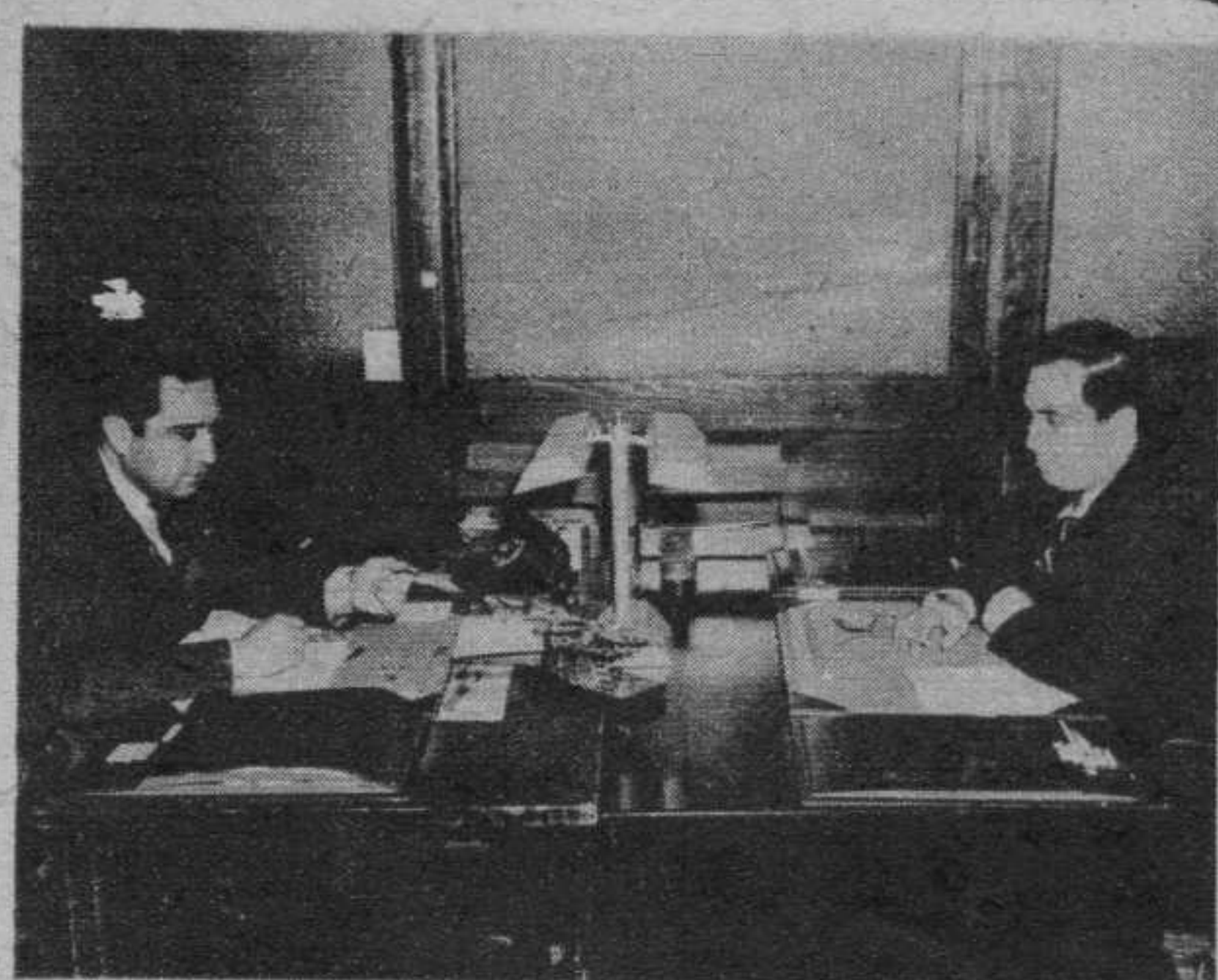
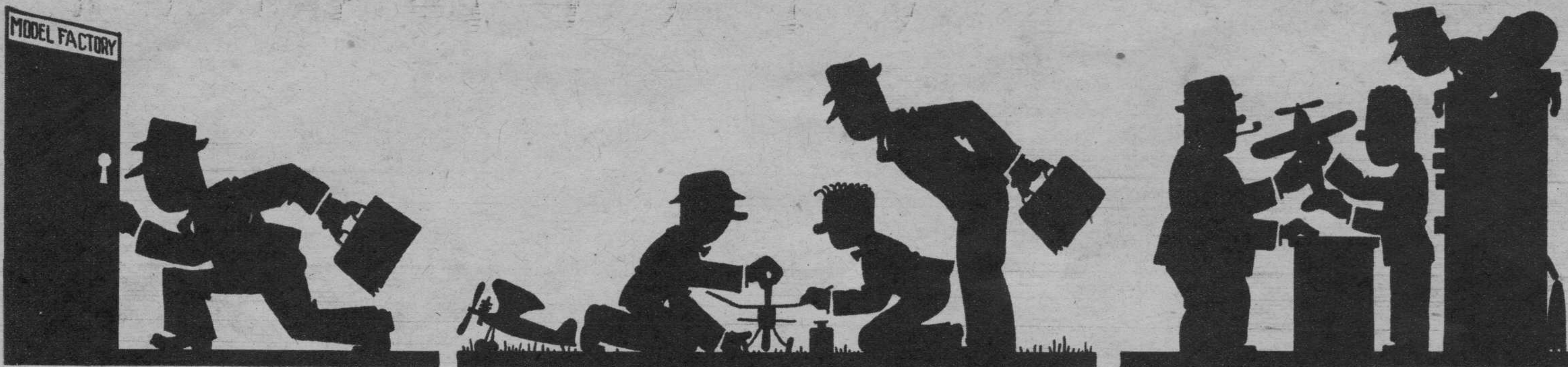
AIR TRAILS FULL-SIZE PLANS, 79 Seventh Avenue, New York, N. Y.

SPORTSTER



DETAIL OF WING STRUTS & FITTINGS

DRAWN BY: A. ORTHOF



The Polk brothers, Irwin, left, and Nat.

HOBBY MART

WITH a background of more than ten years of model aviation work, Irwin Polk, while editor of a now-discontinued model airplane magazine, opened Polk's Model Craft Hobbies, Inc., at 421 Seventh Ave., in the heart of Manhattan, in 1935. The New York opening coincided with one in Newark, N. J., of brother Nathan Polk's store, though there was no connection between the two.

After a year of operation, Nathan found that he could do better selling on the road, so he closed his shop and covered the Eastern States for several model manufacturers. In the meantime, the New York store entered the wholesale field and moved to larger quarters at 429 Seventh Ave. Things began to hum, and Nathan joined the firm to handle the rapidly expanding wholesale branch.

Being a former (Turn to page 59)



New York store is one of the largest.

"DON'T QUOTE ME!"

Talk of the trade as overheard in factory, field, store.

FRANK ZAIC of Jasco is still as far away from completing the Year Book as he was more than a year ago. He is now busy concentrating on his model supply business and the manufacture of insulated balsa boxes for meteorological balloons. . . . Stanley Stanwick, indoor national champ, formerly of Boston and a member of the Junior Aviation League, is in the navy now and is stationed at Lakehurst, where he has been granted the sole use of the dirigible hangar for testing his indoor ships. Watta break!

My pal of the road, Richard W. Mair, representing Rogers' Motors, American Junior Aircraft and Model Associates, came as far East as Pittsburgh on his recent swing, and old man Tabb spent Labor Day week end in New York with Ideal Model Co., and Marine Model, whom he represents in addition to Austin-Craft. Pass on some of the dope you've come across in your travels, boys! . . . The Capitol Model Airplane Co. of Brooklyn is about to hit the market with a new 42" Brewster to round out their \$1 line of flying scale jobs, and is also working on a scale Class B gas model. . . . Polk's Model Craft Hobbies, Inc., have absorbed the Hobby Craft Stores, Inc., one of the pioneer hobby stores of the nation.

Louis Garami, vest-pocket gas-model expert, has perfected a new Atom-powered job that is super! The plans of it are to appear in the near future in Air Trails. He hasn't dared fly it except at the crack of dawn before sunrise for fear of losing it before he has quite a number of them built and plans completed. . . . Sis Frisoli of Scientific Model Airplane Co. has Clipped to Bermuda to visit brother Harold, who is serving Uncle Sam there. . . . The Marvel Manufacturing Co. of Long Island,

makers of those 25-cent scale model tanks, has just come out with three 50-cent motorboat kits. . . . Frank Nekimken of the Ritz Manufacturing Co., makers of gas-model propellers, has just returned to Chicago from a successful Eastern selling trip, during which he introduced a new line of low-priced tools and folding gas-model propellers which are to be marketed by his firm. . . . Fred and Amby Summers of the Summers Hobby Service in Chicago were in the East recently, re-establishing contacts with their suppliers and picking up new lines.

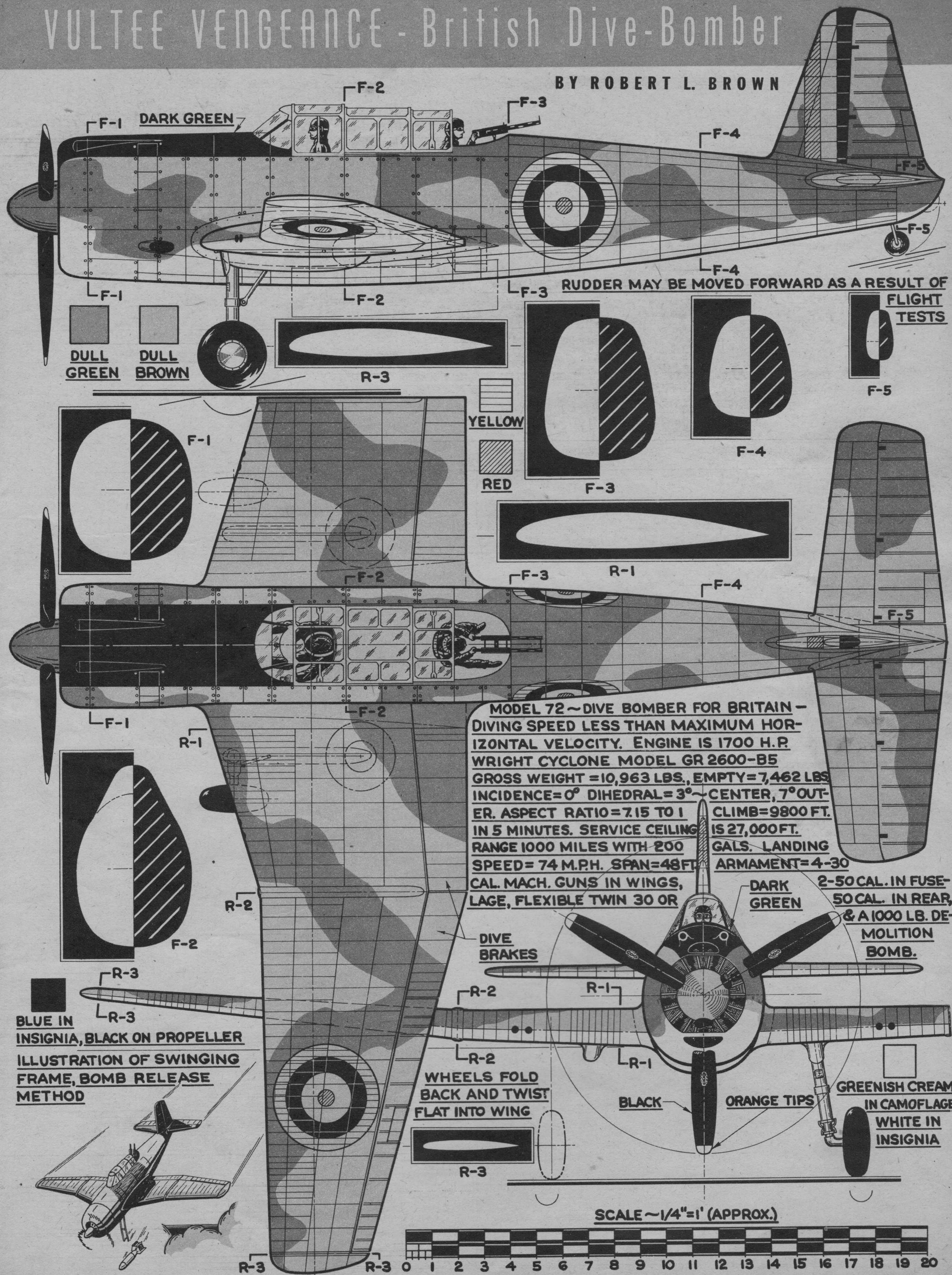
Their inability to obtain tissue and rubber, together with the increased cost of board for boxes, balsa wood and metal parts, may force some of the smaller model manufacturers out of business for the duration. These conditions are affecting tremendously the larger manufacturers, also, and playing havoc with prices of kits in general. Unfortunately, so many of the manufacturers do not or are not able to give advance notice of price changes to the trade. Model builders get upset no end when they come into a store to purchase a kit only to find that the price has been advanced. I do hope that the industry will be able to overcome the bad effect of this situation and somehow smooth the ruffled feathers of the model builders. . . . While Ohlsson and Rice Mfg. Co.'s production is greater than it ever has been, deliveries have not been improved, engines being rationed out to distributors. It seems Ohlsson is trying to make his present supply of raw materials last as long as possible. . . . Super Cyclone simply can't get the materials to manufacture their engines in the quantities they used to. They promise delivery in ninety days, and because they sell direct to the consumer, ask buyers to establish priority by send- (Turn to page 62)



BY THE TRAVELING SALESMAN

VULTEE VENGEANCE - British Dive-Bomber

BY ROBERT L. BROWN



CONDUCTED BY AL LEWIS • EXECUTIVE DIRECTOR

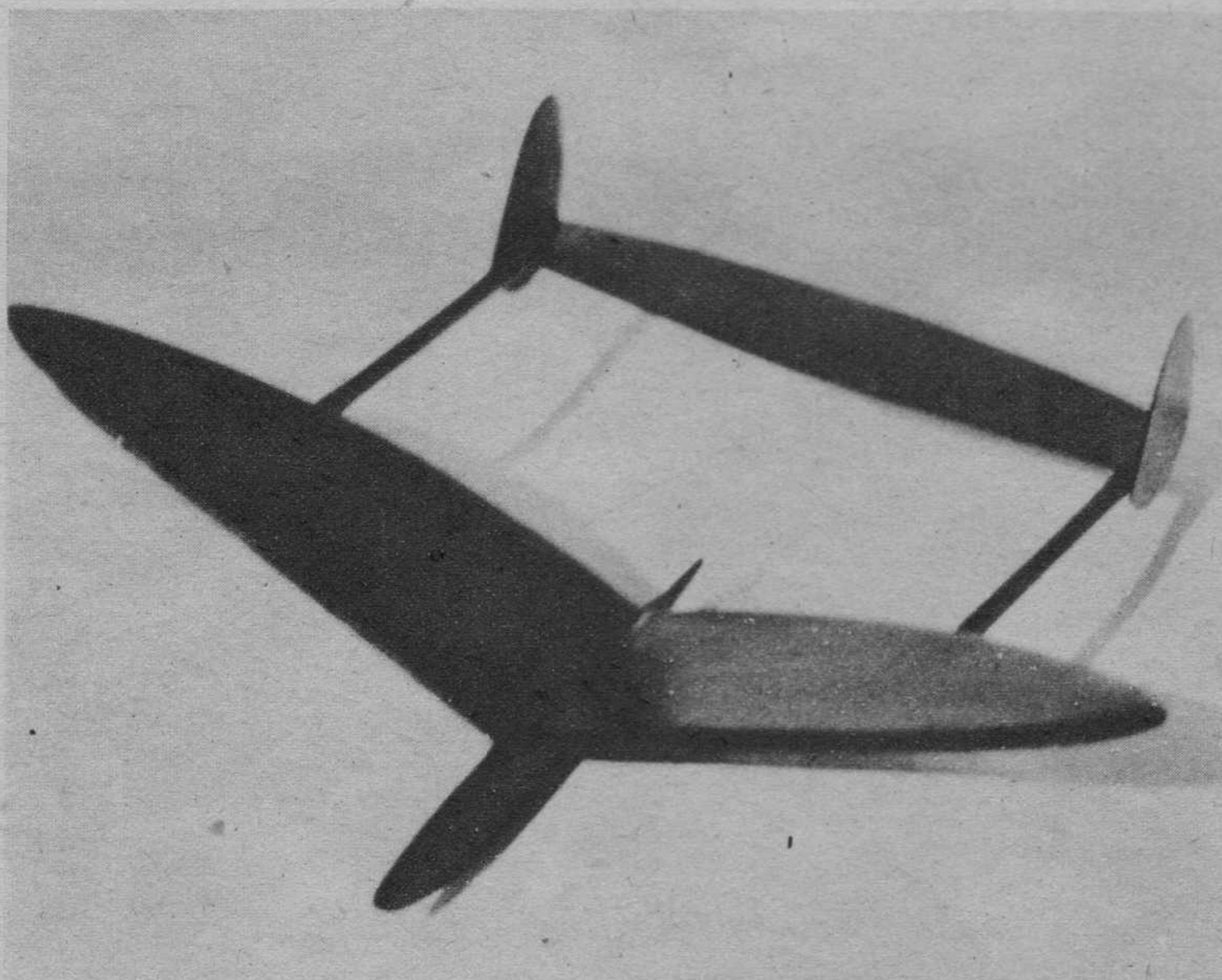
★ ★ ★

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(Turn to page 61)



BY AUSTIN RINALDI

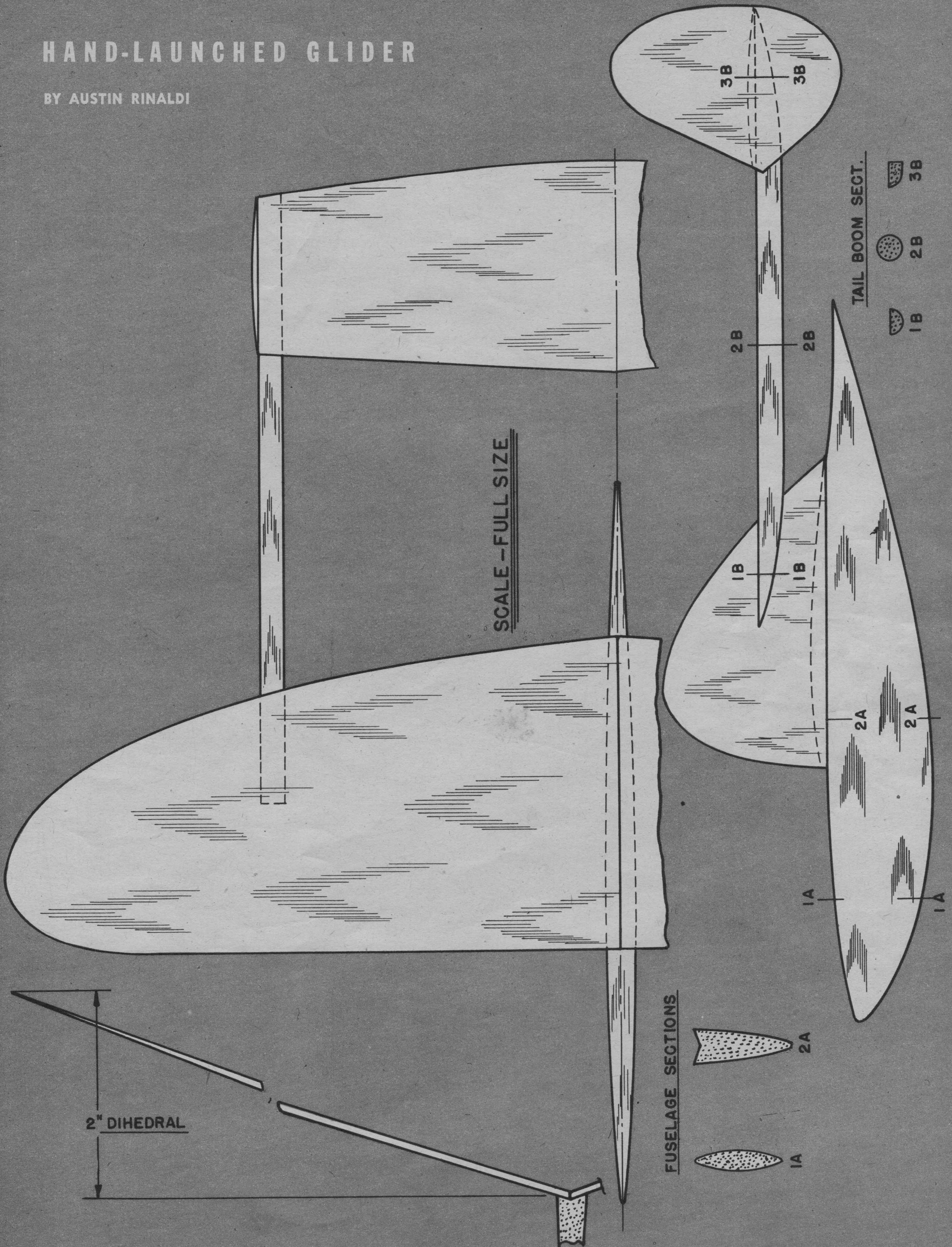


ARE you looking for something different to build in hand-launch gliders? Well, here is the ship for you. It's different, attractive, and turns in good flights. It is of simple construction and costs little to build. This ship can be built in a night and is easily adjusted. It is like an ordinary glider, but with two booms extended from under the wings. It is adjusted as any other ship and built in the same manner, so if you have ever made a glider, you can turn out this one without any trouble at all. Its high tail and twin rudders enable it to be catapulted, by adding a wire hook under the body. It's just the ship for all-around flying. It flies well when hand-launched, catapulted, on a calm or breezy day. So look at the plan and bill of materials and start building.

To get started, cut out the patterns and use them as they are, for plans are full-size. Trace the wing pattern on a sheet of $\frac{1}{8} \times 3"$ medium-hard balsa and sand to airfoil section given on plan. Glue in dihedral, which is two inches, and allow to dry; then finish wings with either clear or colored dope, or glider polish, whichever you prefer. Next, trace body pattern on a sheet of $\frac{3}{16}"$ medium-hard balsa and sand to cross section indicated on plan. Rub in a coat or two of glue and polish. Glue the wing on the body and set aside to dry. Cut out the two booms, which are $\frac{1}{4}"$ square, sand to cross section, also given on plan, and glue them in place on the *(Turn to page 63)*

HAND-LAUNCHED GLIDER

BY AUSTIN RINALDI



VOYAGER

BY JAMES NOONAN



The Voyager is a simple model to build. Design of the real plane is a natural for a model.



Stinson's 1941 development of the famed 105 makes a trim high-performance flying scale model.

SO I decided on the Stinson 105 for a flying-scale model. Completed, the ship was fairly heavy ($5\frac{1}{2}$ ounces), but balanced nicely and was quite stable in test flights, though tricky to adjust because of the scale tail surfaces. I would suggest that you use the larger flying stab, shown on the plan, if you want to get long flights.

CONSTRUCTION

For the fuselage, lay out sides, using medium balsa for $\frac{1}{8}$ " square longerons and stiff balsa for uprights. Doors may be made to open, if you wish. If so, make them fit snugly. Assemble the sides and add the formers on top and bottom. Cut Former A from soft $\frac{3}{8}$ " sheet, all others from $\frac{1}{16}$ " or $\frac{1}{20}$ " sheet. Now for some hard work. Using $\frac{3}{32}$ " very soft sheet, cut strips $\frac{1}{8}$ " $\frac{3}{8}$ " wide, for use in planking the cabin. On the real ship this is metal-covered. Begin by planking the top, forward of the instrument panel, then the bottom. Fill in all the cracks with scraps, and sand smooth. The sides are planked with 2" sheets of very soft $\frac{1}{8}$ " sheet. Plank over the windows and cut them out later. Now add the top, bottom and side stringers. For a neater job sand each stringer to a triangle shape so only a small point will touch the covering. Cut the tail block roughly to shape, then carve and

sand to fit the contour of the fuselage. It may be hollowed out for lightness. Attach the rear hook solidly and cement the block in place. Add two stiff wing ribs, spars, and rib X to the top of the cabin. Cover the area shown with $\frac{1}{32}$ " sheet that has been sanded smooth. Add the $\frac{1}{16}$ " aluminum tubing braces shown inside the windshield. To strengthen the landing gear, cut, bend and attach No. 12 wire as shown. Use scrap balsa to build up the struts and fillet, sand smooth, and rub cement into the wood, sand and repeat until a perfectly smooth surface results. Add instrument panel.

Wheel pants are built up of $\frac{1}{8}$ " sheet. Note that the walls must be very thin in spots, to take a scale-size wheel. Carve the opening on the bottom of the pants as shown on the drawing. To prevent splitting, coat inside and out with cement. Do this repeatedly as you work, and finish the outside of the pants to a high luster. $\frac{1}{4}$ " air wheels or hardwood wheels may be used. The wheel must fit very snugly. Make a tail wheel fork from a bit of tin can, solder it to a bit of piano wire and attach firmly to the fuselage. Attach tail wheel, using a pin or axle.

Cut paper templates of top, side, front and rear of the engine block. Select a medium block of balsa to fit these templates. (Two blocks may be used.) Using the templates, (Turn to page 60)

RIB SPACING IS
TRUE SCALE

BAMBOO

AILERON
OUTLINE

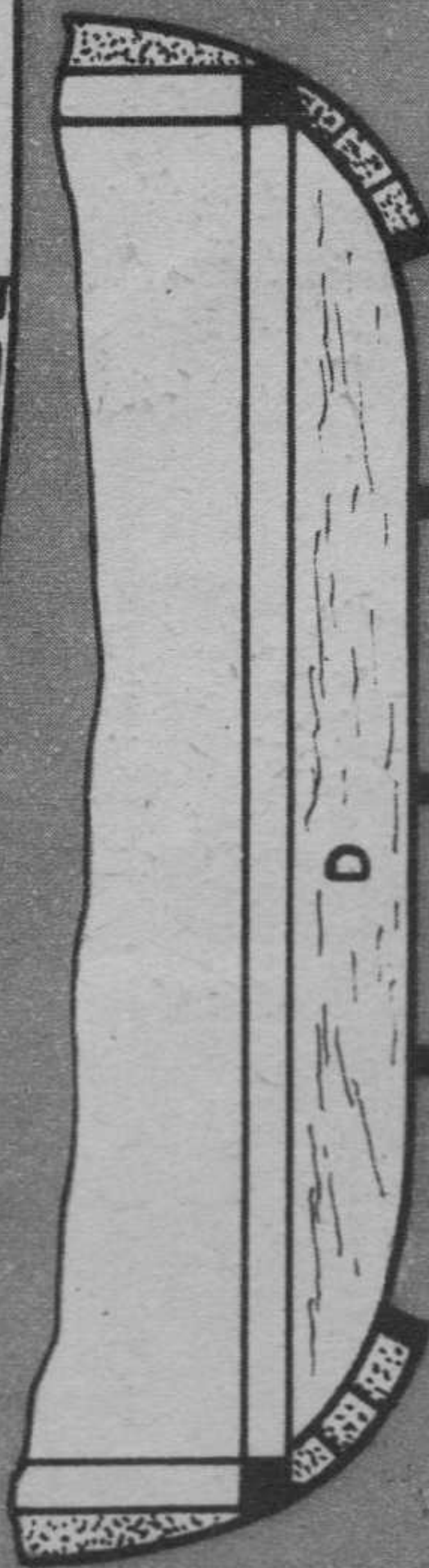
$\frac{5}{16} \times \frac{3}{32}$ "
TR. EDGE

FLAP
OUTLINE

$\frac{1}{32}$ " SHT.

$\frac{1}{8}$ " SQ.

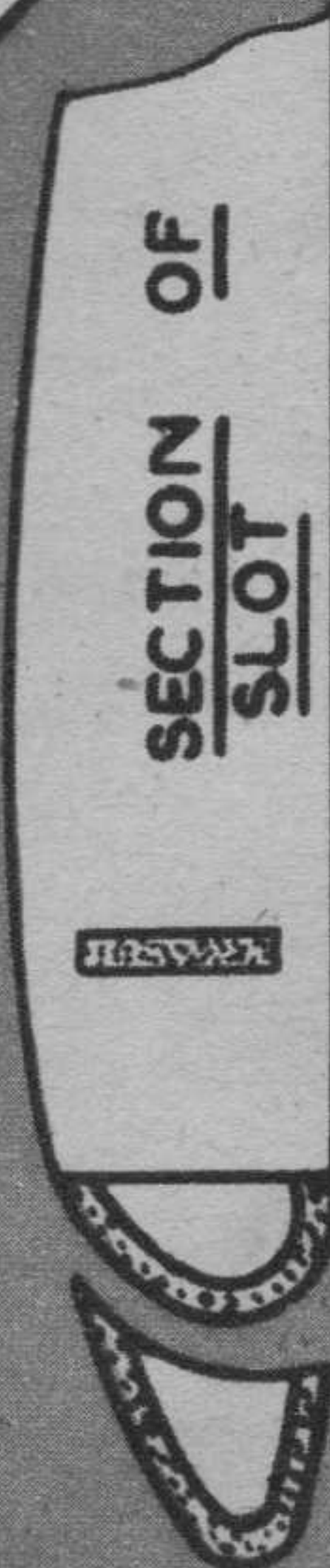
NAVIGATION
LIGHT



BOTTOM OF PANTS



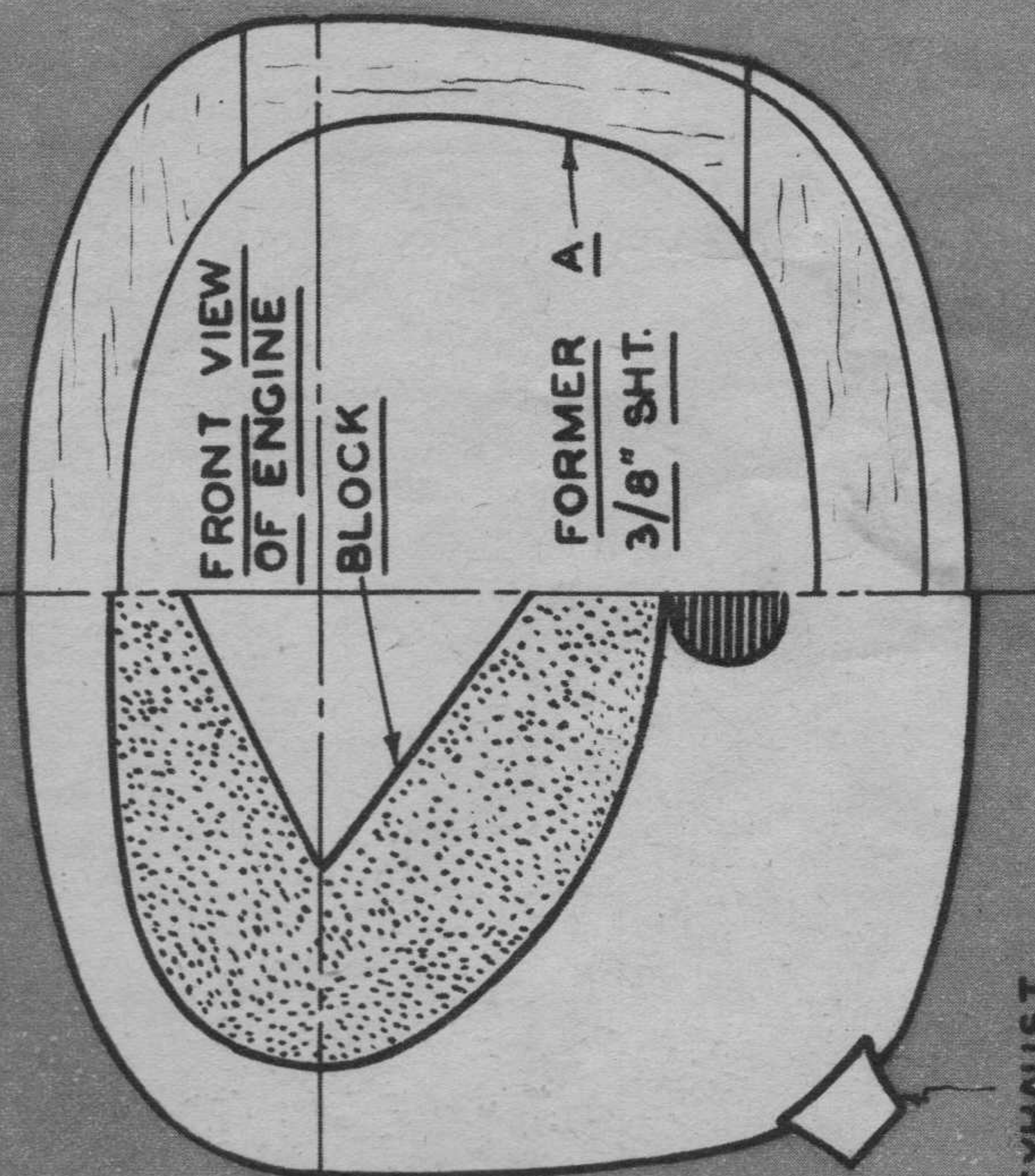
LOUVRES



SECTION OF
SLOT

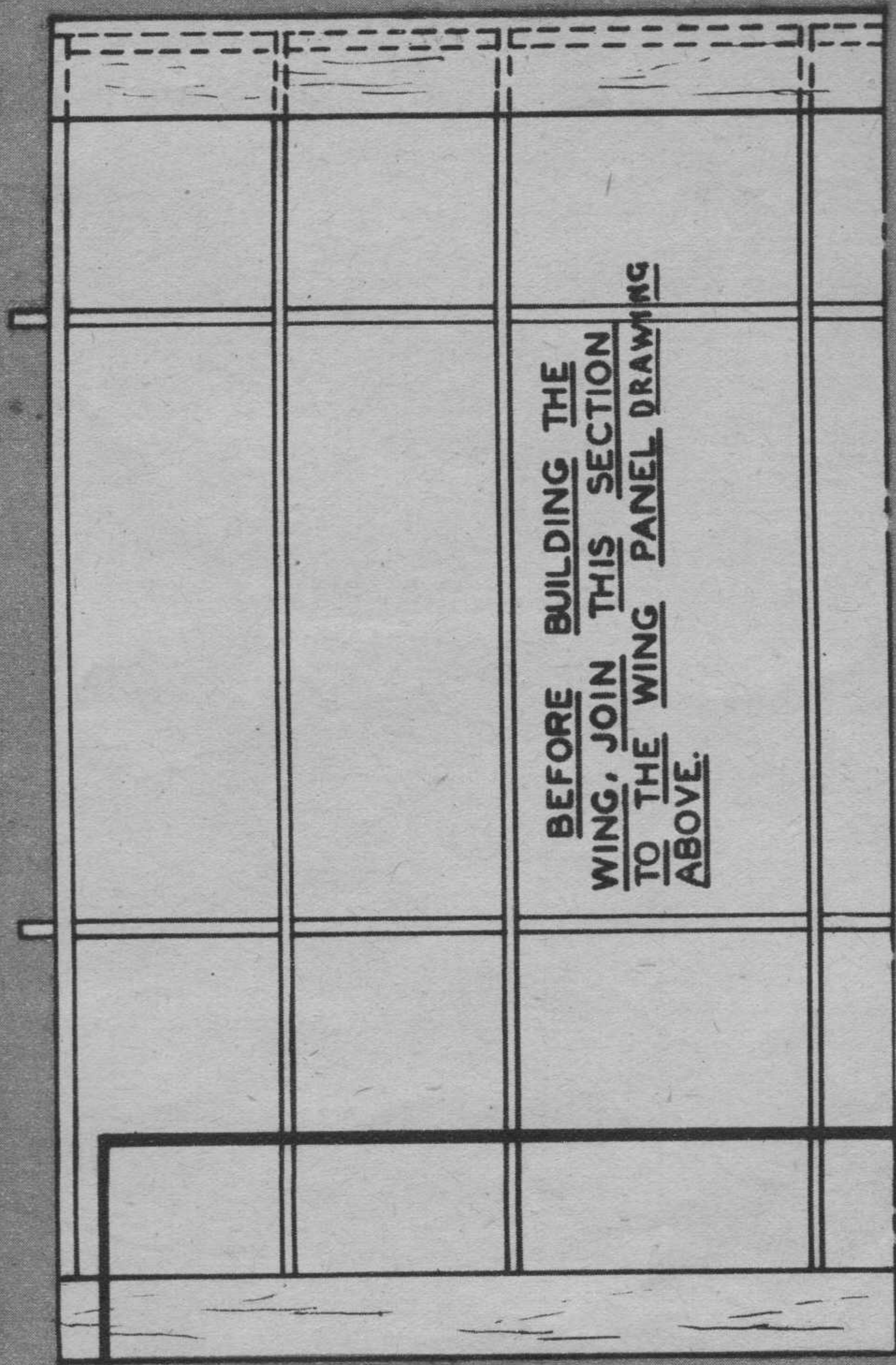
NOSE
BLOCK

EXHAUST

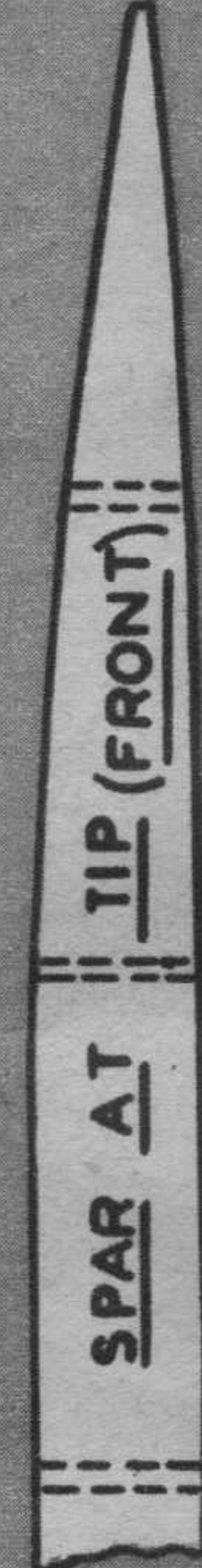


FRONT VIEW
OF ENGINE
BLOCK

FORMER A
 $\frac{3}{8}$ " SHT.

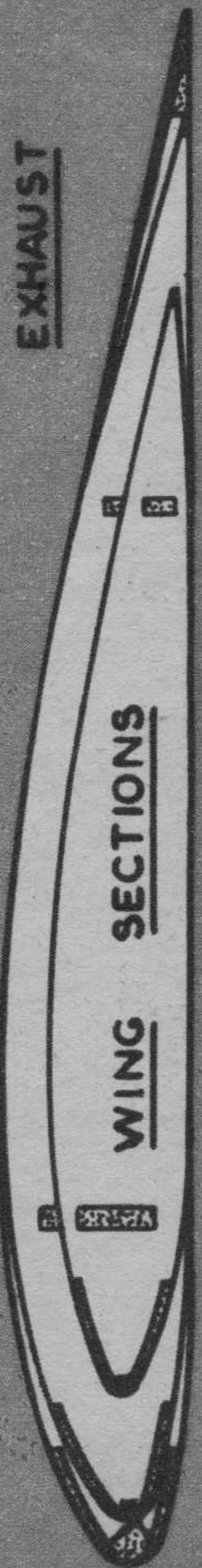


BEFORE BUILDING THE
WING, JOIN THIS SECTION
TO THE WING PANEL DRAWING
ABOVE.



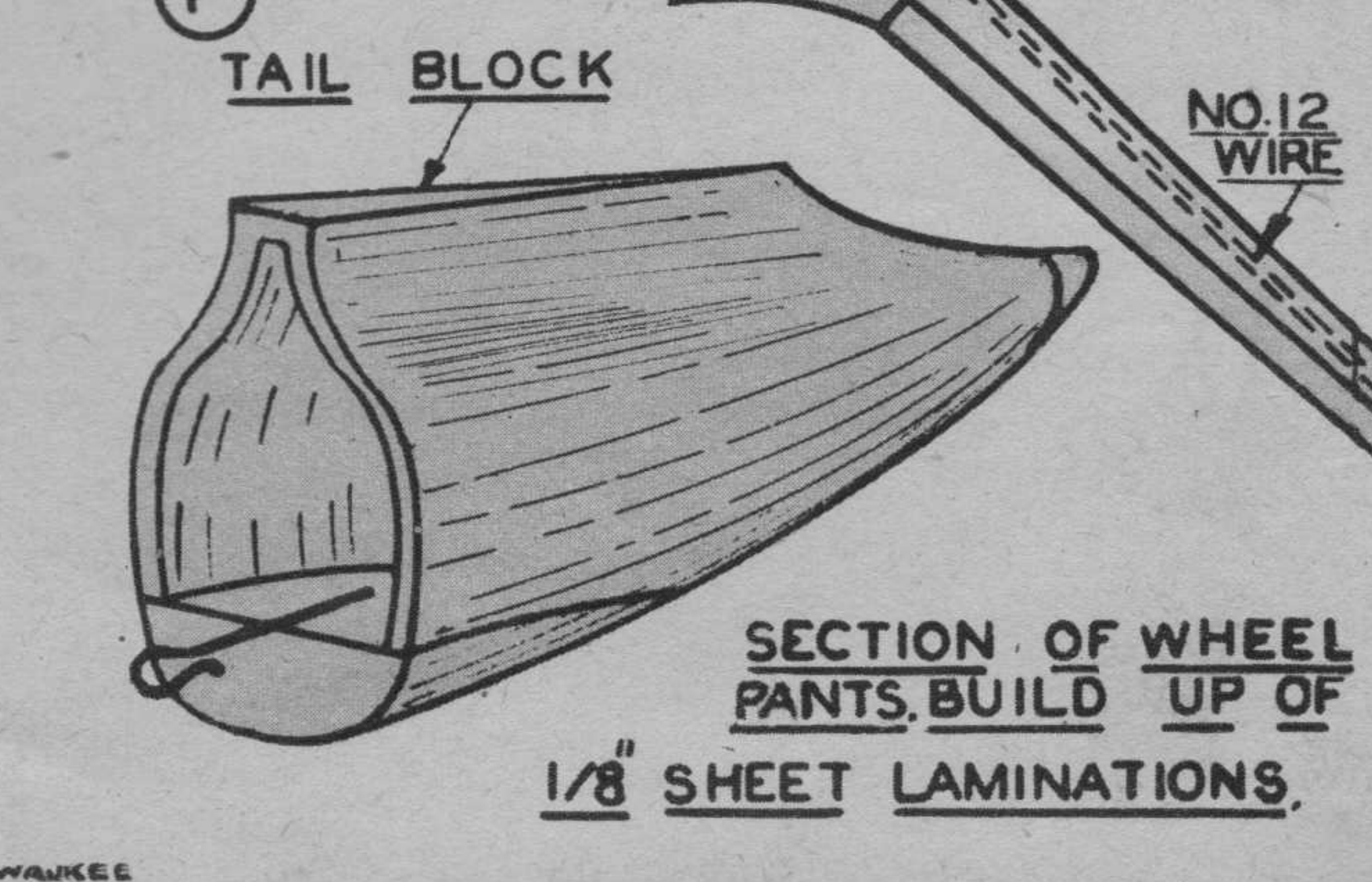
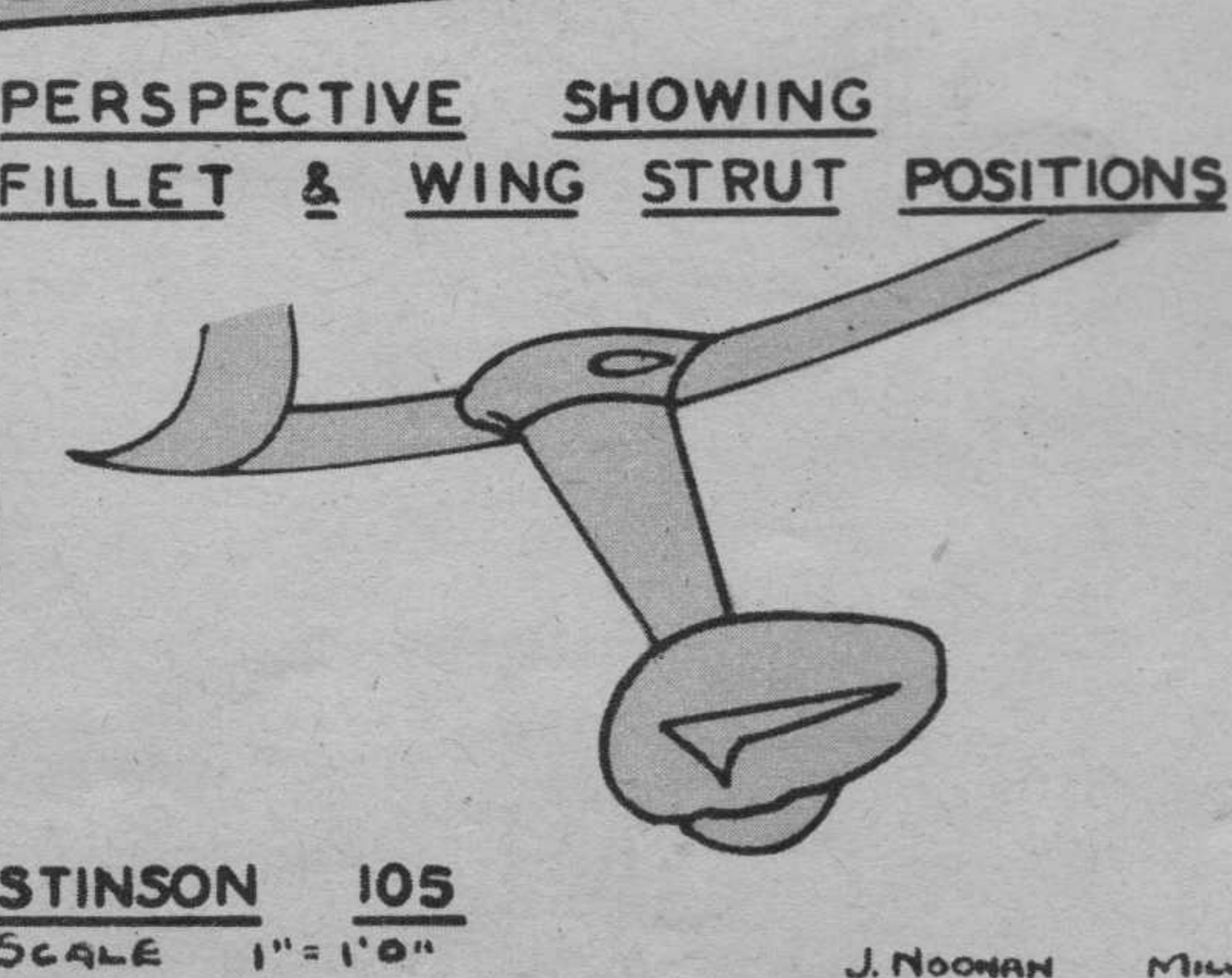
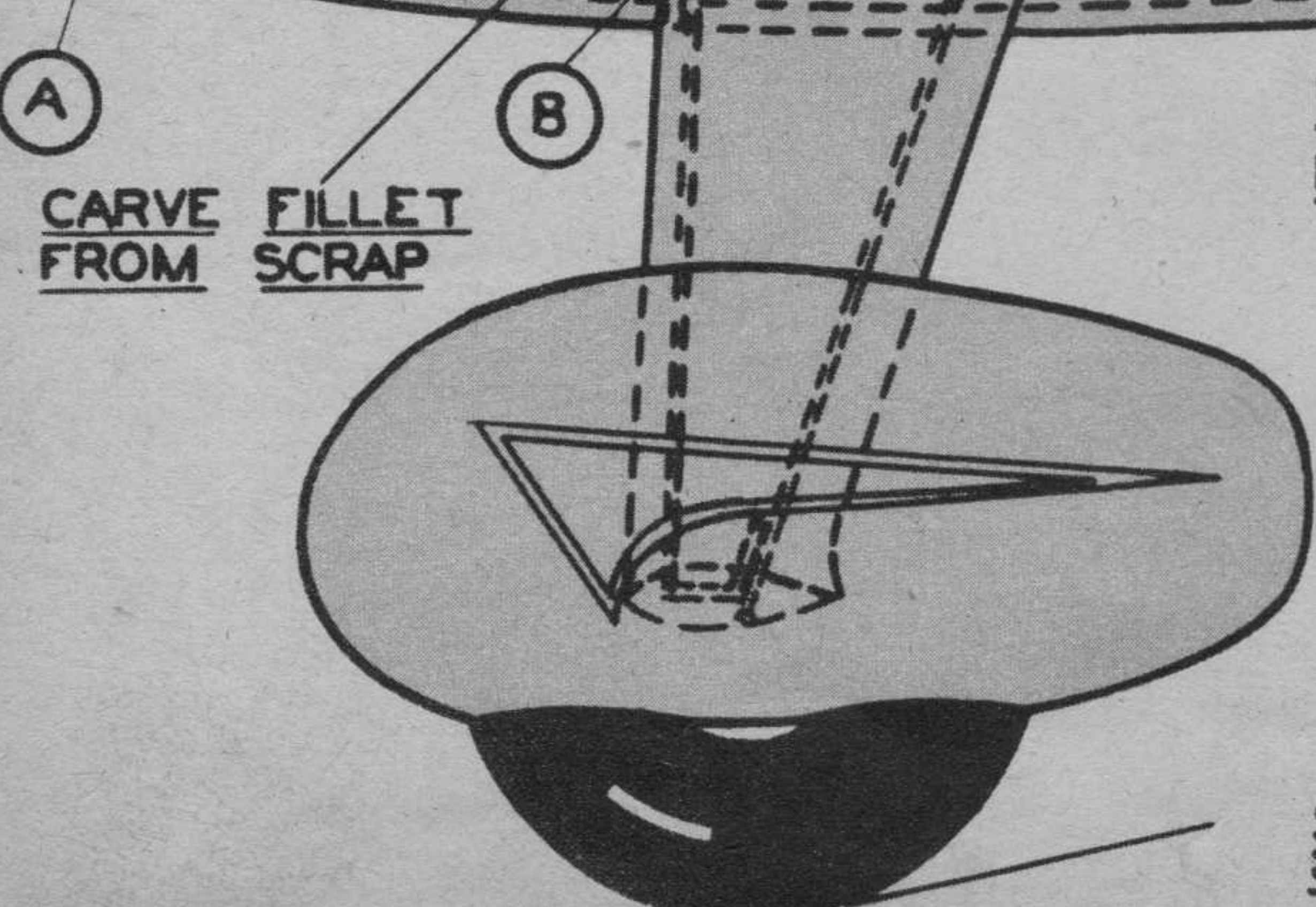
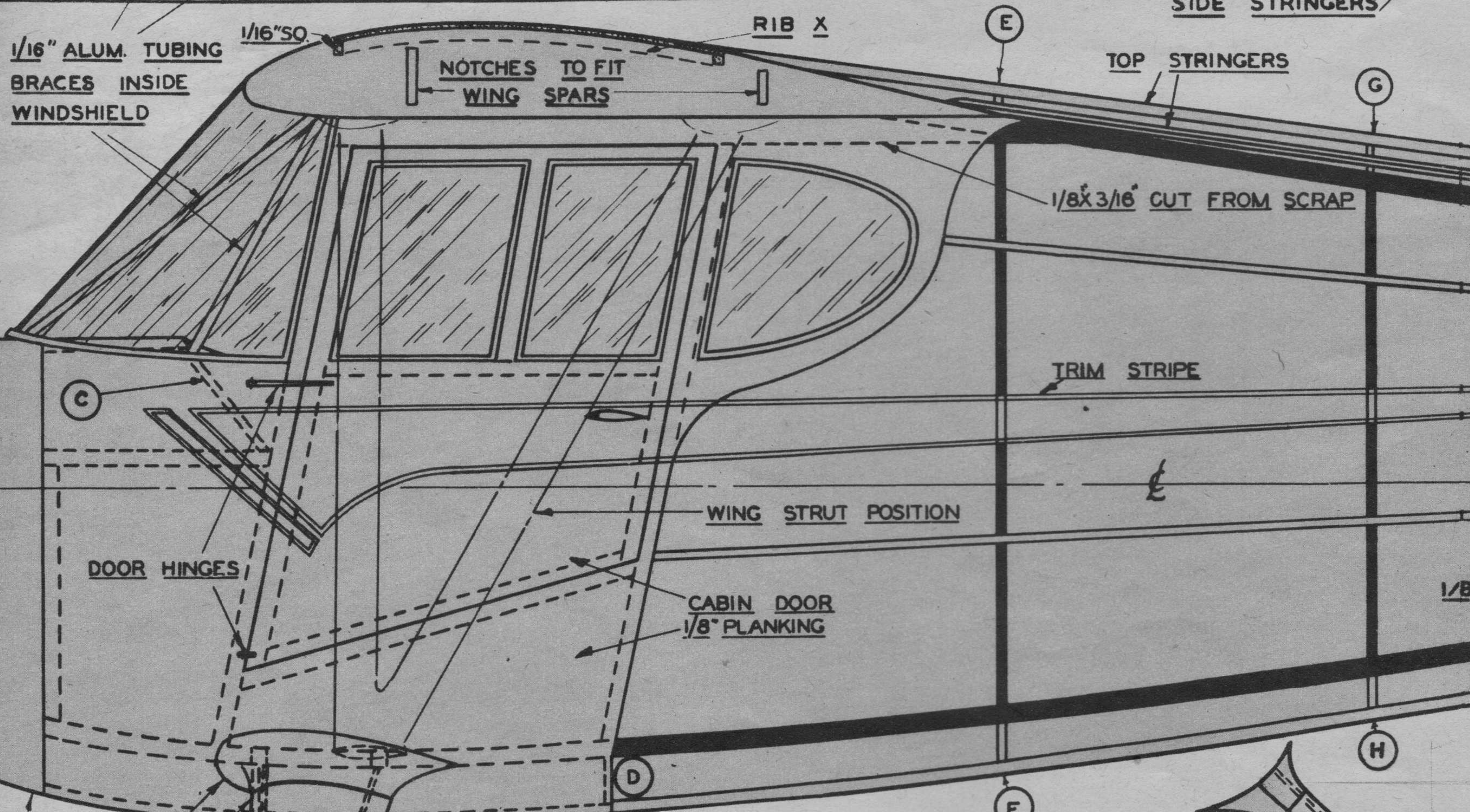
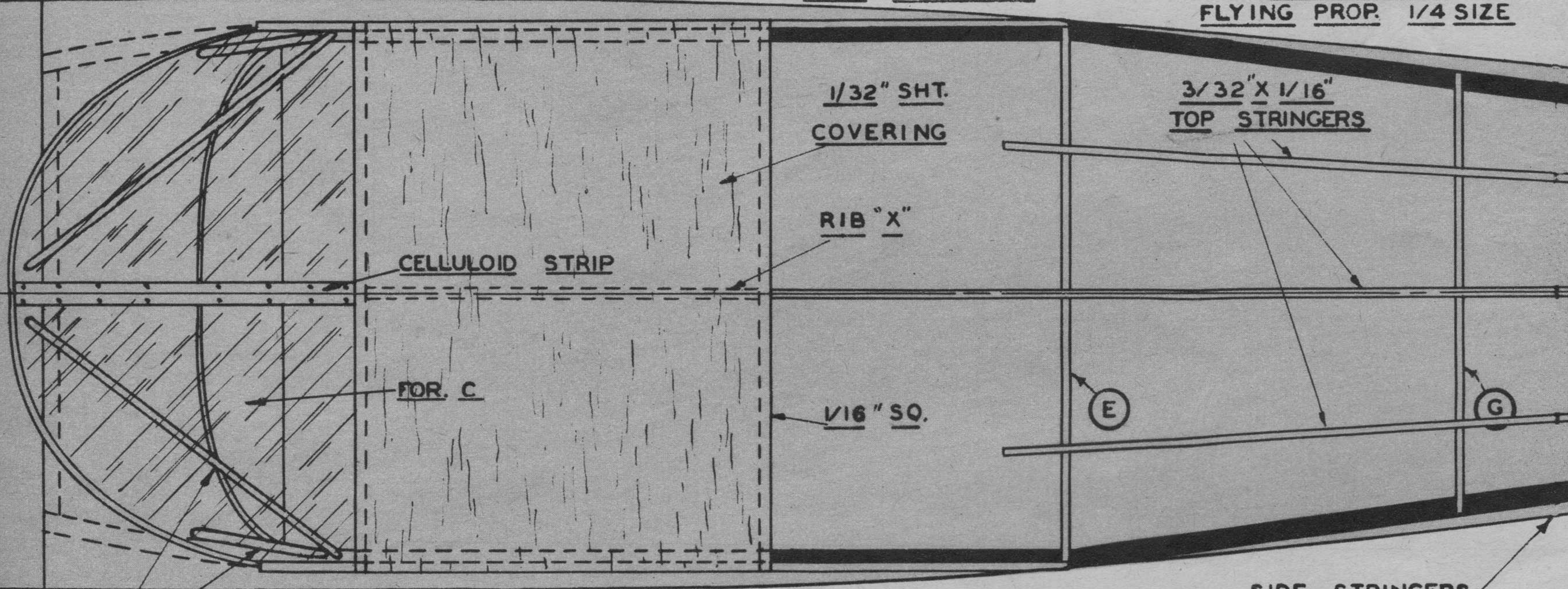
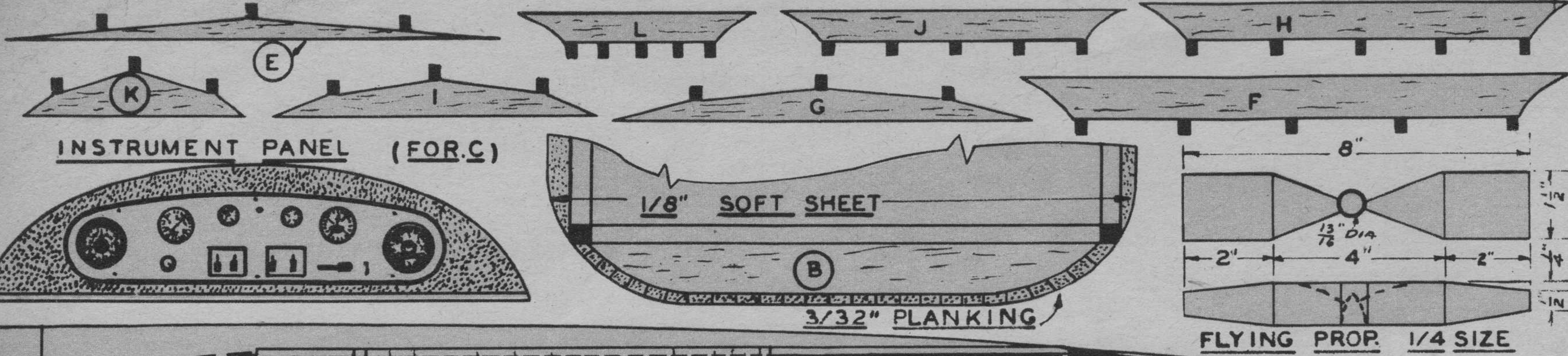
SPAR AT TIP (FRONT)

REAR

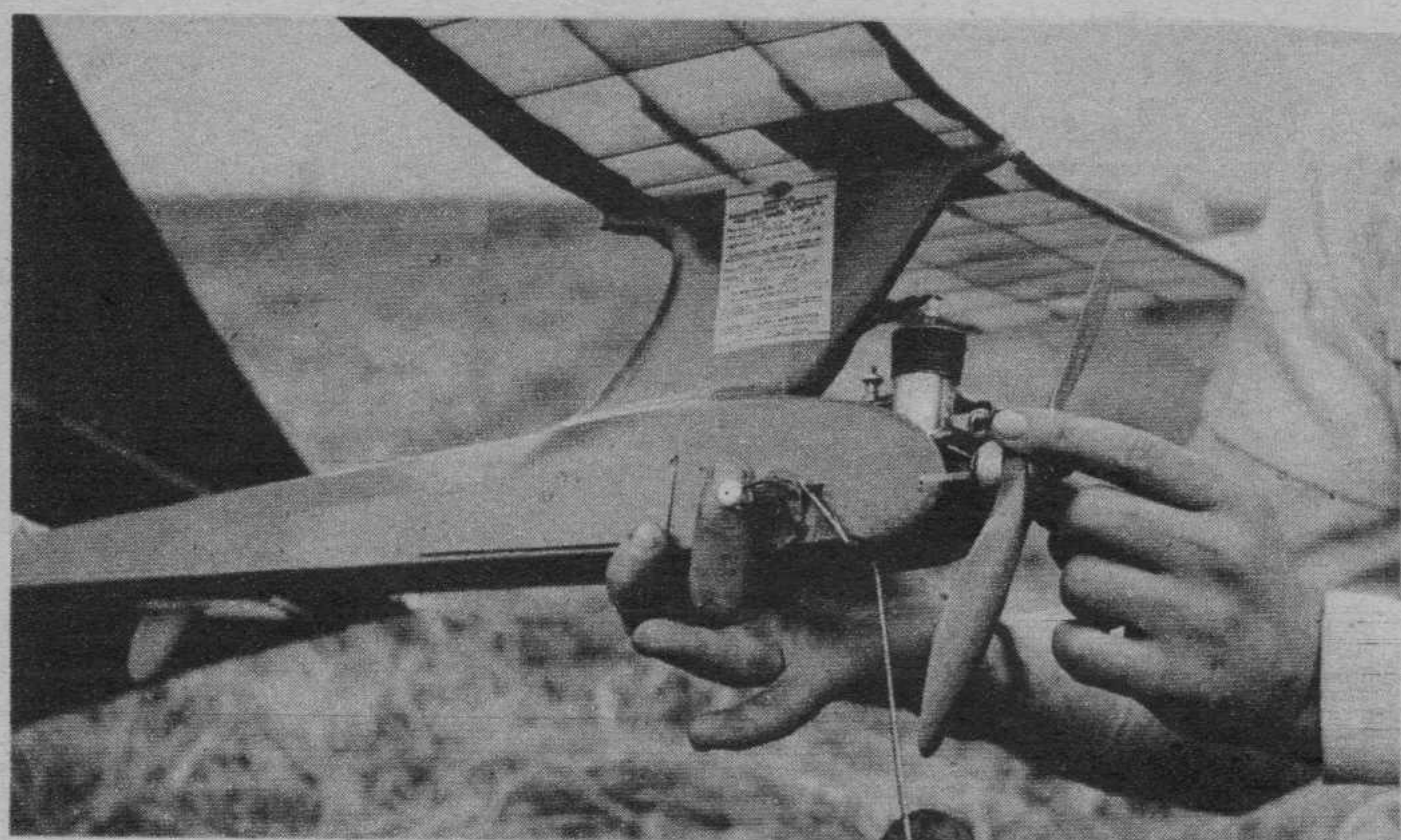


WING SECTIONS

IN.



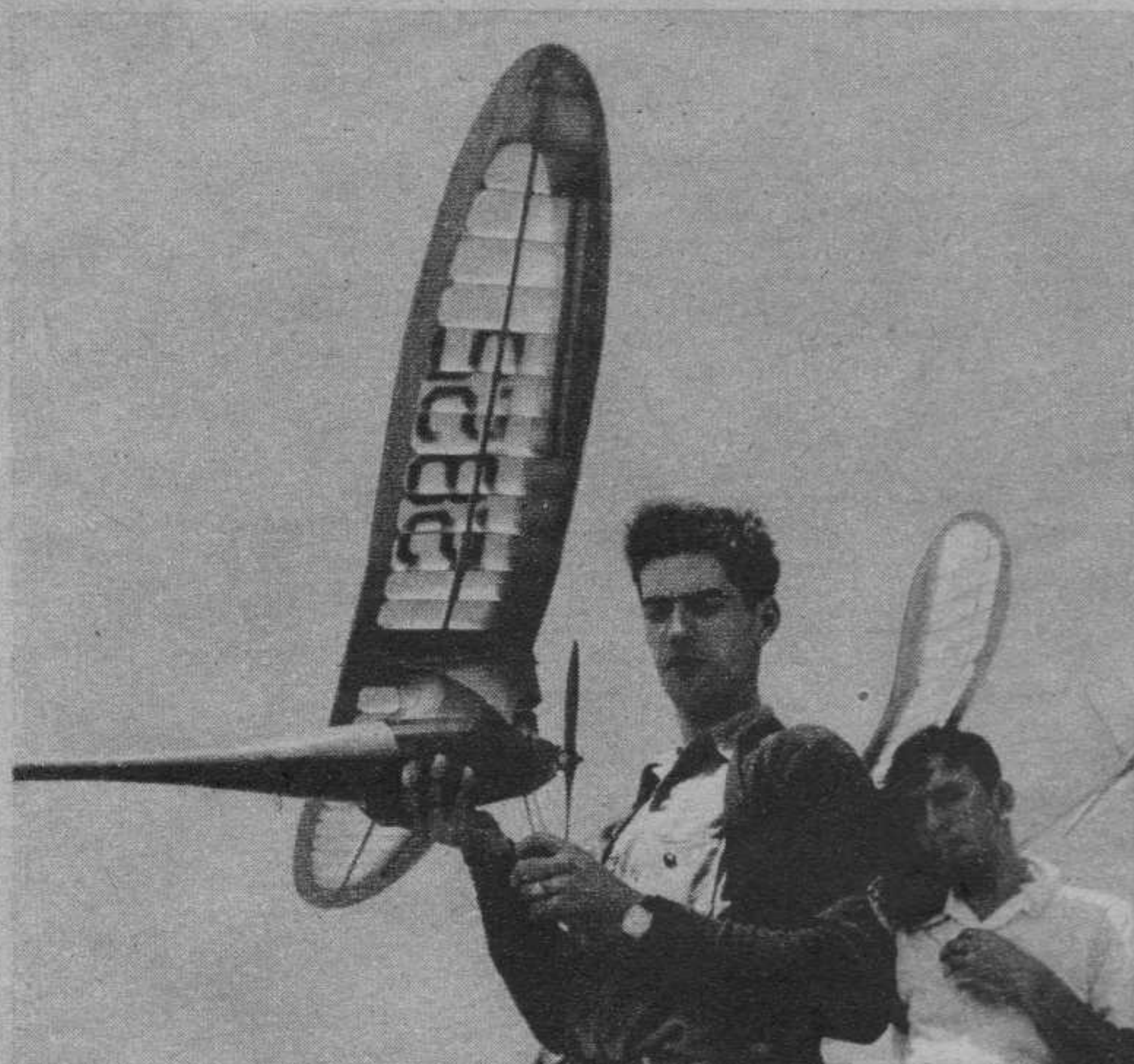
SHOULD THE RULES BE CHANGED?



This Interceptor typifies the modern layout for high climb, efficient glide. Even wheel retracts.



How strong is a thermal? This job with Fowler flaps soared away with flaps in down position.



Streamlining like this makes modern gas jobs far superior to ones on which the rules are based.

BY LEON SHULMAN

Chairman of A. M. A. Gas Model Committee.

Improved design and flying result in so many out-of-sight flights that winning a contest often requires having more engines than the other fellow. Present rules are outgrown. What are we going to do about it?

WELL, there goes another \$25 away on a thermal!"

"Gee, if I had only cleared that patch of grass near the runway I would have had a decent chance!"

"Wow, look at that model fold up!"

Familiar sayings? Sure, these and many similar ones have undoubtedly been heard at contests throughout the country. Of course, we model builders often swell out our chests proudly and say, "Boy, there goes my ship away again on a sightseeing tour," but then usually we must dig down deep into our pockets to buy another new motor, and model, and more accessories. Has gas-model building and flying turned from a hobby into a pastime to see who is the greatest mass producer of models, or have we lost sight of the fact that we are building models to learn how to improve flight? Undoubtedly we have all realized the fact that the changing of rules each year has brought about more efficient models. Because of the rules made last year for this year, we today are still flying models out of sight and

shearing wings and fuselages on our superlight (weak) models.

After gathering the general consensus of opinions of model builders throughout the country, I, as chairman of the Academy of Model Aeronautics Gas Committee, have found that modification regarding lower power loadings, raising the wing loading, one-hand assistance for take-offs, or shortening the motor run should be made. These opinions are general and undoubtedly aren't the best, but at the least are a few steps closer to our goal—perfect controlled flight. I will attempt to take apart these suggestions and present some facts both ways, pro and con, on the effect they would have if adopted by the A. M. A. Each suggestion will be taken apart separately and analyzed.

1. Lowering the power loading. A chart below shows the weight of the models with engines of the most popular displacements as they are under the present rules and how they would be affected if new lower power loadings would be adopted:

Displacement	Model's required weight under 80 ounces per cubic inch of motor displacement	Required weight for 90 ounces	Required weight for 100 ounces
.600	48 oz. (3 lbs.)	54 oz. (3 lbs. 6 oz.)	60 oz. (3 lbs. 12 oz.)
.350	28 " (1 lb. 12 oz.)	31.5 " (1 lb. 15.5 oz.)	35 " (2 lbs. 3 oz.)
.297	23.76 " (1 lb. 7.7 oz.)	26.73 " (1 lb. 10.73 oz.)	29.7 " (1 lb. 13.7 oz.)
.232	18.56 " (1 lb. 2.56 oz.)	20.88 " (1 lb. 4.88 oz.)	23.2 " (1 lb. 7.2 oz.)
.199	15.92 "	17.91 " (1 lb. 1.9 oz.)	19.9 " (1 lb. 3.9 oz.)
.097	7.76 "	8.73 "	9.7 "

(Turn to page 63)



THE QUICKIE is designed for swift construction and snappy performance. Although we do not recommend trying to build it at a single sitting, two evenings should be sufficient to get it into the air. Structural pieces are held to a minimum; curved sections of wing and tail are cut from sheet balsa in the easiest manner possible. Minutes have been sacrificed here and there to provide a few frills to make the job more attractive.

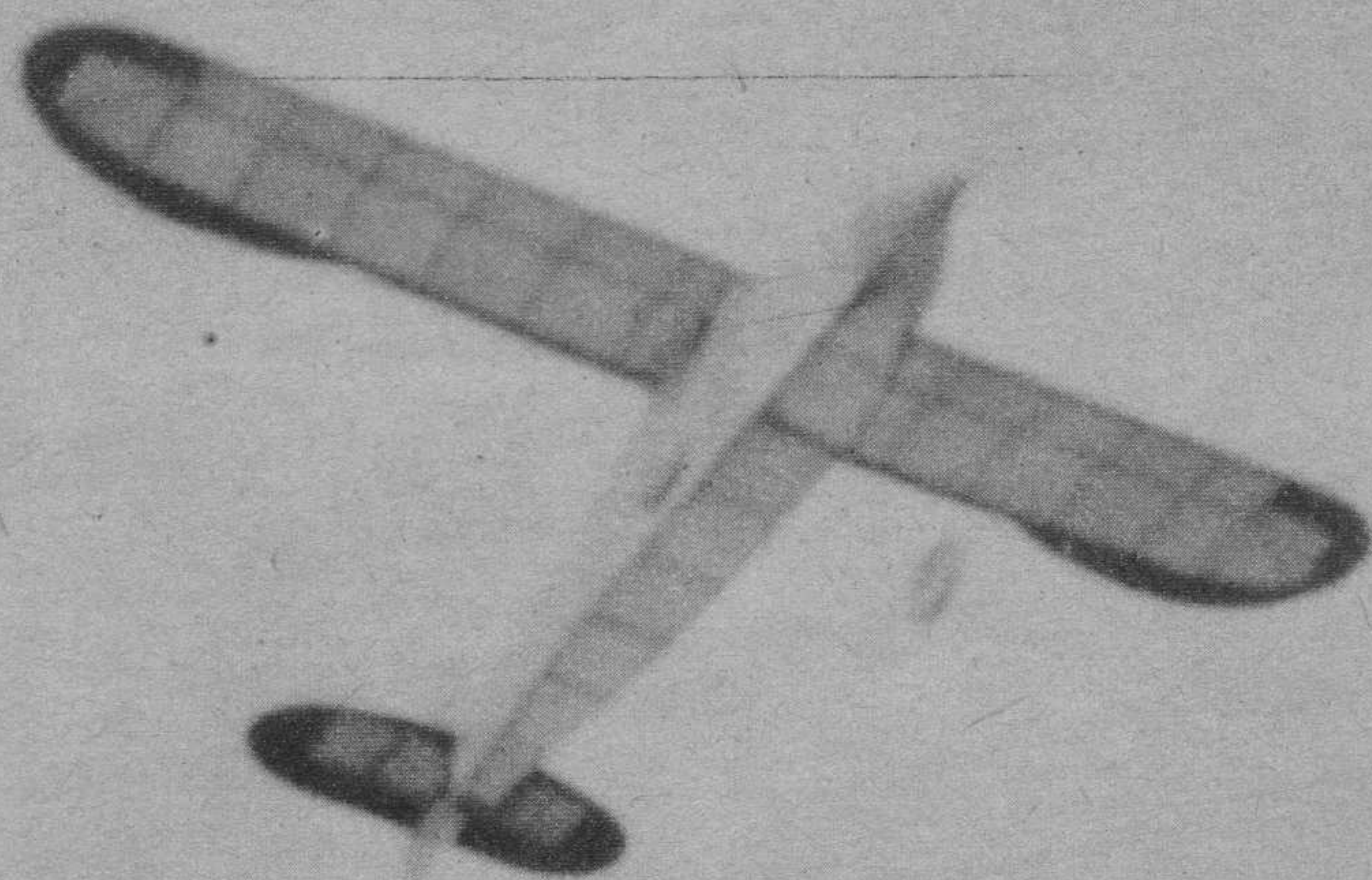
CONSTRUCTION

Fuselage. The side view is symmetrical, both $\frac{1}{8}$ " square longerons following the same bend. The nose cross pieces are wider to take knocks. The top and bottom cross pieces are shown in a group. No top view is necessary. Lay wax paper over the drawings and pin the longerons in place directly on the plans. Cross pieces are cut to size and cemented in place. When dry, remove the side frames from the form and assemble them to each other at Stations 3, 4, and 5. Wrap a rubber band around the nose to pull it into position while its remaining cross pieces are glued in position. Pull the rear of the longerons together, install the rudder post complete with rubber hook, and the remaining top and bottom cross pieces. Cut two cabin sides from $\frac{1}{8}$ " soft balsa sheet and glue one atop each upper longeron in the proper position. A $\frac{1}{16}$ " sheet bulkhead holds these cabin sides in alignment and supports the $\frac{1}{16}$ " sheet V-shaped cabin roof. Details of the landing gear are given on the plan. Finish the landing gear and install it before covering the fuselage. Use hardwood wheels.

Tail. The stabilizer is made from four pieces of $\frac{1}{8}$ " soft sheet as shown by the plan. The rudder requires three pieces. Notches are cut for the cross pieces and the tail is constructed by pinning the various parts directly over the plans until the cement has dried. Round the leading edges and taper the trailing edges.

Wings. Thirteen ribs are cut to the pattern given from $\frac{1}{16}$ " sheet balsa. Pin one of the $\frac{1}{16} \times \frac{1}{4}$ " spars over the plans as the rear spar and cement the ribs on it in the proper locations. Preshape the $\frac{1}{8} \times \frac{3}{8}$ " trailing edge and pin it to the bench. Then slide the $\frac{1}{16} \times \frac{1}{4}$ " leading edge into the leading-edge notches cut in the rib noses. Lastly, glue the top spar in place. Cut the wing-tip pieces from soft $\frac{1}{8}$ " sheet and cement them in place. After the wing is removed from the form, round the front edge of the tip and shave the rear edge to a sharp-edged taper. Brace the tip with short pieces of $\frac{3}{32}$ " square to prevent warping when covered. Dihedral is accomplished by cracking the wing at the center and blocking up one tip three inches off the bench. Hold the other side flat on the bench. Cement the cracked center generously to hold position.

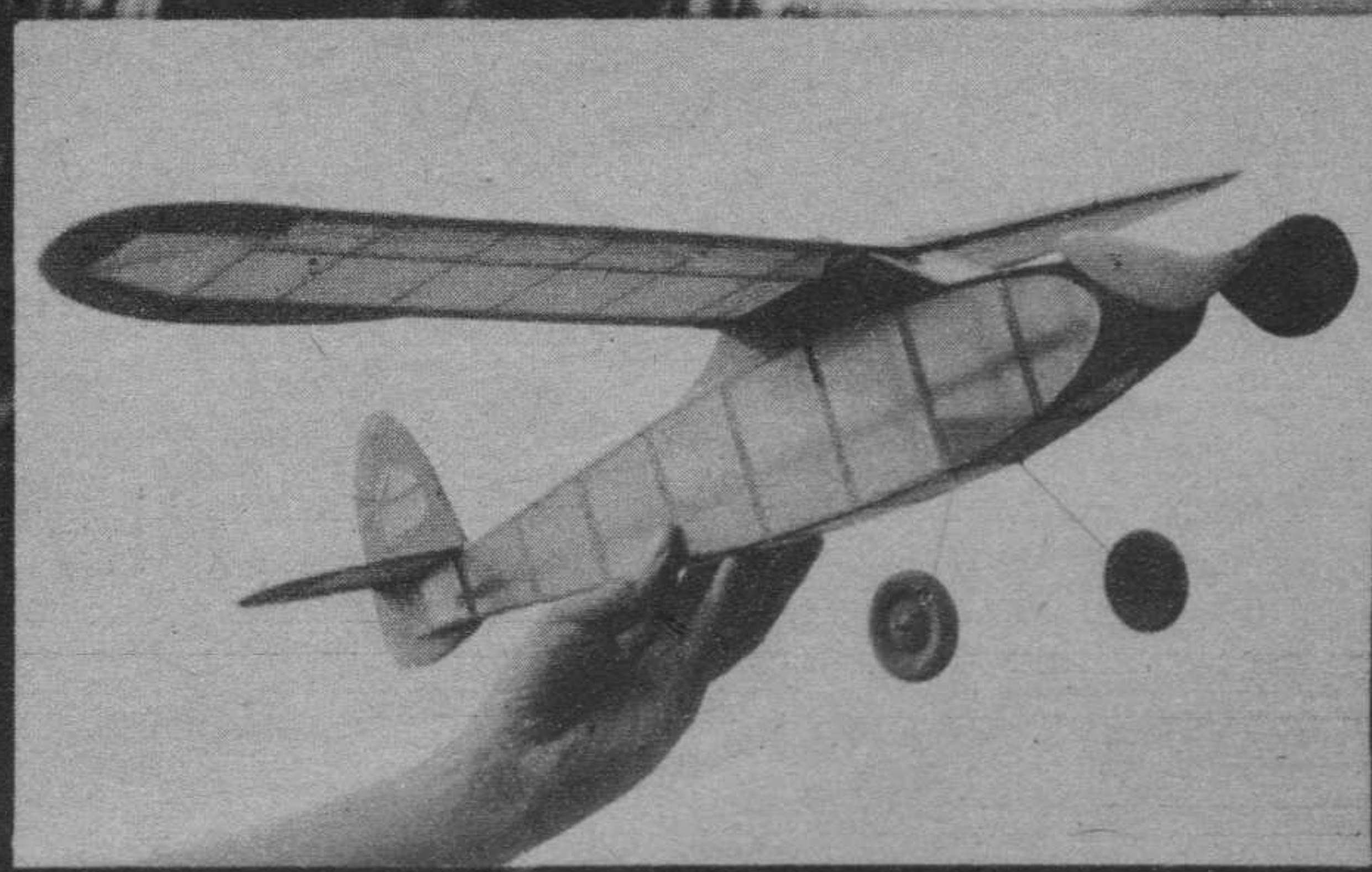
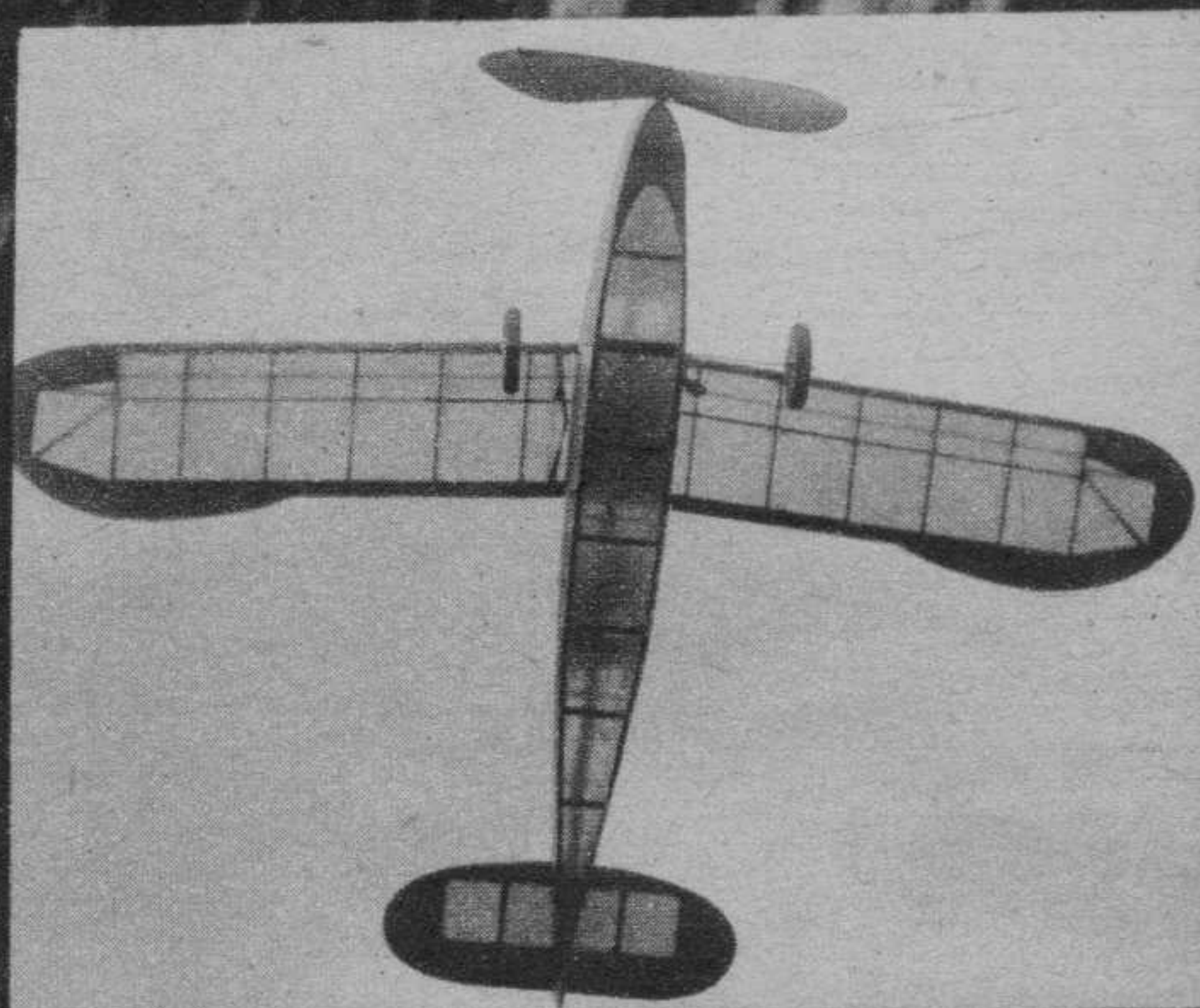
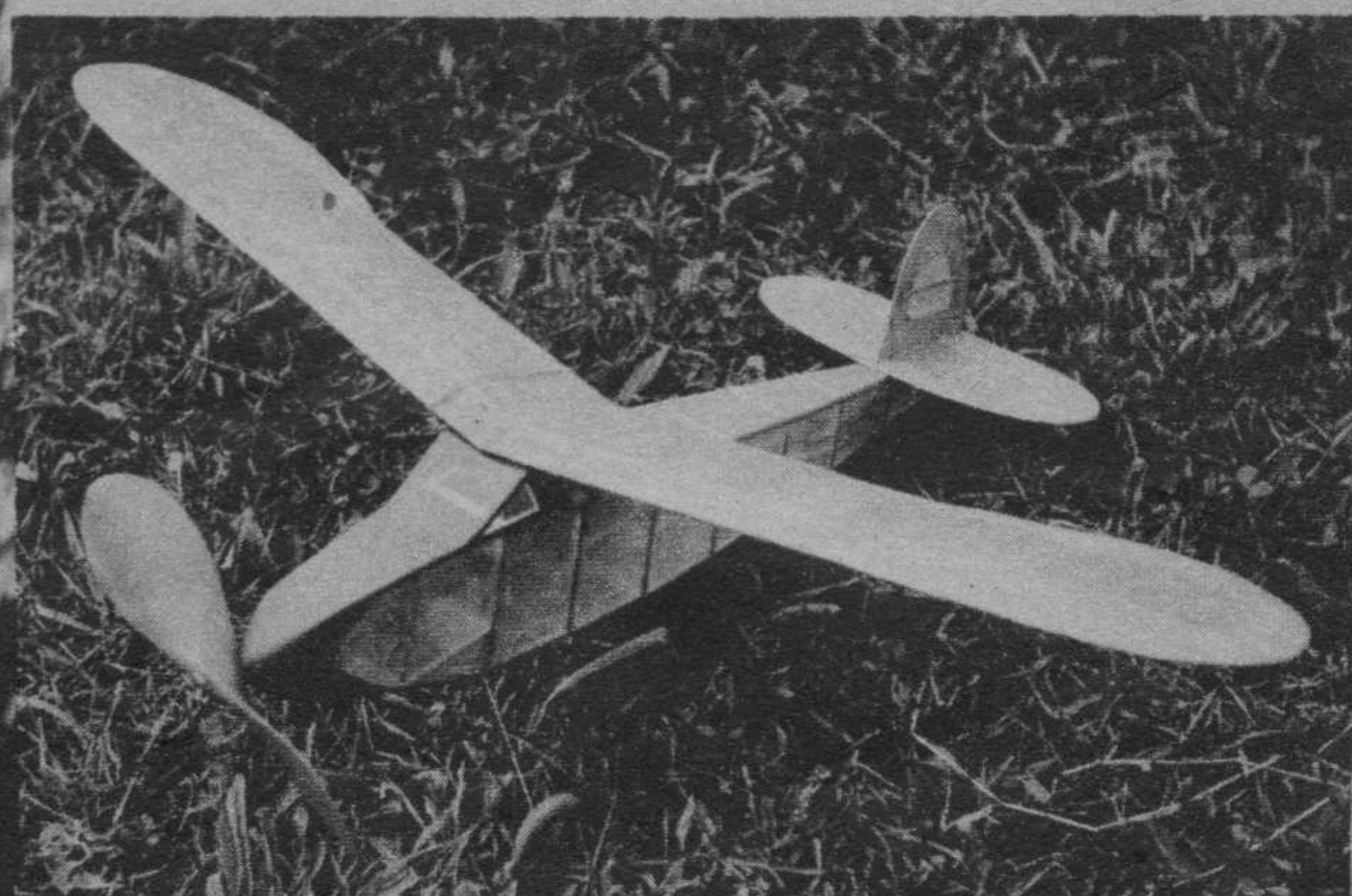
Covering. Using thick dope for adhesive, attach the paper to one fuselage side at a time. Trim the edges neatly before going on to the adjacent side. The stabilizer and rudder are each covered with two pieces of tissue (Silkspan was used on the original model), one piece for each side of the surface being covered. The wings are covered with (Turn to page 55)

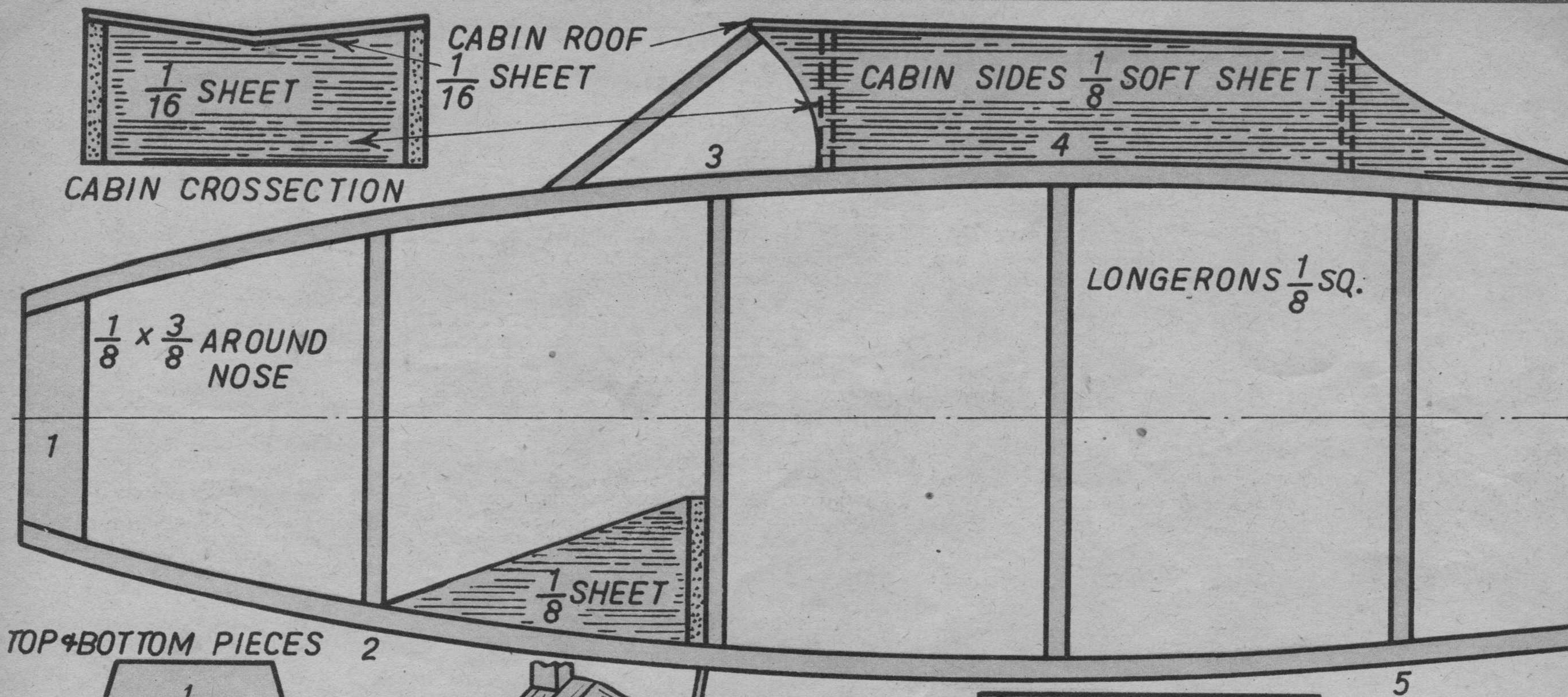


QUICKIE

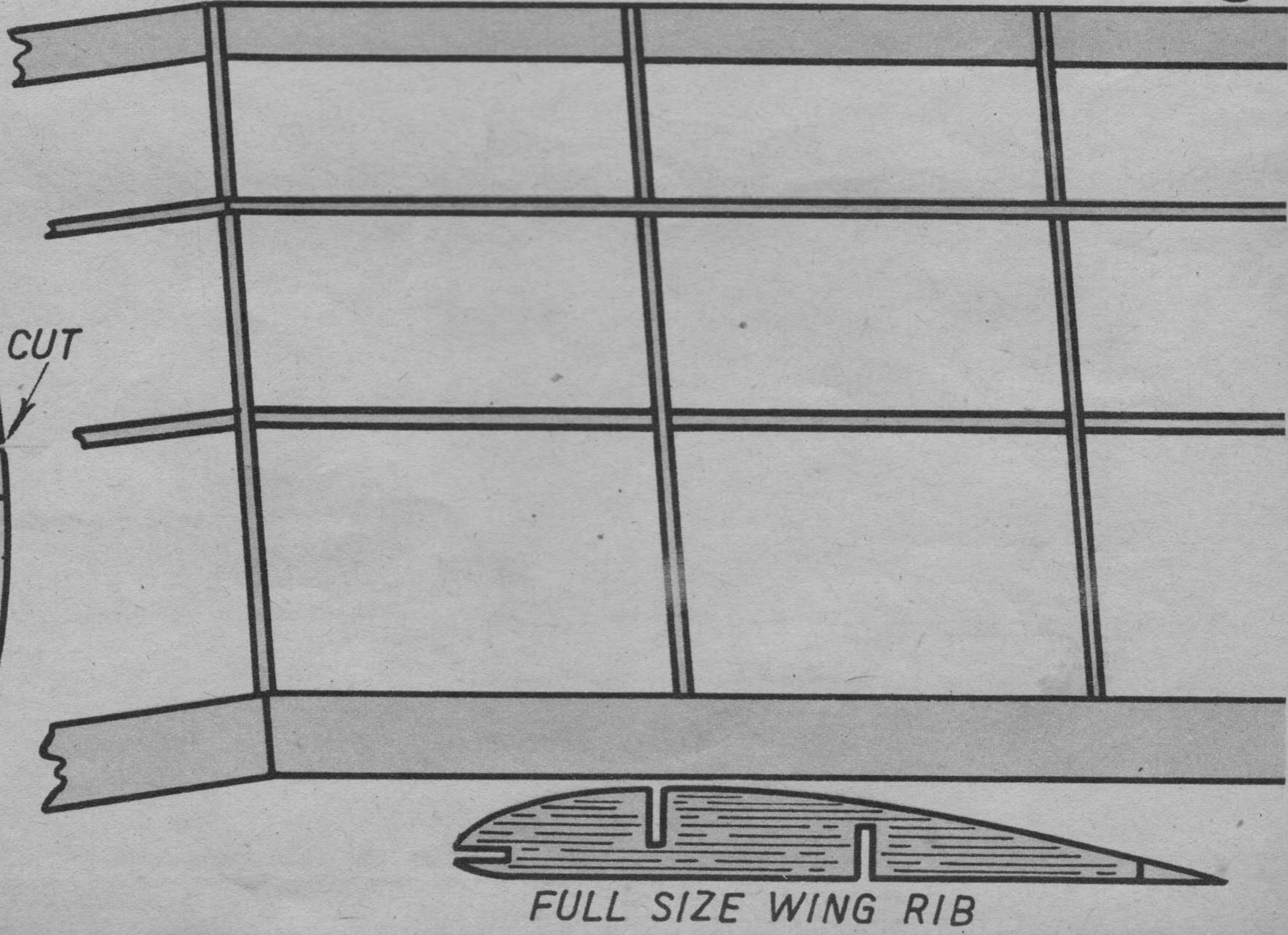
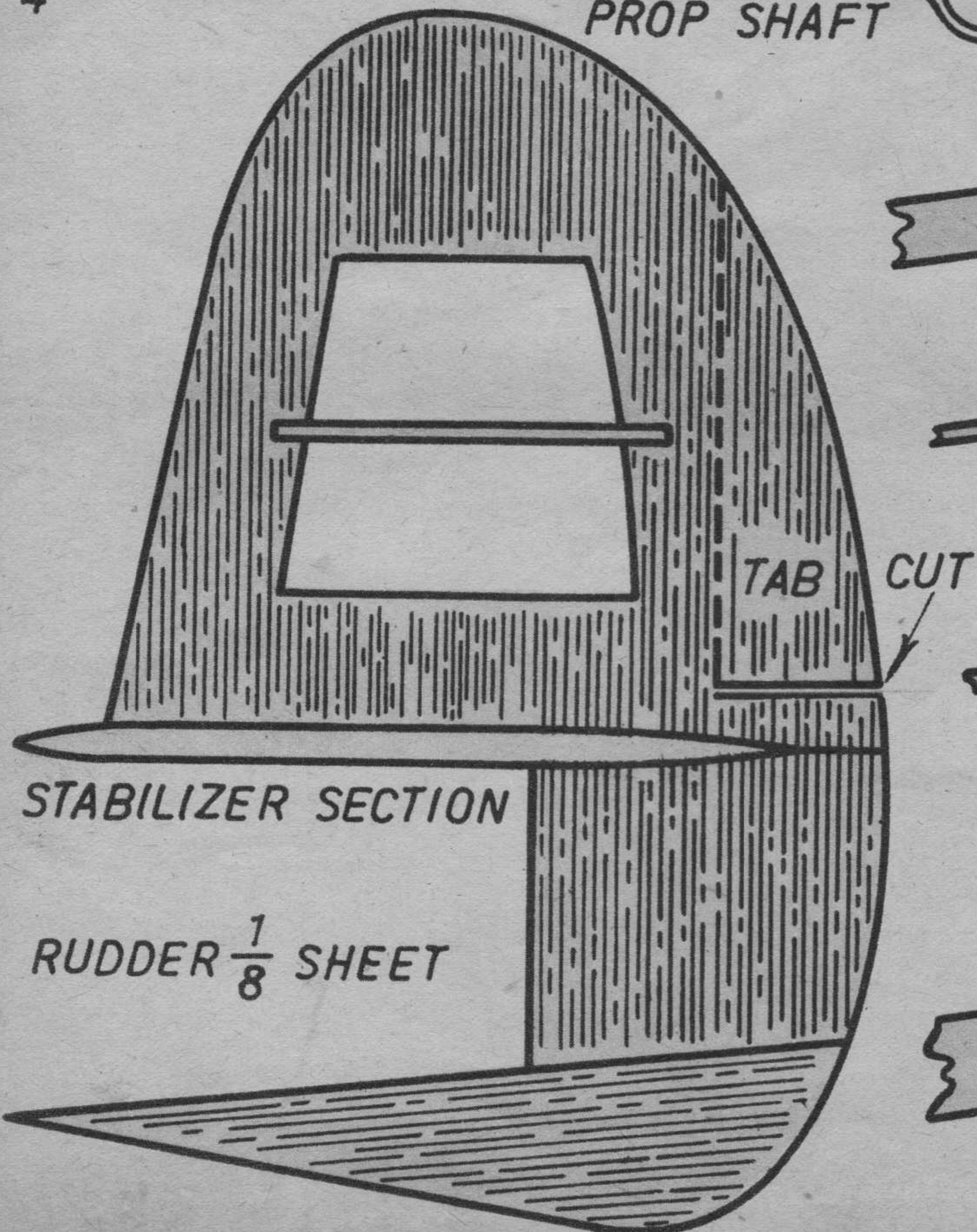
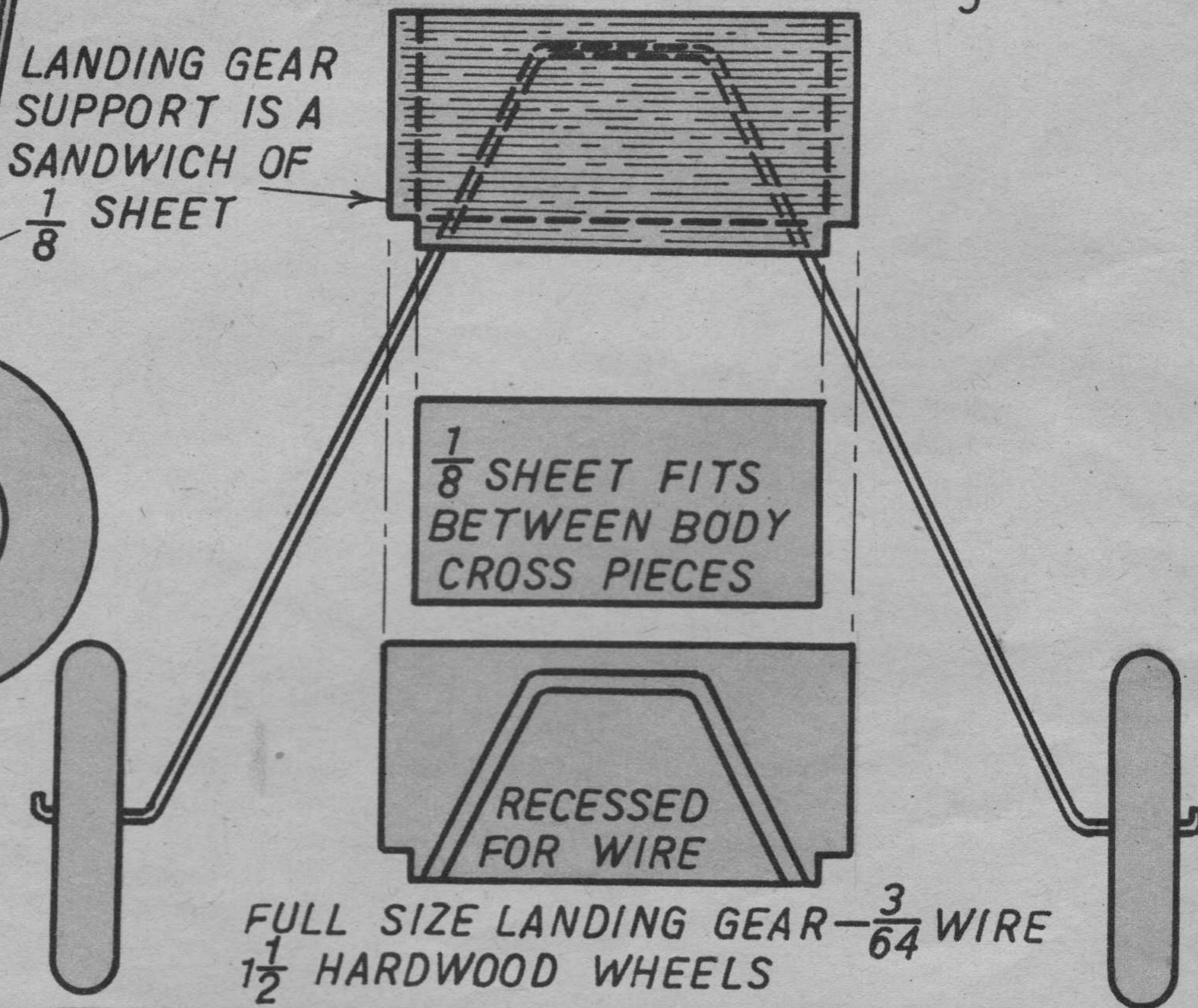
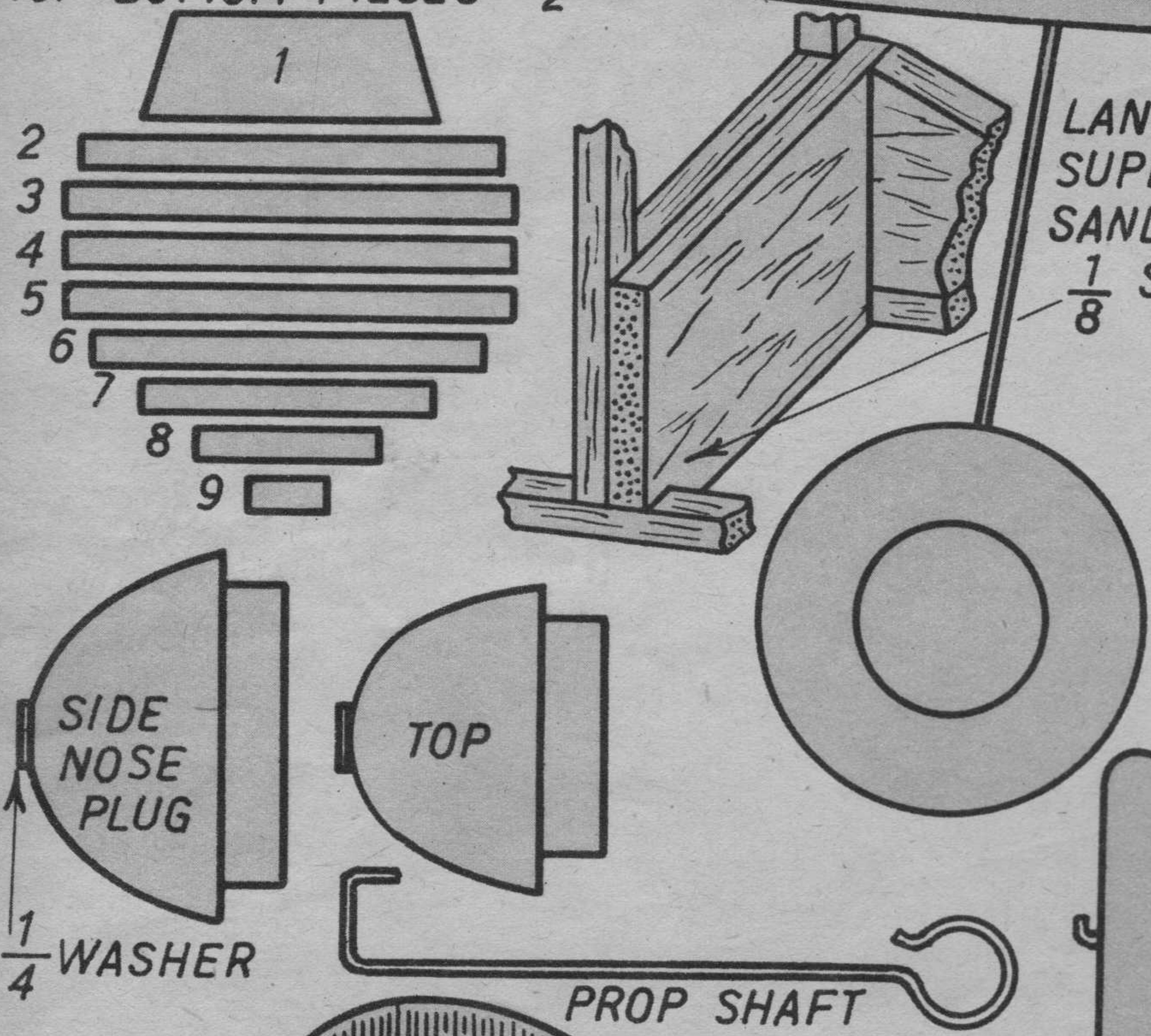
BY JOHN SPRAGUE

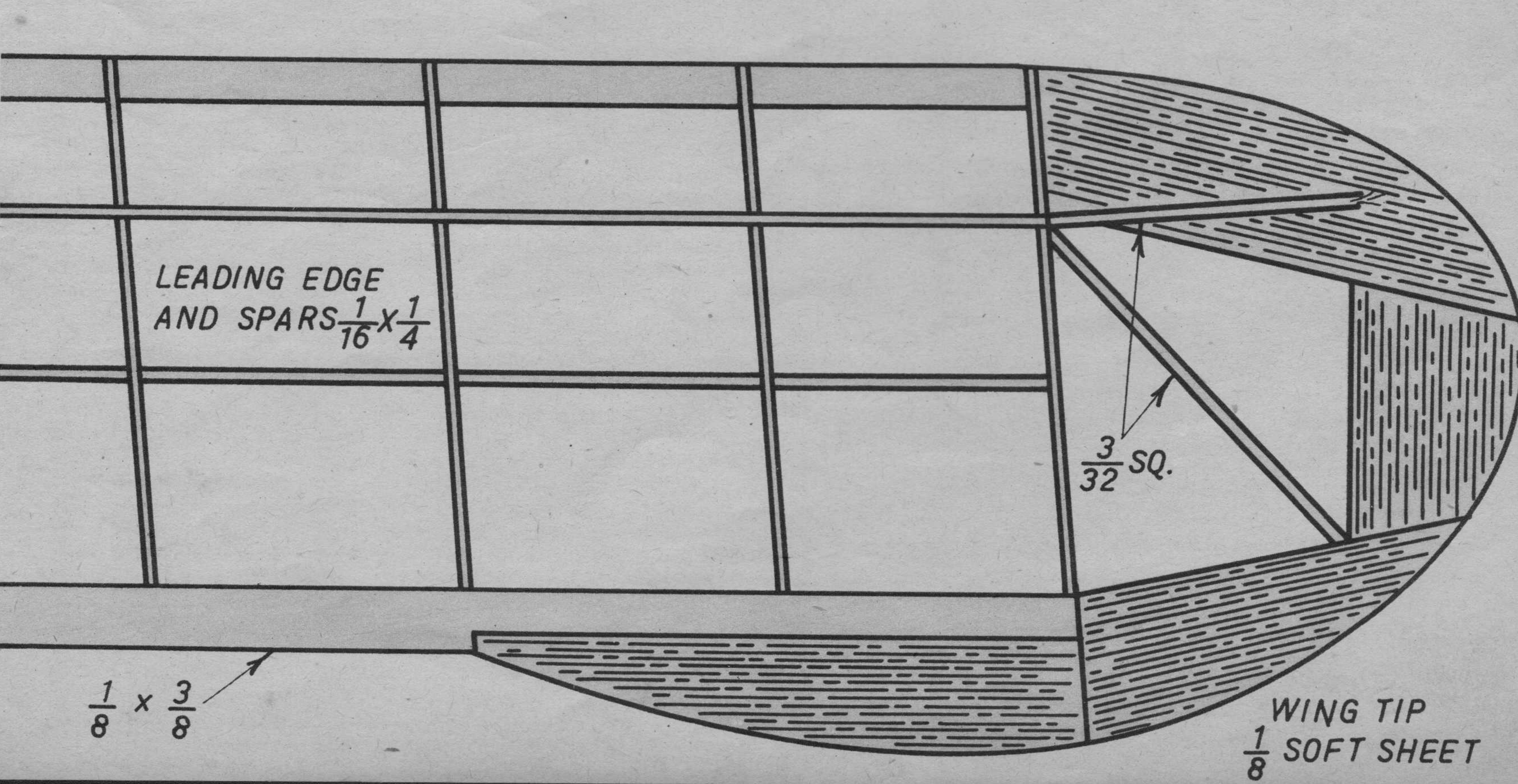
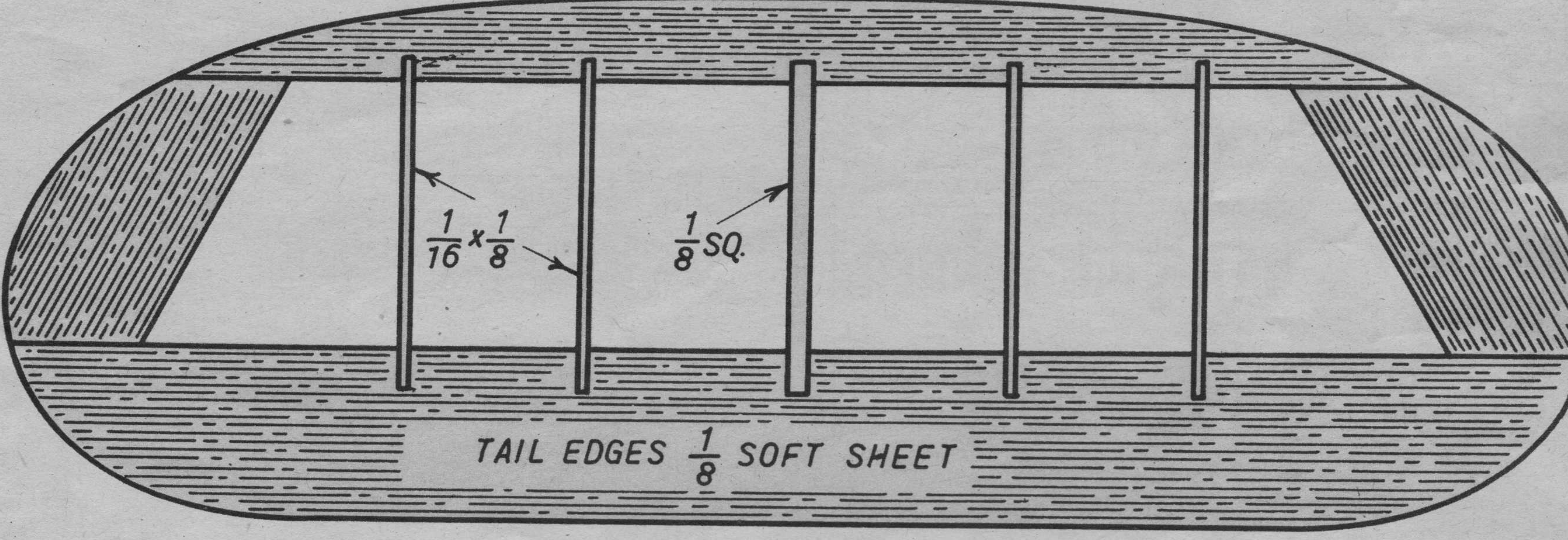
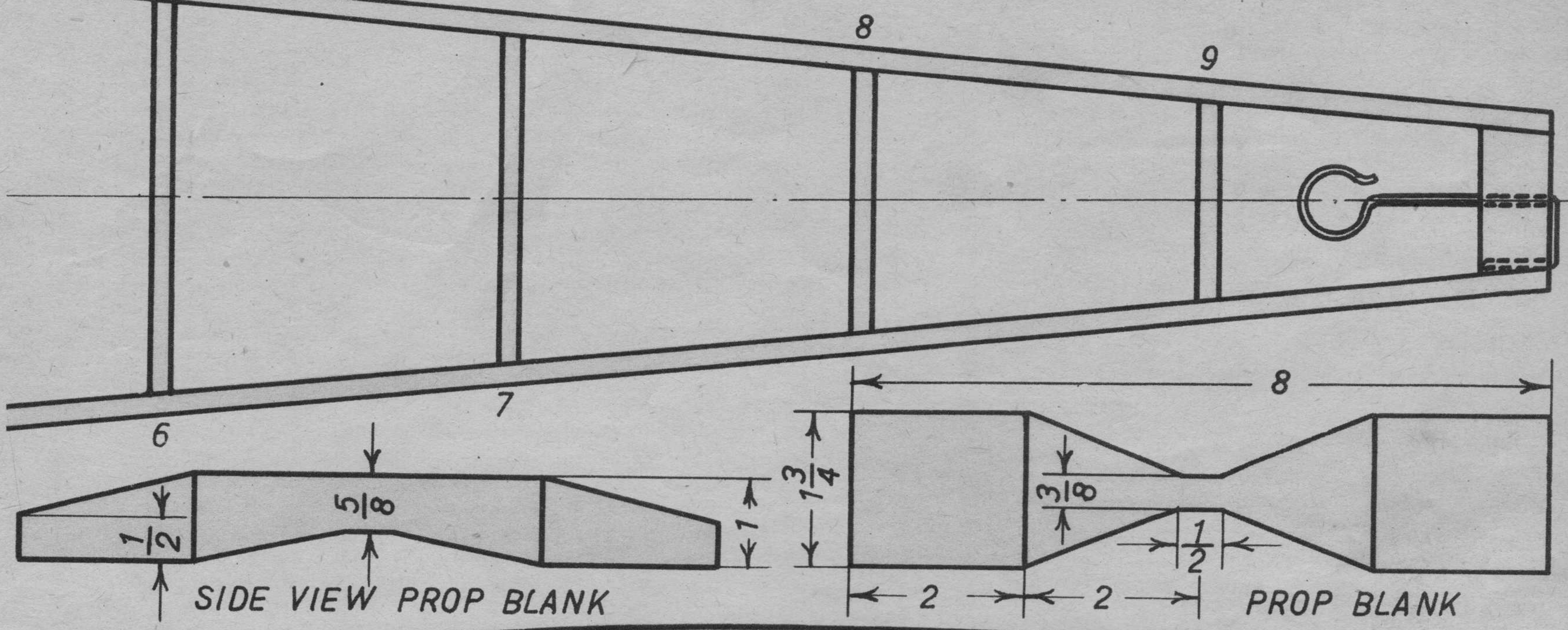
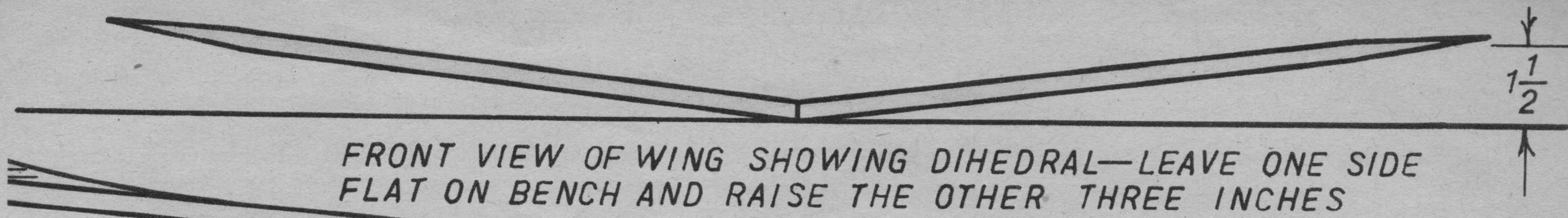
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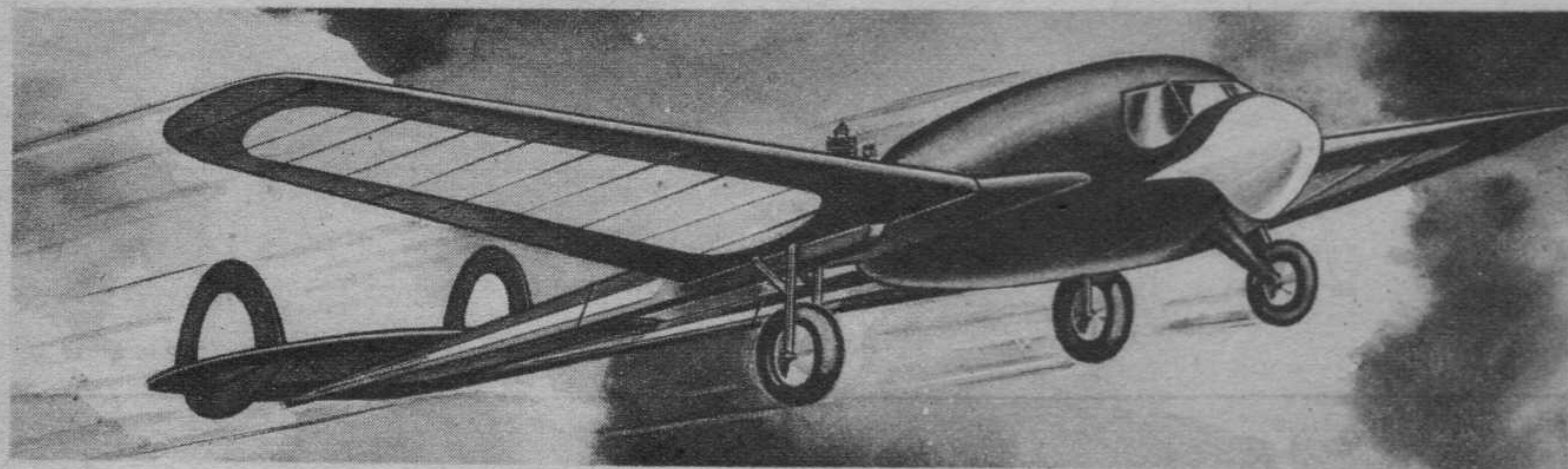
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NEW YORK CITY

Model Matters

(Continued from page 35)

boys cleaned up in the rubber events. They took the glider event. Three cash awards for high points scored were taken by Tulsans. Not only that, the Cloud Chasers brought home forty dollars in prizes from a recent contest in Coffeyville, Kans. Club members Don Emmick and Bill Scaggs recently made application for AMA recognition of record flights in fuselage and stick categories. The Cloud Chasers have been organized less than a year and specialize in rubber power. Apologies, Tulsa, we done you wrong in the September issue.

It's cropped up again—the story of the excited person who mistakes a model for a large airplane and throws everybody into a twitch by reporting a crash. This time it was in the Bronx (New York City) and brought police, emergency squad, and ambulance zooming to the scene. But the cops didn't get sore. They inspected the model carefully and agreed that it was a realistic piece of work that anybody might mistake for the real thing. Harry Silverman of the Propbusters Club built the job.

The Tri-City Gas Model Club of Davenport (Iowa), Rock Island and Moline (Ill.) started about three years ago. Initial enthusiasm carried membership up to fifty, then slowly tapered off as "passing fancy" members dropped out. The remaining twenty are genuine. Ray Smith won the 1941 Mulvihill Trophy Event. President Herbert Andrews took two thirds in gas. Pride of the club is the streamlined trailer for model carrying. It cost fifty-two dollars and was financed by three dollars assessment per member. Rock Island Sash & Door Co. donated most of the lumber. The trailer is lightweight and can be towed at normal driving speeds. If building a trailer falls within the projected activities of your club, John Loufek, secretary of the Tri-City Club, will gladly give you some ideas. Address is 1902 Grand Ave., Davenport, Iowa.

Two builders ask for help in finding their lost Bantam-powered models. Bob Osbahr lost his flying from Memorial Park in South Plainfield, N. J., last July. It was a thirty-nine-inch job with a Topper fuselage and a Megow Ranger wing. Motor No. 1089. Bob's address is 63 West 14th Street, Bayonne, N. J. Jerry Brofman lost his Class A Bantam No. 300, AMA No. 9577, at the Hicksville contest last July. "Spectre" was printed on both sides of the fuselage. The model landed on a road, was picked up by a passing car but was not returned. Brofman is one of the up-and-coming youngsters. He won the Class C junior event at Chicago.

Even though Texas has a good bunch of model builders, when they're spread over such a large area the covering is rather thin in spots. Shuford Alexander, Jr., of Lockhart, is too far from the active clubs in San Antonio and Austin to do much good. Galen Stephens is the only other nearby builder. He's fifteen miles away, but they hold a two-man contest every Sunday in official style.

Competition is close, since both boys fly Sailplanes. Different motors help make it exciting. Alexander has an Ohlsson and Galen a Super-Cyclone. Thermals are vicious—been known to carry models away on their test glides. Shuford recently lost a Sailplane after sixty-five minutes.

It's a long time since the national meet, but we still get letters on Hotel Sherman stationery. Some of the boys evidently stock up enough to last them a year, which is one way to cut down overhead.

Take a look through your back issues if you missed the "Arrow" in the December, 1940. Latest testimonial on the flying qualities of this Gibson and Beeler model comes from Ocie Randall of Fresno, Calif. He's racked up twenty-seven dollars in merchandise, five ribbons, and one trophy with his Arrow. It was lost at 9:19 o. o. s. June 29th at a California contest. Randall was using a Phantom Bullet Motor with a one-blade propeller. Climb and glide are tops.

Did you see the news-photo of the Ryan ST model built from 24,000 match sticks by a twenty-two-year-old Detroit model builder? He used sixty-two ounces of cement. The span was about twenty-four inches.

For the last five years George DeLaMater of Oneonta, N. Y., has experimented with pushers—single and twin. He's worked up a twin which has flown splendidly in the last four contests entered this year. Four have been lost. The longest flight was 11:40—the only long flight in the contest that day. As for single pushers, he's flying one that averages 2:30 in dead air, with a climb and glide that exceed the better tractors. His argument is that the pusher has been neglected and steps should be taken to revive it. Certainly, if they were able to corner the hobby for the first twenty-five years they must have something. Builders follow styles in design, and the tractor has been the thing since the early '30s. The pusher-tractor argument is due for another airing. We're planning on DeLaMater to state the case for the pusher in a future article. George is a model builder from way back. At present he's a junior in chemical engineering at Cornell.

Model flying for Murray Parker has been somewhat limited and unfortunately will continue that way for some time. He's been a shut-in for the last four years. His building goes right on, nevertheless. A rubber-powered California champ and a six-foot towline glider of original design are his latest. The sailplane should feel right at home, since Parker lives in Corning, N. Y., and flying is done at American Airlines Airport at the foot of Harris Hill—the soaring center of America. He must rely on fellow modelers to fly his ships for him. Offhand, it seems they'd be too happy to do this, but this isn't always the case. We always thought it would be ideal to fly them and let someone else worry with the construction. It must be

(Turn to page 52)

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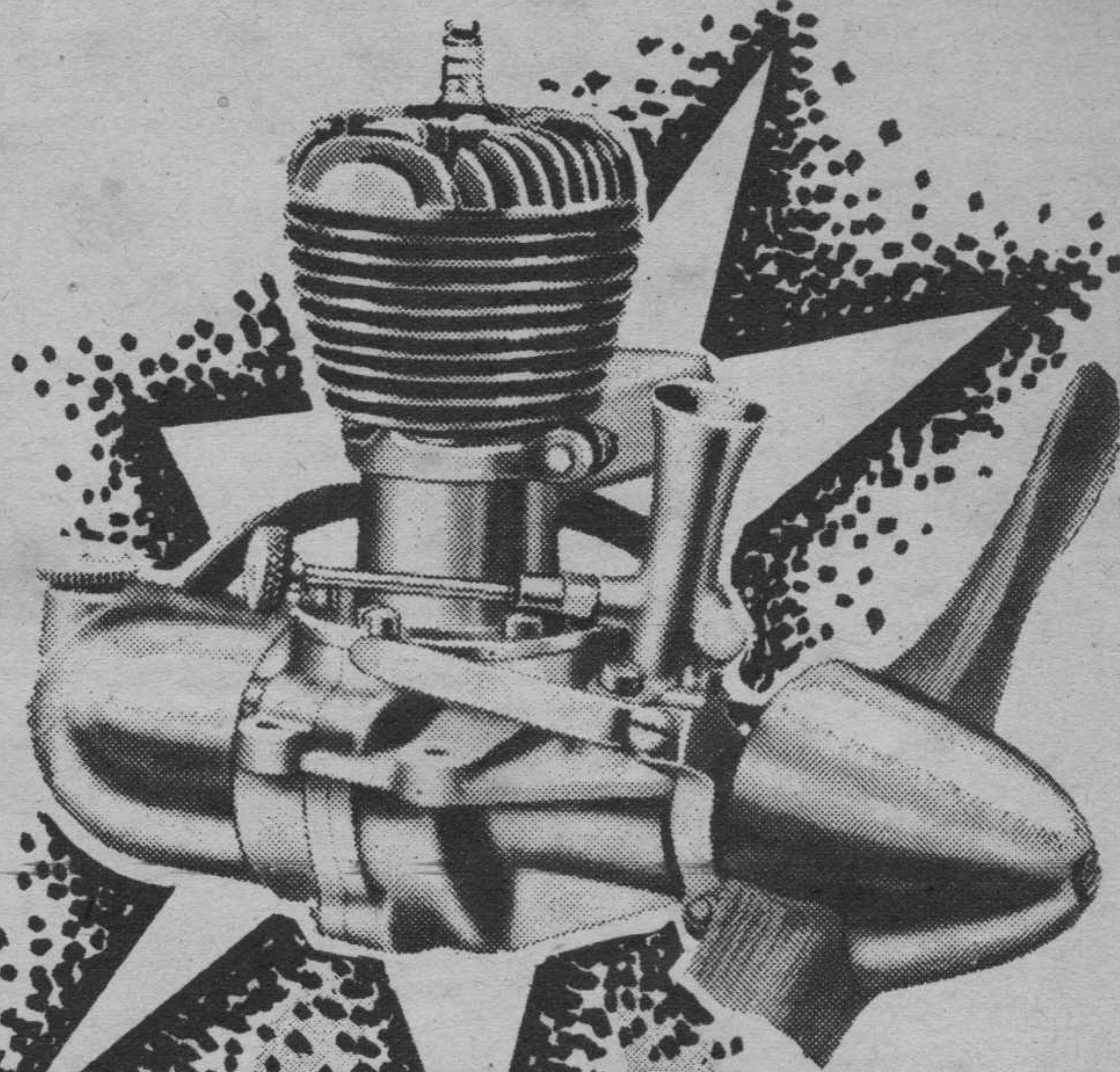
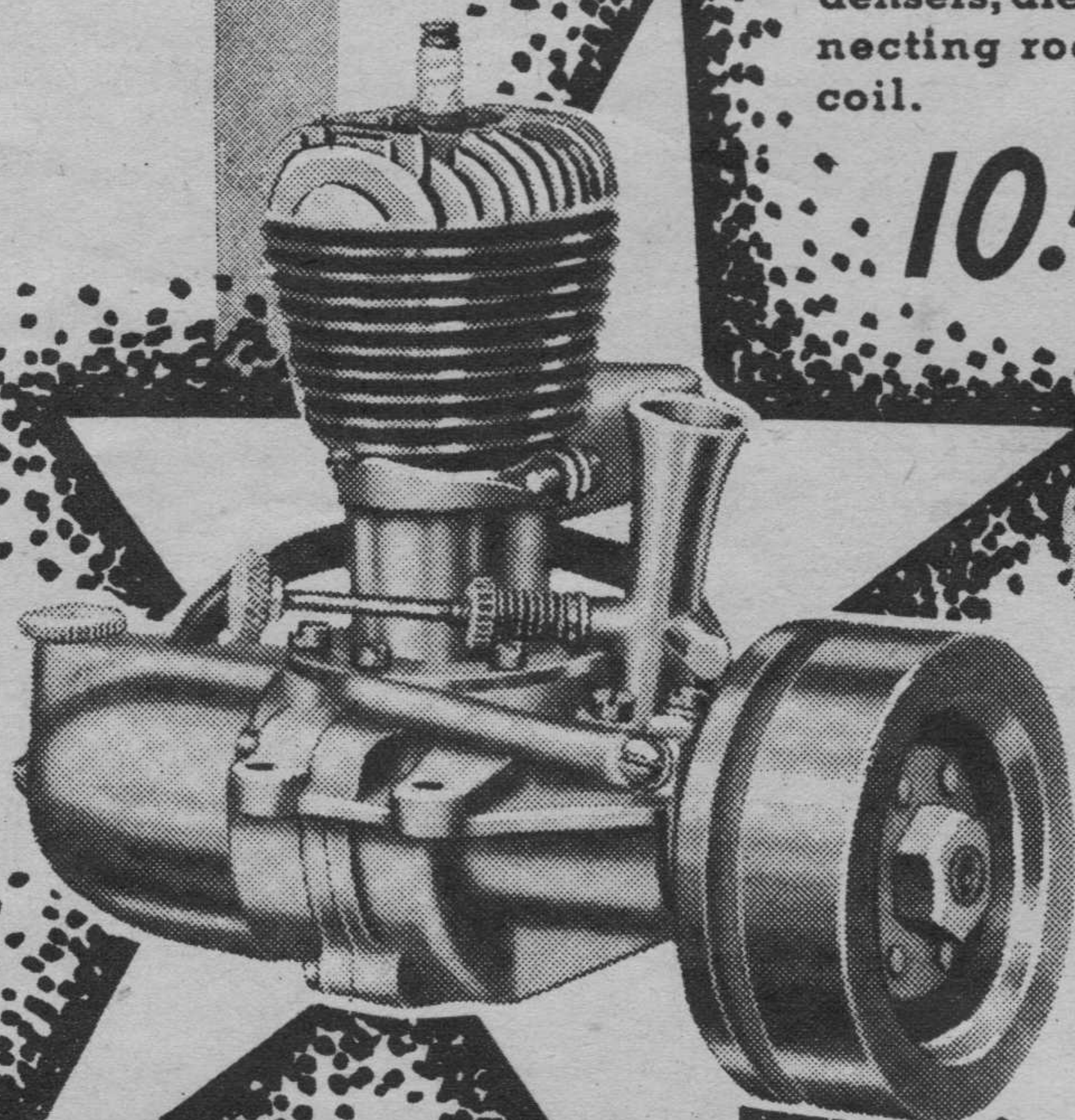
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ON THE FIELD. (By Carroll Moon.) The Mac Model Airplane Association of Southern California held its annual contest recently and the winner established a record in Class C which eclipsed Joe Konefes' Class C record by a wide margin. Bud Chapman of Van Nuys, flying a modified Zipper with an Ohlsson 60 for power, averaged 29:53 for three flights. Averaging that amount of time with this particular set-up is really stupendous, and we congratulate him on the accomplishment. Mrs. Bunting won the ladies' prize. Bud Chapman took first in Class C and Joe Bilgri took tops in B Class. Cummings, of course, captured the Class A trophy. Jerry Williams took the Junior Class trophy (he placed sixth in the meet) and inasmuch as he is but eight, he deserves a fine hand for his achievement. His flights were 9:06 and 7:23. Consistent, eh? His ship was a KGS powered by a Tiger.

The Third Midwestern Gas Model Contest held at Ottumwa Airport, Ottumwa, Ia., was a "howling success," according to those present. Some 255 entries participated, and that, my friends, is a contest for any one man to handle. Captain C. P. Oleson of the army air corps, however, and Ottumwa's airport manager, handled the meet very efficiently. By agreement, motor runs were cut to 15 seconds due to wind. Ken Heckart of Ottumwa, flying a ship of his own design powered by a Tiger Aero, took Class C with an average of 6:00¹/₃. In Class B, S. S.

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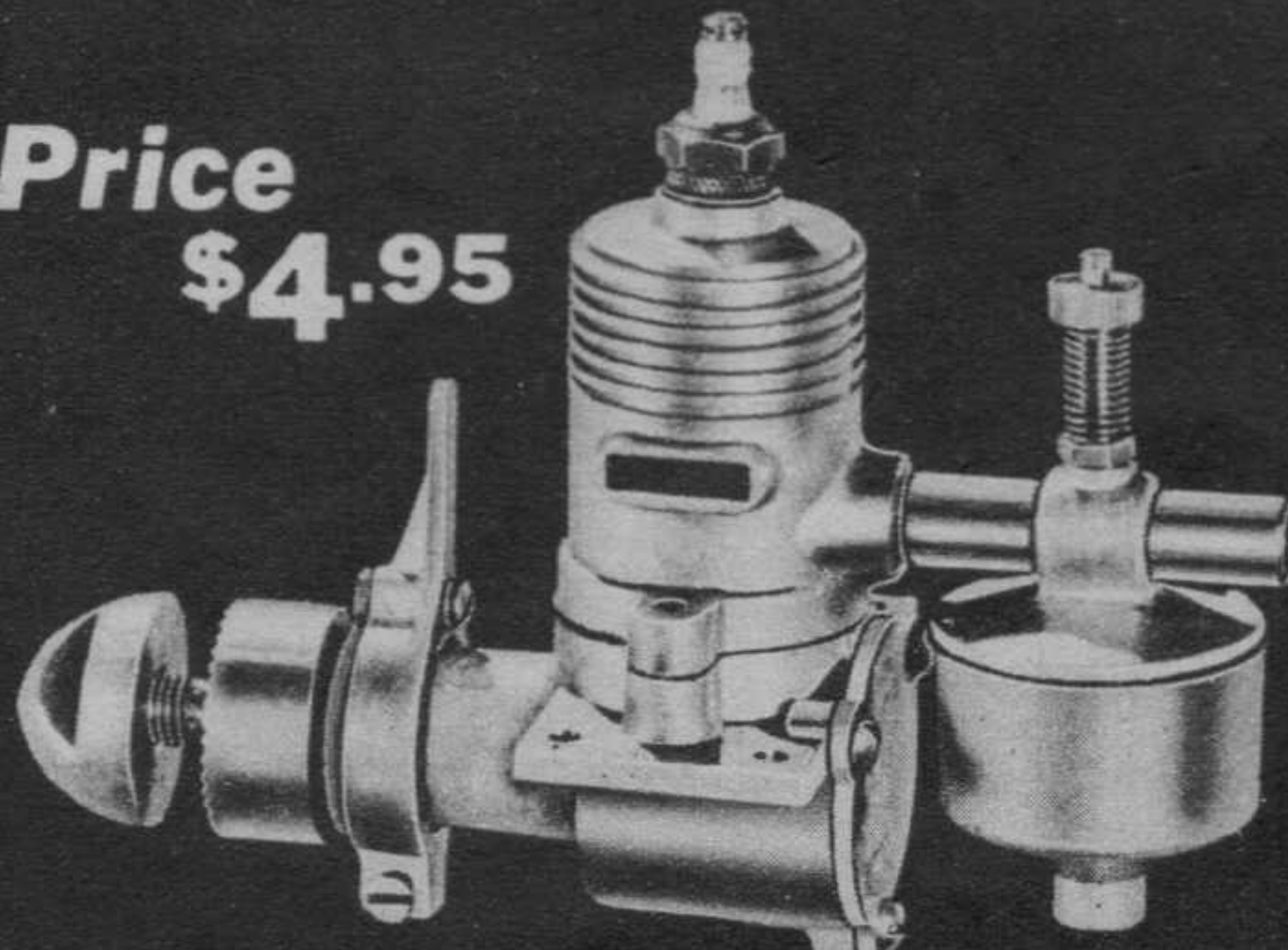
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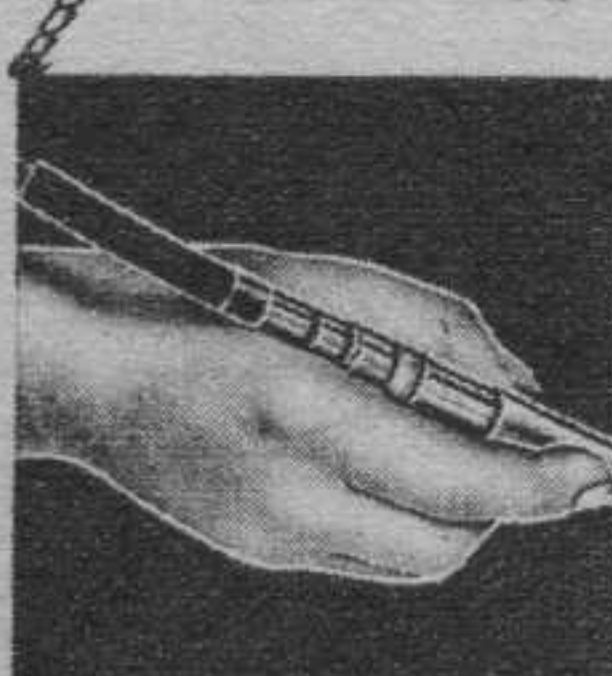
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Hackenburg of Kansas City was first, flying a Zipper with an Ohlsson 23 in the nose. His average was 5:06¹/₃. In Class A, Charles Lamb of Tama, Ia., took first flying an original design with a Bantam for power. His average was 2:36¹/₃. Among the entries were John Williams, Joe Williams and Frank Mead of Colton, Calif., while others from Wisconsin, Illinois, Missouri, Nebraska, Kansas, Minnesota, Louisiana and Michigan attended. The Winged Motors Club of Kansas City won honors for the best representation.

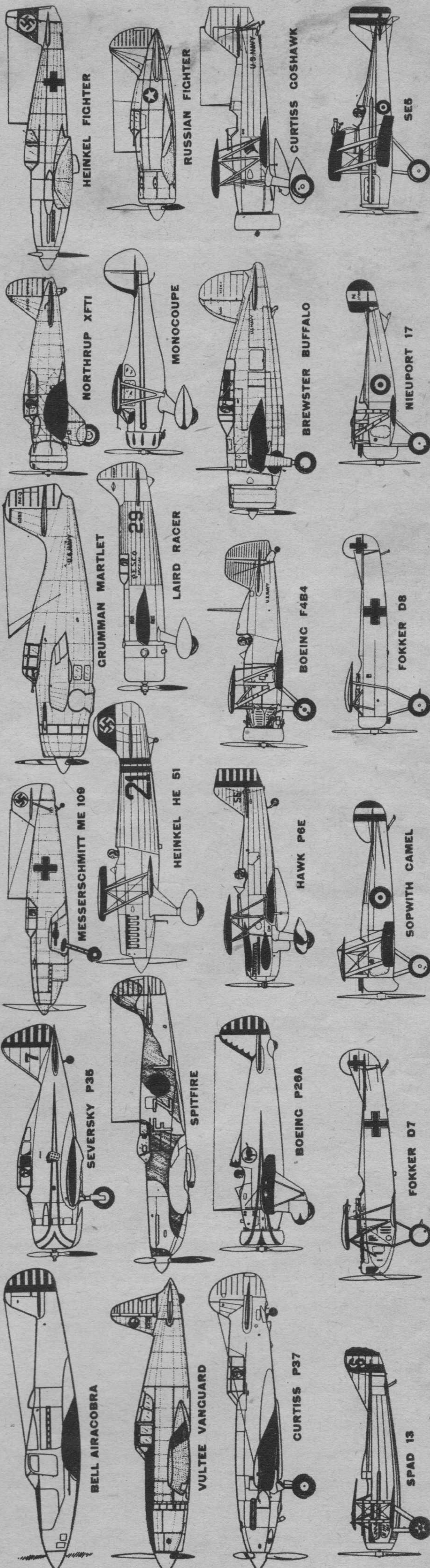
The Poughkeepsie Gas Model Association's annual contest held during the first few days of August resulted in a fine representation despite the fact that the meet was postponed a week due to bad weather. Some 150 entries were on hand. C. G. Giessen of Jackson Heights, L. I., took Class A honors with an average of 4:24, and the longest flight of 10:45. In Class B, George Terwilliger of Newburgh, N. Y. was first with an average of 8:17, his longest flight being 12:51. Mike Pace of New York won Class C honors with an 8:43 average, longest flight 22:10. Awards were made by Carl Goldberg (Comet—remember?). Officials included Walter Lenart, Henry Douglas, and Joseph Butler. Oh, yes, Leon Shulman lost his own ship on a test flight, spent a day cutting down a tree retrieving it and ended up by contracting poison oak. No, he didn't win a prize.

And here's a name that appeals to the wife. The Model Maniac Contest held at Nobelsville, Ind., on August 3rd, which was attended by nearly 100 entries. Some thirty-nine ships were lost in the various events due to the intense thermal activity. Byron Graham of Frankfort, Ky., won the open rubber class with a total time of 21:49. (Whew!) George Perry of Lexington, Ky., flying a Ranger powered by an Ohlsson 19 took first in Class A gas with a total of 11:51. Paul Parke, flying a Baby Playboy powered by an Atom, was third. In Class B, Howard Bonner of Anderson, Ind., flying a Zipper powered by an Ohlsson 23, was first with a total of 17:02. In Class C, Ray Neese of Indianapolis totaled 18:23 using a Playboy with an Ohlsson 60.

The Second Annual Granite City Model Meet (St. Cloud, Minn.) held August 3rd, attracted about 100 modelers from throughout the Middle West. According to our correspondent, thermals were not only frequent but terrific. For example, Bob Sweger of St. Paul won Class C with an average of 15:04. He also had the longest flight of the day, doing 43:28 on one flight. In Class A, Fred Emmert was first with a 7:19 average. E. C. Johnson of Rochester, Minn., captured Class B with a 7:38 average. Conrad Renning of Minneapolis won the cabin event with a 10:10 average. Roberts won the stick event with a 9:28 average. An unusual feature of the meet was a radio transmitter on the field tied in with a receiver located some five miles downwind. Through this constant contact, a majority of the lost planes were soon located.

Cliff Travis, whom we mentioned

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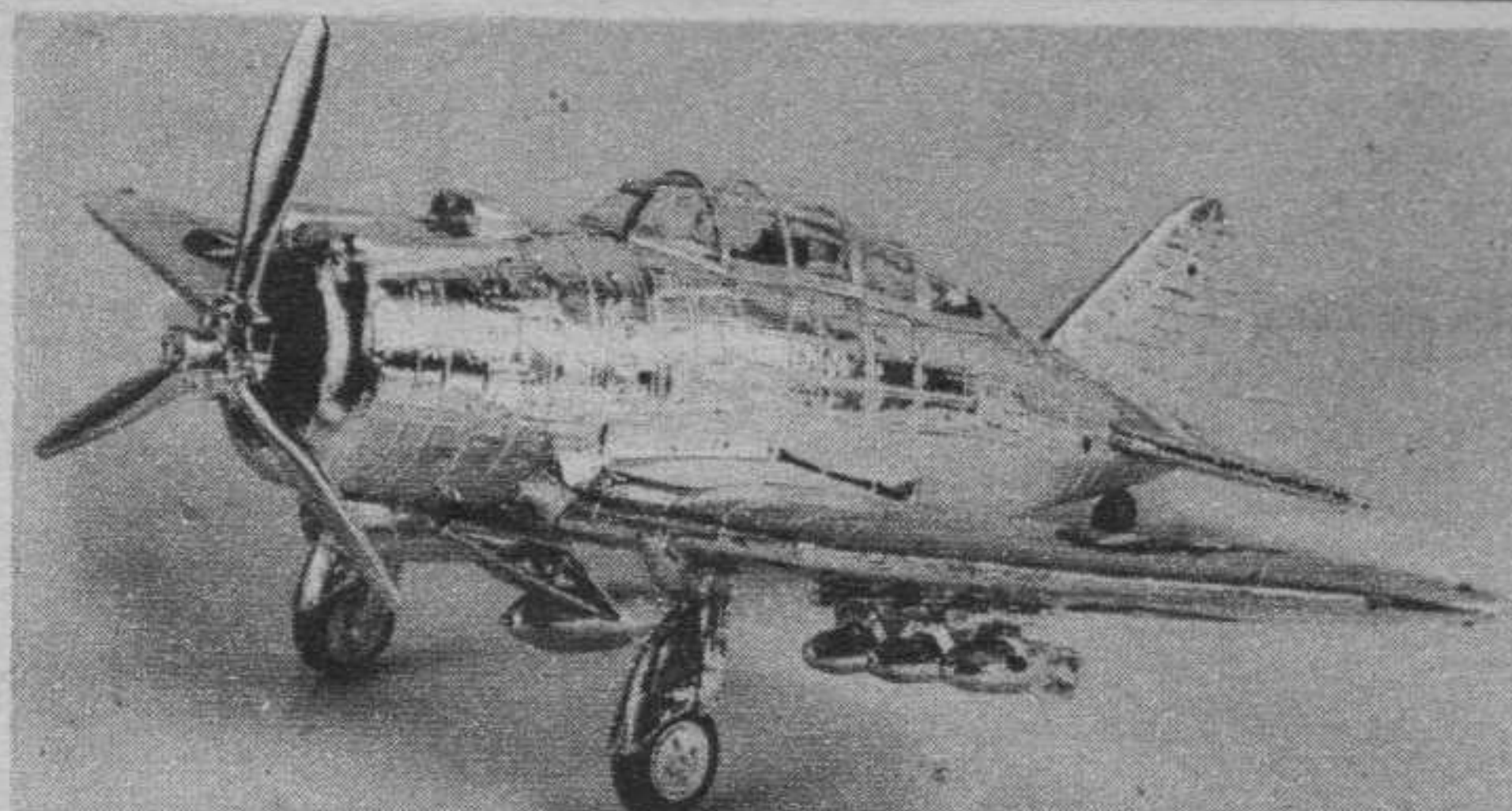
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before, walked off with Class A honors at the meet sponsored by Jackson's Models and Supplies Co. of New York and held at Throggs Neck, Bronx, also on August 3rd. His Bantam-powered ship (original design and how!) turned in a total of 340 seconds. In Class B, C. Hauff was first with a total of 290 seconds. In Class C, R. Willard flew a Guff (an Air Trails ship) to first with a total of 700 seconds accumulated on one flight. J. Hopkins won the stunt event. W. Yuppa took the surprise event.

We always like to feature rubber championship meets. To our mind, a good rubber job is harder to build, adjust, and maintain than any gas model. The Linden Model Aircraft Club of Linden, N. J., has conducted the New Jersey State Model Meet for several years, the most recent meet being held early in August. John Best of Elmont, N. Y., won the junior championship, taking first in fuselage and third in glider. In senior fuselage, Silveo Colletti of Linden was first with 29:26 on three flights. In senior stick, Mike Gural was first with 16:50. Bob Dagond was first in senior glider with 7:47. Don O'Connell was first in junior glider. Frank M. Krysiak was contest director.

Although we don't often editorialize, we might mention the advisability of getting up that extra buck to AMA for insurance. To our own personal knowledge, in recent weeks planes have smashed two windshields, hit a house and broken a window, and one poor unfortunate who was smacked by a high-flying ship suffered a fractured skull. That dollar invested in insurance might have saved an expensive hospital bill. . . . Gordon (Scotty) Murray of the Brooklyn Sky-Scrapers received his wings from the R. C. A. F. on September 2nd. Shortly after this high point in his life, Gordon returned home on a furlough and promptly the boys in the club gave him a party. The Scotsman was overjoyed, and in sheer gratitude promised to design no more gas models in the future. . . . Ben Shereslaw, proprietor of Bantam Motors, advises all and sundry that Miniature Motors, Inc., is now knee-deep in defense contracts. However, within a few weeks repair motors should be forthcoming, and by Thanksgiving, new motors should be available. Benny's correspondence reveals some funny things about modelers. One motor, returned, bore this bit of enlightening information: "I cannot start the Bantam despite the fact that I have choked and choked it." (Normally, in one full choke, a Bantam will be flooded for about an hour.) Another builder reported a "slight crack-up," and the motor returned was found to have all lugs broken off, a split case and broken timer. Benny is still wondering what the builder would have done in a real smack. . . . Newly elected officers of the Sky-Scrapers for the remainder of 1941 are Art Mansfield, president; Sal Taibi, vice president; Bernard Liquorman, secretary, and

Pete Tryborn, treasurer. Doris Meyer is corresponding secretary, and mail addressed to the club should be relayed to her at 44 Harte St., Baldwin, Long Island, N. Y.

On August 10th, the Queens Aero Club of New York held its first annual contest at Creedmore, L. I., and despite high winds (again?) a goodly crowd of modelers was on hand. Leon Shulman, (prexy of the Kresge Club and erstwhile Sky-Scraper) won Class A honors with an average of 4:56 2/5. In Class B, Cliff Travis (mentioned before in these columns) took first with a 4:41 average. George Gordon won first in Class C with a 4:09 average. Travis also won the award for best single flight with 9:16. Bob Feuer, contest secretary of the club, turned in the report. Incidentally, Bob reports that his Comet Zipper with a Comet 35 (#1193) was stolen a few days later. Ship had red fuselage with blue trim, yellow wing and tail. His address is 93-30 220th St., Queens Village, L. I., N. Y.

The Sky-Scrapers Club of Brooklyn, N. Y., conducted its third annual gas meet—the Eastern Championships—on August 31st at Hicksville, L. I., and nearly 200 entrants were accommodated at the meet, which all conceded to be the biggest and best in the East this year.

At the close of the contest, Alden Mowry of Orange, N. J., was awarded an armful of hardware when he was announced as the Eastern Champion. Mowry won fourth in Class B and second in Class C, and turned in the highest single flight of the day—11:15 in Class C. Walt Waechter, flying a Pacer powered by a Forster 29, took Class B honors with a 2:58 average, his best flight being 7:25. Mowry, who flew a Diamond Demon with an Ohlsson 23, averaged 1:59. In Class A, Leonard Wilket, flying a job of his own design powered by a Bantam, averaged 3:13 1/2 for first. In Class C, George Hartman (Gladiator, Super Cyclone) was first with a 5:13 1/2 average, his best flight being 9:40. Mowry flew a Clipper powered by a Brown to a 4:38 average.

An unusual feature of the meet was the gas flying scale event won by Hank Osmer (Sky-Scrapers). His ship finished first in the fidelity and workmanship half of the event and second in the flight half. The Sky-Scrapers were permitted entry in only this one event. Osmer's ship was a beautifully finished Fokker powered by a Forster 29. In charge of the meet were Contest Directors Ed Yulke and Yours Truly, while most of the credit of the organization of the many details goes to Sal Taibi. Art Mansfield, Pete Tryborn, Doris Meyer and their able assistants Judges in the flying scale event were Frank Zaic and Jesse Davidson. Model builders from Schenectady, Hampton Roads, Va., Poughkeepsie, N. Y., Boston, Mass., and many other modeling centers in the East were represented by entrants and the nearly 10,000 spectators.



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Quickie

(Continued from page 47)

three pieces of paper, one for the bottom, and one for each side on the top. Attach the paper to end ribs and wing edges only. Spray the finished covering with water and allow to dry taut. Then follow up with a coat of thin clear dope. When spraying the tail surfaces and wings, pin them to the bench until dry to prevent warping. The wet paper will not adhere to the bench. Spray one half of the wing at a time.

Propeller. The propeller blank is cut to the outlines on the plan from a medium-hard balsa block $1\frac{3}{4} \times 1 \times 8$ ". Do not round the tips until carving is finished. Carving is done in the usual way. Carefully balance and sand the finished prop. Use at least eight strands of $\frac{1}{8}$ " flat rubber with no slack. The nose block is shown. Glue a washer to it for a bearing and another to the rear of the prop hub. Use a loose washer on the shaft.

FLYING

The tail surfaces are cemented permanently in position. The wing is loose for convenience, being held in place by rubber strands run over the wing and around two wire hooks fastened one on each side to the fuselage at Station 4. Test glide the model over tall grass if possible. If properly built, the model will be tail-heavy. Since the wing cannot be moved back and forth for adjustment, a slight amount of downthrust will remove any stall, but if the stall should be severe, add a little weight to the nose. Insert a sliver of wood behind the top of the block for downthrust. Remember occasionally to place a drop of oil on the propeller shaft between the bearing washers.

Photo Credit List

The following list shows the sources from which credited photos were obtained. Abbreviations: bot., bottom; T., top; U.L., upper left; U.R., upper right; L.C., left center; R.C., right center; L.L., lower left; L.R., lower right; Cen., center; T.C., top center; B.C., bottom center.

Page 6—Fletcher of "PIC."

Page 10—International.

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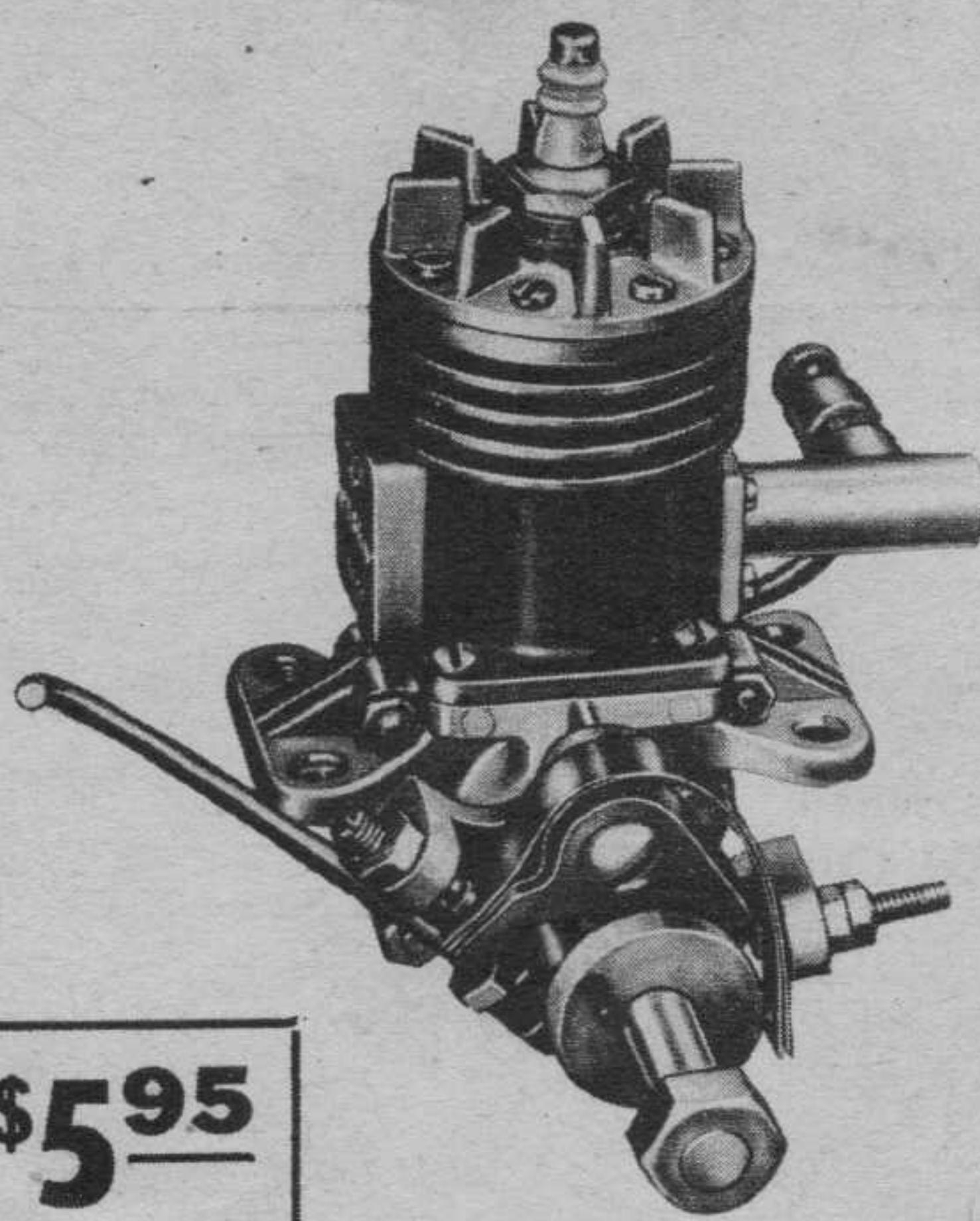
Page 23—Second from top by Emery, rest by Brion.

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Sportster

(Continued from page 36)

the rear of the cockpit. In these cases the spaces between the fairing strips should be filled with small pieces of 1/16" balsa strips to support the covering. The positions for the fairing strips are not shown because even the most careful transfer of formers will produce enough inaccuracies to cause many of the positions to be changed.

The individual builder will probably have his own idea of how many fairing strips should be used and the spacing of them. The fuselage section drawing shows the spacing on the original model. Fasten one strip at a time lightly in position on the formers with a few pins and mark its position on each former. (A fountain pen is very good for this and all other markings on balsa.) Remove the strip and cut the 1/8 x 1/16" notches. This matching is best done with a short piece of 1/16 x 1/2" balsa with a narrow strip of very coarse sandpaper cemented to its edge. Use a sawing motion.

The planking on the forward end is of 1/16" medium balsa. It is laid over the formers and flush with the edges of the fairing strips. Cover with as wide strips as possible over the flatter sections. This provides the smoothest and fastest results. Where the curves are sharp use 3/32" or 1/8" soft balsa and narrow planks. The contours around the wing stubs are made by cementing the stub ribs in place and filling in between the formers with 1/8" soft balsa blocks. The leading edge of the stubs are formed last by cementing soft balsa blocks in place and cutting and sanding them to shape when dry.

When the two halves are completed they may be removed from the assembly surface and the inside of the formers cut away as desired. The formers are left solid up to this stage of construction to provide a more substantial frame to work on. When cutting away the formers, keep in mind the stress on each one. F-11 and F-12, for instance, should be left quite strong because of landing gear stress, and F-13 should be left solid because it acts as the firewall. The cut-away portions are only for accessibility, as the weight saved is negligible. F-14 and F-15 may be cut away to about 1/4" to 3/8" to give ample room for the engine. The two halves of the fuselage may then be assembled and the fuselage completed. The nose block is made from laminated sheets of 3/16" or 1/4" hard balsa. Cement these sheets together to form a block of sufficient size and then lightly cement this block to the forward former.

Draw the spinner circle on the front of this block and then carve it to shape. When shaped on the outside, remove it from the fuselage, hollow it only as much as is necessary to clear the engine, and replace it permanently.

The removable sections (above the stabilizer platform and the bottom hatch) are made by cutting the stringers away enough to allow a piece of 1/16" sheet to be inserted next to the adjacent formers. Bring

these removable sections as near to completion as possible before cutting from the fuselage. This is not only the easiest way to build them, but it insures a good fit. After the bottom hatch is removed, brace F-9, F-10, F-11, and F-12 across the bottom between the lower longerons with 3/16" square strips. The top of the engine cowling is cut away as shown and the top of the firewall is rounded to provide a louver for cooling-air exhaust. The rear of the cowling is also cut away to a thin edge to provide as free an airflow as possible.

The landing gear is bent as shown from 1/8" diameter piano wire. Make the center bends first, slip sections of aluminum tubing over the wire, and complete the bending. Bind the landing gear to the two lower 3/16" square longerons. Bind only over the aluminum tubing. Scratching the tubing with coarse sandpaper will give the cement a better hold on it. It will be necessary to cut away a small portion of the planking to bind the landing gear, but this can be easily replaced by inserting a piece of 1/8" sheet and sanding it to fit. The landing gear fairing may be added later. This is made from heavy drawing paper wrapped around brass or tin ribs soldered to the piano wire. Several thicknesses of the paper may be used if necessary to acquire the desired strength. The fairings should fit loosely to allow the landing gear legs to flex; and when crushed or crumpled they may be easily replaced. Rubber cement makes a good adhesive with which to replace fairings. It is well to have some material, already painted, handy for quick replacement.

The tail wheel on the original model was a rubber-tired wooden wheel from a toy automobile. Its U-shaped axle is cemented to the 1/16" planking on each side of the tail-wheel cavity. The lower cooling-air exhaust louvers are made by cutting through the cowling and into the firewall as shown. Bend the cardboard to shape for the air scoops and cement in place. The rectangular louver plate may be made from thin aluminum. Cut parallel slots in the sheet and bend the louvers with a pair of flat-nosed pliers; then cement in place. The tubes for the wing shear pins are made from aluminum tubing. On the original model a match stick would fit very snugly into the tubing used. This is suggested, because a good source of shear pins is always available. Roughen the tubing with sandpaper and insert in drilled holes in the indicated positions. Use plenty of cement. Cut the holes under the shear pin tubes to allow for the wing mounting rubber bands.

The former at the forward end of the cockpit is used as a template in bending a wire windshield frame. The former may then be cut away and replaced by the wire. The cockpit cover is cemented in place and then the windshield is added. Although a template is provided for the windshield, natural structural variations will make it necessary to fit the



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ENGINE INSTALLATION

The engine mounting is quite unusual. Although the builder may use any kind of engine mount he wishes, the one described has proved very satisfactory and convenient. The engine used in the original model was also often used in another model. The mount consists of a skid to which the engine is bolted securely. The skid is made from two thicknesses of 1/8" mahogany or birch plywood cemented together. The dimensions are determined by the engine to be used. This skid also holds the gas tank and condenser. It is supported in three places in the engine compartment. It is held in place by four heavy wire hooks that are spring-mounted to the inside of the engine compartment. The two forward hooks are of 1/16" diameter piano wire and are hooked directly over the mounting flanges of the engine. Small drill spots in the flanges will keep the hooks in place. The rear hooks are of about 5/64" diameter hard brass wire or brazing rod. They hook into small brass plates mounted on each side of the engine skid.

The ignition wires from the fuselage are soldered to the brass plates. Upon installing the engine in a plane the ignition system is completely hooked up when these two hooks are in place. All four of the engine mount springs are attached to wire loops bent as shown and securely cemented to the bottom of the engine compartment. The best positions of the hooks will vary for different engines installed. The chock blocks upon which the engine skid rests should be made from very hard balsa and securely cemented in place. Plastic wood is used to fillet in the blocks. (Use moistened fingers or tools when applying plastic wood.) When the chock blocks are dry the engine skid may be fitted into place. The engine should be mounted to the skid with the line of thrust parallel to the skid edges. All variations in the thrust line should be made in the skid mounting, and it will always be the same no matter how often the engine is removed. The skid is fitted into place by laying a layer of plastic wood over the chock block, moistening the contacting portions of the skid to prevent adhesion, and then pressing the skid into position. Remove it immediately and allow the plastic wood to dry. Several coats of thinned cement will add to the strength of the chock blocks. When all dry the skid will fit snugly into position. Later, if desired, the thrust line may be changed by cutting or building up the rear chock block. Cut any necessary holes in the cowl to allow for the engine controls and gas tank. Some builders may find it advisable to cut a hole in the bottom of the cowl for the removal of the spark plug with a socket wrench. Give the entire inside of the engine compartment several coats of shellac.

The spinner is made from disks cut from hard sheet balsa and cemented together as shown. It is made in two



Sal Taibi

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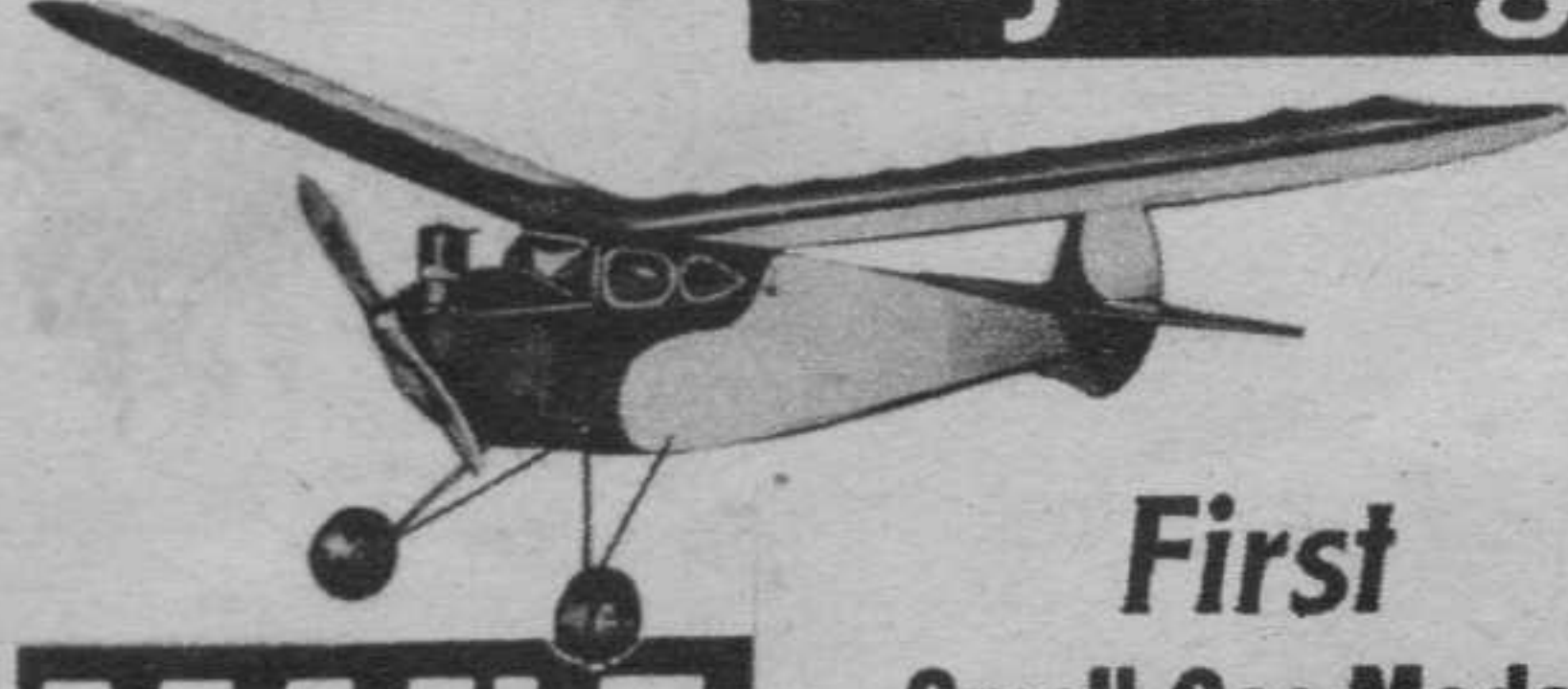
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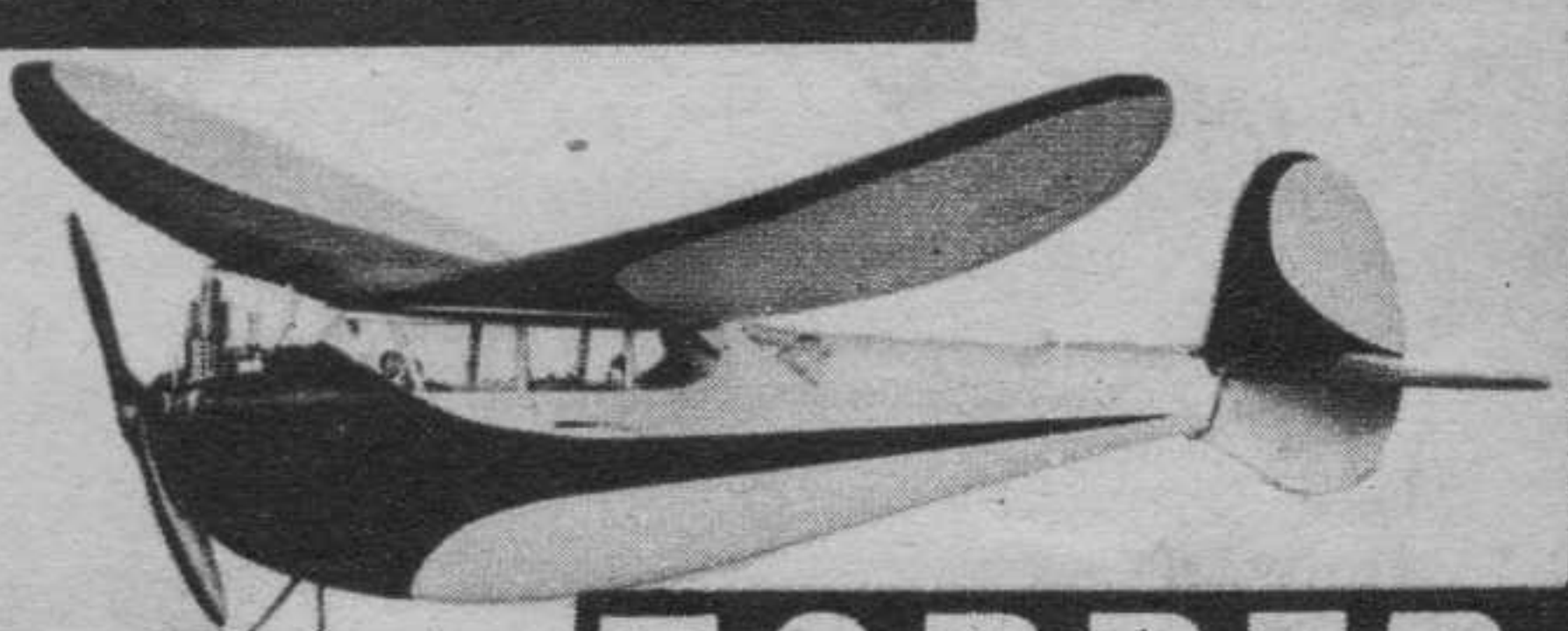
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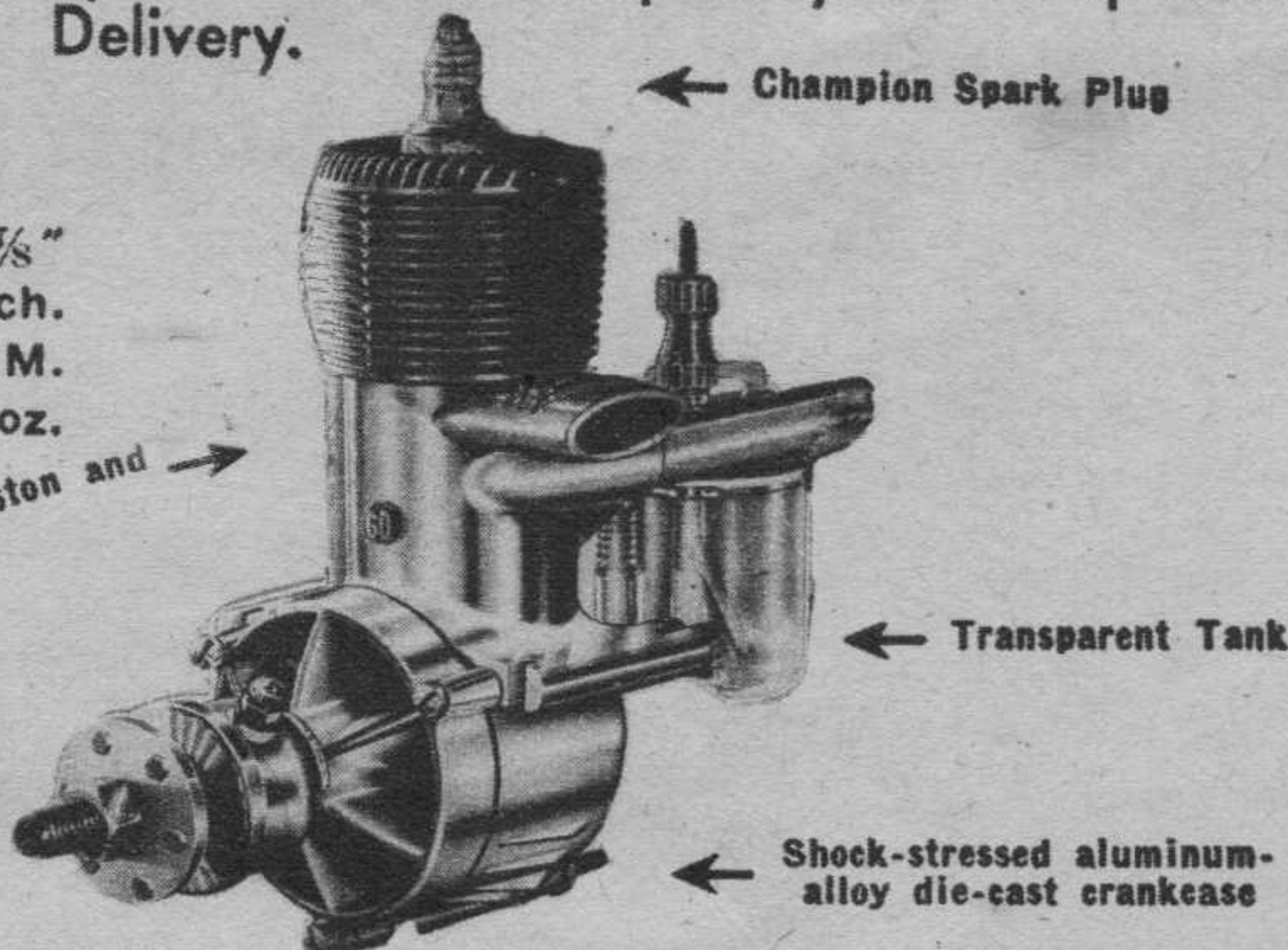
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heat treated crank shaft

Micro-lapped piston and
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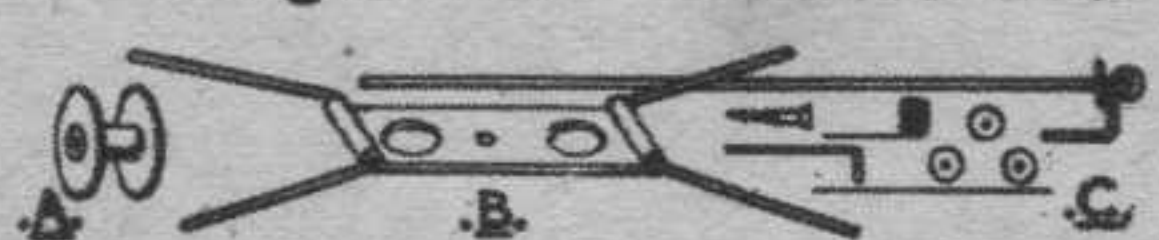


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parts; the back section is clamped between the drive plate and the prop hub, and the spinner cap is fastened with two wood screws to the sides of the prop hub. After having built quite a few spinners, I found this method most satisfactory because it can be rapidly adapted to any propeller.

WINGS

In building the wings, first lay out a spar line and then rib position lines at right angles to it. No further layout is necessary. Cut out the leading and trailing edges and the tip and root rib. Lay these in their correct positions on the drawn position lines. By using the chord dimensions and by carefully cutting the edges, the wing can be built quite accurately. Assemble the edges of the wing first. See that the joints are good fits; this may be done with a sand block. Use two applications of cement; the first should be of thinned cement and allowed to dry without assembling the parts. (This extra penetration will provide a much stronger joint.)

When the edges are assembled but still unshaped in section, the rest of the wing is built. The lower cap strips are straight pieces and are laid flat. The spar is placed in position on these strips and then the upper cap strips and false ribs are added. The upper cap strips and false ribs are cut from medium 1/16" sheet quarter-grained balsa by cutting along the edge of an aluminum rib template with a razor blade or knife. After making each cut, move the template down 5/32" and make another cut. Mark the position of the spar on each strip. The false ribs can be cut with the same template by merely using that portion forward of the spar position's mark. In assembling these upper cap strips a little judgment is required to turn out the best airfoil; trim the ribs at both the leading and trailing edges and always place them so that the spar position mark is always directly over the spar. The cap strips need only be held in place at present with a small amount of cement, as all joints are recemented later. The auxiliary spar is a strip of soft 1/16" sheet about 3/8" wide. It is intended to provide a little rigidity to the wings and also to brace the ribs. Slip it in between the cap strips and push it back until it contacts both the top and bottom strips, then cement it in position. It will form a curve much like that shown in the drawing.

When the cement is dry the wing may be shaped. Trim the edges roughly with a knife and finish the entire wing with a sandpaper block. Work it lightly over the ribs and edges until the joints and contours are smooth. When the shape is satisfactory, every joint in the wing should be gone over at least once with thinned cement. By using a brush this may be done quite rapidly. Apply at least two coats of cement to the leading and trailing edge joints. Joints made in this manner provide a maximum of strength, and if the cement has been thinned sufficiently they will not show through the covering. Locate the positions for the wing peg tubes in the root ribs. Drill

holes and insert one-half-inch sections of aluminum tubing of the same diameter as used in the wing stubs. Make the wing strut fitting by soldering 1/8" lengths of 1/16" diameter brass tubing to 1/8 x 1" strips of brass or tin. Bend these so that they fit over the rib and along the bottom edge of the spar and bind them with linen or silk thread and cement.

The rubber mounting hooks should be bent as shown and securely cemented in place. The wing is held in place by stretching rubber bands from the hooks on one wing, through the holes in the wing stubs, to the hooks on the other wing. Use a long piece of 1/16" diameter piano wire with a tight hook in one end to pull these rubber bands through the fuselage, and stretch them in position.

The wing struts are made from very hard balsa and are streamlined in section. The fitting on the wing end is a piece of piano wire bent and mounted as shown. The free end of the fitting is bent parallel to the wing lower surface to allow the strut to fit closer. The hook in these fittings makes it necessary to twist the strut into position, and then when the other end is fixed the wing end cannot become disconnected. The fuselage end of the strut is provided with a short section of 1/16" diameter aluminum tubing and a rubber hook. The lower fuselage longeron has a similar piece of tubing in it. A common pin, bent to suit, is used in this tubing to hold the strut in position, and rubber bands are stretched from one wing strut hook, under the fuselage longerons to the other wing strut hook. This arrangement for mounting the wings allows a very strong connection that will give in any direction in case of a crack-up.

TAIL SURFACES

The stabilizer construction is very similar to that of the wings. The ends of the spar and the leading and trailing edges are allowed to project a short distance beyond the tip ribs. The fins fit over and are cemented to these projections. This eliminates the typical warping characteristic of this type of fin. As in the wing, the stabilizer is sanded to shape after assembly, and all the joints are recemented. After the dihedral is put in, the center section is covered with soft 1/32" sheet. To hold the stabilizer in place on the fuselage, cement two pieces of piano wire across the underside of the stabilizer platform to act as rubber hooks. Place one under the leading edge and one under the trailing edge, and allow about 3/8" of the ends to project through the fuselage sides. By using 1/4" sections of aluminum tubing in the platform and pegs in the stabilizer, the position of the stabilizer can be made very constant. The section of the fuselage which fits over the stabilizer is finally cemented to the stabilizer, but it is best to hold it in place with pins until the model has been flown and the best angle of incidence decided upon.

COVERING AND FINISHING

The builder may use any kind of covering material he wishes. Bamboo paper was used on the original model because of its toughness; how-

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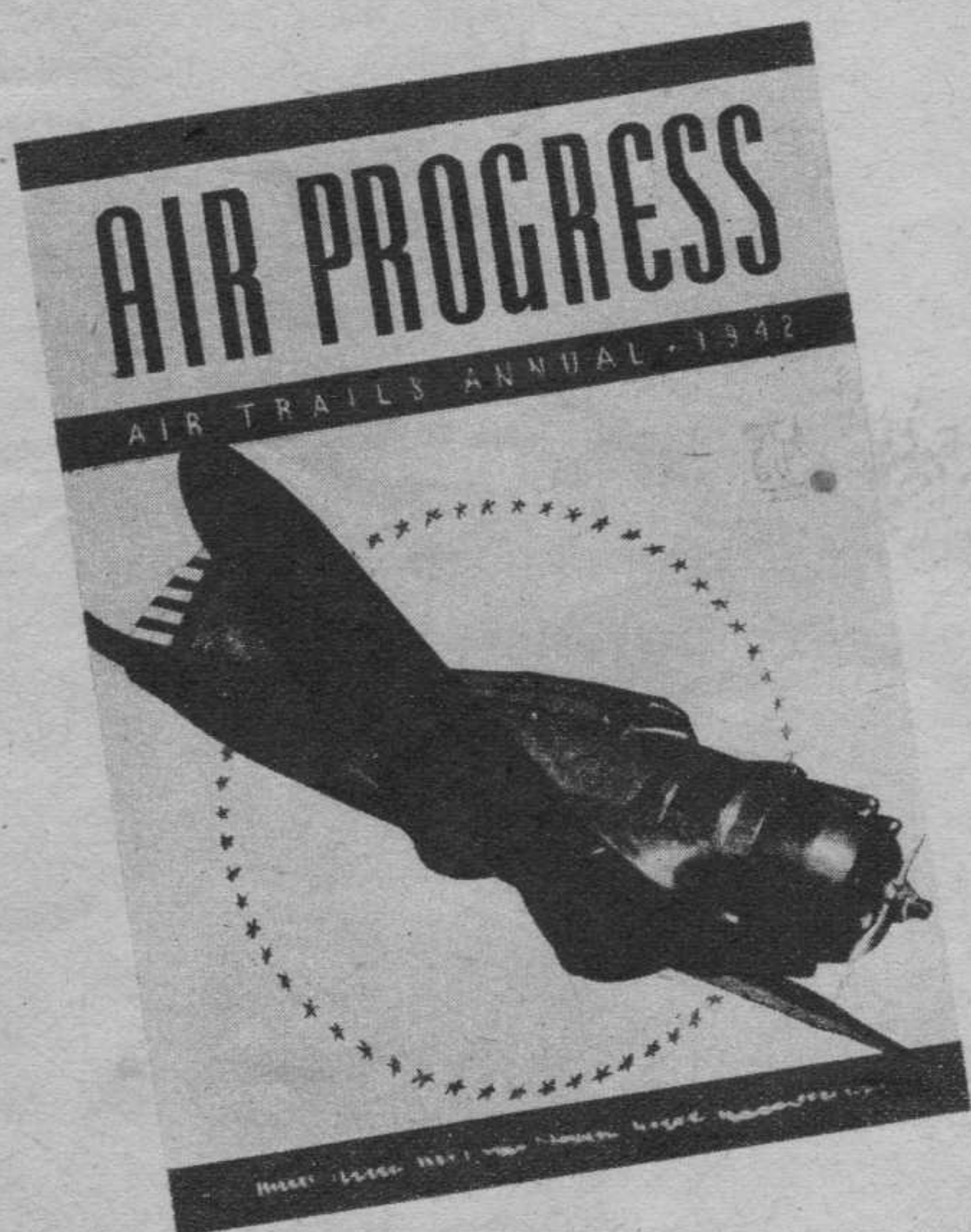
The opening article is by Major General H. H. Arnold, Deputy Chief of Staff for Air.

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ever, its weight and the difficulty of applying it on the curved fuselage are disadvantageous. Use narrow strips of tissue over the wood-covered portions to give them a smooth appearance when doped. Dope the entire model with one coat of clear, and as many coats of colored dope as necessary, to give the desired finish. Sanding with fine sandpaper between coats will improve the surface considerably.

Hobby Mart

(Continued from page 38)

model builder himself (having personally taught nearly 5,000 boys to build airplanes), Irwin Polk, with his wife, Chuddy, faithfully served the requirements of Metropolitan modelers. Polk's policy has been and is, "If it's made and is any good, we've got it!" Every conceivable kit can be found here. Built-up display models make the builder's choice easier. Thirty-five different gas engines and every part for replacements are stored in "Polk's Drawers." While model airplanes are the personal favorites of the Polk brothers (Irwin being the founder of the Bamberger Aero Club in Newark, N. J., which both brothers directed, and the director of the Junior Birdman Institute) other model-building hobbies are not neglected. Both the model railroad and the ship model departments under the supervision of experts in each field are by far the most complete in the country. An eighty-page ship catalogue gives one an idea of the extent of the stock carried, while future R. R. catalogues are expected to be the most comprehensive in that field.

The present gas-model catalogue is a real digest of the kits and engines available today.

While wholesaling is now the major function of the business, Polk's have a retail store that is the talk of the nation. It not only serves efficiently modelers in the Greater New York area, but through its mail-order department reaches modelers in far-off States and away from the beaten track. The store serves as a showroom and exemplary hobby shop for the many dealers who religiously visit Polk's for ideas in merchandising and displays.

Polk's have a downtown warehouse from which bulk shipments to hobby shops and department stores from coast to coast are dispatched, while a two-story building in Newark contains a dope shop and a modernly equipped balsa shop where Polk's color-graded wood is cut by experts.

The Polk brothers are active in the promotion of model aviation, having founded the Metropolitan Model Airplane Council in New York. Irwin, with Lieut. H. W. Alden, first obtained national recognition for aero modeling through the N. A. A., and has for several years been a vice president of the Academy of Model Aeronautics. He has acted as meet manager for several Nationals, and is also a director of the Model Industry Association.

NATION-WIDE "HITS" by SCIENTIFIC

FLAGSHIP—Class "C"

- Wingspan—78"
 - Wing Area—850 Sq. In.
 - Overall Length—44 1/2"
- \$5.50**



CORONET—Class "A" or "B"

- Wingspan—46 1/4"
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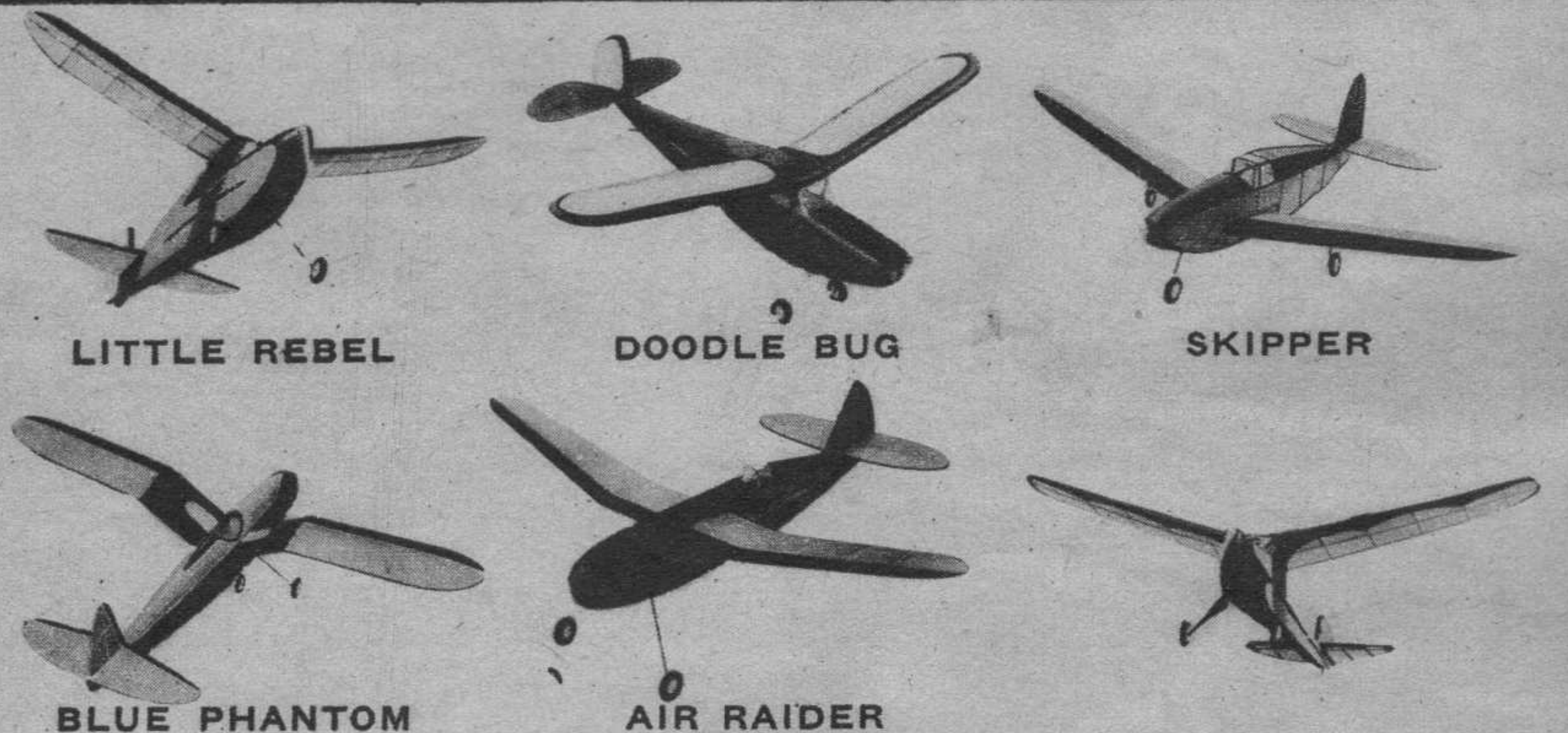
Ensign \$3.50

Mercury 5.50

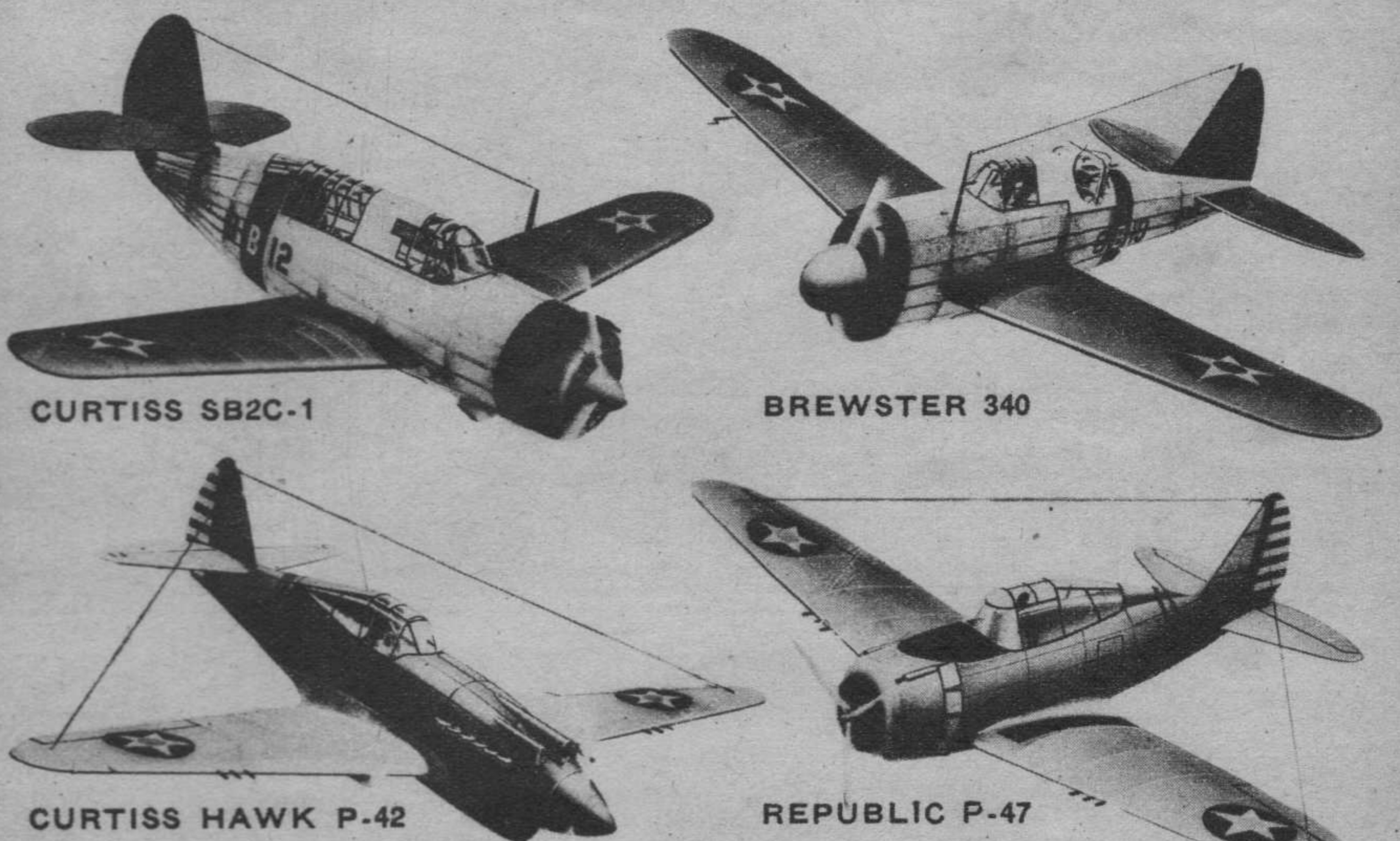
VARSITY—Class "B"

- Wingspan—50"
 - Wing Area—370 Sq. In.
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25" FLEET OF CHAMPIONS.. 25c



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ZENITH Soaring Glider

It's A GLIDER and A FLYER!

Complete, easy to build kit includes everything necessary to build both the Glider and the Flyer. Only..... **50c**

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NOW **\$7.95**

FAMOUS FOR
LONGER MOTOR LIFE
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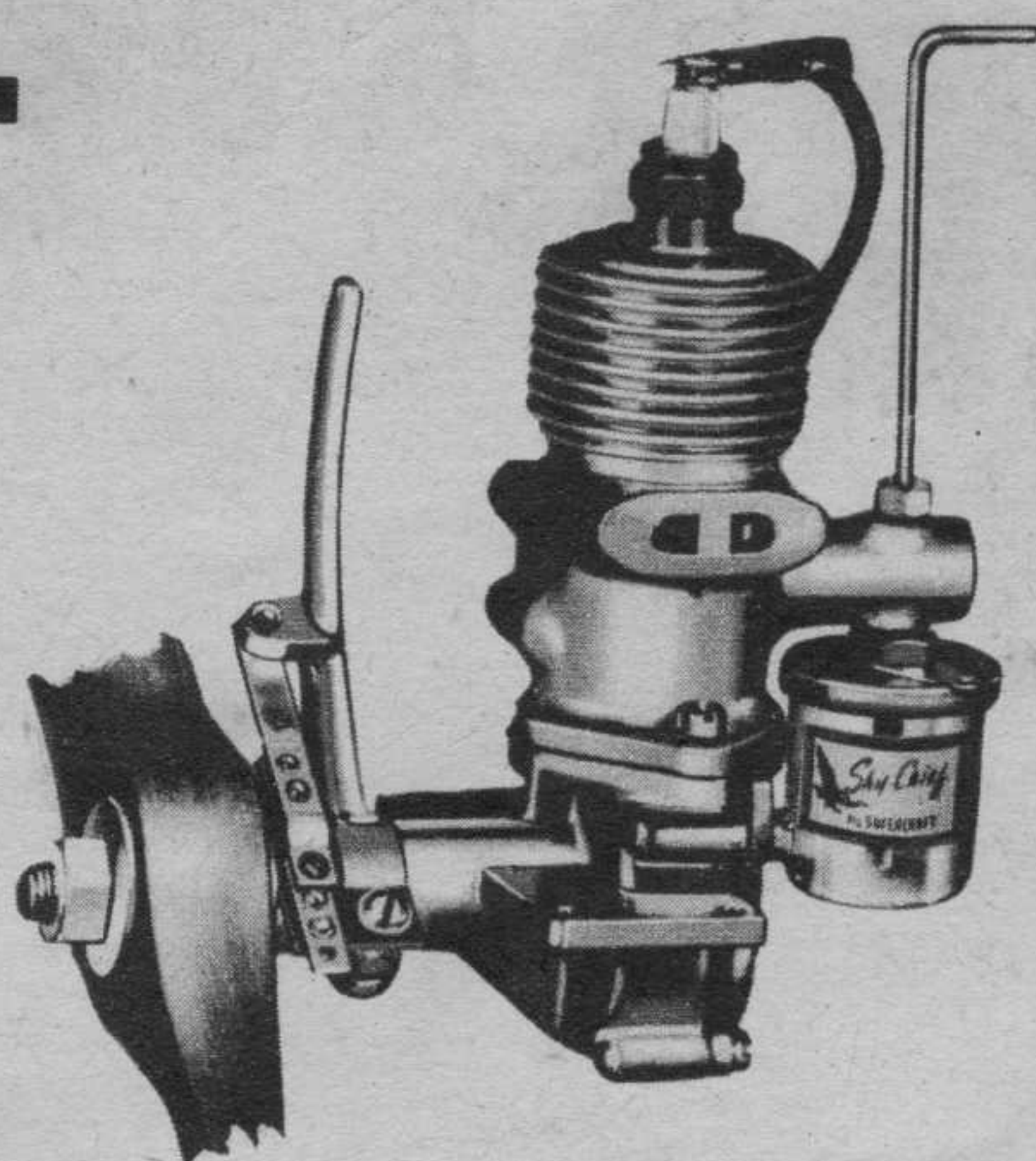
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UNCONDITIONALLY GUARANTEED

Class "C" 1/5 H.P.—Complete with Coil & Condenser

- *Sky Chief "Lightning" 3 ounce Coil
- *Bore 7/8", stroke 7/8", displacement .526
- *R. P. M. up to 13,000 with 13" propeller.
- *All bearings are Diamond-bored and Micro-lapped
- *Weights approximately 10 ounces with coil and condenser
- *Multiple-finned Cylinder made of Molybdenum Iron
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PHILADELPHIA, PA.

Voyager

(Continued from page 42)

carve and sand to correct shape. Cement the nose block to the front and carve it to fit. Check constantly with the drawing and templates, to get the correct shape. Cement a large-face bushing on the nose block. Now cut off the nose and saw the engine block down the center. Carve out the inside as shown. Cement a scrap block to the rear of the nose block. Make it fit snugly in the carved-out portion of the engine block. Finish the entire block smooth as you did the landing gear and pants. Add the detail shown.

Carve the prop from a fairly hard block. Shape the blades first; then, using a razor blade, carve the spinner. Add freewheeling and finish smooth.

Now for the tail surface. Cut rudder ribs and spars. Bend tip and trailing edge of aluminum tubing or bamboo. Assemble the rudder and cover the leading edge with 1/32" sheet. The stabilizer on the real 105 is plywood-covered, so to simplify the model I used 1/8" soft sheet for the stabilizer, sanded to a streamline shape and covered with tissue. Scale and flying outlines are shown.

For the wing, make a metal template of the longest rib. Cut the required number of ribs, cutting slots for the leading edges and spars. Cut the odd-sized spars from sheet balsa. I used bamboo tips, but 1/16" aluminum tubing or balsa may be used. The wing spars should project a quarter-inch or so from the end ribs. These fit in the slots on the ribs built into the fuselage, assuring perfect wing alignment. When wing framework is finished, cut away the leading edge and insert the carved slot. When thoroughly dry, sand the entire framework smooth. Movable ailerons and flaps may be added, if you wish.

COVERING AND FINISHING

Use any material desired. I used light silk on the fuselage, and hakone tissue on the wing and tail. Apply the covering carefully. Don't allow it to touch anything but longerons, stringers, wing ribs and tips. Spray with water and apply thin clear dope until all pores are filled. Sand lightly with 10/0 and dope again. If you are not sure of the pores in the covering or wood parts being properly filled, give them a light coat of colored dope. When dry, it will show where fill-in is needed.

Now for that super finish. Don't rush the job. Use Berryloid regular pigmented dope. I used Stearman vermilion trimmed with black, but any color scheme will do. Thin the dope slightly, then apply three coats to wings and tail, seven or eight coats to fuselage and wood parts, letting each coat dry before applying the next. Check to see if all pores in wood and covering are closed.

Now sand lightly with wet or dry sandpaper, wetting the surface occasionally. Wipe clean and apply auto rubbing compound with a soft rag. Do this slowly and wet the surface occasionally. When all parts take on a smooth luster, you will

notice that the dope is rubbing off in spots. Wipe the surfaces clean and apply several more coats of thin dope, until all parts are evenly colored and smooth as glass. Give it another rubdown. As many as twenty coats may be applied to the fuselage and wood parts. Be careful when rubbing the wings and tail—don't go through. Decorations and detail may be applied with thinned colored dope flowed on with a ruling pen. By rubbing talcum powder into the surface, India ink will stick, but must be coated with clear dope. Windows are .005 celluloid. The edges of the windshield are 1/16" wide strips of celluloid painted and cemented in place. A strip of celluloid 3/8" wide may be painted and carefully cemented over each fuselage wing junction, on top. The real ship has a metal strip over this junction.

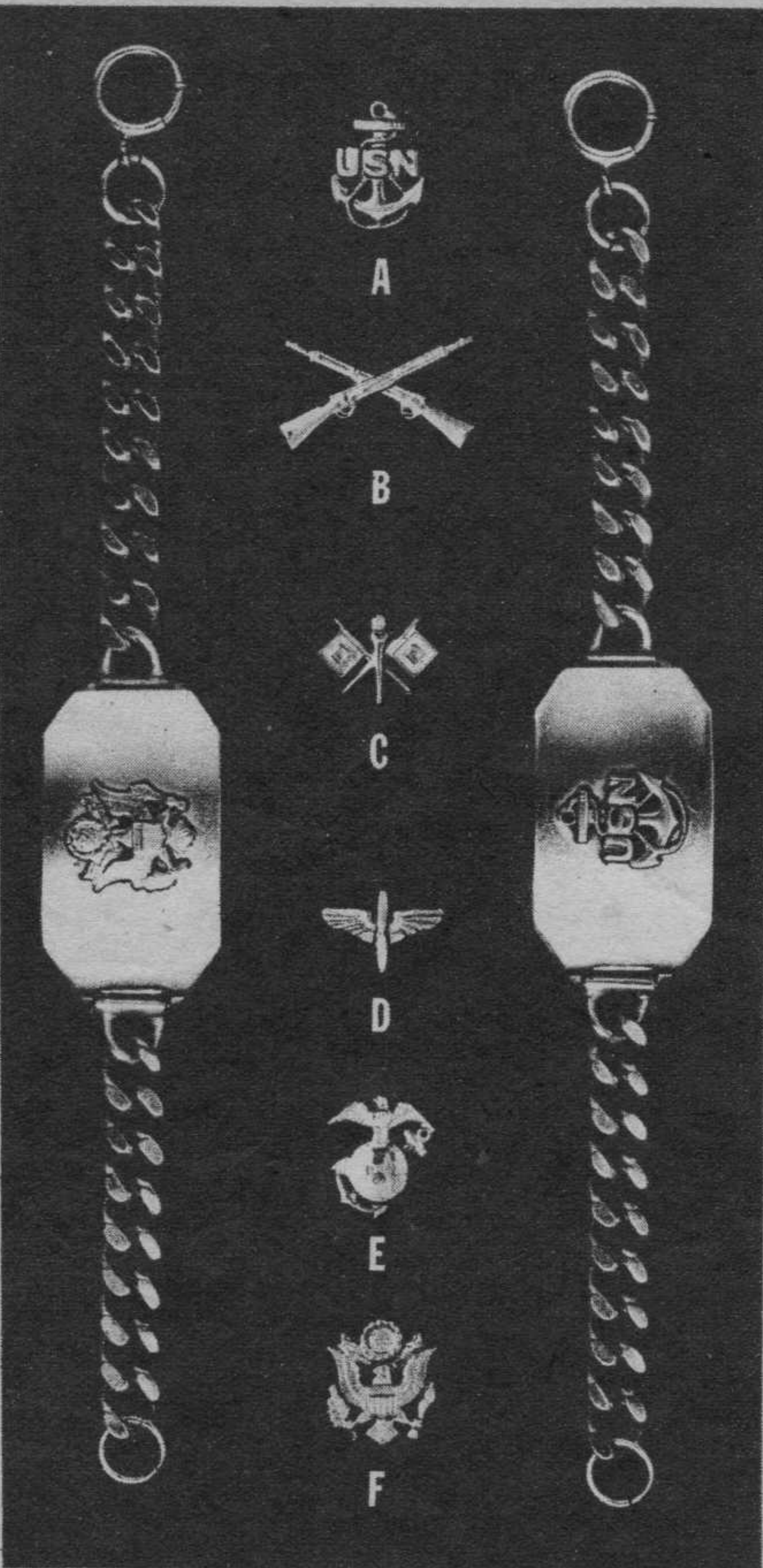
In assembling, attach wing to the fuselage. The spar ends fit in the slots cut in the center section. Cut the wing struts to correct length and cement in place. Cement the stabilizer in place, at 0° to the thrust line. Attach the rudder and cut silk to fit the fillet shape. Apply it wet, pulling out all wrinkles. Dope and paint the fillet. Finish as you did the other parts. Cement the engine block in place. Make up a rubber motor of six or eight strands of 3/16" brown rubber, well lubed, and bind it to the prop shaft and rear hook. A small opening may be cut at the rear of the fuselage to permit changing the rubber motor. To keep the finish from getting dull use any wax in paste form, applied with a soft rag and rubbed to a high gloss. This should only be done on the completed model, because the wax may retard the drying of any cement or dope that may be necessary in assembly.

You may have noticed that I omitted much of the usual instruction, but I'm taking it for granted that you can "wish" some parts to their proper shape, the idea being to keep working on the particular part until you are satisfied it is right and that it conforms to the drawing.

Adjust and fly the model in the usual manner. Test hopping can be done safely in tall grass on a calm day. Good luck!

LIST OF MATERIALS

- 1 pc. 3 1/2 x 3 x 3 1/4" for nose block
- 1 pc. 1 x 1 1/2 x 8" prop block for flying prop
- 1 sheet 1/8 x 2 x 36" soft balsa for wheel pants, planking
- 1 sheet 3/32 x 2 x 36" very soft, for planking, et cetera
- 6 pcs. 1/8 sq. x 36", longerons, leading edge
- 1 sheet 1/16 x 2 x 18" hard, to strip for wing spars, stringing rudder spars, et cetera
- 2 pcs. 1/16 x 1/8 x 36", fuselage up-rights, et cetera
- 1 pc. bamboo and 18" of 1/16" O. D. aluminum tubing
- Various scrap blocks of balsa
- 1 sheet 1/16 x 2 x 36" soft, rib, formers, et cetera
- Iron wire for control hinges



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NAME

ADDRESS

CITY STATE

.005 celluloid for windows
3/16" brown rubber
3" rubber tubing for hooks
Silk and tissue for covering
1 large-face bushing
3 1/4" O. D. copper washers
1 pr. 1 1/4" balloon wheels
2 ft. No. 12 wire
8 oz. Berryloid pigmented dope (optional)
6 oz. clear dope
2 oz. cement
6 oz. thinner
Black dope for trim
Wet or dry sandpaper, fine
Various other grades of sandpaper
Auto rubbing compound, wax

Down The Runway

(Continued from page 40)

The Academy bows deeply to Mr. E. for his much-appreciated comment and introduces for the applause the Chicago Park District and the Chicago Times, whose staffs made the 14th Nationals the best ever.

★ ★ ★

Probably few activities receive the publicity that model aviation activity is accorded by the press and radio. Organized enthusiasm comes in for the most play, of course. Of all the full-page "spreads" we've seen in the roto sections on aëromodeling, we award our own first prize to the Philadelphia Inquirer for a full page of color shots taken at a Quaker City meet this summer. The colorful models made a very effective front page for the Inquirer's "Picture Parade," and the best of these splendid photos was one of Viola Gutekunst holding a yellow-and-white model while wearing polka-dotted blue slacks and a Bustleton-unit Quaker City Club white insignia blouse.

Fashion catches up with the model builders!

★ ★ ★

Latest news from up North is the establishment of the Air Cadets of Canada, a sort of boy scout-aviation movement designed to inculcate into the youth of Canada a knowledge and love of flying. With smart uniforms and aviation-study programs, the Air Cadets are already under way. Back home, it is reported that the boy scouts have finally licked antiflying sentiment in their own leadership and may soon embark on a model and full-scale aviation program in a big way.

The Canadian Air Cadets are not to be confused with Maurice Roddy's Air Cadets of America, although both are utilizing models to interest youngsters in full-scale aviation.

★ ★ ★

We promised that we wouldn't be lengthy this month, but before we close we can't help passing on the information that a number of flying schools such as Parks Air College have a surprisingly large number of ex and active modelers among their students. The A. M. A.'s slogan for the month goes "Keep 'Em Flying" one better. Our aim: "Start 'Em Flying."

U.S. NAVY

MIGHTY 450 M.P.H. FIGHTER

Grumman SKYROCKET

WINGSPAN—42"

Above model of the famous Grumman Skyrrocket was featured in double-page spread in the SEPTEMBER, 1941 issue of AIR TRAILS.

TWIN-MOTOR 450 M.P.H. NAVAL TERROR

THE GRUMMAN SKYROCKET—A ship that attains a top speed of 450 m.p.h. . . . climbs 6,000 ft. per minute and acclaims to be the most heavily armed fighter in the world . . . that's the plane Sid Struhl followed in designing the exact flying scale model. Model has 42" wingspan. Its twin-props give it terrific climb. No torque. The double propellers revolving in opposite direction assure tremendous stability. 2-minute flights are accomplished with ease in clam air.

KIT CONTAINS: Full-size plans, Printed sheets (ribs bulk-head), Silkspan covering, 2 finished balsa props, Prop spinners, Ensignia, Celluloid, Wheels, Wire, Liquid, Cements, Dopes, Etc.

\$1.50

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	ROCKETEER "A"	GAS—Sensational contest winner. Wingspan—40". Class A or B. For Bantam, Ohlsson 19 or 23. KIT: Full-size plans, Stream-lite wheels, Silkspan, Printed sheets, Formed landing gear, Semi-F prop.	\$2.95
	JIFFY	GAS—36" Class "A" ship. For Atom, Perky, etc., Full-size plans. \$1.00 Standard KIT: Silkspan, Balsa wheels, Formed gear, Liquids. \$1.50 DeLuxe KIT: Silkspan, Fin. prop, Stream-lites, Cement & Dopes.	\$1.00 \$1.50
	BEE	GAS—Contest winner that has developed into 1941's biggest seller. COMPLETE KIT: Full-size plans, Carved prop, Formed landing gear, Silkspan, Printed wooden parts, Stream-lite wheels, Cement & Dopes.	\$1.95
	STREAM-LITE WHEELS	Ultra-streamlined sponge rubber wheels centered with hardwood hubs, fits all ships, blow-out proof. 2-inch Size 40c PAIR 2 1/2-inch Size 40c PAIR 3 1/2-inch Size 50c PAIR	40c 50c PAIR
	50-INCH MODELS	RUBBER—Modern 50-inch flyers. KIT: Alum. cowl or spinner as needed, Full size plans, printed sh., land. gear, contest rubber, Balsa prop, Tissues, etc. STINSON "105", MR. MULLIGAN, RYAN ST—\$1.00 EACH	\$1.

H&F MODEL AIRPLANE CO.

273-T VAN SINDEREN AVE., BROOKLYN, N. Y.

DEALERS: Brooklyn Novelty, 2264 Bedford Ave., Brooklyn—Austin-Crafts, Burbank, Cal.
Summers Hobby Service, 929 Milwaukee Ave., Chicago.

Called
"LIGHTNING"
by
the R.A.F.



\$1.95
By mail postage
15c extra

Sensational NEW MEGOW MODEL LOCKHEED *Interceptor*

Interest today is focused on the warplanes, and as usual, Megow is far out in the lead with a big new 50-inch flying model of the fastest, most terrific fighting plane the world has ever known... the 2,200 h.p. American LOCKHEED INTERCEPTOR!

Called "Lightning" by the British, this radically different warplane is making history in Europe today, and every model builder who wants something "different" will want this new Megow Kit. Get one today and show the fellows that you know your warplanes. Kit includes lifelike pictures in detail, full-size plans and the super quality materials found in all Megow kits. Ask for it at your dealer's. If he cannot supply you, send your order direct to us.

Send 15c postage for the big new 1942 Megow Hobbycraft Catalog just out, and for special information on all Megow warplanes.

Megow

Dept. A.T., Howard & Oxford Sts., Phila., Pa. or 217 N. Desplaines St., Chicago, Ill.

WORLD'S LARGEST
MANUFACTURER AND DISTRIBUTOR
OF MODEL AIRPLANES
SHIPS AND RAILROADS

"Don't Quote Me!"

(Continued from page 38)

ing their orders now for future deliveries.

The National Retail Dry Goods Association is publishing a manual for its member stores, "Making Profits out of Hobbies," which will show how to install, operate and promote a hobby shop. The manual is being prepared with the co-operation of the Model Industry Association. It is hoped that by the means of this manual many department stores will become interested in conducting a hobby department, thus widening greatly the distribution of hobby materials and providing the means for many hobbyists to carry on their activity by obtaining a source of supply where there was none before. This sort of competition should make hobby-shop owners perk up, dress up their stores and polish up their service.

Franklin Butler, secretary of the Model Industry Association, is moving his office from New York back to Chicago. The Model Industry Association board of directors' meeting will be held September 27th and 28th in Pittsburgh, Pa. Plans for proposed model-hobby trade exhibit to be held during the New York Toy Fair will be discussed. It is planned that an executive committee meeting of the Academy of Model Aeronautics be held at the same time.

The world's fastest model airplane is what Victor Stanzel & Co. call their new Super "G" Shark, which features an entirely new wrinkle in control-line flying. But let Stanzel himself tell you about it. We quote from a recent letter: "First, however, we would like to give you a little dope on Super 'G' Line Flying, our new directional control system. This is something entirely new in

movable elevator control for gas-powered models. It is especially designed for Super speed flying and stunting, yet it is so simple in construction and operation that even the beginner will experience no trouble mastering it. . . . Getting back to the Super 'G' Shark, this little super speedster has a wing span of only 24" and may be powered with any Class B or C motor, Class C motors, such as the Ohlsson "60" and Super Cyclone preferably. Test models of this new ship have thundered through space at the unbelievable speed of over 100 m. p. h. Its remarkable maneuverability and ease of control allows for hair-raising stunts in absolute safety. The new Super 'G' Shark Construction Kit will retail at only \$3.95 complete."

Cannon Manufacturing Co., 1561 East 17th St., Cleveland, Ohio, sends us a very impressive and comprehensive leaflet on the Cannon motors (Class B with .299 cubic-inch displacement at \$16.50 and Class C with .538 at \$18.50). Jack Liendecker won Senior Class C at '40 Nationals using a Cannon, then followed up by taking the same event at the Scripps Howard races in Akron. The Cannon is a development of the DeLong and Steele custom-built engines of a few years ago. Chief engineer is old-timer Mr. DeLong, said to rank among leaders in design in the internal-combustion field. Interesting features include a special sand-cast crankcase which is stronger, and a thirty-five percent to fifty percent improvement in crankcase cooling, an extremely high-compression ratio, replaceable cylinder liner and replaceable bronze main bearing.

We hear that Pioneer Brown will introduce a high-quality coil in the

MODEL CRAFT'S NEW SCALE-TYPE GAS MODEL THAT WILL FLY AGAINST PEDESTAL-TYPE SHIPS!

The trend is to real DESIGN in gas models... away from mere contest "freaks". For years some "experts" have been saying that you couldn't get high performance in a cabin-type airplane. However, Modelcraft designers have been interested in finding out what COULD BE DONE. After exhaustive test-flights, we announce the new "Westwind", a true "aviator's model", with scientifically slotted wings... and performance that challenges any pedestal model on the field.

So perfectly balanced that you have to carry the BEST BATTERY on the market to bring the weight up to 8 oz. per sq. ft. a Westwind (for Class B or any small Class C engine) is nevertheless as STRONG as any gas model ever built. Like all Modelcraft models it is easy to build from complete, well-made kit. Order from your dealer or the West's \$3.85 Largest Model Supply House. Price.....

MODEL CRAFT 7308 S. VERMONT AVE • LOS ANGELES, CALIF.

About the SOLO CLUB and how to become a member

Feeling that there is a definite need for a means of recognizing those pilots who have experienced the supreme thrill of their first adventure alone into the blue on man-made wings, Air Trails has formulated and founded the SOLO CLUB.

This club is open only to those who have actually made a solo flight in heavier-than-air craft, either motorless or powered. It does not matter when or where such flight was made. Applicants must furnish the membership committee with satisfactory proof of their qualification for acceptance. There are no dues. Once a member, always a member.

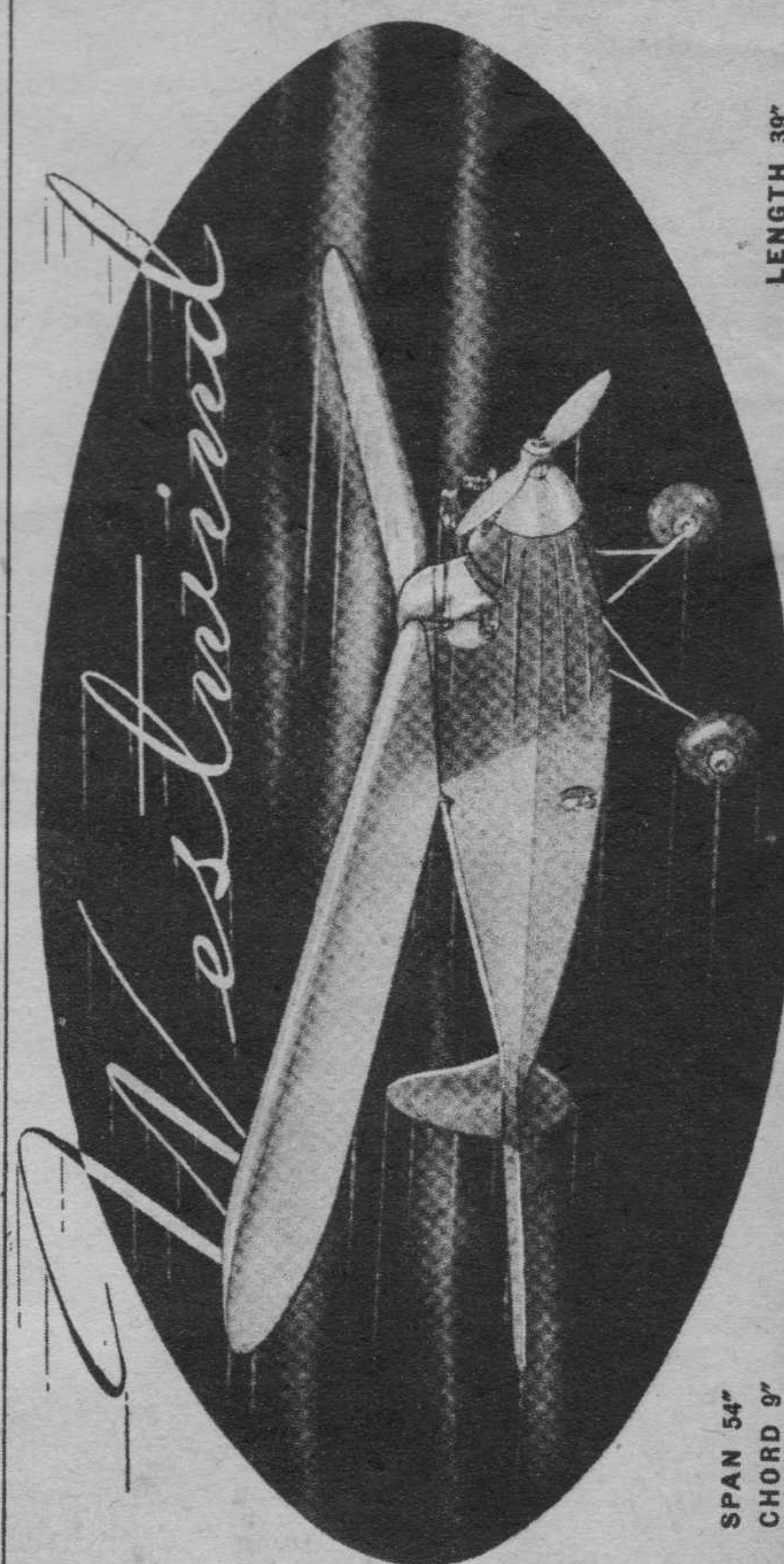
To obtain your sterling silver SOLO CLUB lapel wings and life membership identification card, comply with any of the following requirements and sign. Send with fifty cents to the SOLO CLUB, Membership Committee, Air Trails, 79 Seventh Ave., New York, N. Y.

Proof of Qualification as a SOLO CLUB Member

1. Dept. of Commerce license and number if held.....
2. F. A. I. license and number if held.....
- Or attach any of the following:
3. Evidence of military or naval air-corps service.
4. A letter from your instructor testifying to your solo flight, giving his rating and license number.
5. A notarized statement, preferably with witnesses, giving all details and data of solo flight and plane used.

In submitting the above for membership in the SOLO CLUB, I certify my willingness for the Membership Committee to investigate my application.

Applicant..... Age.....
(please print)
Street..... City or Town..... State.....



near future. . . . Ritz Propellers have added a Handy Andy line of 10-cent tools, including a neat refillable sandpaper block, a tiny hand saw with a wood handle and a hack-saw-type blade to be used for field repairs, and a small wood plane with a razor-blade-type cutting edge. . . . Ritz Props used by American Junior

in Fireball tests did over 90 m. p. h. . . . H. & F. is now sending advance trade notices to dealers. . . . Ben Spotts reports that as a result of his recent write-up in Air Trails he was deluged with orders and inquiries including new business from fourteen States not heard from before.

Something New In Hand-Launched Gliders

(Continued from page 40)

wings (making sure they are glued in proper position under wing). Next step is the stabilizer and rudders. Trace these patterns on a sheet of 1/16" medium-hard balsa and sand to airfoil section as on plan. Rudders and stabilizer are polished like the wings. The stabilizer is glued in place on top of the booms, and the rudders are glued on the sides of booms. Make sure the stabilizer is set at zero degrees incidence. When ship is finished, wax the whole plane and it is ready to fly.

FLYING AND ADJUSTING

Take the ship out to your favorite flying spot and test-glide it, adding clay to the nose to balance it. When you obtain a long flat glide, give the

ship a heave into the air and watch it soar around. For best launching, put one finger behind the left wing, gripping body with thumb and middle finger, and throw into the air, giving the ship a little bank. A higher altitude may be obtained by taking a little clay off nose and adding a little positive to stabilizer. Well, from here on it is all yours, fellows, and lots of luck.

BILL OF MATERIALS

- 1 sheet 1 3/8 x 3 x 12" for wings
- 1 piece 3/16 x 1 x 7" for body
- 1 piece 1/4 x 1/4 x 12" for booms
- 1 sheet 1/16 x 2 x 12" for stabilizer and rudders
- 1 ounce glue
- 1 ounce dope or glider polish

Should The Rules Be Changed?

(Continued from page 46)

By glancing over the chart, we can readily see the required weight for the models using engines of the most popular displacements. Today the rules require 80 ounces of weight for every cubic inch of motor displacement. It was suggested by the country's leading modelers that 100 ounces of weight for every cubic inch of motor displacement be adopted. This would prevent, to a great extent, the type of model that zips upstairs and sometimes leaves part of it behind. This power-loading requirement will tend to give a medium fast climb with a greater safety factor. The 90 ounces of

weight for every cubic inch of motor displacement is the other alternative in this phase, but does not help or prevent in the loss or wrecking of our models to any large extent. So, after considering and reconsidering it may be suggested that the 100 ounces of weight requirement for every cubic inch of motor displacement be adopted.

2. Raising the wing loadings. The phase of model flying most often discussed is usually wing loadings. Arguments always take place on the advantage and disadvantage of higher wing loadings. It is time that arguments be turned into action to

Statement of the Ownership, Management, etc., required by the Acts of Congress of August 24, 1912, and March 3, 1933, of Air Trails, published monthly, at New York, N. Y., for October 1, 1941.

State of New York, County of New York (ss.)

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared H. W. Ralston, who, having been duly sworn according to law, deposes and says that he is Vice President of Street & Smith Publications, Inc., publishers of Air Trails, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above-caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publishers, Street & Smith Publications, Inc., 79-89 Seventh Avenue, New York, N. Y.; editor, C. B. Colby, 79 Seventh Avenue, New York, N. Y.; managing editors, none; business managers, none.

2. That the owners are: Street & Smith Publications, Inc., 79-89 Seventh Avenue, New York, N. Y., a corporation owned through stock holdings by Ormond V. Gould, 89 Seventh Avenue, New York, N. Y., Gerald H. Smith, 89 Seventh Ave-

nue., New York, N. Y.; Estate of Ormond G. Smith, 89 Seventh Avenue, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

H. W. RALSTON, Vice President, Of Street & Smith Publications, Inc., publishers.

Sworn to and subscribed before me this 30th day of September, 1941. De Witt C. Van Valkenburgh, Notary Public No 84, New York County. (My commission expires March 30, 1942.)

Special Delivery



OHLSSON 60 Custom \$21.50
OHLSSON 60 Special \$18.50
OHLSSON 23 \$16.50 OHLSSON 19 \$14.50

• No advertising appeared on the 60 Special until this motor was actually in the dealers' hands. It's there now—and it's .60 cubic inches of *Special Delivery*. In exhaustive test flights, this new Class C motor has yet to be excelled in either climbing power or instant responsive action by any engine, custom-built or standard. See it today. All materials were ordered before the recent shortage, so that at a time when prices generally are rising we are passing on a desirable saving to modelers.

OHLSSON & RICE Manufacturing Company
P. O. Box 2324 Terminal Annex, Los Angeles, California

Mail coupon for illus. folder on all 4 Ohlssons. Name..... Address.....

Sh-h-h! SUPREME IS 1st AGAIN!

with something new in the model field

NOW!

passenger auto kits in 5 new streamlined designs.



Supreme Pan-American \$1.00 complete



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This is a new line of kits that will sell. Write us on your letterhead for attractive trade discounts.

Supreme Debutante \$1.00 complete

Kits come complete with plans, dopes, cements, wheels, semi-cut balsa, etc. Nothing else to buy. All models \$1.00 each.

If not available at your dealer order direct and include 10c postage per kit.

SUPREME MODEL SUPPLY CO. • WAUKESHA, WIS.
Leading manufacturers of miniature, passenger auto kits.

\$7.95

P.P.

CLASS "B" CHAMP

COMPLETE OUTFIT—NOTHING ELSE TO BUY

\$7.95

P.P.

The lowest complete gas combination in model history. Both are complete including motor, model, timer, wheels, prop, etc. **NOTHING ELSE TO BUY. — JUST BUILD AND FLY. \$7.95 complete.**




- 1—SYNCR MOTOR KIT COMPLETE WITH COIL AND CONDENSER
- 2—MERCURY "BULLET" GAS MODEL
- 3—GAS PROP
- 4—HYDRAULIC FLIGHT TIMER
- 5—BOOKLET ON MOTOR REPAIRS
- 6—RUBBER GAS WHEELS
- 7—TWO BATTERIES

48" Wingspan, 14 oz. Weight

Climbs like a sky-rocket. A thermal catcher if there ever was one. Designed for small bore engines. Kit is complete with Balsa, Cowled nose, Wire, Cement, Dope, Celluloid, Tissue, Balsa strips, cut to size, full size plans and printed sheets, etc.

Price of kit, if bought separate.....\$1.50 P.P.

Send 3c stamp for latest catalog of motor, kits or supplies. Dealers write for discount.

MERCURY MODEL AIRPLANE CO. 159211 LINCOLN PL. BROOKLYN, N. Y.

NEW! 9-Foot 1941 TAYLORCRAFT GAS MODEL

9-Foot Span. Length 66". 3" Scale
MODEL 1/4 SIZE OF REAL PLANE. CAN USE RADIO CONTROL

One of the easiest gas models to build. Has special wing airfoil for slow landings. Set has ready cut wing ribs, gear struts, nose piece, etc. set of paints, dope, glue, etc. Model weighs 3 1/2 lbs. Full size scale suitable for radio control. Lifts 4 lbs. additional weight. Full size scale drawing. Const. set, postpaid, less wheels and motor. **\$15.00**

Additional equipment if desired:

18" carved propeller.....	1.50
5 yards silk.....	2.00
1 pair 4 1/2" M & M Air Wheels.....	2.75
1/2 h. P. Forster Gas Motor.....	20.75
1/5 h. P. Brown, Jr., Gas Motor, Type B.....	16.75

OTHER SCALE MODELS RUBBER-DRIVEN FLYING TYPE

24" NORTHROP A-17.....	Set \$2.50
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World's Finest Detailed Scale Models

MINIATURE AIRCRAFT CORP., 83 LOW TERRACE, STATEN ISLAND, N. Y.

restrict the tendencies of our favorite models to hover in the clouds and forget their homing instincts.

Eight ounces of wing loading for every square foot of wing area was the most popular loading in years past because we enjoyed seeing our models glide slowly and bounce around in those slight ground risers. Today it is not too surprising to learn that we have improved over the past six to eight years when this loading was adopted. Today, our models climb much faster than they did six years ago, and because of their greater efficiency and the inherent dynamic soaring characteristics of most models, we can outglide ships of that day. The time seems to be on hand at last to raise the wing loadings.

It has also been suggested by leading modelers that 10, or better yet, 12 ounces of wing loading be adopted for 1942. Twelve ounces seems mighty high for most models, but if most builders calculate the wing loadings that they fly with, they would be surprised to learn that they have been flying with nearly 10 ounces, and some with 11 or 12 ounces. When we first build a model it is finished quite light, and has usually as hoped for, an 8 or 9 ounce wing loading; the testing period adds a few ounces because of oil soaking and slight repairs, and then our models are 10 or maybe 11 ounces loaded per square foot. That is a fact.

Theoretically, a smaller chord on an airfoil is proportionately less efficient. Class C models will not be handicapped as greatly as Class B, and not as great as Class A models if a heavier wing loading is adopted. Because of the smaller size of a Class A model, the efficiency throughout is not as high as a larger class of model.

Realizing this fact, it was suggested that 9 ounces wing loading be adopted for Class A models, 10 ounces for Class B models, and 11 ounces for Class C models. The effect on each class of model today will not be great, but these loadings will tend to decrease the size of the future models for the engine used.

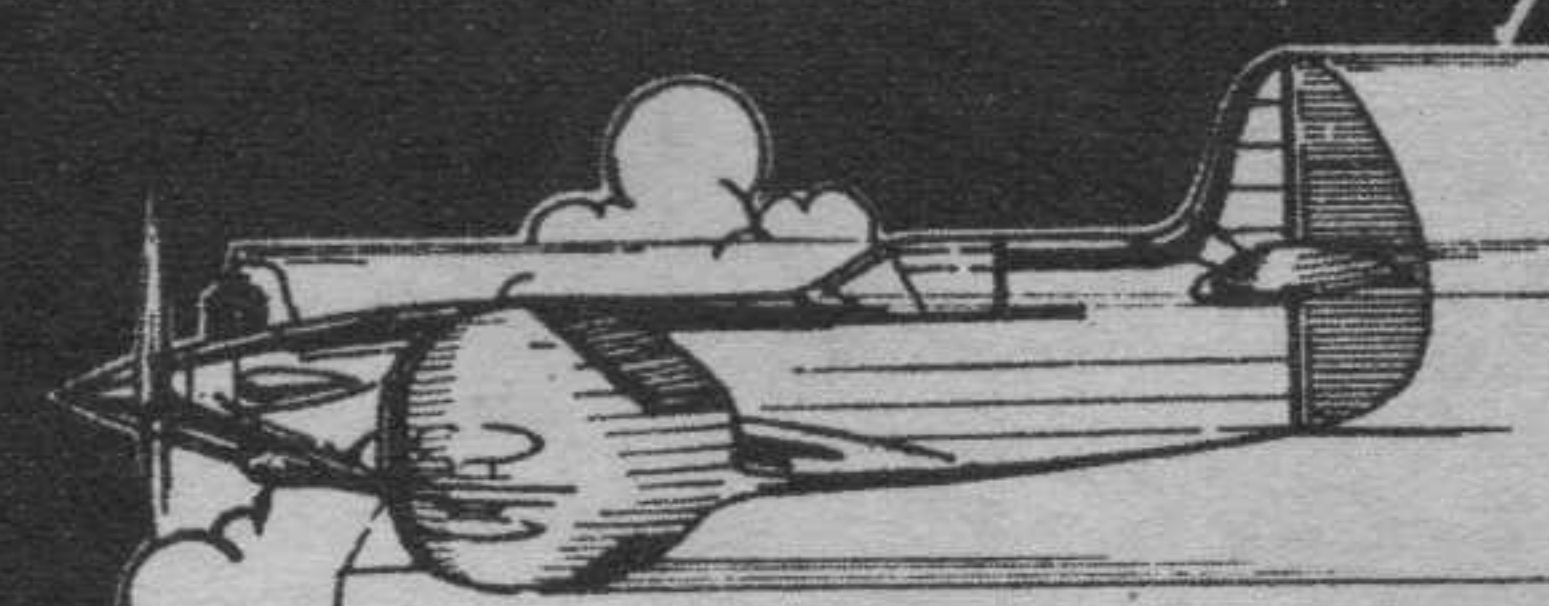
Decreasing the size or loading the models more will prevent to some extent the soaring characteristics of most models and is a step closer to our goal.

3. Shortening the motor run. Five years ago we started flying with 45 seconds engine run, then four years ago with 30 seconds; then 20 seconds, and today still 20 seconds. Nowadays 20 seconds seems too long a period of time, but if lower power loadings are adopted and proportionately heavier wing loadings, a 20-second engine run would be satisfactory since our models would not climb quite as fast and not soar as much. Although 15 seconds was also suggested by these modelers, it was only done so as an alternative if the power and wing loadings were to remain the same. If these suggested loadings are adopted we may disregard the shortening of the motor run.

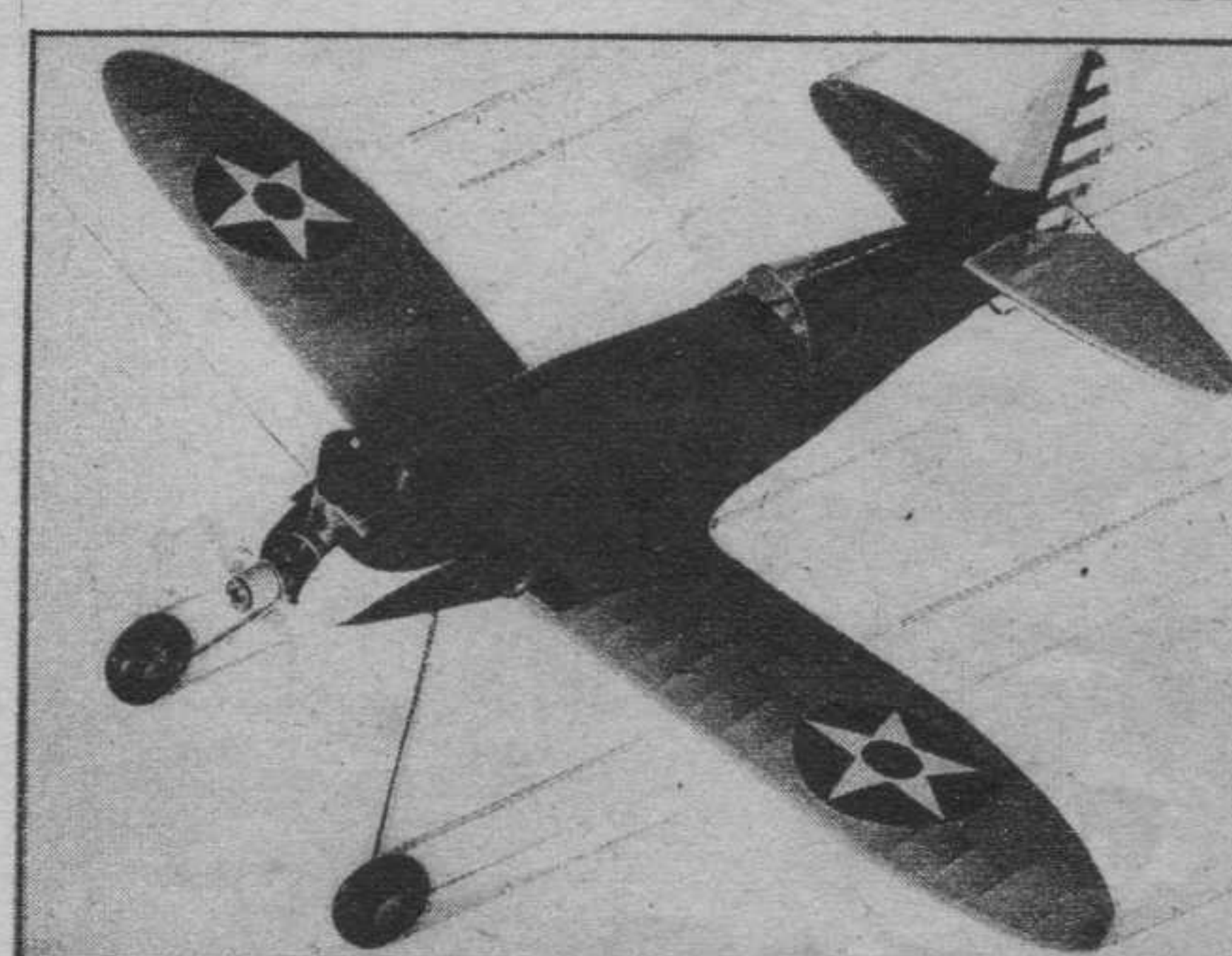
4. Allowing one hand only, guidance on a wing tip. With the inadequate take-off facilities at the majority of the contests throughout the country, many models have been wrecked and damaged during the take-off procedure. Because of the varying flight conditions and the many poor flying fields some builders must content themselves with, the take-off rules should either be abolished and hand launching permitted universally, or allow one-hand guidance on a wing tip. There cannot be any in-between. Last year the

"G" LINE FLYING

Sensational - New - Thrilling



FULLY PROTECTED BY U. S. PATENT
SHARK P-60 "G" LINE MODELS



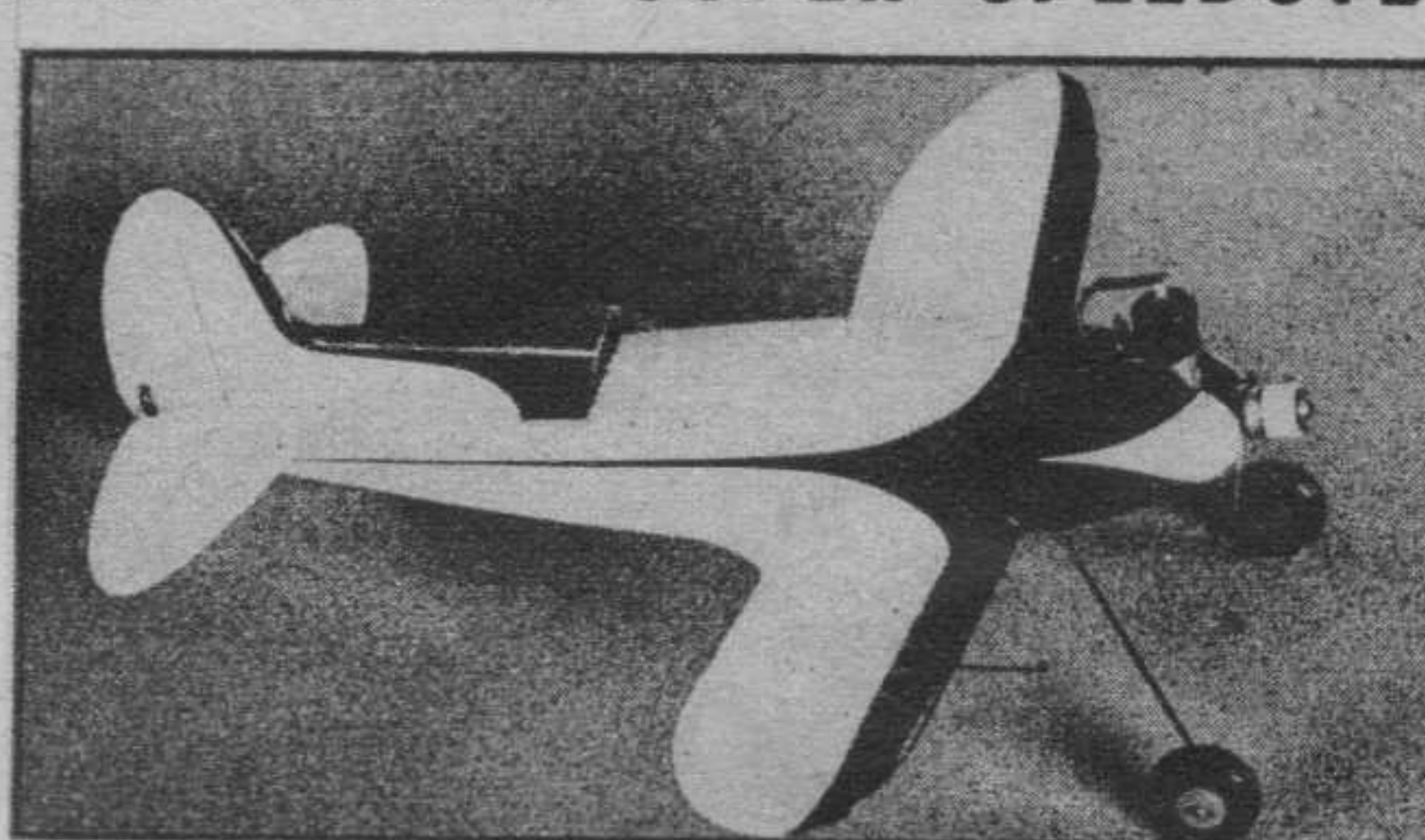
New Rubber Power Kit Two Gas Power Kits

Build and Fly one of these thrilling new ARMY TYPE PURSUIT "G" Line Speed Ships. All Kits are unusually complete throughout.

Complete Shark P-60 Kits

Rubber Powered Kit Complete	For All Class A & B Motors	For All Class C 1/5 H.P. Motors
\$1.95	\$1.98	\$2.98
Postage 20c	Postage 20c	Postage 30c

BABY SHARK SUPER SPEEDSTER



The new BABY SHARK, Super Streamlined Speed Ship, is designed for all Class A and B motors. This snappy little job flies at tremendous speeds of from 50 to 75 M.P.H. **COMPLETE KIT \$1.98** Postage 20c

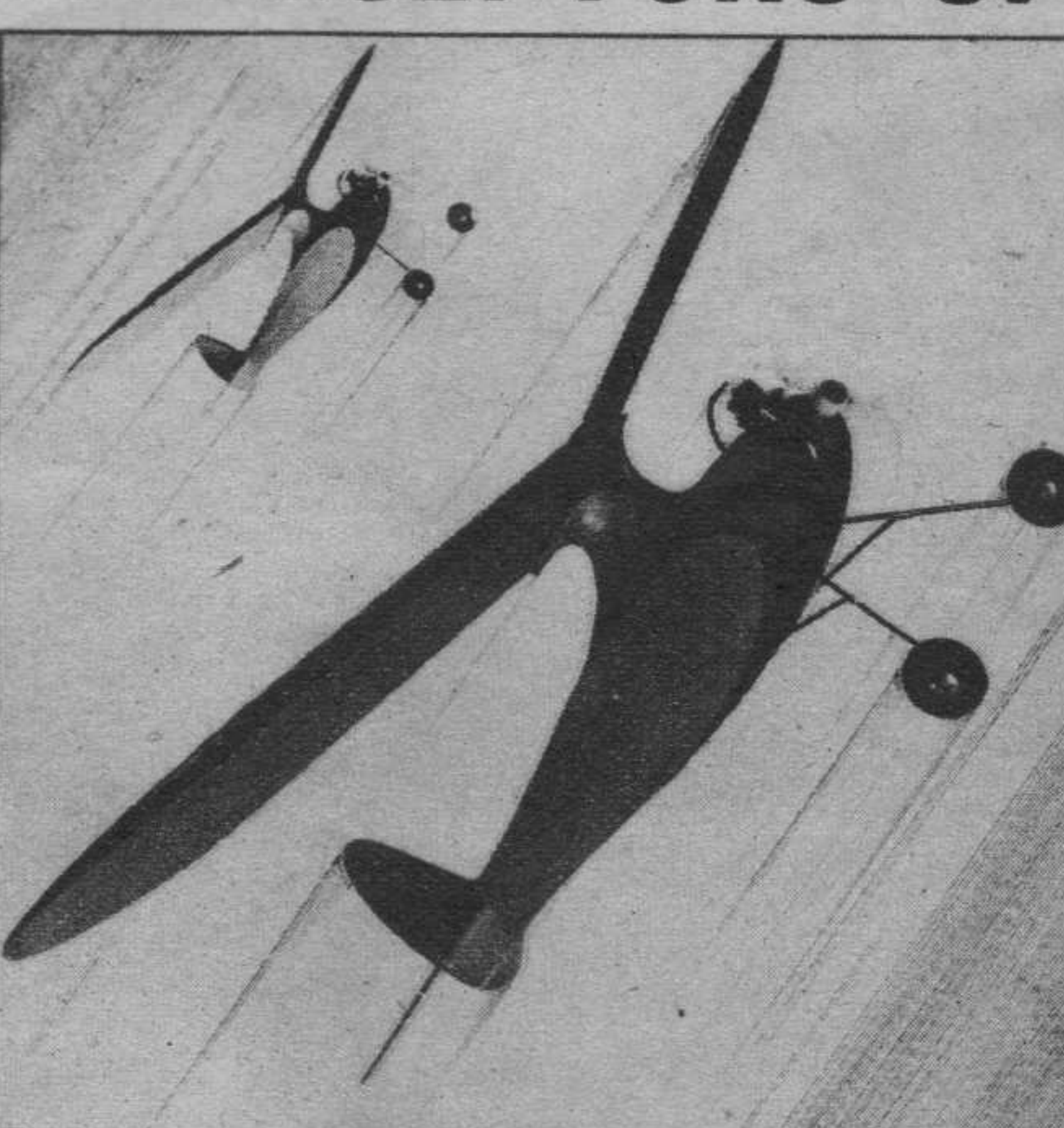
TIGER SHARK SPEED DEMON



The TIGER SHARK, Super Speed Demon, is designed for all 1/5 H.P. motors. It roars through the air at unbelievable speeds of from 60 to 90 M.P.H. **DELUXE KIT \$4.95** Postage 30c

TEXAS RANGER
Combination Model
The TEXAS RANGER is a combination model, designed for both "G" Line Flying and Free Flight. It may be powered with any Class "A" or "B" motor. **DELUXE KIT \$4.95** Postage 30c

INTERCEPTORS UP



Fly the Sensational New INTERCEPTOR, Class "B" Free-flight Model. Super Performance in climbing and gliding. Our kit is Unusually Complete. **Kit Complete \$2.98** Postage 30c

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Dealers Write For Special Discounts.
Victor Stanzel & Co.
Schulenburg, Dept. A. Texas



"Those mysterious packages are from the postal department. We're to throw them out during bombing practice!"

G. G. rules read that the model must start from a standstill under its own power without any assistance. Without doubt this phase of the gas model rules has created the greatest dissension between contest directors and contestants.

At almost every contest, inadequate take-off facilities are prevalent. We either must specify a definite size and type runway and strictly enforce it, or do away with the no-assistance restriction. It is almost an impossibility for the average contest flier to get his ship off the average runway at an average contest—without some assistance. Suggested was one-hand guidance or assistance on a wing tip—which would definitely increase competition by allowing every model to get into the air at a contest instead of just a few. It is the opinion of these modelers and myself that the purpose of the unassisted take-off procedure was to simulate real flight. Do we simulate real flight to any degree? Only in the sense of the word "flight" and not much more. Our models today look less like a real craft than they ever have, and yet fly more efficiently in respect to climbing ability, stability and soaring characteristics—simply because our rules demand these characteristics, whereas real aircraft fly under entirely different conditions.

Modelers today when sport flying almost always fly from a hand launch simply because they realize that it is safer, yet many of them advocate unassisted take-offs for contests. Why? At contests more than at any other time do we want safety. Once model flying is branded unsafe it will surely be outlawed.

One-hand assistance or guidance would allow every builder a better

chance to get his model into the air, wind or no wind. One-hand assistance on the wing tip means just that—no pushing on the tail, fuselage, wing or any other part. One-hand assistance on a wing tip will not favor some planes and builders more than others. If a modeler cares to toss his model with one hand on a wing tip he cannot do much to boost his flight time by his assisted acceleration. This rule if adopted would decrease the total crashes due to a part of the model striking the ground, grass or any other obstruction.

5. Creating another gas model category. Gas models have flown in competition throughout the country in endurance events only. Rubber-powered model builders have several different categories which they can build for and fly in, but gas model builders have only one—endurance. Speed flights were proven possible using Jim Walker's U-control method. Scale model flights have been proven practical in California, as has precision flying. Weight lifting has been proven interesting in the East. Why couldn't we create new categories for some of these types of flying? As an example, speed flying by U-Control or any other similar method doesn't need a large field. This type of flying is quite safe because of its controlled flight path. I believe new categories for some other types of models besides endurance should be adopted. (If we are trying to simulate real flight, let's build speed jobs and learn what makes 'em fly faster.)

These expressed opinions have been made by worthy builders and leaders in the model aviation field and merit your consideration for next year's contest flying rules.

AMERICA'S CHOICE AUSTIN-CRAFT

Battery Boxes



Available in 3 sizes:
1/4 oz.: for Penlite size.
3/8 oz.: for Medium 1"
dia. cells.
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dia. cells.

Any Size 40¢

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FREE 1941 Austin-Craft JUMBO CATALOG

AUSTIN-CRAFT BATTERY BOX—40¢

1/4 oz. 3/8 oz. 1/2 oz. dia.

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NEW FREE CATALOGUE JUST OUT—Contains pages chock full of the latest gas model supplies, accessories, kits and motors. Send for yours today.

ORDERING: Take advantage of our super-fast mail order service. Your order filled the same day received. On orders under \$1 add 5¢ postage. Remit by money order, check or stamps. PRINT NAME AND ADDRESS.

No C.O.D.'s.

DEALERS: Send on your letterhead for wholesale price list and catalogue.

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Send 5¢ for catalog—Dealers write for prices
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FREE choice of any one on orders of 1 dollar or over. (1) water sprayer. (2) 3 plans. (3) 5 sheets AA tissue. (4) large cement or dope.

18" Balsa
1/16x1/16 100, 5¢
1/16x1/16 40, 5¢
1/16x3/16 18, 5¢
1/16x1/2 15, 5¢
3/32x3/32 35, 5¢
1/2x1/2 32, 5¢
1/2x1/2 10, 5¢
3/16x3/16 8, 5¢
1/2x1/2 6, 5¢
1/2x1/2 3, 10¢
1/32x2 10, 10¢
1/16x2 9, 10¢
3/32x2 8, 10¢
1/2x2 7, 10¢
1/2x2 3, 10¢
3" or 36" double above prices; 5 foot, double 36" prices. Add 10¢ pckge. for 36" 20¢ for 5-foot.

M&M WHEELS
1 1/2 to 1 3/4 .50¢
1 3/4 to 2 .60¢
2 1/2 Gas .90¢
3" Gas 1.00¢

CELLULOID
6x8 .50¢

BAMBOO PAPER
White, red, green, blue or yellow .50¢

SHEETS 12"x2"
1/16or1/32 11, 10¢
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1x1 1/2 9¢; 1x2 10¢
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WIRE
6-8-10-12-14 2 ft.1¢
1/16 dia. 5 ft. 12¢
.0503 ft. 5¢
3/32 dia. 5 ft. 15¢
1/8 dia.5 ft. 25¢

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Small 3¢; Lge. 5¢
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Flat, large . . .10¢

HINGES .10¢
Brushes
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TISSUE, AA
All col., doz. 18¢
Silverea. 5¢
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Sm. 10¢; lge. 15¢

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Large can . . .15¢

MODEL PINS
1/2" or 1" pckge. 5¢

PROP BLOCKS
1/2x3/86, 5¢
1/2x1/23, 5¢
1/2x1/2x10 . . .3¢ ea.
1/2x1/2x12 . . .4¢ ea.
1/2x1/2x15 . . .7¢ ea.

RUBBER LUBE
Bot. or Can 10¢

SPONGE RUBBER WHEELS
1" pair15¢
1 1/4" pair . . .18¢

RUBBER
.04525 ft., 5¢
1/16 sq. 20 ft., 5¢
1/4 flat 15 ft., 5¢
3/1610 ft., 5¢
1/2 Tubing ft., 5¢
U. S. Coil 1.00
Austin Jacks 35¢
Free Wheeling 10¢
Silkyd., 45¢
Austin Timer 1.25
Clock Timer 1.75
Smith Coil 2.50
Model Knife 10¢
3 extra blades 10¢
Spark Plugs 50¢
Fly wheels 1.00
Tog. Switch 15¢
Alligator clips 5¢
Plugs and Jacks .5¢
Set20¢
Condensers . . .10¢

PIONEER BROWN ENGINE KIT
OUTSTANDING PERFORMANCE IN CLASS
"B" EASILY ASSEMBLED IN A FEW MINUTES.
BORE13/16"
STROKE9/16"
DISPLACEMENT292"
WEIGHT4 3/4 oz.
COMPLETE WITH SPARK PLUG BUT NO COIL OR CONDENSER.

PRICE \$4.95

WHEELS per pr.
Breh Bisa Celu 1/2 .01 .03
1/4 .02 .04 .05
1 .03 .05 .07
1 1/2 .04 .08 .10
1 3/4 .07 .10 .16
3 .15 .15 .30

PROPELLERS
Balsa Paulo Gas 1/16, 3/32, 1/2, ft. 6¢
Wina Mod. 3/16, 1/2, ft. 10¢
5" 4c-7c Pol. 5/16, ft. .15¢
6" 5c-9c-8" 25¢
7" 6c-12c-9" 25¢
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1/16x3/32, 1/2, ft. 6¢
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.0004 4"x36" .3¢
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national CHAMPIONSHIP DESIGNS
recognized ENGINEERS
superior WORKMANSHIP

FIRST AGAIN

WITH STALL-PROOF SLOTTED WING and
SPIN-ARRESTING TAIL

AGAIN—the latest BUCCANEER gives you the ultimate in safe, stable, super-performance. The ideas incorporated in this ship are the result of the latest N.A.C.A. Wind Tunnel tests. No more whip-stall or spins due to improper adjustment with the BUCCANEER "B" Special, the only gas model with wing slots and spin arresting tail. Power it with any Class "B" or small Class "C" engine.

56" WINGSPAN



The BUCCANEER "B" Special is another super-value, complete BERKELEY kit. The same rugged construction that has made the BUCCANEER line famous. Kit has detailed full size plans, printed-wood parts, complete hardware, formed landing gear, semi-finished blocks, cement and dope, finished propeller and rubber wheels.

\$3.95
P.P.

The Wing Slots prevent whip-stall.

The tail design arrests spins.

AIR YOUTH ADOPTS "BRIGADIER"

CLASS "B"

58" WINGSPAN

The new BERKELEY design that is a sensation. Recommended for every builder because of its easy construction. The "one-class" design for group building. Kit is "complete with everything" (except the motor). Finished Prop, Rubber Wheels, Formed Landing Gear, Printed Wood, Step by Step Plans, All for only

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P.P.

CHAMPIONSHIP Struck DESIGNS



Henry STRUCK receives the 1941 National Championship Trophy from Colonel Roscoe Turner

AMERICAN ACE

2 National Records and Now-Mississippi Valley Championship

54" WINGSPAN

Only BERKELEY gives you models designed by the champion. The AMERICAN ACE, a Henry STRUCK design, holds the National open record for landplanes and seaplanes*—both. In addition the AMERICAN ACE won the open event at the Mississippi Valley Meet, the biggest in the mid west. Kit is complete with everything . . . \$3.95 P.P.
*Seaplane Record Model equipped with BERKELEY Gondolier Floats.



FLYING CLOUD

Build and Fly the Henry STRUCK designed BERKELEY FLYING CLOUD. Her sleek lines and finer performance are the result of extensive designing tests which assure you, the kit builder, of the finest in model flying. Kit is complete for \$1 (10c extra by mail).

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One of Henry STRUCK'S latest creations. Those who have built the Flying Cloud and the American Ace know the value found in BERKELEY-BUILT, STRUCK-designed kits. SINBAD is not just another towline launched glider but features SPIRAL CONTROL, a new release method allowing you to release your glider at the peak of your run. \$1 complete. 10c extra by mail.

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A scaled down model of the Famous American Ace. AND a real duplicate in performance. Power her with an Atom or an Elf and you're really set to crack records and win prizes. Complete \$1.50 p.p.

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DEALERS THROUGHOUT THE U. S. A.

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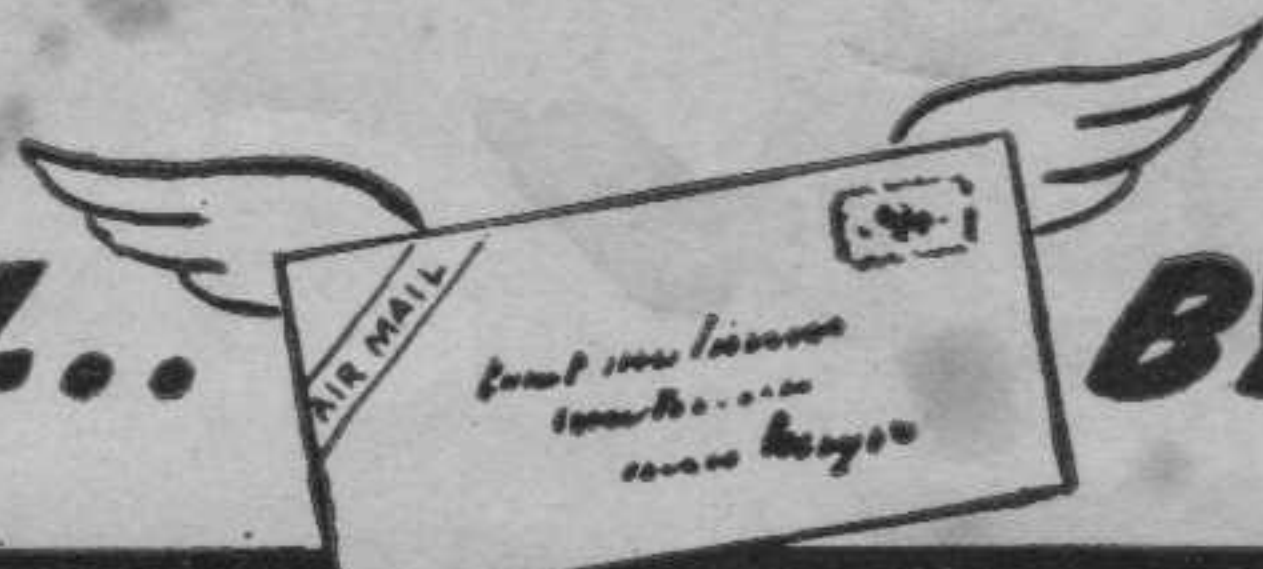
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DEPT. AT-11

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BROOKLYN, N. Y.

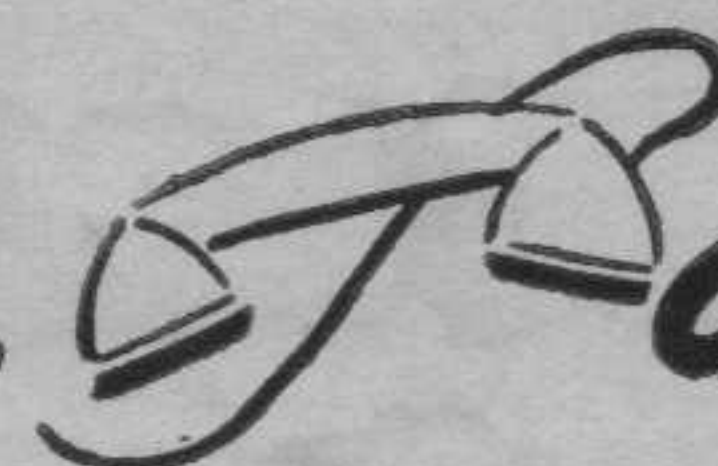
BY WIRE..



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COMES

proof

of Comet Superiority!

James Monroe, 15 years old, wins Second Annual Fresno, Calif. contest with Comet Sailplane, establishing high time of 20 minutes, 35 seconds for a single flight.

BAKERSFIELD, CALIFORNIA CONTEST

NAME	TIME	PLANE
Joe Menezes	2030 Sec.	Zipper
Ted Gillette	1143 "	"
Curtiss Dugan	1017 "	Mercury
Lester Haskall	900 "	Own
A. L. Buck	510 "	"
Van Tassell	408 "	Zipper
V. Kishue	399 "	Sailplane

LETTER FROM—Chas. VanDyke, Independence, Mo. Gentlemen:

The first time I flew my Mercury was at a Topeka, Kansas contest. On an unofficial flight my plane flew out of sight after eighteen minutes in the air and I had to get a real airplane to find it. Two weeks later, Kansas City held a contest in which around 400 competed. I flew the same plane and won first place. A month later, the Winged Motor Club held a contest in which around 100 took part. I again won first place, my time being 23 minutes. This is the best little gas plane I have ever had and I sincerely want to congratulate you on such a wonderfully designed model as the Mercury.

RESULTS OF San Diego Aeroneers Sixth Annual Southwestern Championship Gas Model Airplane Meet.

- 1st—Walter Hauck, Sailplane, 22 min. 9 sec.
 - 2nd—Ray Acord, Sailplane, 21 min. 22 sec.
 - 3rd—Chas. Koby, Sailplane, 20 min. 49 sec.
 - 4th—Bob White, Zipper, 18 min. 52 sec.
- Seven out of the first ten places went to Comet models.

Richard Pittenger of San Francisco, Calif., established a new national record for Class "C" Jr. event with three flight average of 10 minutes 10.3 seconds, using a Zipper, powered with a Comet "35" motor.

LETTER FROM—Warren Lowe, Contest Director of Brookfield Balsa Bashers, Brookfield, Mo. Gentlemen:

I wish to tell you about the remarkable flights that my fellow club members and myself have been getting from our Comet Zippers. My Zipper is about a year and a half old and is silk covered. In the last 40 flights, I have had 7 thermal out of sight flights. It has stayed up for one hour, 47 minutes, travelling 20 miles. Other thermal times are 45 minutes; 15 minutes; 1 hr. 15 min.; 12 min.; 25 min. and 30 minutes. The ship is powered by an Ohlsson "23", two years old. I recently tried a Forster 29 in it but both times the ship "left the country". The plane weighs 28½ ounces and has really taken a lot of punishment with only slight damage, due to proper design and construction. Several of the other club members have Zippers and Ohlsson "23"s and their flight records are very similar to mine. Some of their times are 45 minutes; 1 hr. 30 minutes, 20 minutes, etc. Here's to Comet for their unequalled success in gas model design and construction.

LETTER FROM—Warren Weible, Defiance, Ohio. Gentlemen:

I think you will be pleased to learn of another victory for your Sailplane. I took first at the Newhio Model Airplane meet held on October 20th at Dayton, Ohio. My first flight was 30 minutes official but the

plane flew 26 minutes more before coming down. With the thermals gone, the plane turned in its next two official times of 4:18 and 4:17, giving a total official time of 38:35. I think that the Sailplane is the best model I've built. My Sailplane was powered by an Ohlsson "60". I would like to know if you are going to come out with a small Sailplane that could be powered by an Ohlsson "19".

Cliff Propst won first in Class "C" in the meet sponsored by the Arrowhead Aerodynamics Club with a Sailplane. Time—17 minutes for one flight!

Bobby Davis, Jr. of Atlanta, Georgia, age 15, made the longest official time of 1940 when his Zipper flew 64 minutes on two flights establishing the national record.

LETTER FROM—Wm. A. Mulvoy, So. Norwalk, Conn. Dear Sirs:

After reading all your testimonials about the performance of the Zippers and Sailplanes, I feel that I should tell you about the success I had with the Mercury. I built and flew two this past Summer and in every meet I entered, they outflew all other Class "B" ships, including Ohlsson "23"s powered Zippers. On its best flight, it disappeared in the clouds after 36 minutes, using a 13½ second motor run. This flight gave me the national record in Class "B" open. In my estimation, the Comet Mercury is "tops".

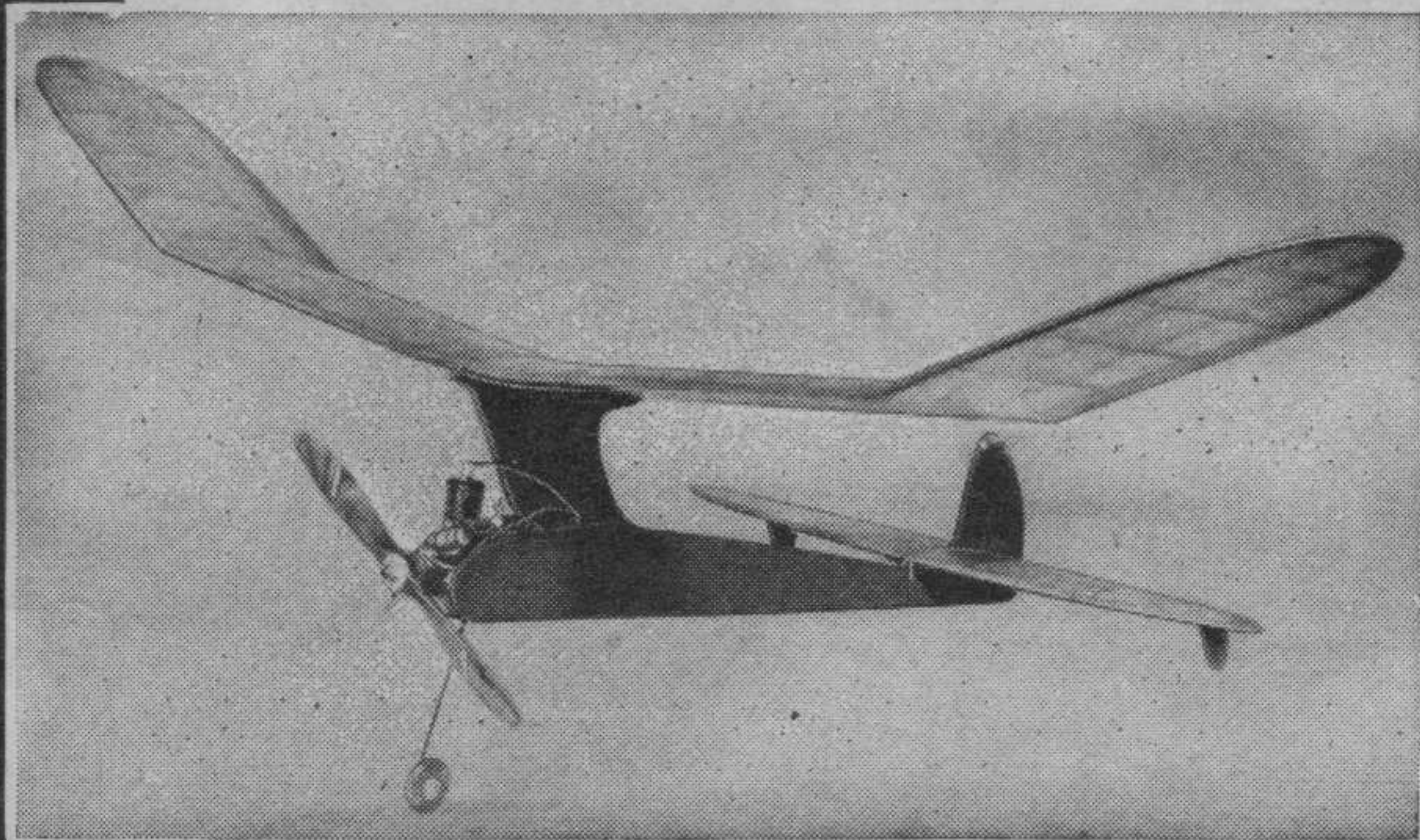


And 5 out of a possible 9 First Places at the 1941 Nationals!

Watch the Interceptor!

It's going places and no mistake! Carl Goldberg's newest gas model triumph, the Comet Interceptor is rapidly winning a reputation in meet after meet. Inherently light in weight, yet remarkably rugged; fast, steep climb and long, flat glide. Kit contains plans for Class "A" and Class "B", and sufficient material to build either one. Class "A" wingspan—42 in. Class "B" wingspan—48 in. Can be used with any Class "A" or "B" motor. Order from dealer and save postage; otherwise add 25c. Kit No. T14.

\$2.50



COMET MODEL AIRPLANE AND SUPPLY COMPANY

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Do You Know What *Up-grading* Means..in Aviation?

—It Means Everything to You... *After You Get Into the Aircraft Industry*

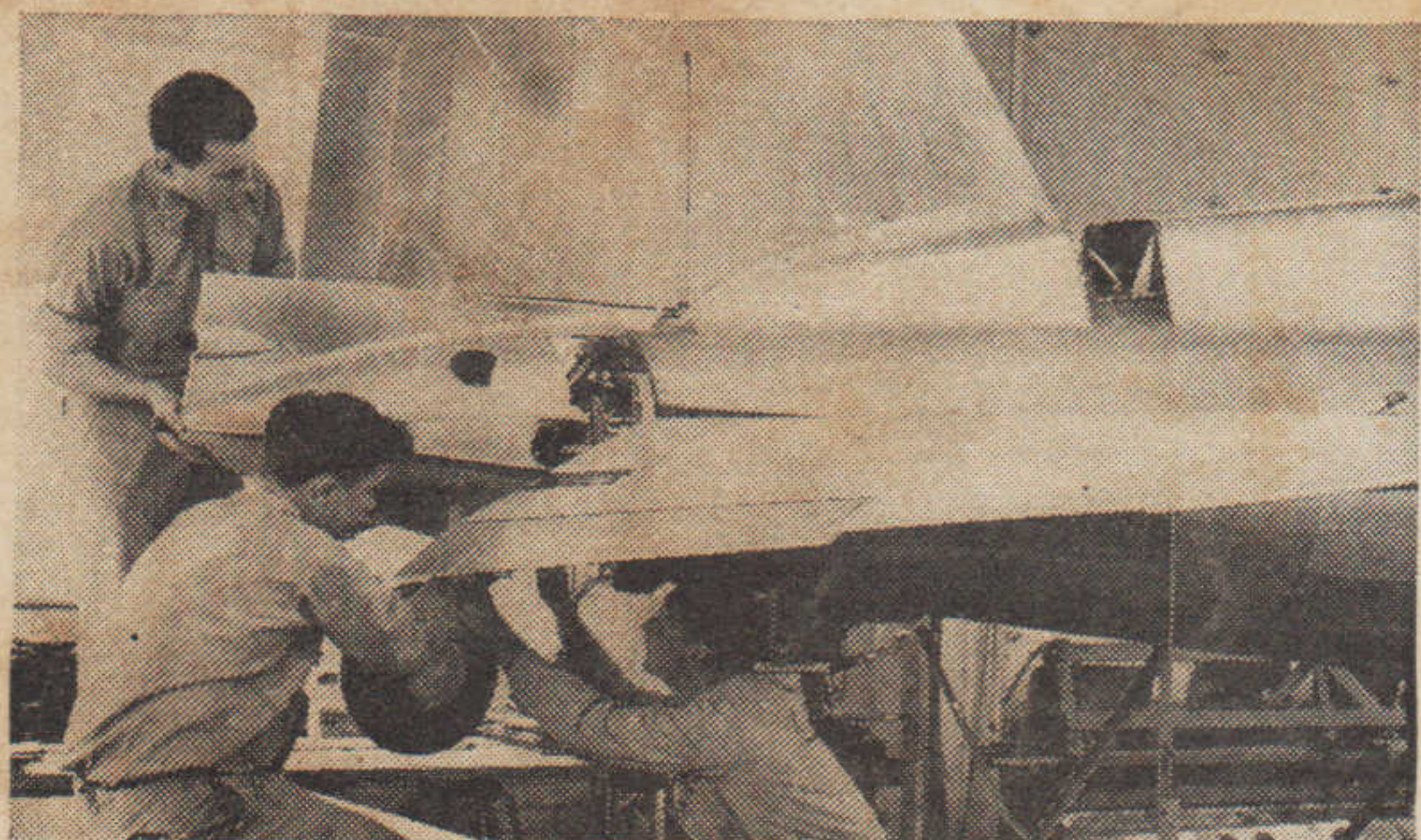
How fast you advance... how far you go... depend on how well you turn out in the aircraft industry's "Up-grading" process. This is a system of testing and developing a man's skill in one type of work after another, "up-grading" him to more and more important duties. Under this plan, your superiors would hope that you would gain all-around proficiency and could then be entrusted with supervision of the work of others. After that would follow the industry's unlimited opportunity to hold posts of greater and greater responsibility, to win prominence, leadership, and success.

If you enter the industry trained to do only some routine hand or machine operation, you must start at the bottom in the up-grading process. IF you perform this one starting job satisfactorily you may be entrusted with a more important task. IF you are able to "make the grade" in the whole up-grading program you may win your first supervisory job. ALL depends on how good your aviation school training was, on how wide a range of skills your school could give you the opportunity to achieve, on how broad and detailed a store of technical aircraft knowledge you were taught. Read below what it can mean to you—in these respects—to be an Aero ITI-trained man.

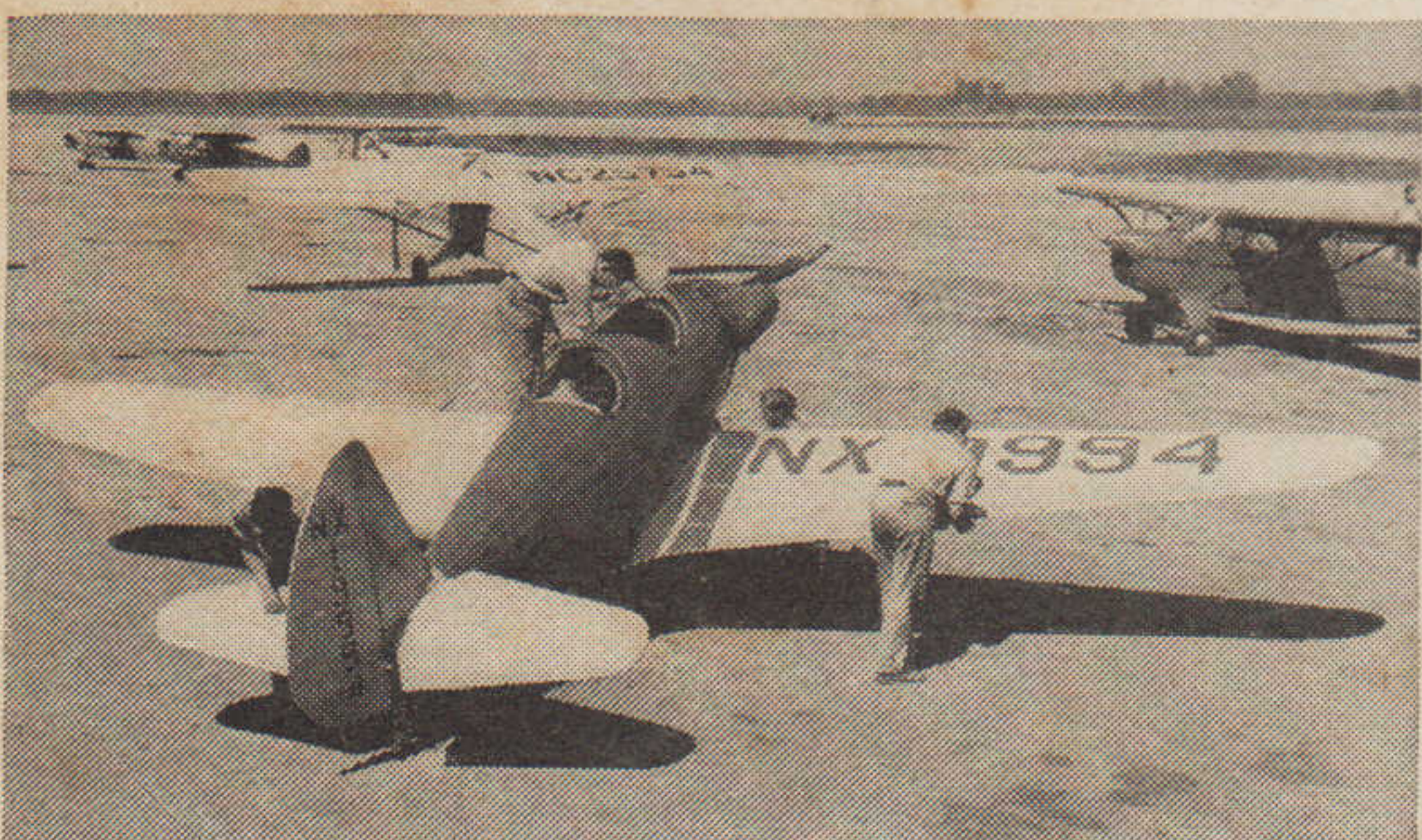


Operations like these—drilling, riveting, running a punch press—are typical routine, manual labor jobs for which short "job training" prepares you.. This is where you start in aircraft work...where you may **STAY**...when you do not have the advantages of broad, thorough training... such as given by Aero ITI.

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Assembly of the various aircraft components into complete planes—including large, all-metal ships—is a standard part of Aero ITI training... giving you priceless experience far advanced over simple operations such as drilling and riveting.



Here you see Aero ITI students—both mechanics and engineers—giving a student designed and built plane final inspection before its first test "hop"... a typical example of how Aero ITI training reaches the ultimate in practical experience.

As an Aero ITI-trained man your up-grading is already well along BEFORE you enter the industry. This is PROVED by the outstanding records of the 2766 graduates employed by 99 firms in aviation. It is the rule rather than the exception that Aero ITI-trained men are soon advanced beyond their starting jobs. Many have gone through the more advanced stages of up-grading quickly—or been excused from it entirely—and soon placed in supervisory posts. Many more have stepped directly from Aero ITI into preferred jobs—responsible jobs such as power plant installation, final assembly, experimental, and inspection.

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Before starting ANY aircraft training, for ANY branch of Aviation, be sure it will take you a long way, that it will bring you real success. These are the all-important reasons you should be satisfied with nothing less than Aero ITI training. For the sake of your whole future, write today, or send the coupon, and get complete information on what Aero ITI training can mean to you.

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