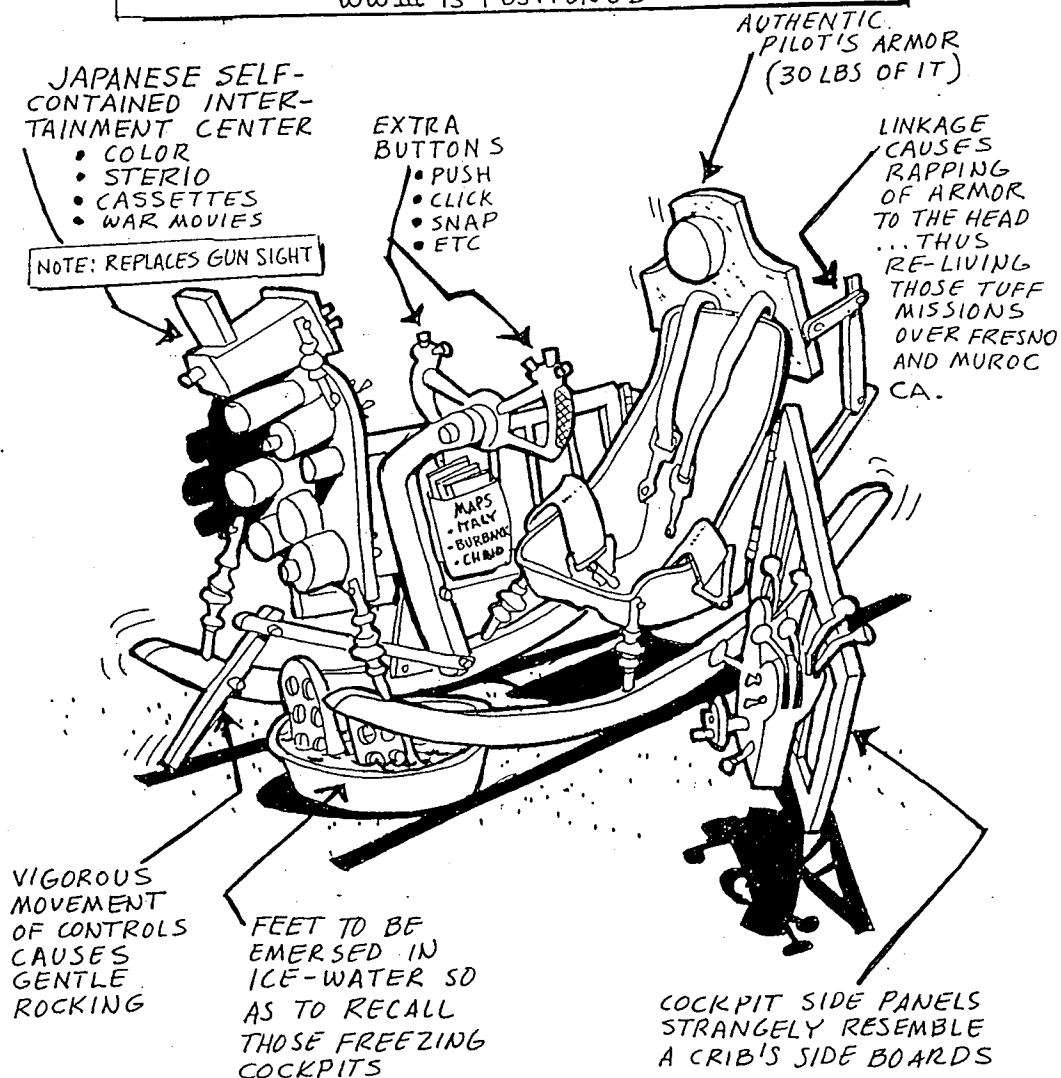


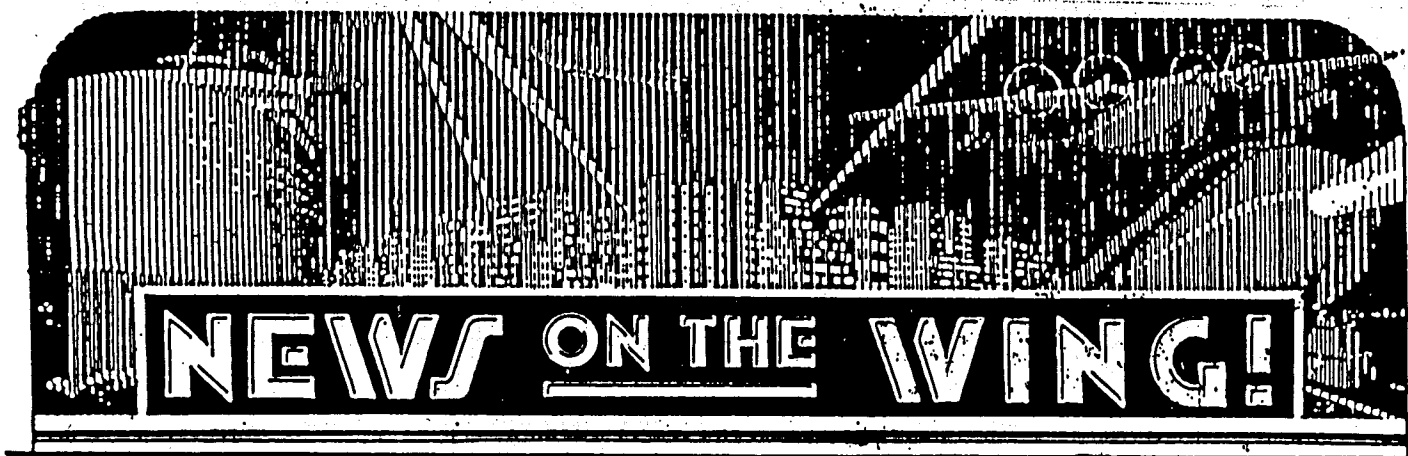
FLYING ACES

Club News

ISSUE 244-170 Nov./Dec. 2008

RETIREE'S "ARM-CHAIR AND ROCKER"
CAN BE CUSTOMIZED !! EARLY AMERICAN
MAPLE OR MODERN... IT FITS ANY
HOME DECOR PERFECTLY... SO AS NOT
TO UPSET THE "LITTLE" WIFE - THUS
WWIII IS POSTPONED





HAPPY HOLIDAYS FROM GHQ! Here's hoping we all have a safe and enjoyable end to 2008 with a prosperous start to 2009. While you're planning for the 2009 flying season, please keep the following announcements in the forefront of your memory banks:

- 1) Mike Welshans is Keeper of the Kanones. There is a reporting form in this issue with Mike's contact info.
- 2) Kanones are awarded to official FAC events listed in the rule book. If your local club wants to fly an event that is not listed in the book, but you think the event falls within the "Spirit" of FAC competition, send me the details and with my approval the event will qualify for a one of those big K's.
- 3) If you were planning on competing in WWI combat with a model of the British P.V. 7 "Grain Kitten," sorry, it does not qualify. G-2 received an anonymous tip to check it out, which I had our agents do. Mr. I.R. Google reports that only one was ever constructed and its poor performance caused the project to be scrapped. The model is most welcomed to fly in the other scale events dependant upon wing span.
- 4) We've also learned that some "Tomahawk" embryos and very similar models have been receiving full bonus points for a "raised cabin." The issue here is the angle of the windshield. By rule, to receive the 5 bonus points for a raised cabin, the windshield slant can be no less that 30 degrees. So check your angle when designing or building that new embryo for 2009. And if you have an embryo that has a sick slant...a little modification will get you back in good graces in no time at all...maybe even a MAX and a full 9 bonus points!

SEVERAL minor changes will be in the rule book for 2009. For one, "contra-prop" units will receive 5 bonus points when used in a scale location. There will also be revised wording to help reduce confusion when awarding bonus points for models with multiple props. We hope to have the rule book ready to be delivered with your Jan. / Feb. issue.

Please send in those plans, photos, etc. to our editor Juanita at her Cindy Lane address. We can never have enough good stuff to pass along to the members. **And speaking of our editor**, she reports that several of you have missed the dues change announcement of many months ago. If you have a red X issue, your dues are due. The amount and address to mail your check is right there next to that dreaded red X. **And please, any and all issues not related to your news letters should be sent my way...**facghq@verizon.net or my home address...4207 Crosswinds Drive, Erie, PA 16506.

Wishing you blue skies and gentle thermals, Ross P. Mayo, CinC, FAC.

The FLYING ACES CLUB

is a society of unique individuals with a common interest that at times borders on a passion. It is our intent to preserve and promote the traditional building and flying of free flight stick and tissue model aircraft. Although competitive at times, the sharing of innovations, assistance and camaraderie is second nature to all that believe in the unique spirit of the
FLYING ACES CLUB

From the Editor:

CALENDARS ARE NOW READY. Order now for Christmas. Cost is \$15.00 with postage. Get your order in quickly as my son is taking me to Florida on the 19th of December, so I will need your orders S.A.P.

There are four plane plans in the newsletter this time. If you want to see a particular plane and you have a plan send me a copy. Just remember if the wing span is to big we will have to shrink it. The size of the newsletter is 11 x 17. If the wing span can be cut in two pieces that is also a possibility, we will be able to use it. I still have several plans of Lin's for sale which are in the newsletter.

If anyone has a sure way of hanging planes in your workroom, please write and give a good subscription of how you do it. People are writing for this information. Any information which you think will be news worthy send to me.

We have T-shirts from both the Nats (A-20 and Douglas TBD Devastator) and Muncie (Fairchild 45). The sizes are x-large and up. Call first to make sure we have your size before you send monies. We must have a lot of you FACers losing weight as we have never sold so many small sizes. The cost of the T-shirts is \$15.00 including postage for all of them except the Dauntles which is \$10.00. We also have the 30 yr memorial pin which sells for \$8.00.

Received a note from Larry Wacken regarding issue May/June 2008 in which Fran Ptaszkiewicz wrote about a Martin 333 engine. Larry found a copy of the engine in the American Airplanes & Engines 1933-34. The engine was put into a "Cannon Ball" but the flight came to no good end like many of our models. The plane did not clear the tree tops. This engine was obscure and only one was made as far as Larry could find. Great work Fran and Larry. If there is room I will enclose a copy of the engine and the plane.

Wishing you and yours wonderful holidays. HAPPY NEW YEAR!!! .

NOTE: DUES STRUCTURE AS OF 1/1/2008 BELOW

IF THE CIRCLE ON THE RIGHT HAS THE DREADED RED "X" IN IT, IT IS TIME TO RENEW YOUR MEMBERSHIP WHICH INCLUDES THE NEWSLETTER. COST IS \$18.00 PER YEAR IN THE U.S.A., COST FOR CANADA IS \$25.00 PER YEAR. COST FOR OVERSEAS IS \$30.00 PER YEAR. ALL IN U.S. DOLLARS. SIX ISSUES PER YEAR, PUBLISHED APPROXIMATLY EVERY OTHER MONTH. PLEASE MAKE CHECKS PAYABLE TO: FLYINGS ACES CLUB, 3301 CINDY LANE, ERIE, PA 16506



Those of you who are in the habit of closely following my modeling adventures will know that of late I have had an unhealthy number of airplanes fly away. Not get stuck in a tree, mind you, but fly away-- speck out in the sky, each one magically transformed from a palpable, tissue-and-bones vessel of dreams into a steadily diminishing, abstract dot of yellow or red or silver, drifting off into the ether, ever more faintly impressed on the retina until at last the floaters and other bits of ephemera that clutter the lens flash into the foreground, the star blinks no more, and all hope of retrieval is sucked into a black hole of despair. Woe. It is the perverse reward for gaining traction in the free flight arts, in some ways akin to successfully raising a child only to see him or her leave you behind in their search for new horizons-- except that we usually would prefer to have the *airplane* return home for good. Alas, be they airplanes or children, rarely do the best ones stick around forever, only the ones that have in some fundamental way never quite measured up to your expectations. *They* will rattle around in your hangar forever, hardly able to get out of their own way, much less yours. We love them, warts and all, of course---who cannot love their own creation?---but at some point you DO want them to fly away. Alas, they may never do so, always reflecting back at you from the darkest corner of your shop some destabilizing quirk of character for which you and you alone, somehow, must answer, and which only your mother-in-law can see.

Mothers invented homemade meatloaf and guilty consciences to bring even wildly successful children back to the old nest from time to time; modelers invented the DT to cheat Hung out of his prize and help deliver the perfect flight. One hundred twenty seconds of weightless cloud dancing, followed by a pop of the tail and a rapid return to Earth representing the closest thing to safe sex that free flight can offer. But isn't the DT-assisted descent, in fact, a dreadful thing? It brings to mind the hunter who so admires the beauty and grace of the duck in flight that he somehow feels compelled to shoot it down. It is so much more poetic when the model flies just within the boundaries of the field, accomplishes the desired max flight (or whatever has been asked of it) and then settles, wild, free and graceful to the turf.

So on the one hand we have those hard-minded modelers who eschew poetry, embrace practicality, and install DT mechanisms, and then on the other there are those poor sensitive souls who cannot bear to see a bird on a tether and take their chances. I have chiefly been one of the latter; but I admit I had begun to resent the backhanded compliment of a flyaway in recent months, and decided that it was high time I started getting a handle on things. When I perceived that my pretty new Piper PA15 (Greg Thomas design/short kit, slightly modified) was going to come in at a wing loading of around .4 g/sq.ft, I knew the time had come to act. I located the viscous button timer that had been installed in my Dave Rees design Vega (later removed, due to weight concerns--guess what happened to that model), mounted it to the Piper, contrived a clean pop-up tail mechanism and finished off the model just in time for the Raeford, NC Kudzu meet. This event is held twice a year on a smallish field surrounded by aggressive brush and low swampland, the sort of inhospitable environment that, when I am in it searching for a wayward plane, always makes me think of Juan Ponce de Leon, deluded, hacking his way through the hostile wilds of Florida where everything, *everything* wants to kill and eat you. It is not the sort of place you want to spend any time in, and I was determined to avoid it.

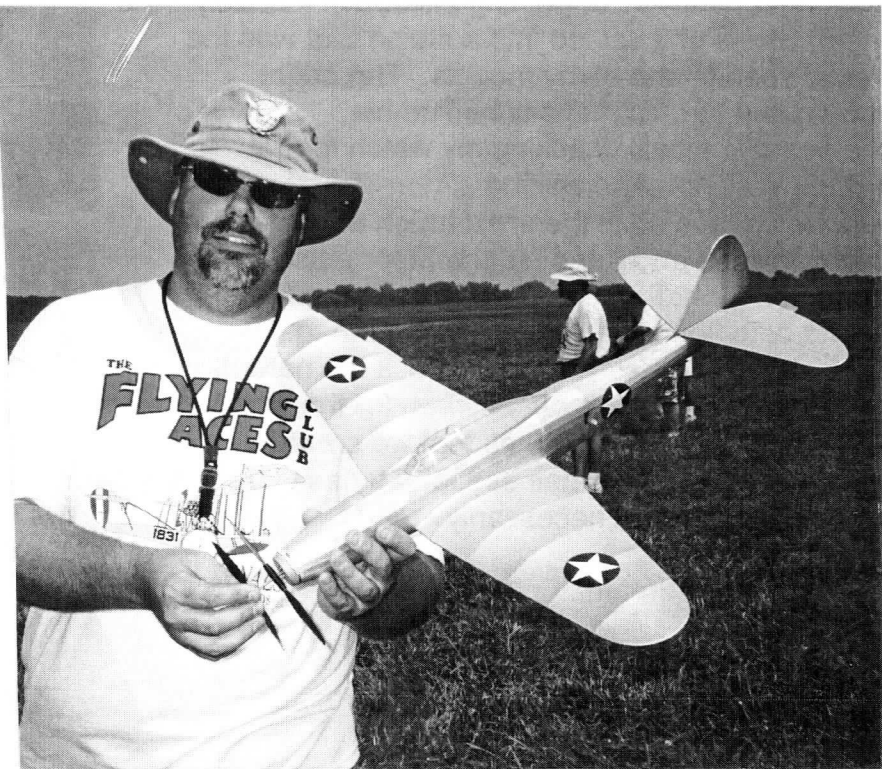
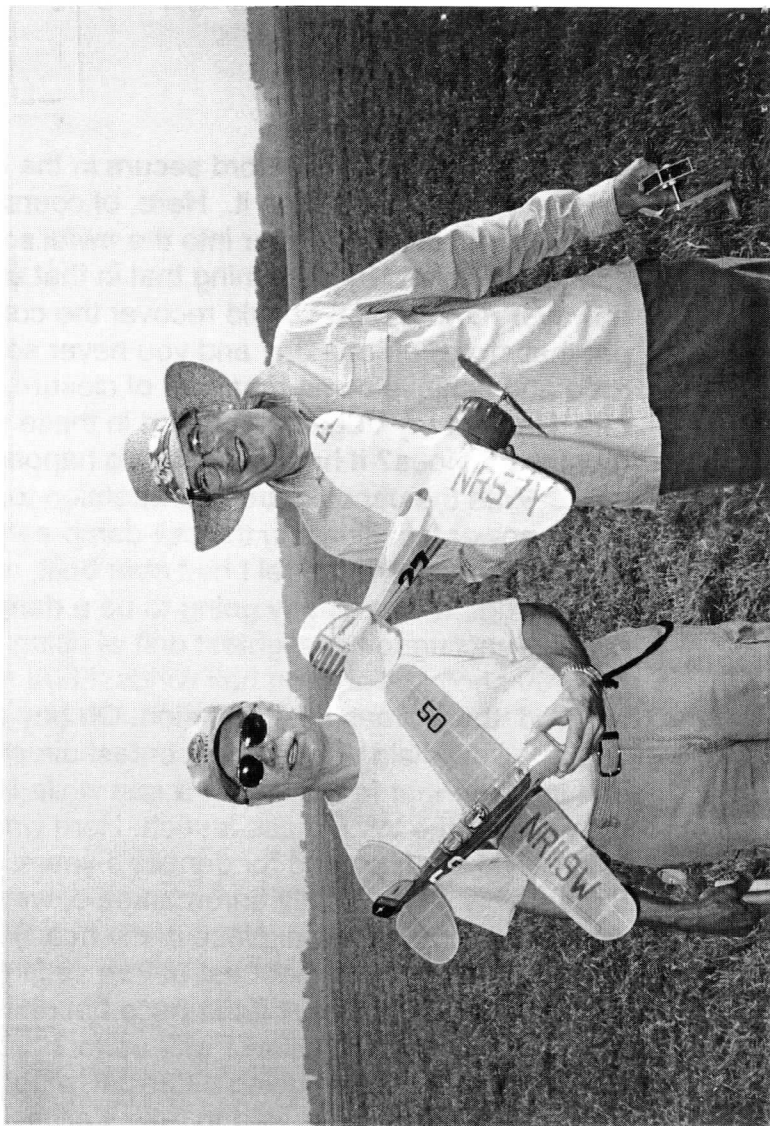
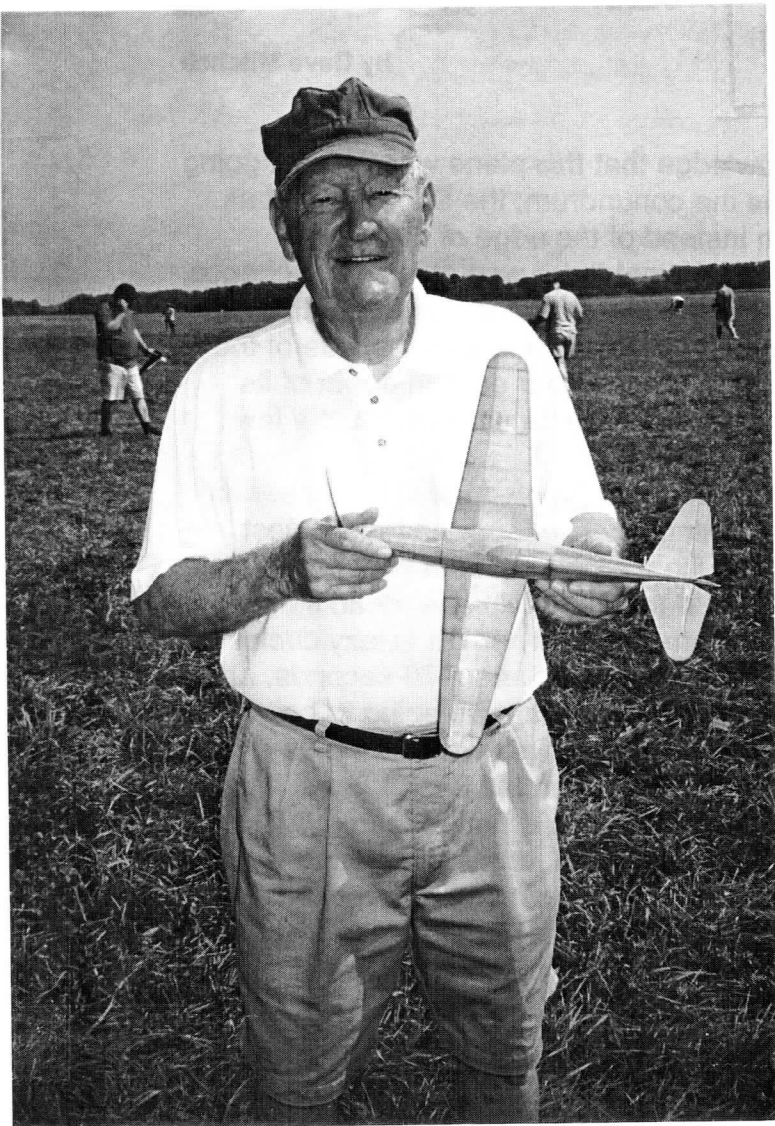
So I set off for Raeford secure in the knowledge that *this* plane was at least going to have some limits set on it. Here, of course, is the conundrum; the DT could just as easily as not drop the Piper into the awful scrub instead of the edge of the field. I comforted myself by reasoning that in that unhappy event there was at least the chance, however remote, that I could recover the corpse of the plane. Nothing is worse than the pet that strays off one day and you never see again. Better to find it by the side of the road and achieve some measure of closure, than to live out your days in doubt of its fate. Had not my Vega been found in these very woods (alive, unscathed!) just a few months previous? It had. Miracles do happen.

With the utmost care and attention to its operation, I proofed the DT on a series of low power test flights in the still-damp early morning air. The Piper had the lowest wing loading of any model I had ever built, and the flight profile was positively entrancing. It was clearly going to be a dangerous, dangerous airplane; dead slow, stable, reacting to the slightest drift of rising air, floating serenely about in lazy circles for easy 60 second flights on half winds. I had set the DT to pop at about 70 seconds, and so it did, three times in succession. Oh boy o boy oboyoboy, this was going to be GOOD! Downfield, I heard the contest director call out for the first event of the day, and so I set the Piper in the car for a rest while I massaged my tired old Bristol Scout into the finals of the WWI mass-launch. Here was a plane that would never need a DT--the Bristol had been around for donkey's years, rebuilt, recovered, repaired, gaining weight, dependably solid, mostly unremarkable, winner of my first Kanone on this very field (and thus occupying a special place in my heart) but beginning to feel a little too familiar. As per script, she gave it her best before settling for another in a long line of second or third or fourth place finishes, off the pace but dignified in defeat. I stowed her back in the car, wound the gleaming yellow Piper up to 2000 turns, and headed out to the south end of the field with my heart going pitter-pat, pitter pat.

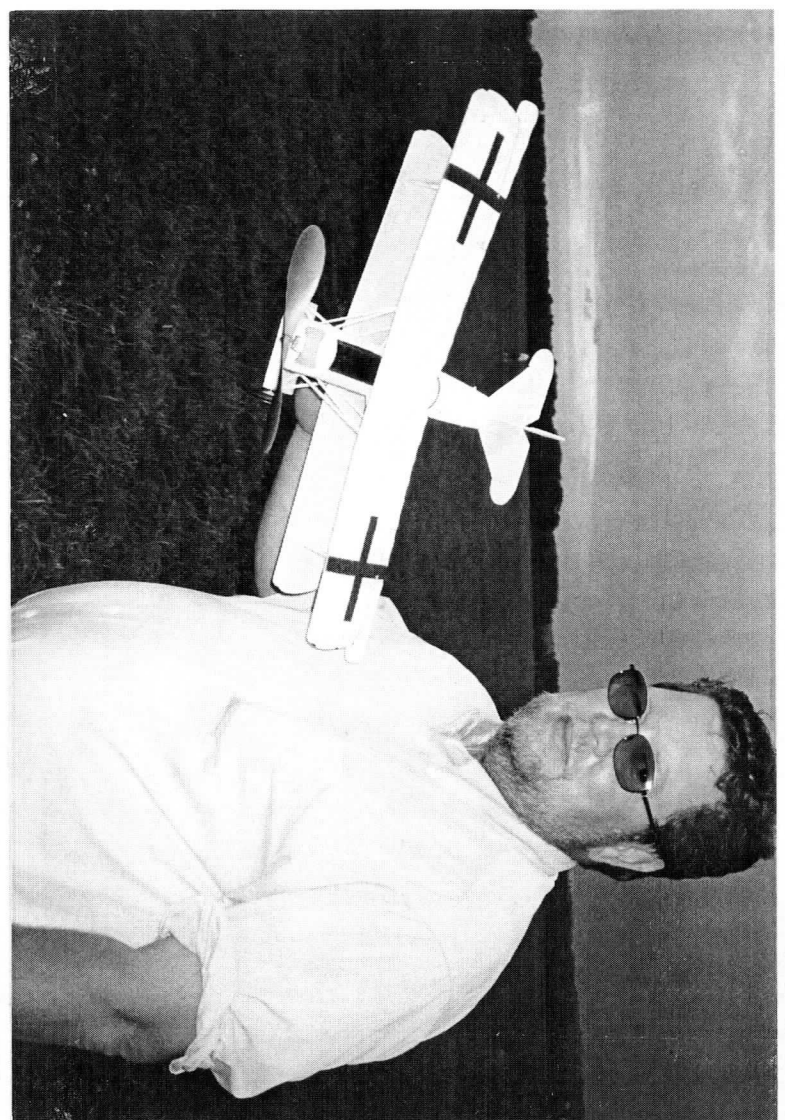
Once there, I paused to take it all in. The day was cloudless and practically windless, with only the slightest SE drift eddying across the grass. Perfect. I wound the DT to the 70 second mark again, carefully cleared the bail wire, and let the Piper drift out of my hand. She took off in an elegant right hand circle, gaining altitude in a stately fashion until she was up to maybe 100 feet, where she settled into a cruise that was the closest thing to scale flight speed I had ever seen in one of my models. The bright yellow against the blue sky was spectacular, and I trotted happily behind her, completely in the moment, glorying in the beauty of it all, checking my watch for the minute mark and waiting for the stab to pop. Waiting. And waiting....

It was nearly twenty minutes later when, standing in the short brush at the far end of the field and staring into the distant blue, I turned away and bid the Piper adieu forever. Deep down, I had known all along that the DT would fail to work properly. I have installed them on two planes now, and both flew off anyway, leaving me to conclude that either I am inept or that I am simply, unwisely, trying to buck the natural order of things. As parents, we do all that we can to prepare our children for the world ahead, all the while doing our best to reinforce the ties that bind so that we create a center and are not lost in the swirl. But the Fates will have their say, and try as you might to steer a course that is all to your liking, it just ain't necessarily so.

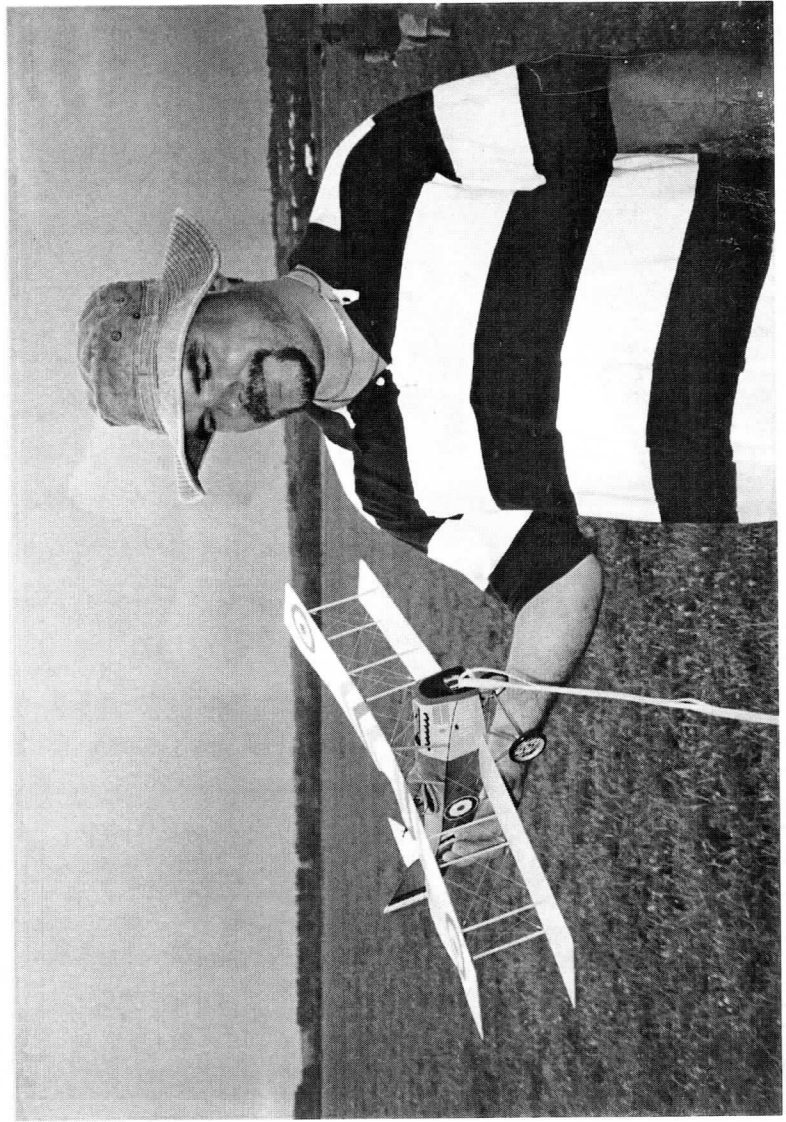
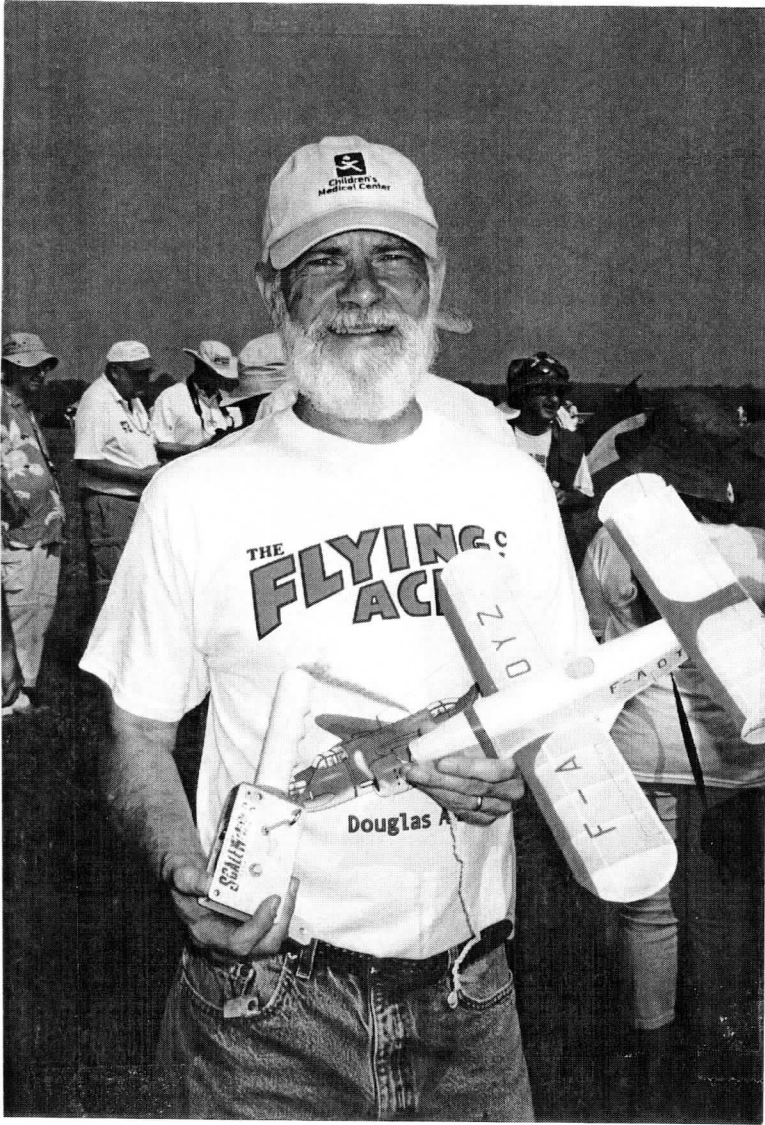
Welcome home, Bristol Scout. Time to build another dream...



All photos in this issue were taken by Freddie Wunsche.
 Top left - Tom Nallen Sr. ready to fly in combat.
 Top right - Jim Deat and Mark Fineman flying in Thompson Race
 Bottom left - Ron Gosselin with His Republic XP69.



Top left - Orv Olm ready to fly in WW1 mass launch with his DH Tiger Moth.
 Top right - Chris Boehm holding his Fokker D-VII.
 Bottom left - Stu Weckerly and Paul Boyanowski with their Wittman "Buster's".



Top left - Wally Farrell is holding his French design Maboussin.
 Top right - Chris Starleaf waiting to wind for the Mass launch.
 Bottom left - Bernard Dion is flying his contra prop NAVUAL SO-8000.

*** * Improving Spiral Stability * ***
Mumbo Jumbo # 136 from the Glue Guru

Today's subject is one of unwanted spiral descent, sometimes fast and furious, acting to cut duration and bang up the model. What is to be done here?

There are at least four possible causes, and they may act in some combined fashion, so it pays to move slowly. These are: warps, lack of dihedral, incorrect thrust line and excessive vertical tail area.

(1) Warps are suspect if the model has previously flown well and has been stored away, or if new and never flown. To correct any lack of symmetry reverse your tissue tightening process: loosen with either heat or solvent and twist oppositely. Pin down. For complex warps, I've learned that adding a flap made of 1/32 sheet and tape to a wing trailing edge can be effective, if ugly. Thick drafting tape permits a good range of adjustment by twisting.

(2) Dihedral acts to pick up a lowered wing tip, restoring level flight. It must be generous or the model is doomed. Scale dihedral is nowhere near enough. At least one inch of wing tip rise per foot of span is required for each wing tip; i.e. three inches for a three foot span. This amount is unfortunate, for it detracts from scale-like appearance, but use of less dihedral means trouble.

(3) Thrust line setting is never final, for much depends on the power being employed, and this may well vary from flight to flight. The model's basic reaction to power results in turning to the left. Applying a great deal of power exaggerates this tendency to produce a rolling, diving, circular turn to the left. By pointing the thrust line slightly to the right, this unwanted pattern can be tamed. However, too much to the right and new troubles arise: those of right hand circling.

There is no simple solution here,

and we must continuously search for the optimum amount of thrust line offset as the power (i.e., motor size: number of strands and turns) is varied.

Our usual control through shimming of the nose block is adequate. However, there is a troublesome tendency for shims to vibrate loose and fall out in mid-flight. Perhaps something can be done here with double-sided tape.

(4) Vertical tail area must be of a proper size. Unlike horizontal tail area, where more means better, the vertical tail must not be made too large, or it will lead to a strange flight path called Dutch Roll. Consisting of partial rolls, alternating between clockwise and counterclockwise, the model seems carefree and delighted, but may end its flight in a crash.

If your model displays this sort of alternating roll behavior, the solution is to drastically decrease vertical tail area. I suspect that the problem starts with the designer's useful increase of horizontal tail area. Once done, the vertical tail seems too small by comparison, and so it too is boosted. This last step must be resisted—keep the vertical tail small.

An Advert for Myself

For a good look at aerial combat in the Red Baron's time, all done in the spirit of the Glue Guru, try the Leon Bennett book "Gunning for the Red Baron." It contains much original material, including some fresh thoughts on Richthofen's death. Available at Barnes & Noble, Amazon and all the usual bookstores.

FAC KANONE REPORT **FAC CLUB NAME** _____ **CONTEST DATE** ____/____/____

CONTEST DIRECTOR _____ **Email address** _____ **SQUADRON #** _____

PLEASE LIST THE TOP 4 OF EACH EVENT. **You may indicate the total number of flyers in each event if you wish.**

EVENT	CONTESTANT'S FULL NAME	MODEL	TOTAL FLIGHT SECONDS OR BEST			BONUS POINTS	SCALE POINTS	FAC member?	
			FLIGHT TIMES or HEAT ROUNDS for ML EVENTS	SCALE FLT. FACTORED	Y			N	
			1	2	3			TOTAL	PLACE

EVENT	CONTESTANT'S FULL NAME	MODEL	TOTAL FLIGHT SECONDS OR BEST			BONUS POINTS	SCALE POINTS	FAC member?	
			FLIGHT TIMES or HEAT ROUNDS for ML EVENTS	SCALE FLT. FACTORED	Y			N	
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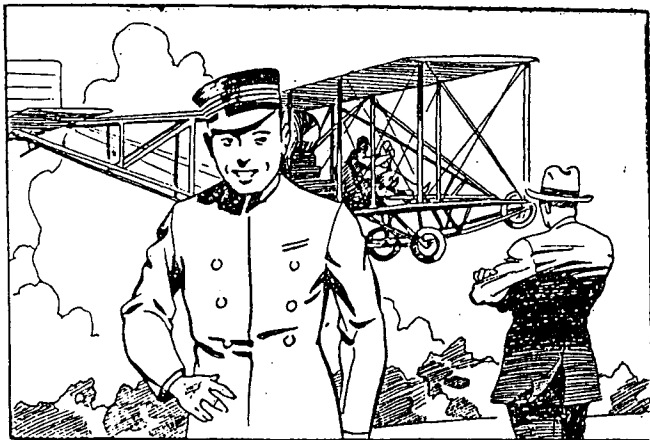
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			1	2	3			TOTAL	PLACE

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			FLIGHT TIMES or HEAT ROUNDS for ML EVENTS	SCALE FLT. FACTORED	Y			N	
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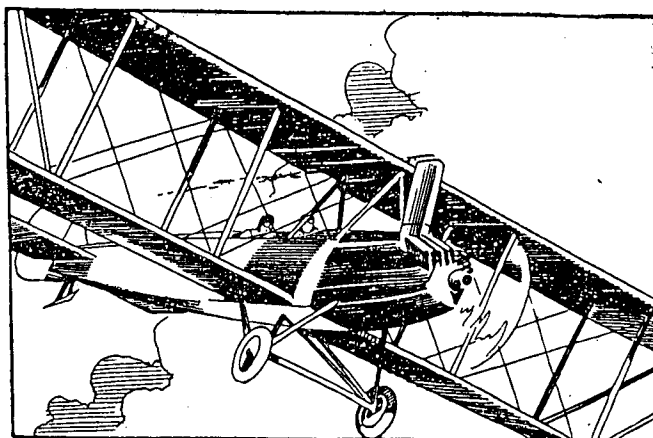
They Had What It Takes

XL—DONALD DOUGLAS—DOUGHTY DESIGNER

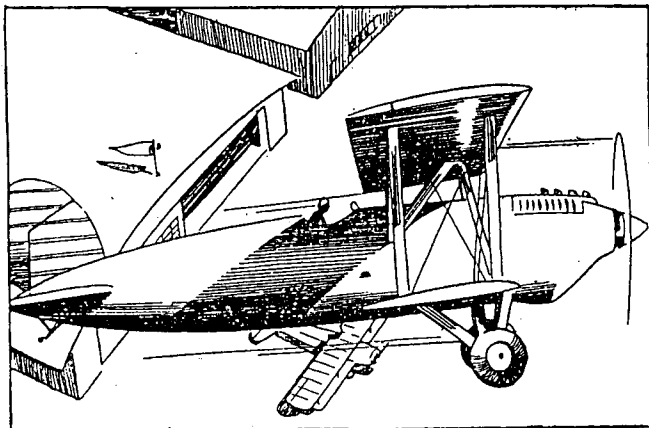
By ALDEN McWILLIAMS



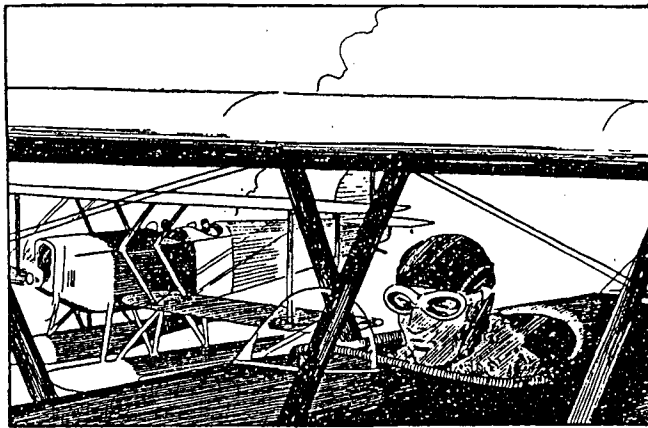
1—Born in New York City in 1892, Donald Wills Douglas attended public schools, then entered Annapolis. While at Fort Meyer, Virginia, on vacation in 1909, the young Midshipman saw the Wright brothers conducting tests with an early plane. His ambition to enter aviation was born then; for he visualized the growth of a great aero industry.



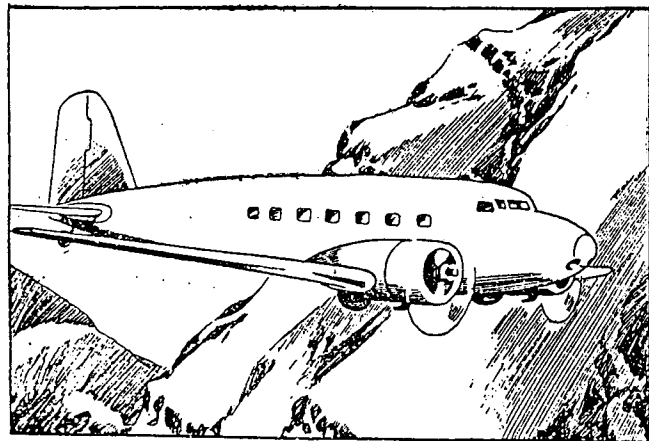
2—He resigned from Annapolis in 1912 and went to M.I.T. for his senior year, studying aeronautical engineering. After graduation, he worked at the Connecticut Aircraft factory. In 1916 he joined the Glenn Martin company and designed his first airplane—the Martin "R." Douglas left the concern later to be chief designer for the U. S. Signal Corps.



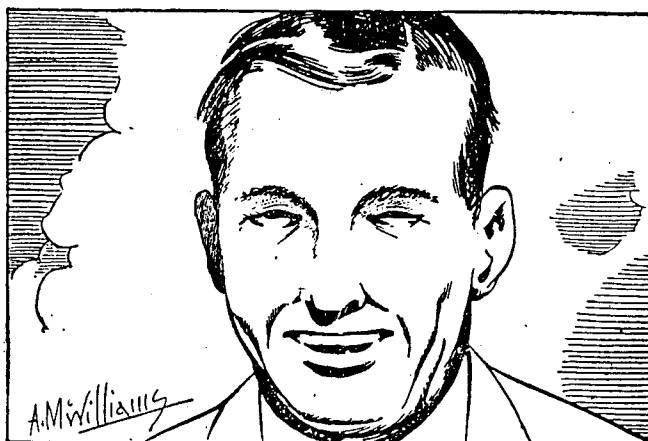
3—Douglas next returned to the Martin company and helped build the famous Martin bombers. Then, in 1920, he decided to go into business for himself. His first craft, the "Cloudster," was bought by David Davis, who took off for a cross-country flight in 1921 but was forced down in Texas. This plane had the first gas dump-valve in aviation's history.



4—Young Douglas then got a \$120,000 order from the Navy Department for "Cloudsters." The sea-branch service wanted them as torpedo carriers. After completing that contract, he opened a new plant in an abandoned film studio in Santa Monica, Calif. There, Douglas built the famous World Cruiser planes in which in 1924 our Army made the first circuit of the globe.

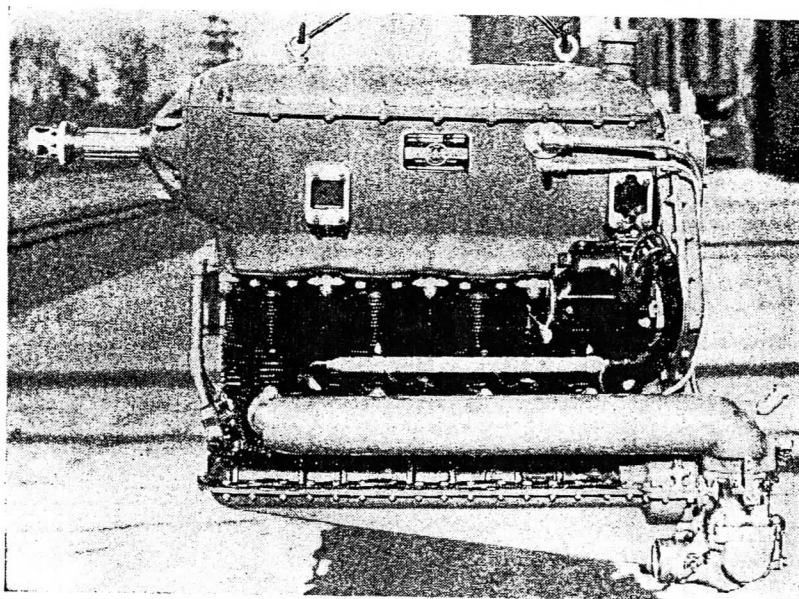


5—When the studio lease expired, he built his own plant in Santa Monica. At this factory, he has constructed planes for the Army, Navy, Coast Guard, and 22 foreign countries. Today, his famous DC-2's and DC-3's cover more air miles than any other commercial transports in the world. And his bombers are now making history in the New World War.



6—Donald Douglas was awarded the Collier Trophy in 1936 for developing the DC-2. Since that time, he has turned out even greater ships, one of which is the 42-passenger DC-4. Douglas received success as a young man, is still receiving it, and with new planes now on the drafting boards he will undoubtedly reap even greater successes in the future.

Martin



Martin 4-333-B (120 h.p.)

Martin 4-333-B

Manufactured by The Glenn L. Martin Motors Company, Baltimore, Md.

A.T.C. No. 59. Type: 4-cyl., air-cooled, inverted in-line.

Performance: Dept. of Com. approved rating, 120 h.p. at 2100 r.p.m. Fuel consumption, 0.48 lbs./hp./hr. (as stated by mfr.). Oil consumption, 0.010 lbs./hp./hr.

Dimensions: Bore, 4.5 in. Stroke, 5.25 in. Displacement, 333 cu. in. Compression ratio, 5.3 to 1. Width overall, 17 $\frac{3}{4}$ in. Height overall, 34 $\frac{1}{4}$ in. Length overall, 42 $\frac{1}{4}$ in.

Construction: Valves, 2 per cyl., steel, Wilcox-Rich. Cylinder heads, aluminum alloy, screwed and shrunk to barrel. Cylinder barrels, steel forging, machined. Pistons, trunk type, aluminum alloy, 4 rings. Connecting rods, H-section, forged duralumin, babbitt bearings. Crankshaft, 1-piece, steel, 5-babbitt main bearings. Crankcase, 2-piece, magnesium casting semi-elliptical.

Equipment: Ignition system, 2 Bosch magnetos JF-4-ARS13. Carburetion system, Zenith downdraft 156 $\frac{1}{2}$. Starter, Eclipse Y-150. Spark plugs, 2 per cyl., Aero-A's.

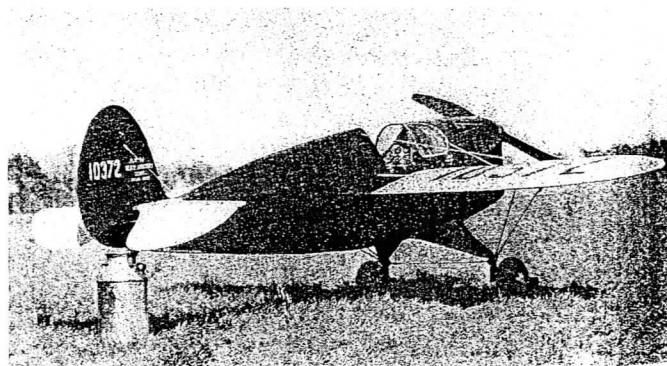
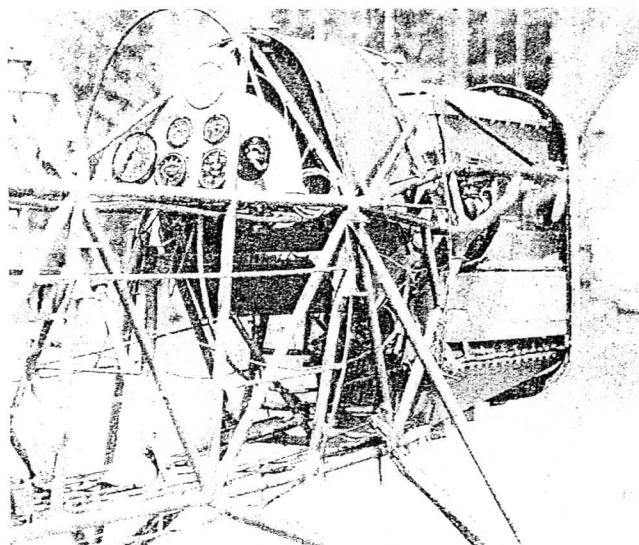
Lubrication: Dry sump, pressure feed lubrication to all points, no other oiling or greasing required.

Weight: Dry (without hub or starter), 269 lbs.





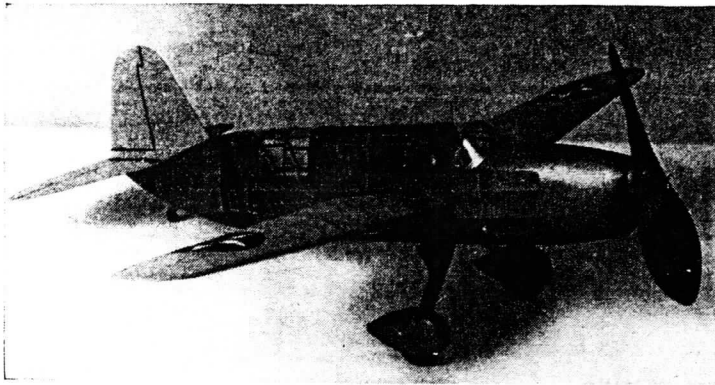
Roger Don Rae piloted the "Cannon Ball" in 1932. Installation of a 4-cylinder Martin D-333 engine, and other modifications performed at the Heath factory, considerably altered the appearance of the aircraft as shown left and below.



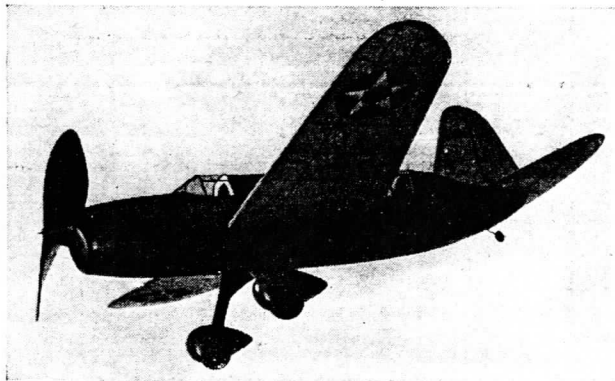
Modified fuselage ready for cover showing cockpit details. Note temporary brace, (landing gear to top longeron), as gear normally held in position by wings' landing and flying wires. Note also gas tank and engine mount design for the 120 hp Martin 333. Engine was manufactured in 1931 by the Glenn L. Martin Motors Company, Baltimore, Maryland.



Rae's ignominious arrival at the Niles, Michigan airport, left, was the result of running out of gas and not quite clearing the top strand of the airport boundary fence. Rae, far right, in cap and knickers. At this stage the Omaha races were less than a week away. Within 48 hours, the aircraft was repaired and test flown — thanks to the efforts of a small group of dedicated Heath employees.



It has sleek realistic lines, just like its large counterpart



A wide blade prop gives plenty of climb

Building A Flying NAVY SCOUT

**A Realistic Fine Performance Model
of Uncle Sam's New Navy Gun Spotter**

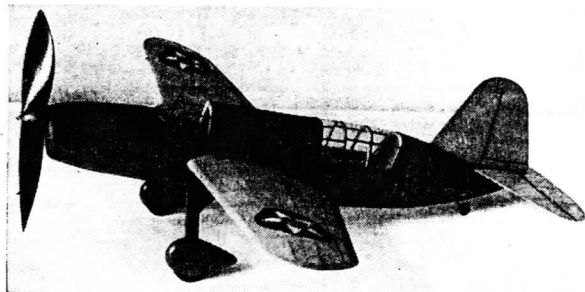
By EARL STAHL

NEWEST scout-observation plane being produced for the U.S. Navy is the trim little Curtiss SO3C-1. As such it is designed to perform the various duties re-

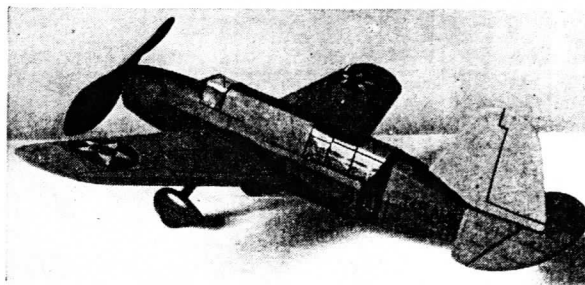
quired of planes operating from cruisers and battle-ships. It can be used either as a landplane or seaplane, its chief function, however, being that of a catapult launched seaplane.

Frequently referred to as the "eyes of the fleet," it is the military mission of these ships to direct the fire of battle-ships' big guns and conduct long range scouting activities in search of enemy surface vessels and submarines. In addition to these tasks the "S-O" planes lay protective smoke screens around friendly naval craft and even engage in light bombing and fighting activities.

In design the SO3C-1 is a two-seater, mid-wing monoplane. An



Cockpits for pilot and observer are enclosed

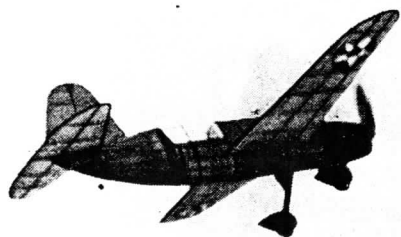


Large tail surface gives steady flight

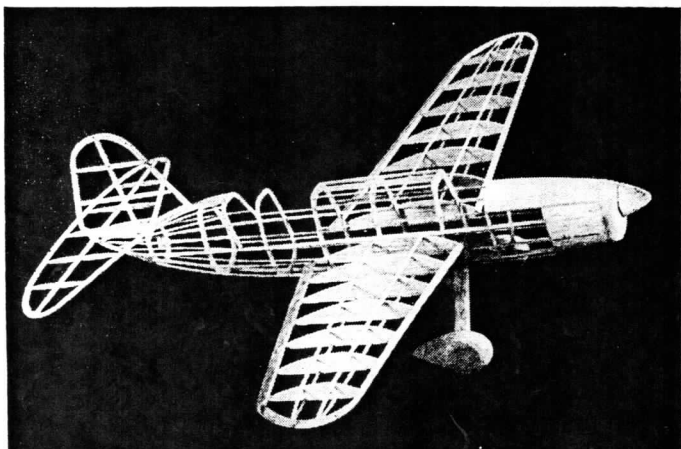
inverted, air-cooled Ranger 12 cylinder engine of 520 horsepower is installed. With the exception of the fabric covered tail surfaces, construction is all metal. As a landplane, the ship is equipped with a fully faired, non retractable landing gear; when being used as a catapult launched seaplane, a large single main float and two small wing tip floats are installed.

Compared with modern shore or aircraft carrier based aircraft, the perform-

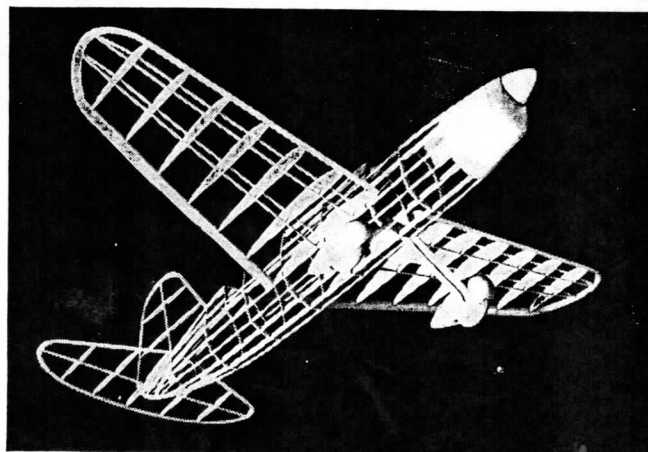
(Continued on page 42)



In full flight—most realistic



The frame is sturdy, light yet flexible, to withstand shocks



The reinforced nose helps to prevent damage

EITHER KNIFE with ONE BLADE 50¢

SETS in MANDY CASES \$1 \$2 \$3

Extra Blades 10c Each

WHEREVER YOU SEE THIS LITTLE MAN

the SHARPEST knives EVER MADE FOR MODEL MAKERS

BLADES EASIER TO CHANGE THAN IN SAFETY RAZORS

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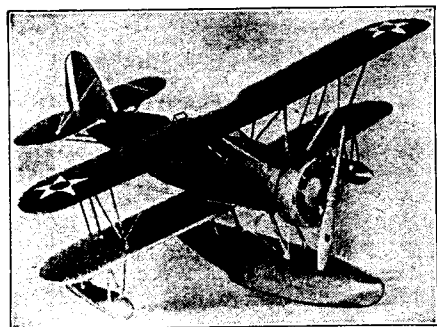
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Building a Flying Navy Scout

(Continued from page 25)

ance is not startling; nevertheless it is considerably improved over that of the old Vought "Corsairs" and Curtiss "Seagulls" (SOC-1) formerly assigned to this task. Top speed is in the neighborhood of 200 m.p.h. while cruising speed is 146 m.p.h. Specially designed slots and flaps keep the landing speed at less than 60 m.p.h. The fuel load of 199 gallons should give a cruising range of more than 1,000 miles.

The Curtiss SO3C-1 is not heavily armed. An electrically controlled machine gun is located in each wing half just outboard of the propeller arc. The observer is provided with a single gun which is exposed when the panels to the rear of his cockpit are lowered. Racks for small bombs may be installed under the wings and when being flown as a land-plane, a small torpedo may be carried beneath the belly.

Because of its ideal proportions and relatively simple structure, the SO3C-1 is readily adaptable for a flying scale model. Our little ship is a faithful reproduction of the prototype and for that reason makes an interesting model to build and fly. If carefully built from the accompanying plans, this little naval scout will take to the air as readily as "a duck takes to water."

Construction of the model is not difficult; before work is started, the pages of plans should be properly joined. Select all balsa wood carefully so the structure will be as strong and light as possible. Cement all joints firmly checking frequently for correct alignment.

Fuselage

The keel and bulkhead method of construction is employed for the fuselage. Exact size bulkheads are shown on the plan; two of each are required (except No. 5 of which four are needed). They are cut from medium grade 1/16" sheet. Cut only those notches indicated; others will be cut later as required. Four keels are necessary: the top, bottom and the two side ones. The side keels are clearly shown and shape of others is obtained by tracing the top and bottom outlines of the side view—average depth is about 5/64" and they too are cut from medium 1/16" sheet.

To begin assembly pin the top and bottom keels to position over the side view. Next cement half the bulkheads to place in a vertical position. Add the side keel and check for correct alignment. When dry, remove from the plan and add the remaining bulkheads and side keel to their respective positions. Check and recheck

the structure to be certain that it is true.

Stringers are rather hard grade 1/16" square stock. Attach those nearest the side keels first; add a stringer to each side at the same time to avoid pulling the structure out of line. Where there are no notches in the stringers, they are easily cut using a razor blade that has been broken to a sharp sliver.

"Filling-in" the nose adds to the strength and attractiveness. The area shown lightly shaded on the plan is to be fitted with individual pieces of soft 1/16" or 3/32" balsa neatly cut to fit snugly between the stringers and bulkheads. Cement two pieces of 1/4" sheet together for the nose block; cut to outline shape and remove the square section into which the nose plug fits. Roughly cut to shape and then cement the nose block to bulkhead No. 1. Cut and sand the entire nose to a smooth, accurate shape.

As shown, 1/16" sheet gussets are cemented to the fuselage to reinforce the wing mount. Cut two rib shaped wing mounts from hard 1/16" sheet and cement them to place with their base exactly parallel to the stringer; cement very firmly. The 3/32" thick blocks in the rear which hold the bamboo pin can be added also.

Landing Gear

To prevent damage to the model the landing gear must be able to absorb all shock encountered in normal flying. First make a complete pattern of the wire strut, then bend to shape from .040 music wire. A 1/16" sheet former is made, as indicated in the landing gear detail; it should fit snugly within the wire strut top. Cement the former to bulkhead No. 4 and then slip the wire over it and attach by sewing with needle and thread. Make the fairing struts from 3/16" sheet. They are of streamline cross section and have a shallow groove in the back to hide the wire strut.

Wheel pants and wheels are made from laminated sheet. Remove the centers of the inside pieces to admit the wheels. Cement the parts together and then cut to shape; looking from the top the shape is streamline. Sand the pants thoroughly and apply several coats of dope for a nice finish. Each wheel is made from two-discs of 1/8" balsa cemented cross-grain. The fairing struts, wheels and wheel pants are not attached to the wire struts until later.

Tail Surfaces

Tail surfaces constructed in the following manner are both light and strong; both rudder and stabilizer are made similarly. Working directly over the plans, make complete frames using hard 1/16" sheet for the outlines, 1/16" x 1/8" strips

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for the spars, and 1/16" square pieces for the ribs. When dry, lift these flat frames from the plan and add soft 1/16" square pieces to each side of each rib. To complete the construction cut the ribs to a streamline shape and finish the leading and trailing edges to the indicated shape.

Wing

The wing is of multiple spar construction. Since only one half the wing plan is shown, it will be necessary to make a full scale drawing of the left wing. All ribs except No. 1 are cut from 1/32" sheet; two of each are required. Sand the ribs smooth and then accurately cut the notches. The leading edge shape is shown in broken lines over the wing plan—cut two from 1/8" hard sheet. Taper the trailing edges before pinning to place over the plan. Wing tips are cut from 3/32" stock; the pieces should be assembled directly over the plan. Pin the various parts to their respective positions; then cement all joints firmly. The spars are hard grade 1/16" square strips. When the cement has hardened, lift the wing halves from the plan and cut and sand the leading edges and tips to their finished shape.

Propeller

The propeller blank is shown in perspective on the plan. Select a hard balsa block 8" x 1-5/8" x 1"; accurately cut the blank to indicated shape. Drill the tiny hole for the shaft and then start to carve a right hand propeller. Finish the back surface of the blades first; a bit of undercamber should be sanded in each blade. Cut away the front face until the blades are of the desired thickness. Shape the blade outline similar to that in the photos. Sand with rough and then fine sandpaper until the blades are perfectly smooth and in balance. Carve the spinner in two parts from soft balsa and then cement to the hub sides.

Nose plug details are given. The front disc is cut from 1/32" birch plywood while the rear portion is laminated squares of 1/8" sheet. The plug fits neatly to the nose block. Cement washers to the front and rear of the plug to fix the line of thrust.

Bend the prop shaft from .040 music wire. Slip the nose plug, several washers and the propeller on the shaft in the order given. Bend the shaft front end to suit the free-wheel gadget being used. A loop in the end into which a winder hook can be attached is recommended.

Covering

Prepare the frames for covering by working over the entire structure with fine sandpaper. The author likes to sand the bulkheads to a scalloped shape so only the stringers will touch the covering; this aids in making a better job. Regular colored tissue is used and thin dope or banana oil is used for adhesive. Use a separate piece of tissue for each side of wing halves, rudder and stabilizer; tips, etc., require individual pieces. When covering the fuselage it will be necessary to use numerous small pieces to work around the curves without wrinkles; lap the pieces of tissue neatly. Cover the balsa nose, etc., too. Spray the covered parts lightly with water to tighten the

tissue but do not apply dope until the ship has been assembled.

Assembly

Your model is now ready to be assembled; let's complete the landing gear first. Flow cement into the groove in the fairing struts and then fit them over the landing gear wires—do not attach the struts to the fuselage structure, however. A strip of silk cloth over the strut and wire will keep it from becoming loose. Next cover the struts with tissue to match the fuselage. Cement washers to the sides of the wheels before coloring the centers and tires. Place the wheels within the pants and slip both on the axle; attach firmly with cement.

Windshields come next. Obtain very light celluloid, especially for the rear cockpit. No frame other than that shown on the plan is needed; simply form the celluloid by rolling between the fingers, then neatly attach with cement. Front windshield pattern is given. Structure of the real plane's windows is represented by tissue strips doped to place.

Since the plans were drawn, it was found that for best flight performance the stabilizer front should be lowered 1/32" to give it a slight negative angle. Cement both stabilizer and rudder to place; offset the rudder a bit for a right turn in the glide. Check the tail surfaces for correct alignment. Small tissue fillets neatly doped to place will improve the model's appearance.

Scrape all tissue away from the wing mounts before cementing the wings fast; use plenty of cement. Make the incidence of each wing exactly as shown. Wing tips are elevated so the dihedral at each tip will be 1-3/8".

Addition of the various minor details completes the construction. One or two coats of thin dope should now be brushed on the whole model; if a bit of colored dope is added to the clear liquid, it will make a better job. Of course the propeller, wheel pants, etc., must be color doped; use several coats with light sanding between each for the best job. The stars, U.S. Navy and other details are made from colored tissue. Ailerons, flaps, elevators and such details are represented by thin strips of black tissue neatly doped to the covering. Add a tail wheel, cow! details, antenna and similar items to suit your ability and ambition and your SO3C-1 is completed.

Flying

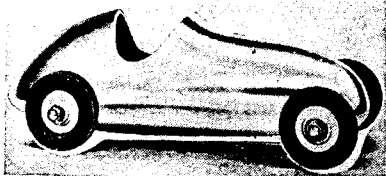
Depending on the model's weight, eight strands of 1/8" rubber or six strands of 3/16" rubber will be required for power. Lubricate the strands, hook them to the prop shaft and then drop the other end through the fuselage. As shown, a bamboo pin holds the motor in the rear. If necessary, remove a small portion of the covering to aid in getting the motor in place. Incidentally, small slits should be cut in the fuselage covering at the point of landing gear attachment so the struts can spring backward without damaging the covering.

In all probability your Curtiss will need a small corrective weight in the nose or tail to bring the model into balance; our own ship needed a tiny piece of lead in

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the nose. Make first flights over a grassy field to prevent damage while necessary adjustments are being made. First adjustments should favor the glide, then offset the thrust line to correct the power flight. A sliver of wood at the top of the nose plug, tilting the thrust line down, will in all probability "iron out" a stall, while right or left thrust, as needed, will control the amount of circle. Gradually increase the number of turns as flights improve. Stretch the rubber motor two to three times normal length for best flights.

Our test plane proved to be a realistic performer. However, like most models of combat planes, it is sensitive to all adjustments which therefore must be made with care. The model pictured climbs in a large left circle at a steep angle and fast rate of speed—it really seems to inherit some of the real plane's "zip." In the glide it descends in easy right circles. After many flights our Curtiss SO3C-1 remains undamaged except for a few patches in the covering. Many happy landings with your little naval scout!

Air Youth of America

(Continued from page 23)

relationship with these leaders, in order to benefit from their experience and advice," Gamache said.

Seven states are covered by the Area Directors, in which the Air Youth program is now actively under way. In announcing the names of these directors, Gamache stressed that others would be added to the list within a short time. The first ones and their regions are as follows:

AREA	NAME
Southern Texas	Edward Burgdorf Houston, Texas
Wisconsin State	Eugene Coles Milwaukee, Wis.
Upstate New York	Harry C. Copeland Syracuse, N. Y.
Michigan State	Stephen Corbett Detroit, Michigan
Kansas State	Leo Rutledge Wichita, Kansas
Missouri State	Robert H. Sommers St. Louis, Missouri
Western Penna.	M. J. Thomas Pittsburgh, Pa.

"The Air Youth program is now rapidly expanding. Questions every day come into National Headquarters from clubs, schools and leaders and from the boys and girls themselves which cannot be satisfactorily answered by correspondence. There should be somebody in the area who can act as a representative for Air Youth. We have been particularly fortunate in the men who have undertaken to serve with Air Youth; we know that our usefulness and service will be greatly increased by reason of their willingness to give us help and suggestions," Gamache said.

Kansas Program Gets Under Way

Under the leadership of Leo Rutledge, Kansas is the newest state to take up an active program in promoting model aviation as an educational factor. With the

cooperation and sponsorship of the Kansas State Aeronautical Association, and The Women's Aeronautical Association, a program to start clubs and enlist leaders has been gotten under way. Wichita, with the Steffens Air Youth Squadron, leads with several clubs already formed and actively at work.

In order to meet the dearth of trained leaders which has been created by the demand for expert model builders in the defense program, a unique model building course entirely for girls—perhaps the first of its kind—has been set up by the local NYA, working in cooperation with Rutledge. Girls who complete the course will be eligible for leadership in Air Youth clubs, or for possible future positions with the model aviation industry.

A class of thirty-two girls in the age group of 17 to 24 has been working under Rutledge's supervision, who reports the girls are showing excellent progress. Many of them may in time become eligible as workers in the defense aircraft factories. Around Kansas it is reported that there is a demand for twenty to thirty thousand of this type of skilled labor.

Philadelphia Schools Inaugurate Program

Philadelphia has now joined the growing list of schools that are adding model aviation to their courses of instruction. Victor R. Fritz, President of the Aero Club of Philadelphia, and a field director of the PMAA has been appointed by Dr. Alexander J. Stoddard, Superintendent of Schools, to take charge of the program.

Dr. Stoddard, who is a member of the Air Youth National Council, in making the announcement stated:

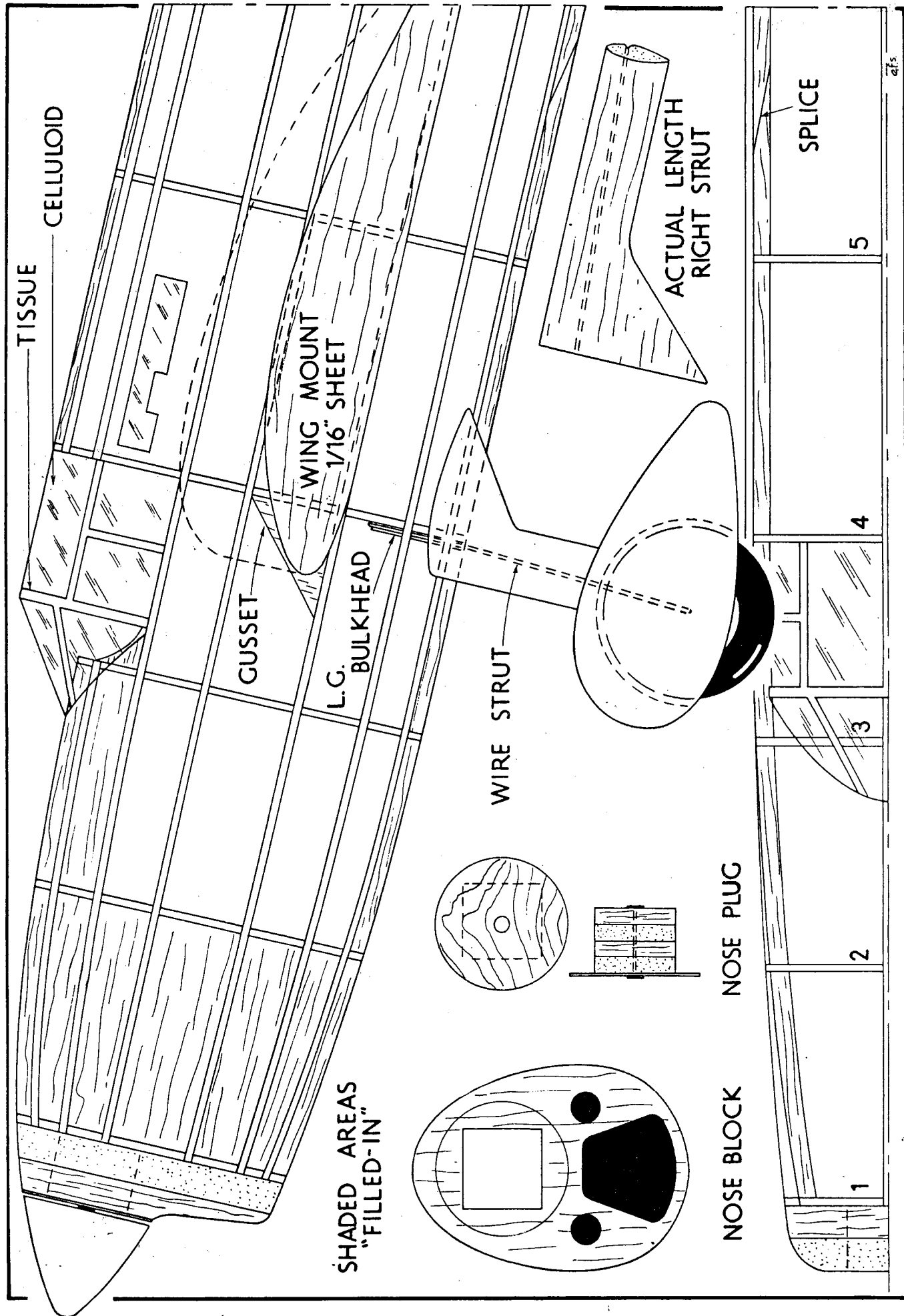
"The plan is one that will meet a need long felt in the schools. This program may be the first step in shaping the vocational destinies of some, for aviation is becoming one of our greatest industries. But our objective is to link it up with physics, chemistry, social sciences and shopwork."

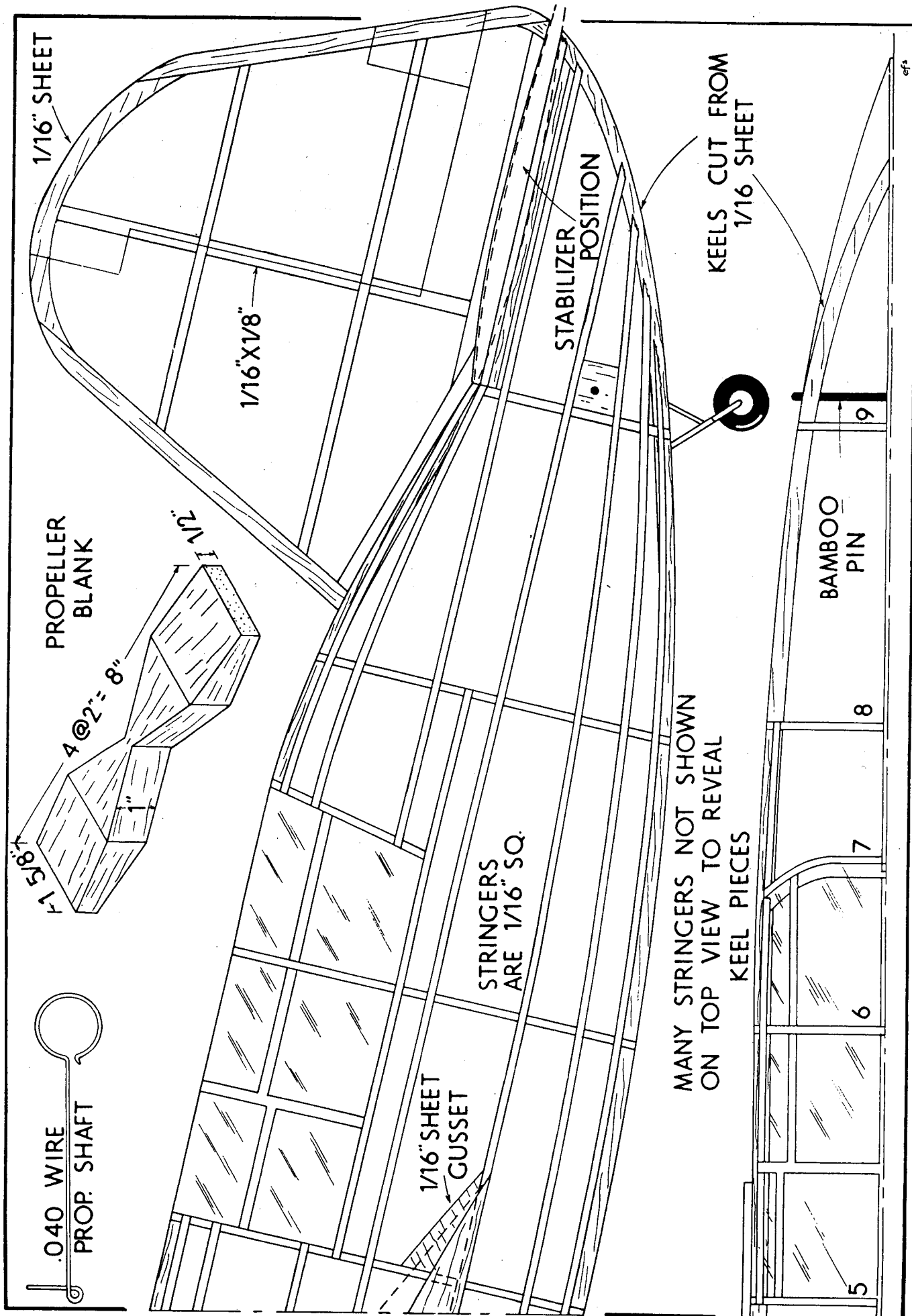
Write To Eire's Model Builders

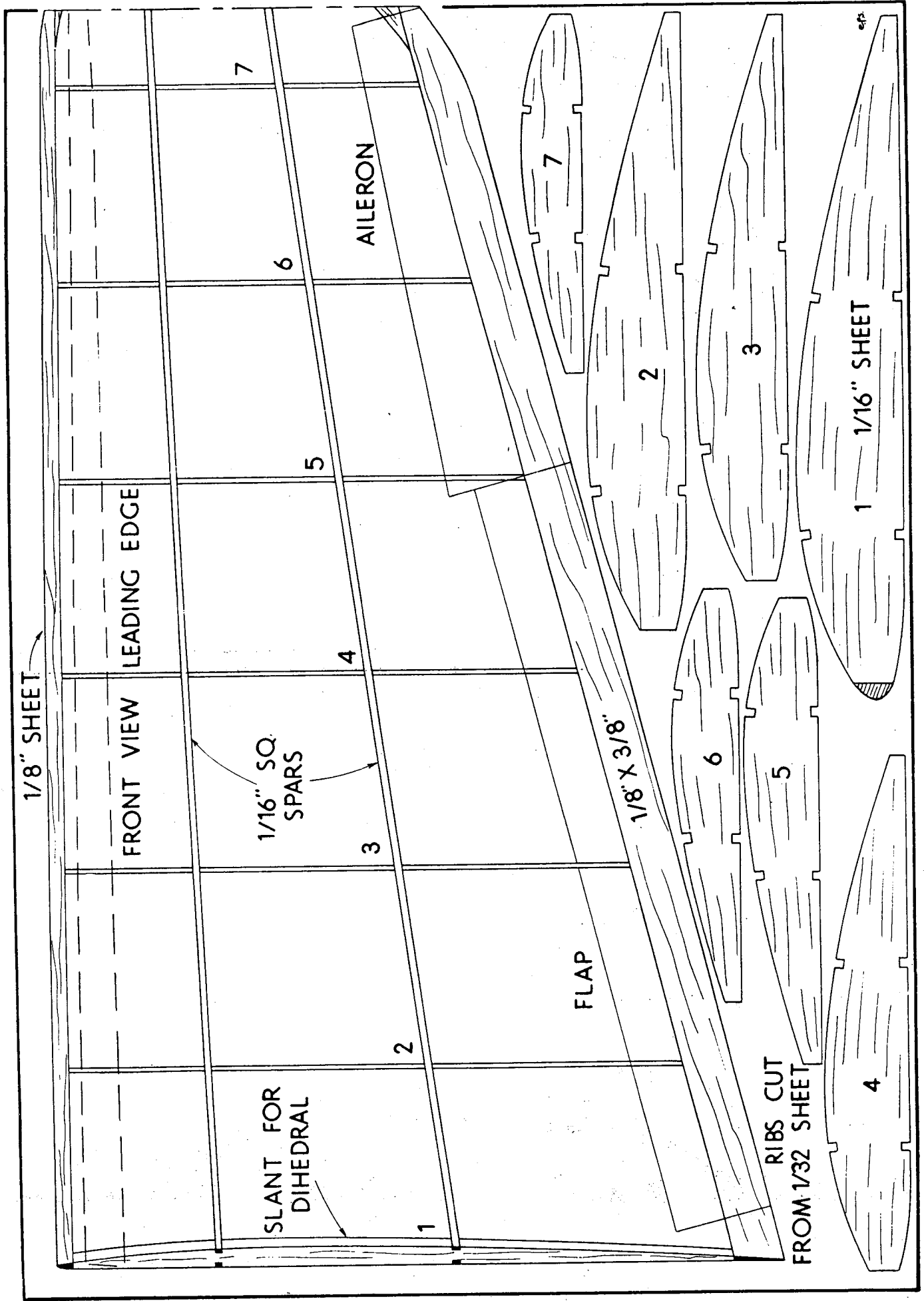
From the Irish Junior Aviation Club of 7 Crampton Quay, Dublin, Eire, comes word to the Air Youth headquarters about model aviation in that war-shadowed country, and an appeal for letters from American model builders.

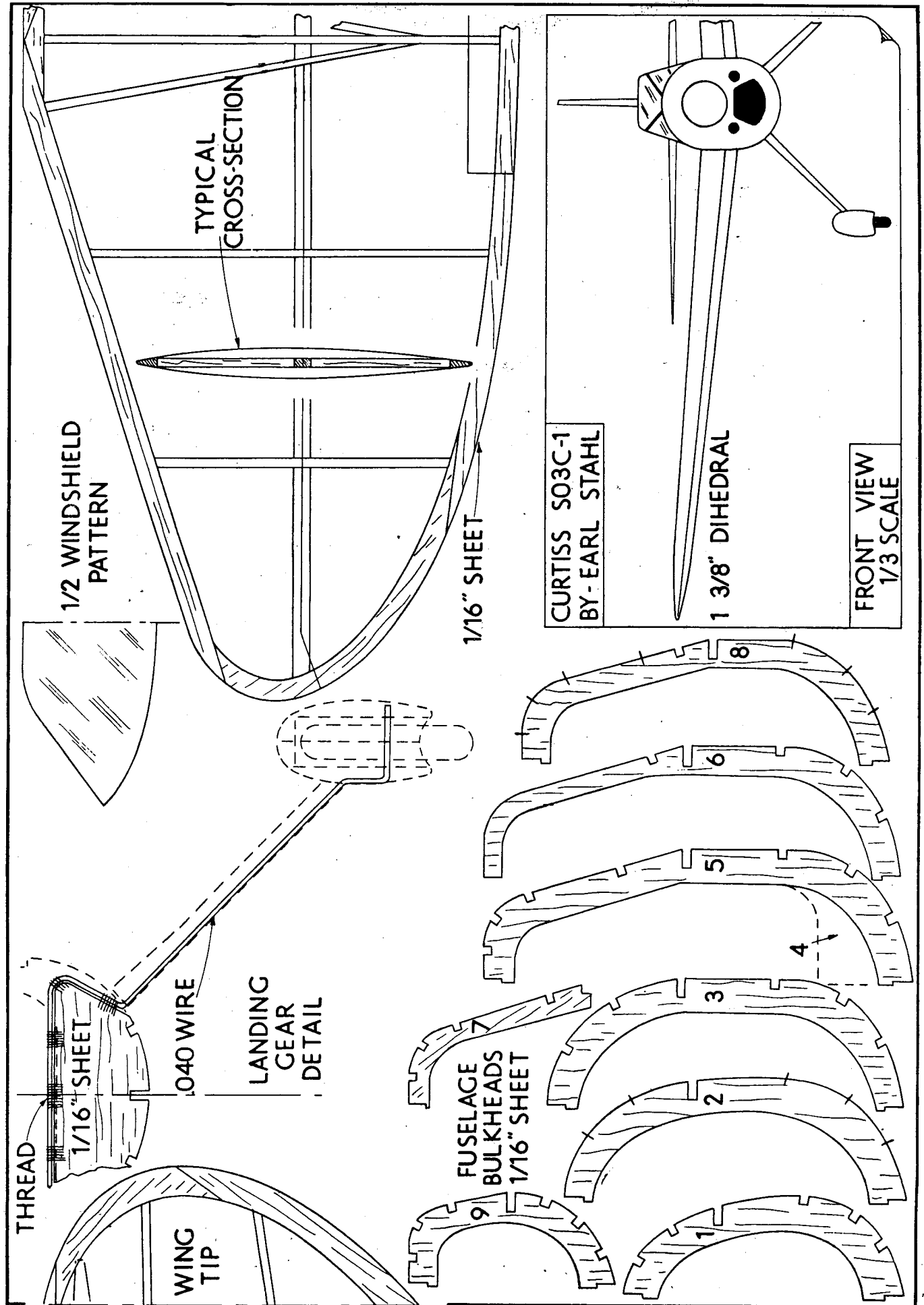
Despite the grounding of all private flying and other wartime restrictions, the club, whose headquarters are in Dublin, has maintained an active program, according to Chris F. Bruton, the club's secretary. Lectures during the winter on aeronautical subjects, which are given by well known figures, have proven particularly popular. Several model airplane contests were being planned at the time of writing.

But because of the irregularity of the mails, the club is not receiving the American model magazines and would like to have correspondence with some American clubs. All letters will be received with great interest and will be promptly answered.

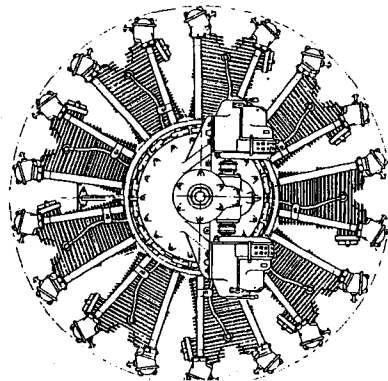
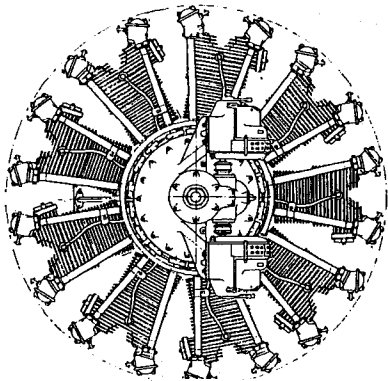
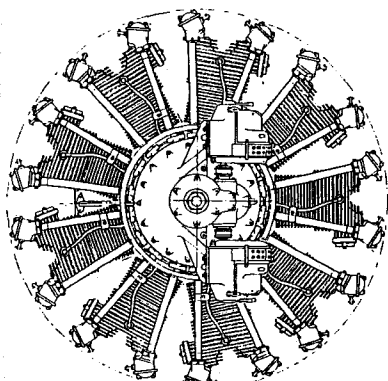
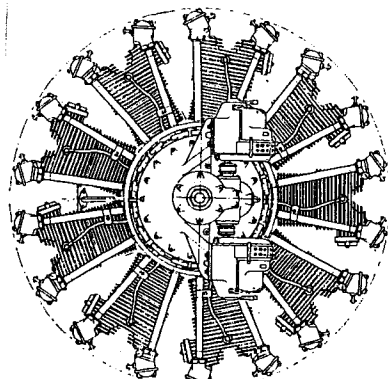
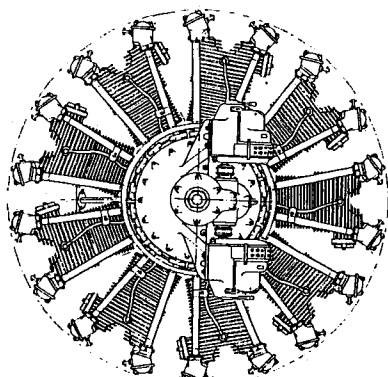
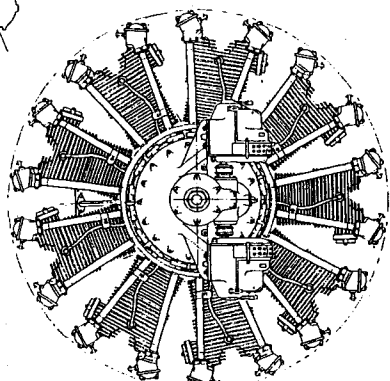
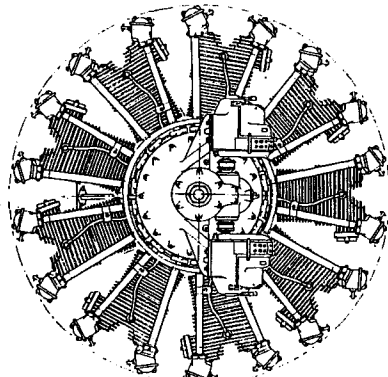
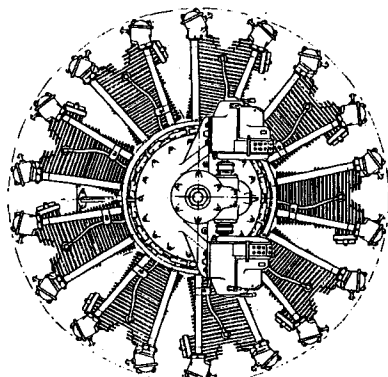
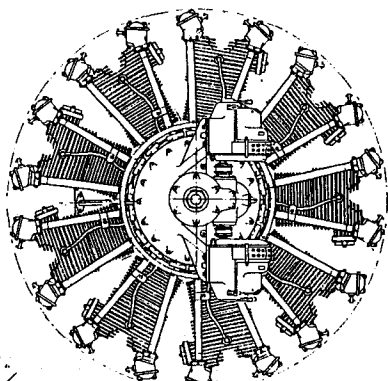
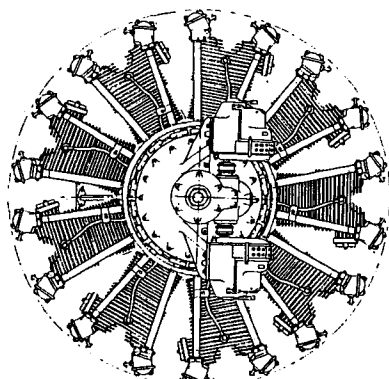
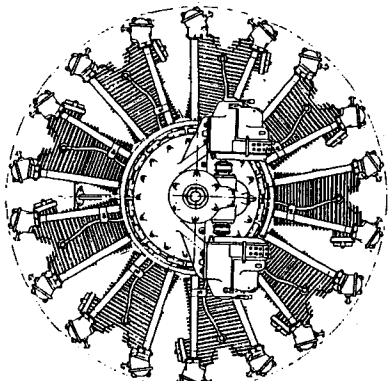
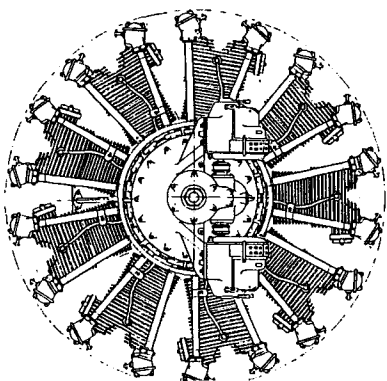
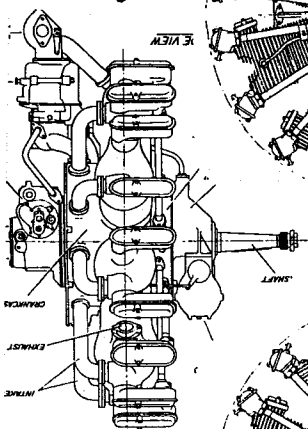


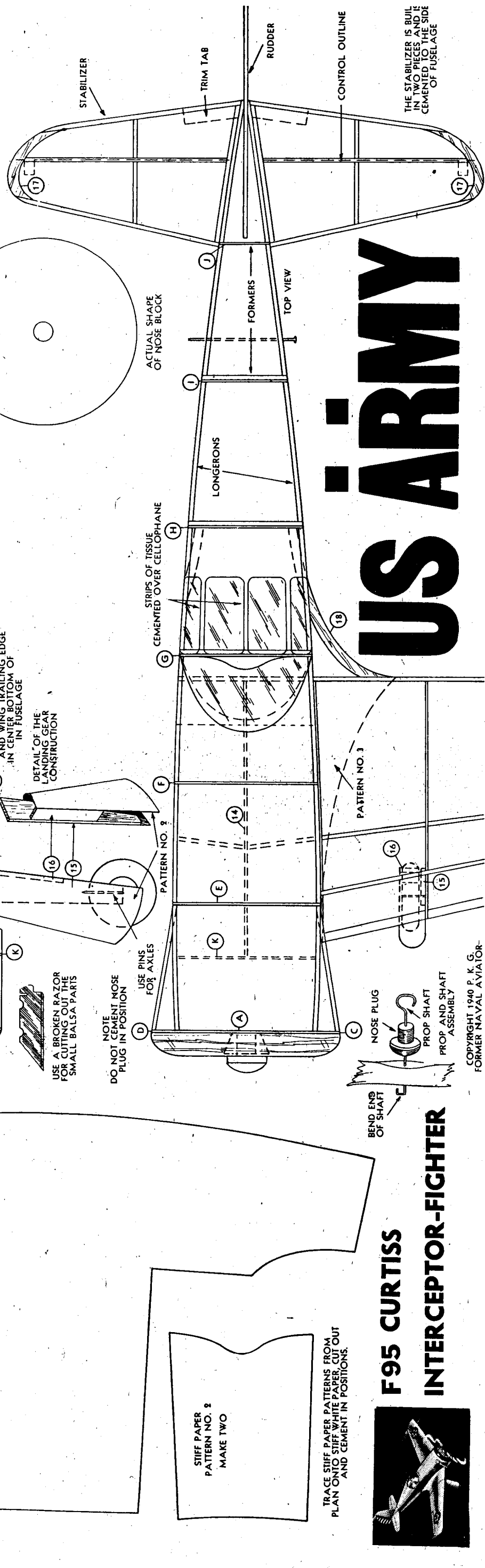
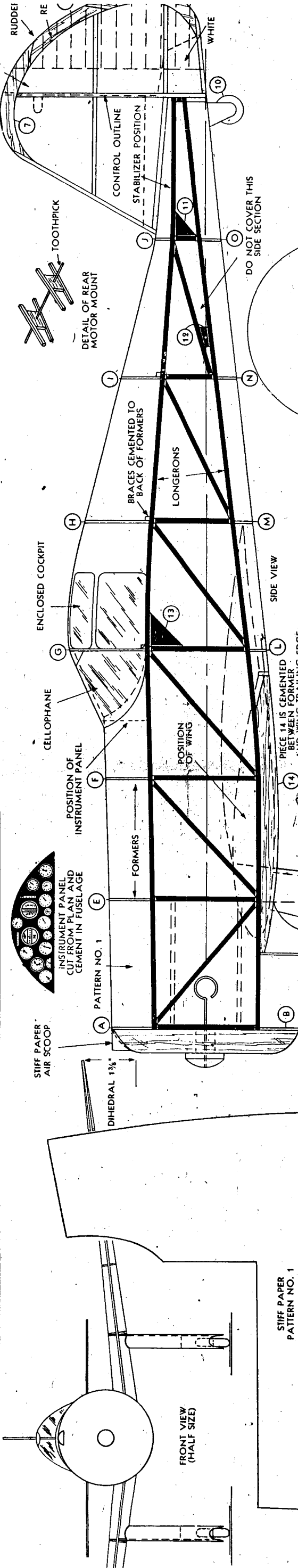
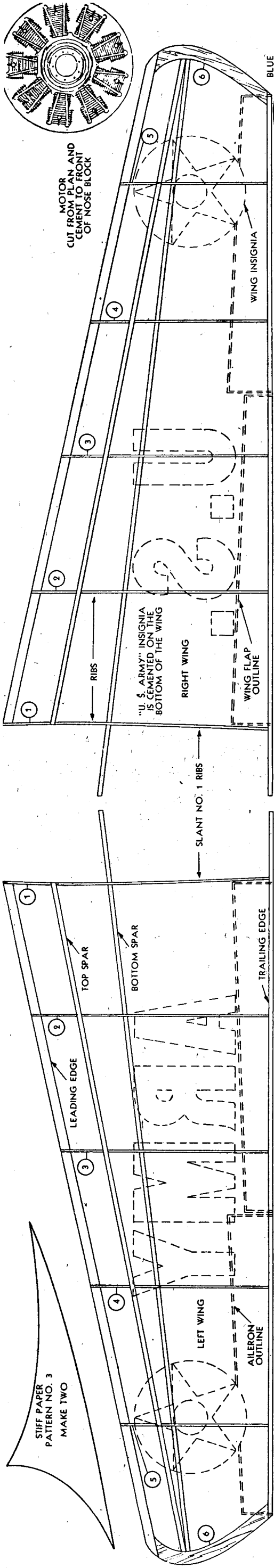






Wright J5 "Whirlwind" 220hp





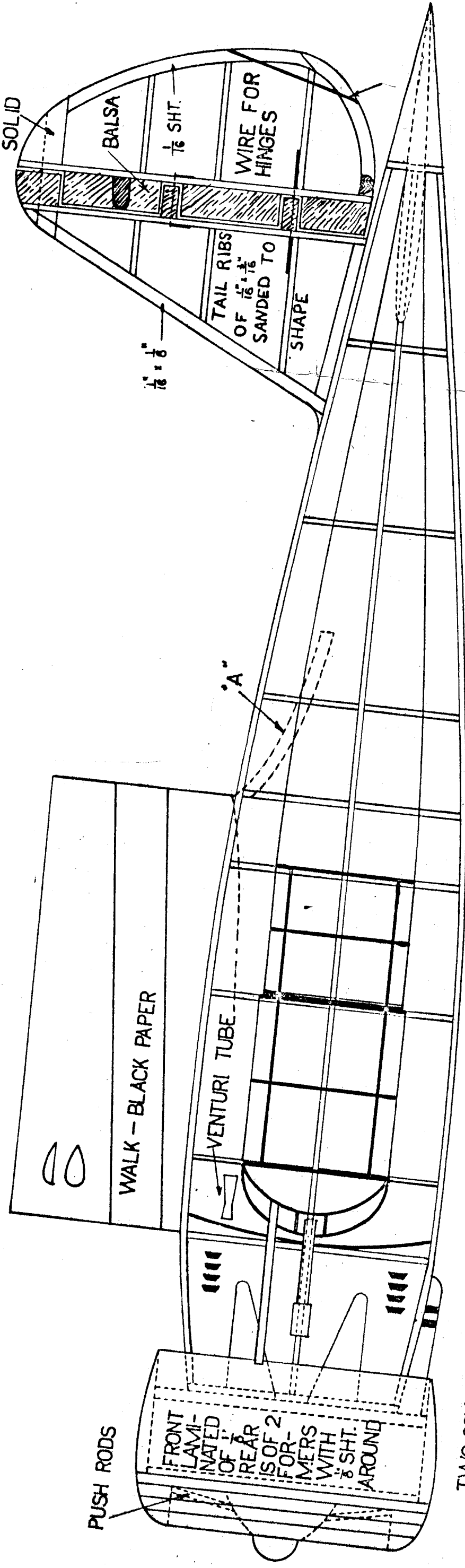
US ARMY

F95 CURTISS INTERCEPTOR-FIGHTER

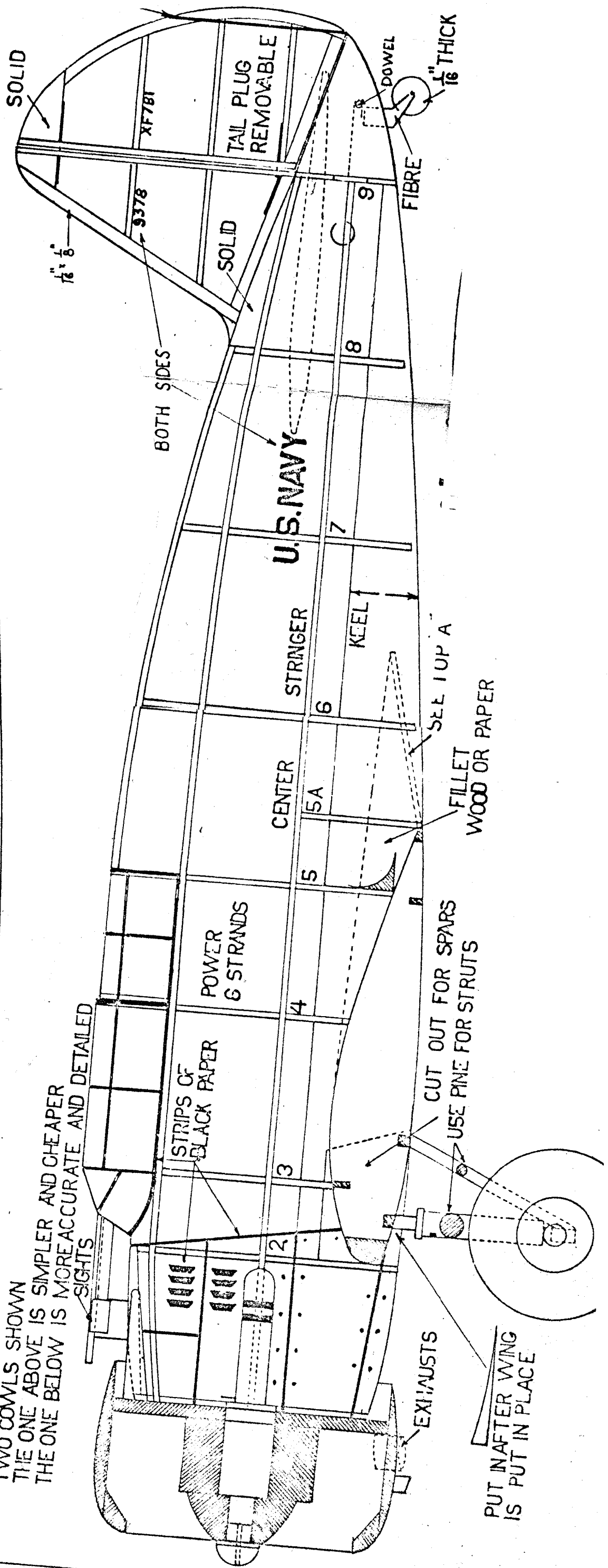


THE STABILIZER IS BUILT IN TWO PIECES AND IS CEMENTED TO THE SIDE OF FUSELAGE

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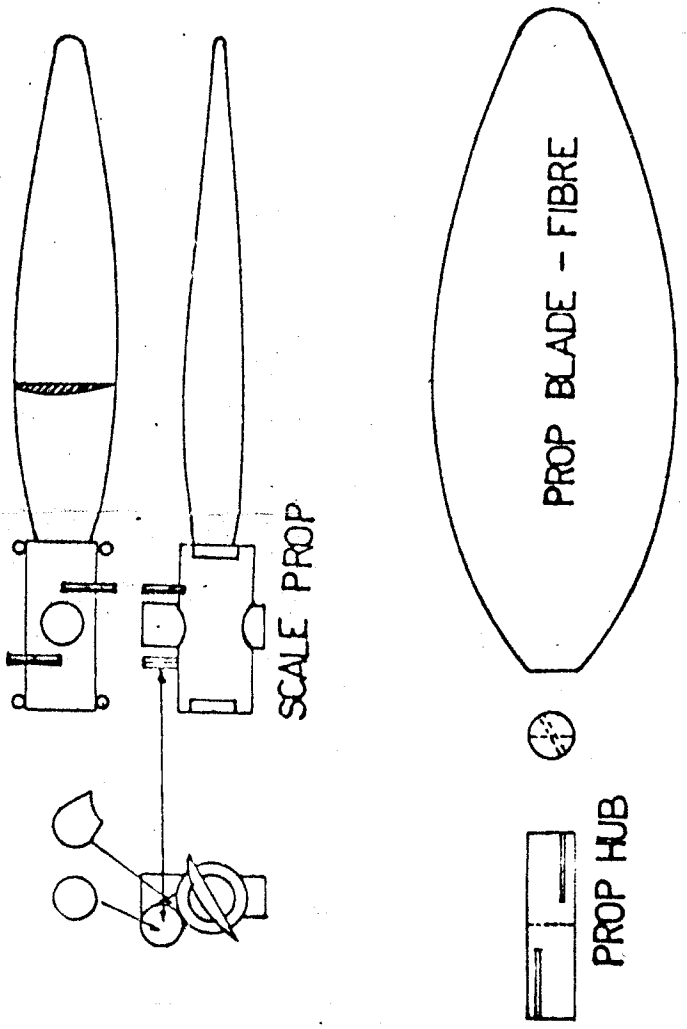
TWO COWLS SHOWN
THE ONE ABOVE IS SIMPLER AND CHEAPER
THE ONE BELOW IS MORE ACCURATE AND DETAILED



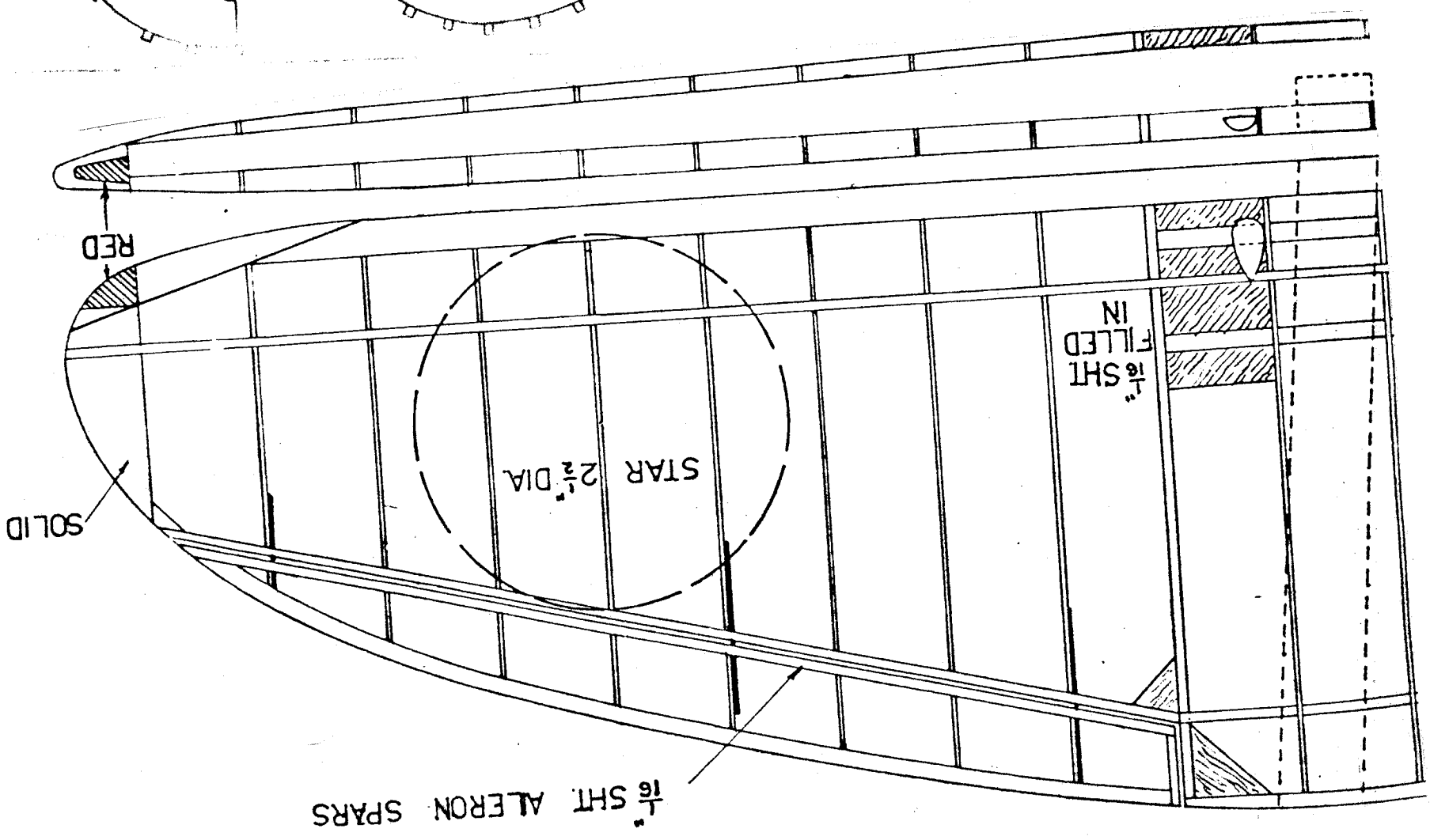
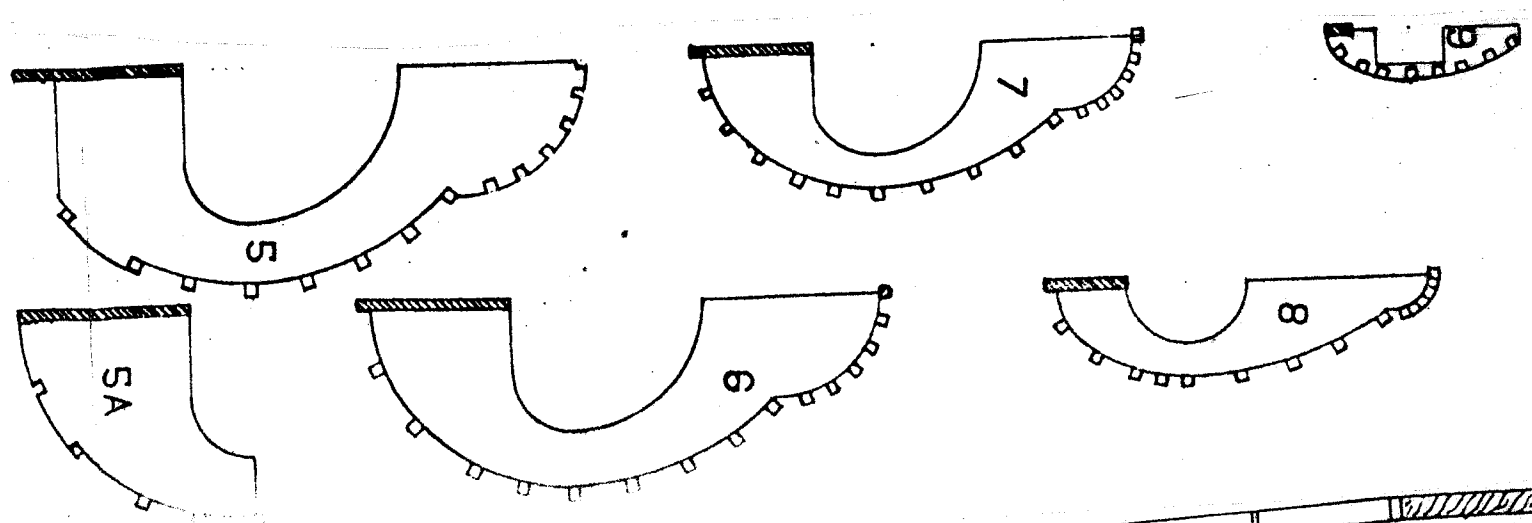
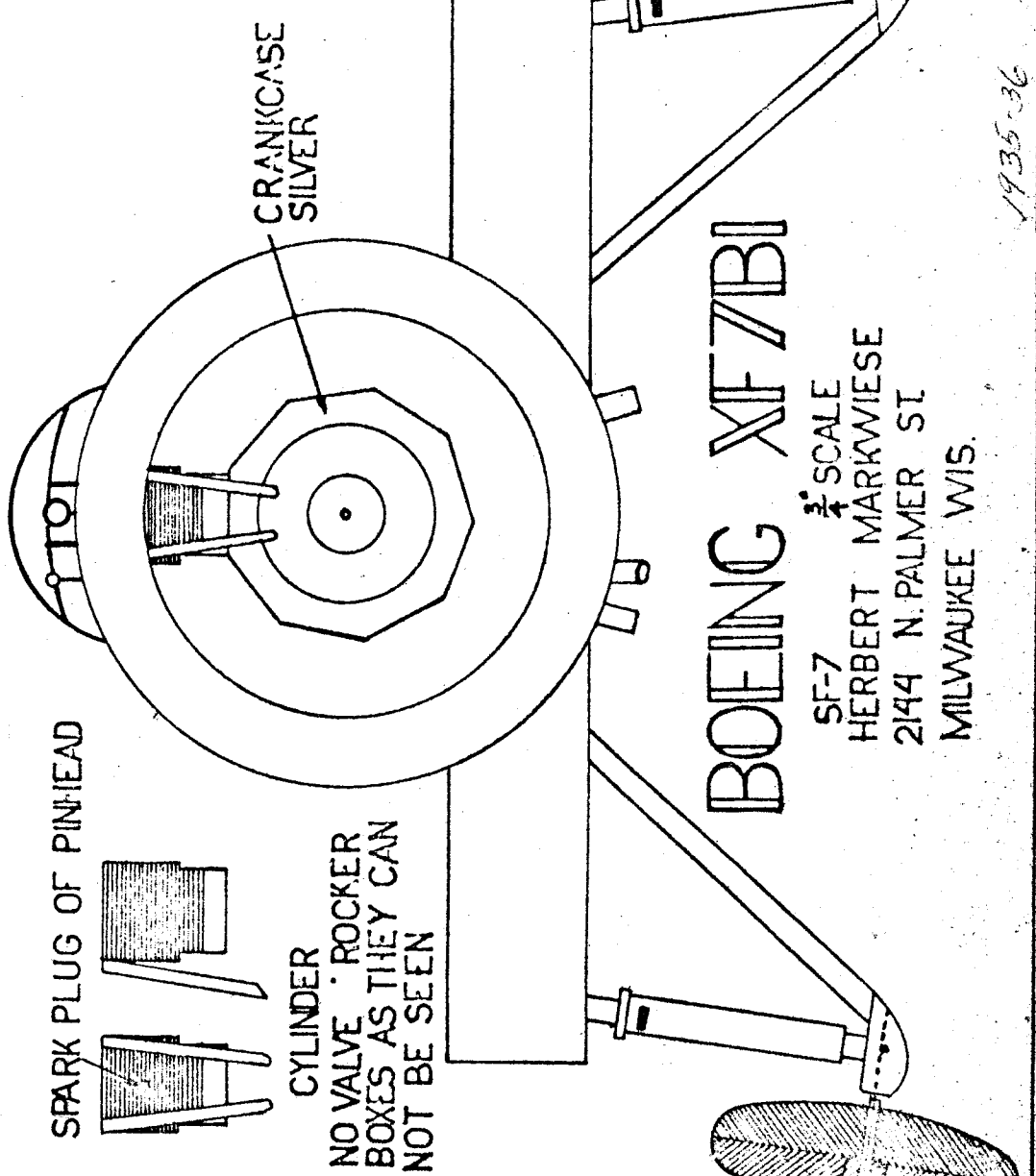
1935-36

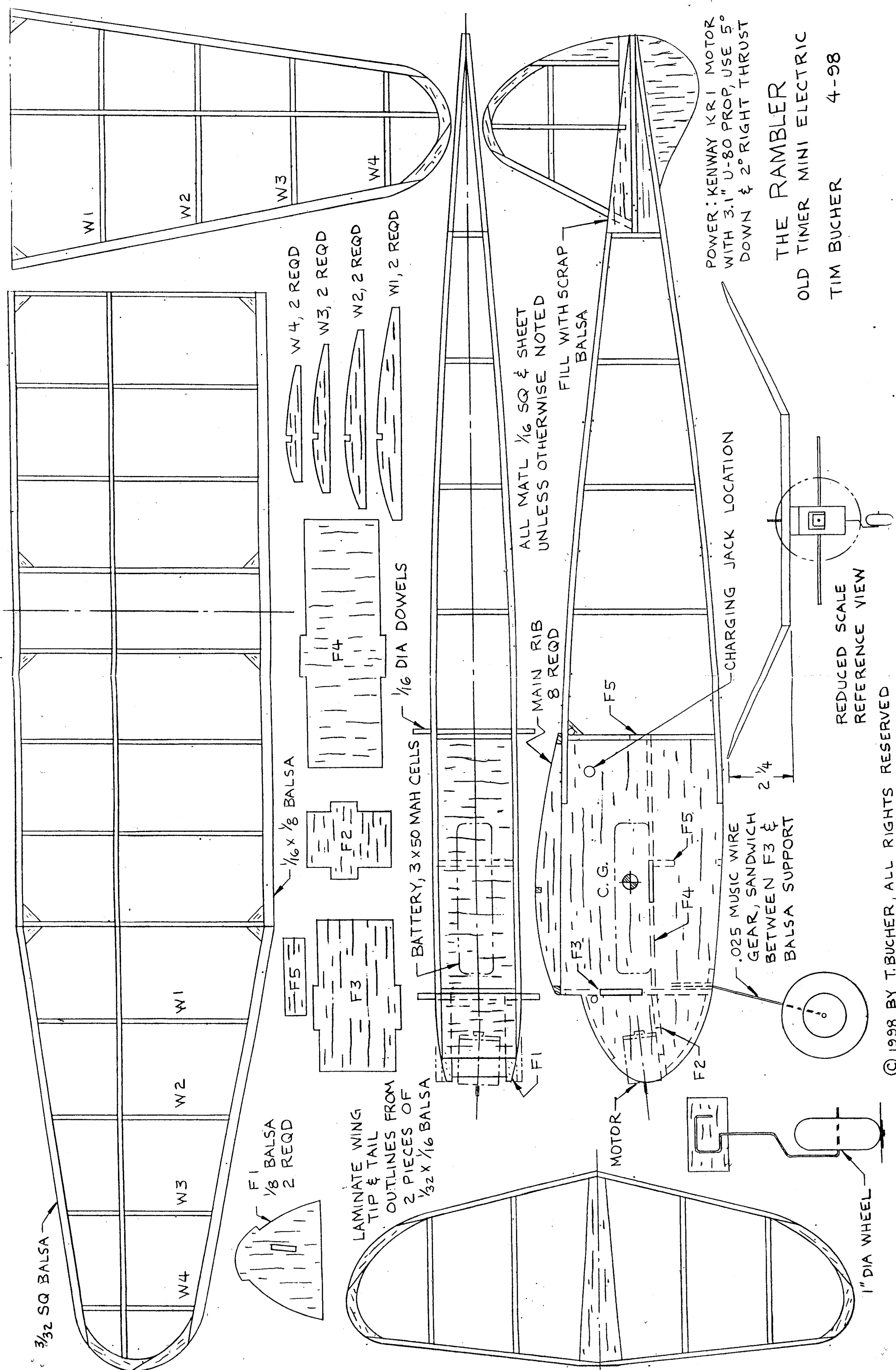
BOEING XF7B1

SF-7 $\frac{3}{4}$ " SCALE
HERBERT MARKWIESE
2144 N. PALMER ST
MILWAUKEE WIS.



COLOR SCHEME
YELLOW — TOP OF WINGS
ELEVATOR
GRAY — REST OF PLANE
DETAILS — BLACK





POWER: KENWAY KRI MOTOR
WITH 3.1" U-80 PROP, USE 5°
DOWN & 2° RIGHT THRUST

THE RAMBLER
OLD TIMER MINI ELECTRIC
TIM BUCHER 4-98

REDUCED SCALE
REFERENCE VIEW