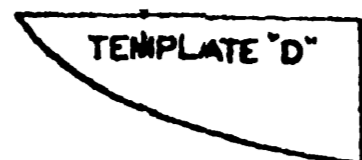
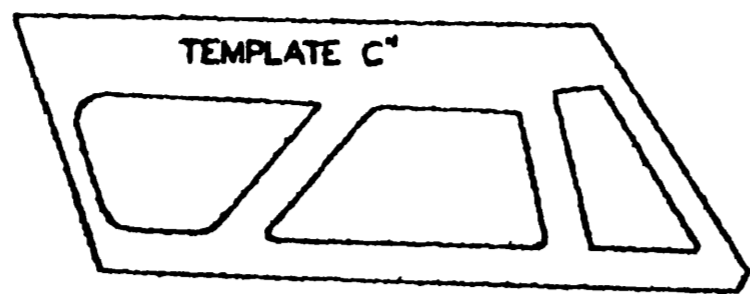
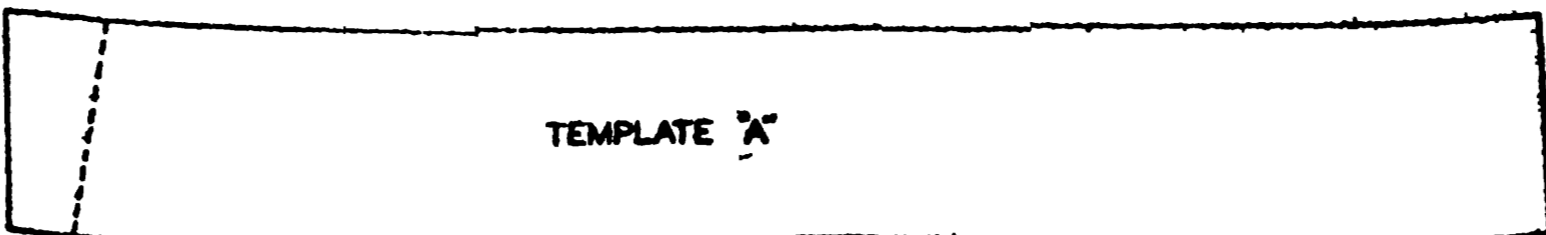


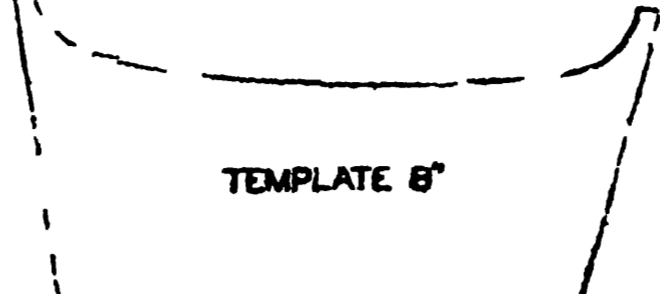
**ENFORCED RIB SHEET CONSTRUCTION**  
**COLOR PORTRAIT BOX**  
**SAV A PLAN SYSTEM**  
PATS. APPLD FOR



2 REQUIRED



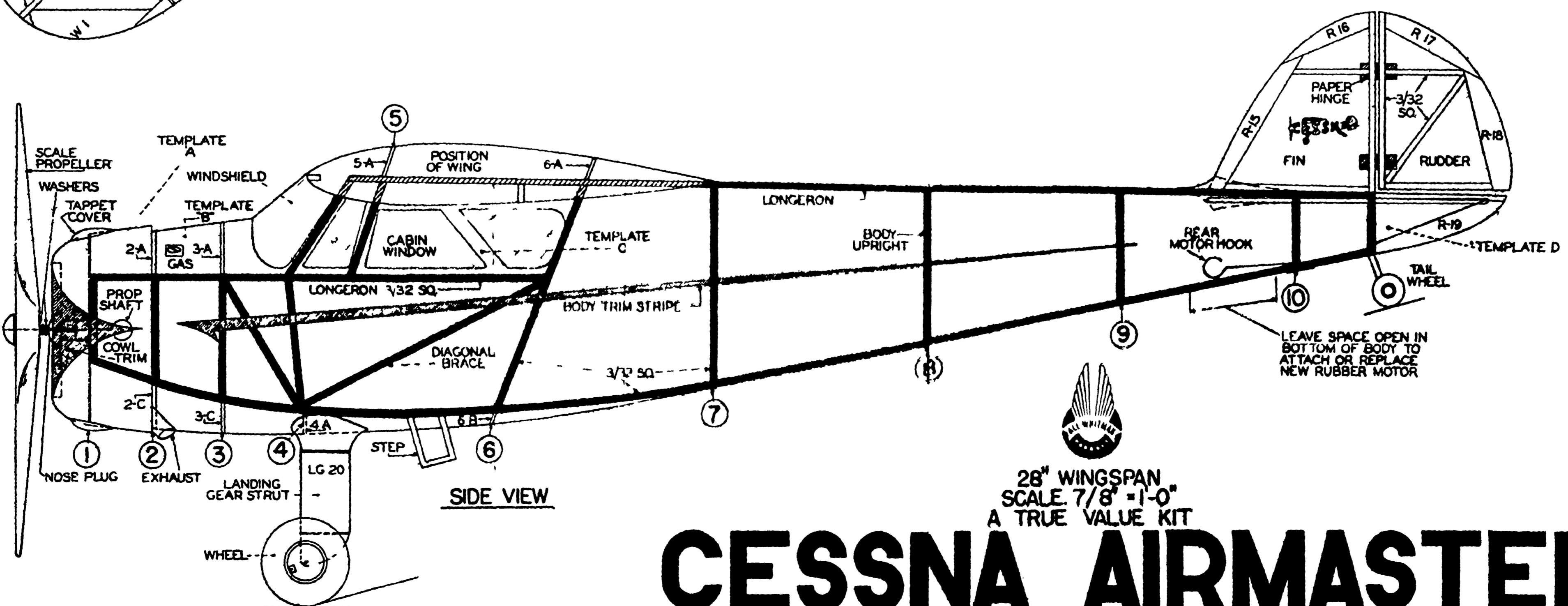
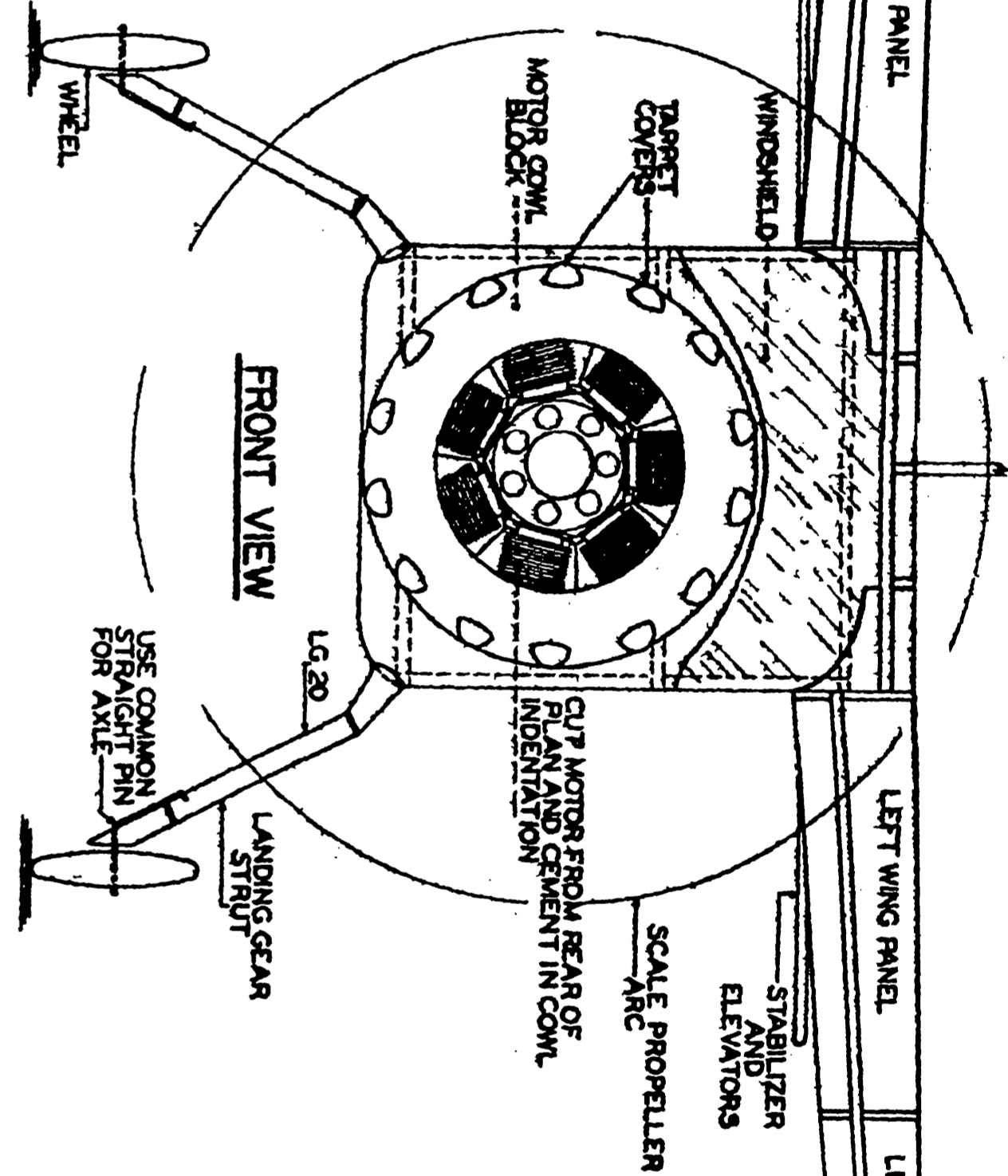
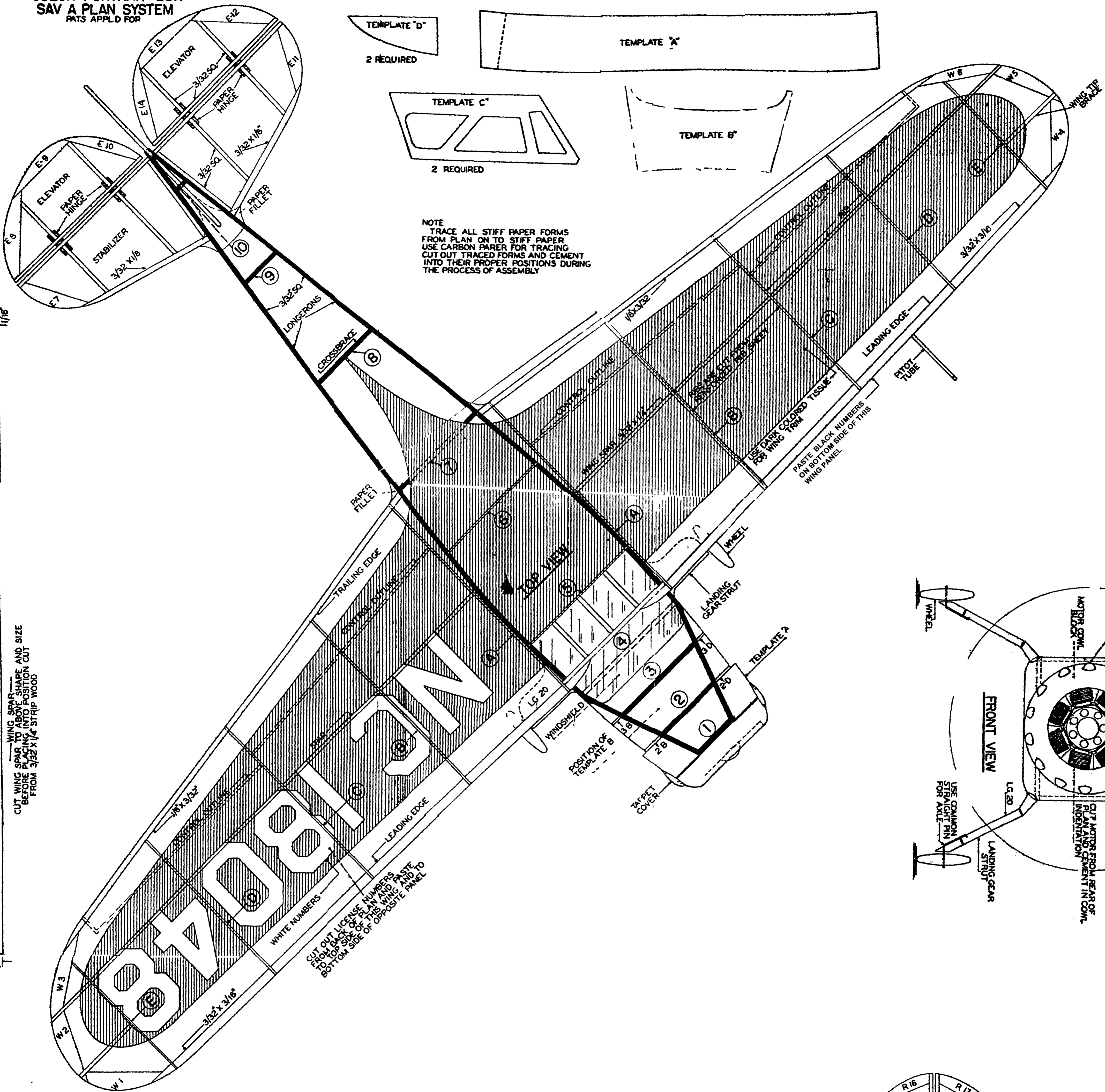
2 REQUIRED



**NOTE**  
 TRACE ALL STIFF PAPER FORMS FROM PLAN ON TO STIFF PAPER USE CARBON PAPER FOR TRACING CUT OUT TRACED FORMS AND CEMENT INTO THEIR PROPER POSITIONS DURING THE PROCESS OF ASSEMBLY

12-1/2"  
 11/16"  
 1/4"

WING SPAR  
 CUT WING SPAR TO ABOVE SHAPE AND SIZE BEFORE PASTING INTO POSITION CUT FROM 3/32" x 1/4" STRIP WOOD



28" WINGSPAN  
 SCALE 7/8" = 1-0"  
 A TRUE VALUE KIT

# CESSNA AIRMASTER

EXACT SCALE FLYING MODEL





CESSNA AIRMASTER

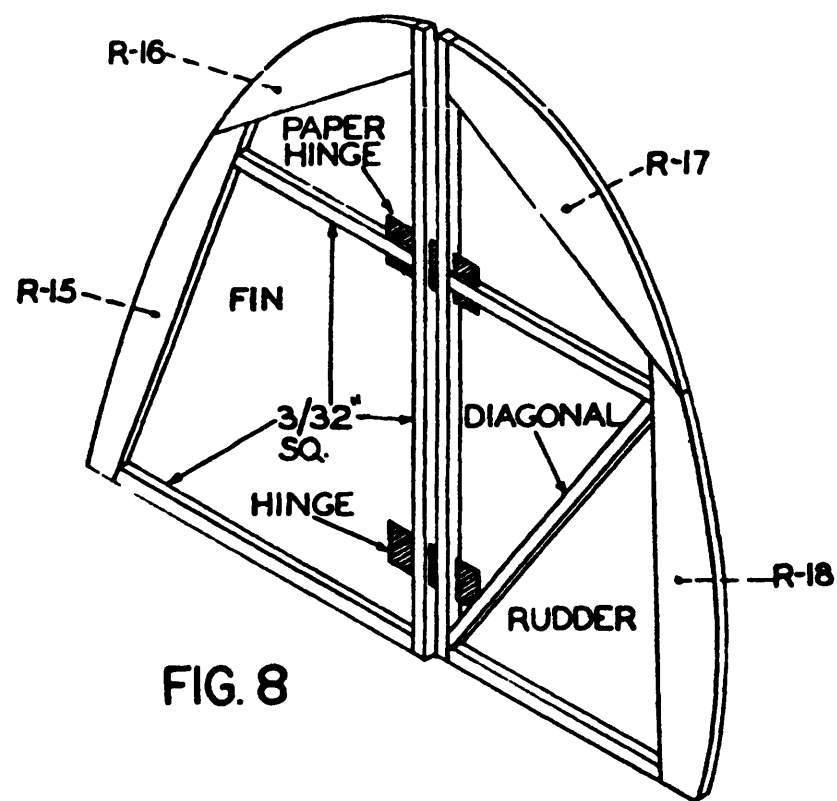


FIG. 8

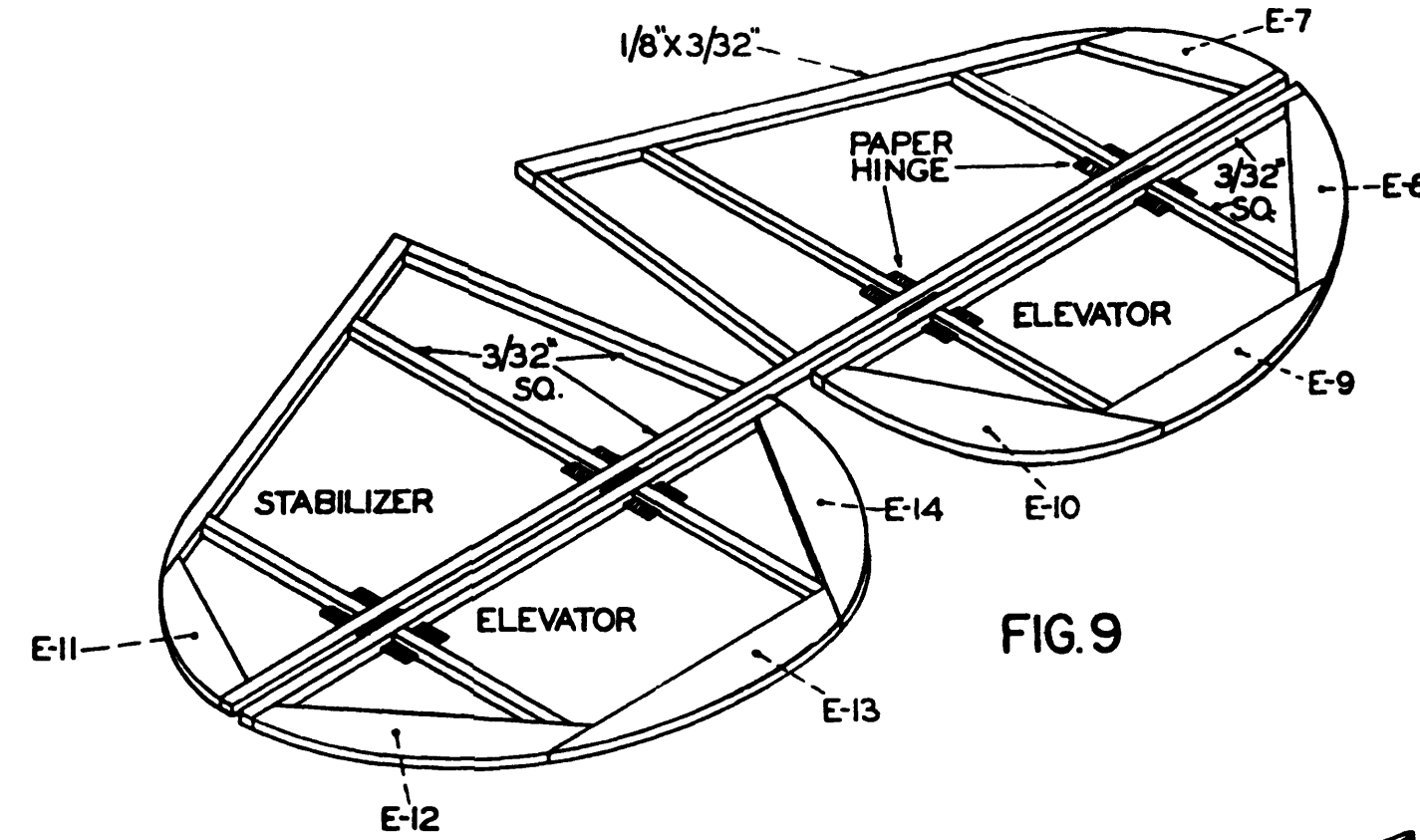


FIG. 9

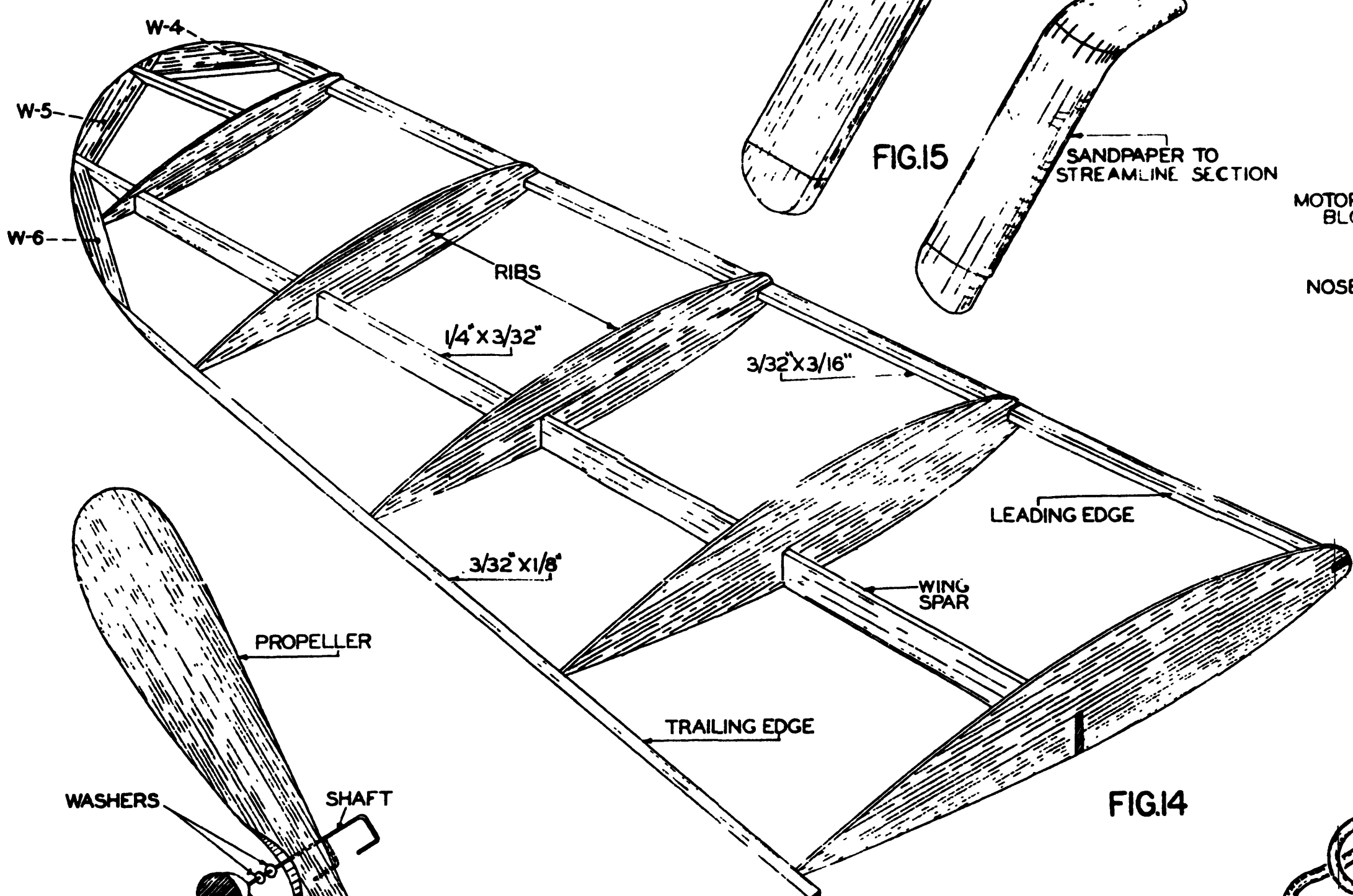


FIG. 14

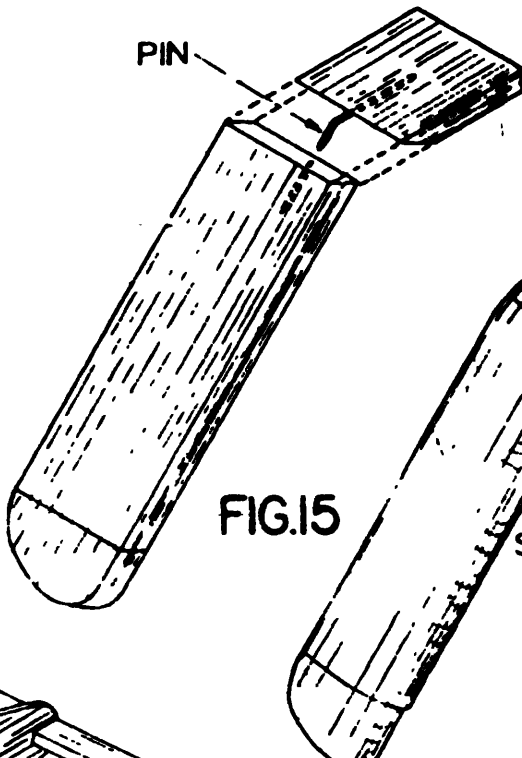


FIG. 15

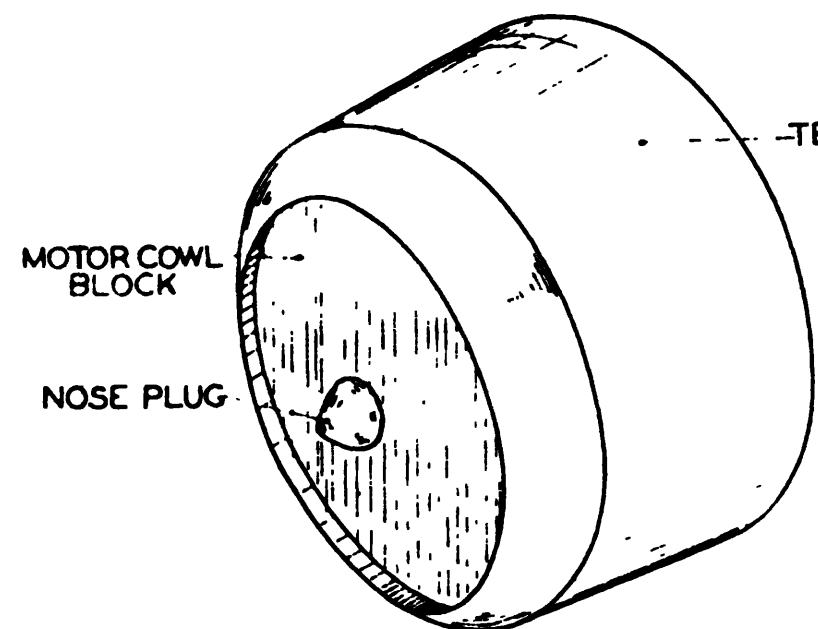


FIG. 11

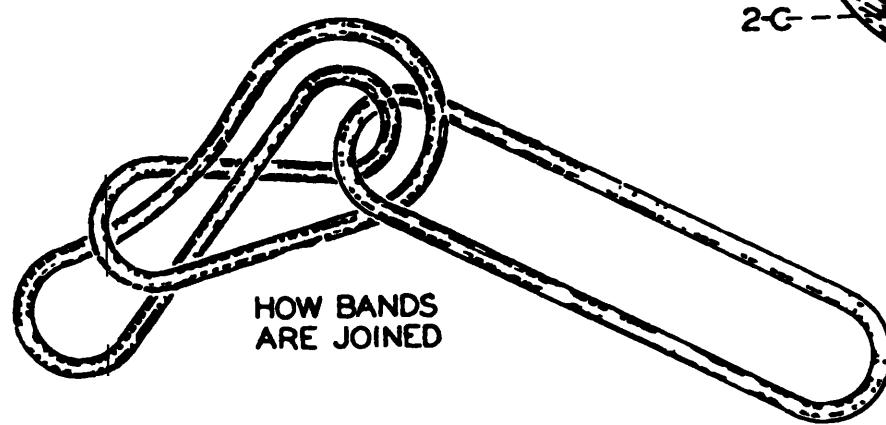


FIG. 10

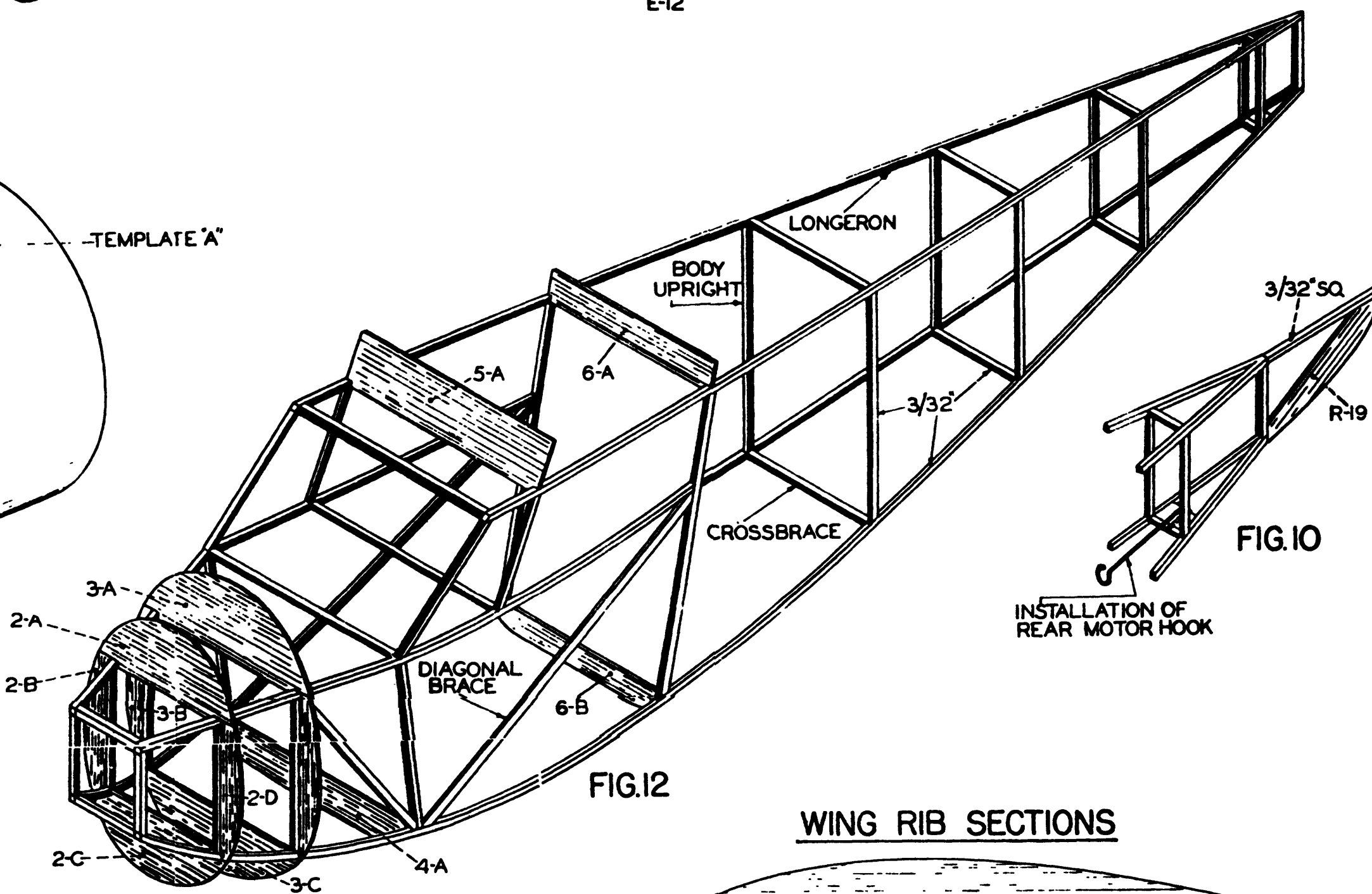
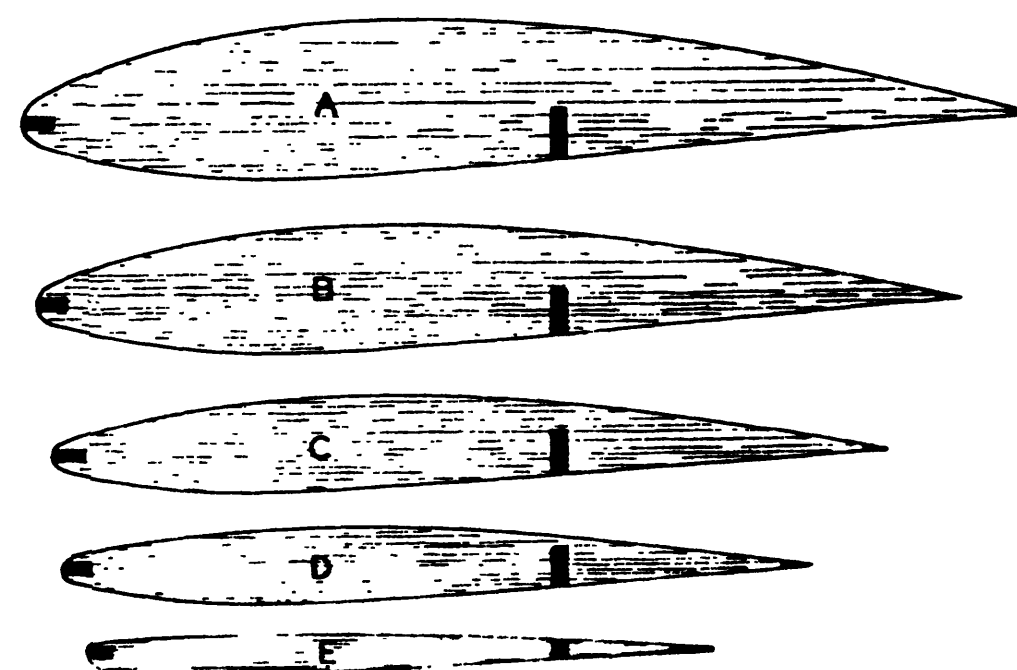
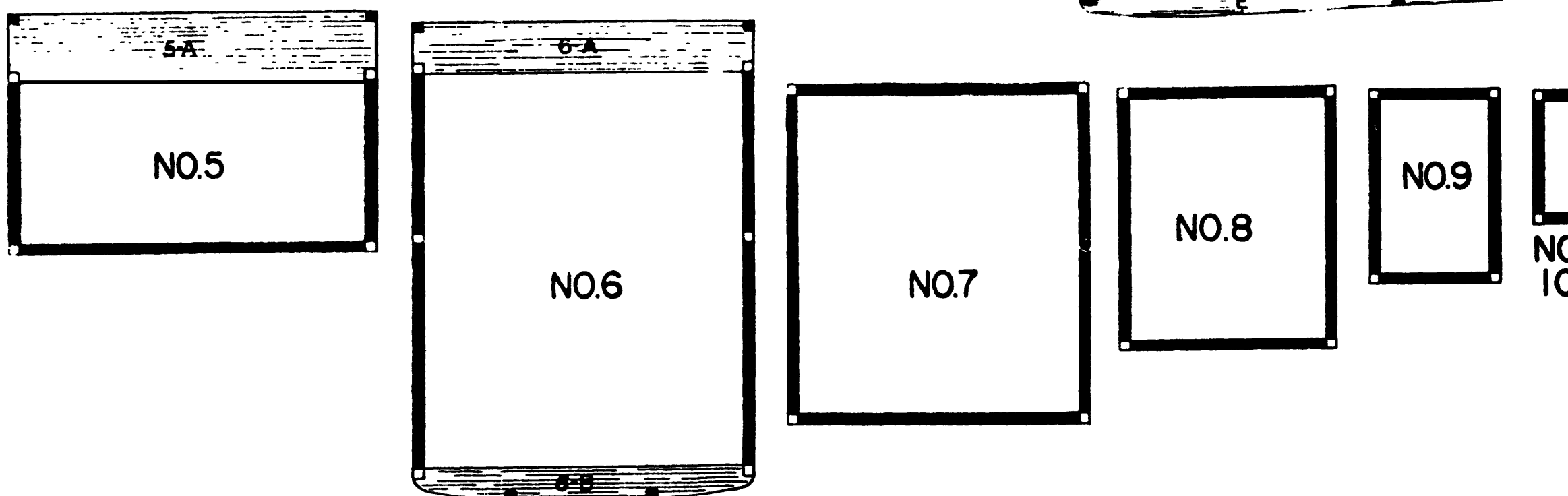


FIG. 12

WING RIB SECTIONS



BODY CROSS SECTIONS



DETAILED INSTRUCTIONS

Study plans, perspective sketches and instructions carefully and thoroughly before attempting model construction. Time and patience are required to make this exact scale model. Always bear this in mind. As only one part of the plan will be used at a time, the remaining portion can be folded over for future reference and study during the process of assembly. The following few additional tools and materials, other than those supplied, are necessary to build this airplane model: A razor blade (preferably one with a heavy rounded back); a small drawing board upon which to work and cement parts; about fifty small thin pins; a pair of pliers for bending shaft; some small pieces of sandpaper; one half cup of ordinary flour; and a piece of waxed paper 12"x36".

Step No. 1 Re-enforced Printed Sheets and Balsa Block

Make a thick paste from flour and water. Cut the Sav-A-Plan strips from top and bottom of plan. Cut rib and motor block sheets from Sav-A-Plan strips, apply paste (or rubber cement) to back of each and to balsa wood surfaces. Mount paper strips on corresponding balsa pieces, press together and carefully smooth out all wrinkles. While drying, place between two flat surfaces and put a weight on them (some old magazines or books) to prevent warping. Let these parts dry thoroughly before removing weight. DO NOT remove paper re-enforcements from various pieces after they have been cut from rib sheet. A plain paper re-enforcement sheet can be cemented to bottom or backs of rib sheets when even stronger models are required.

Step No. 2 Sandpapering

For sandpapering obtain a small block of wood and fold sandpaper tightly around it. Rub sandpaper covered block with an outward motion LIGHTLY and SQUARELY on all balsa strips. Avoid rounding edges of square longitudinal pieces.

Step No. 3 Spars, Etc.

From the sanded strips select the correct sizes as required on the plan for leading edge, spar and trailing edge. Do this before any notches are cut in ribs so that fit will be very close or tight. A good close or tight fit requires less cement. Consequently, less weight will be added to the finished model.

Step No. 4 Wing-Ribs—Wing Tips

With a razor blade cut out illustrated ribs and wing tips from re-enforced rib sheets as they are needed in the process of building the wing. This will prevent pieces from being lost. Begin assembly by working over the wing in the top view. It is advisable to place a piece of

waxed paper over plan to prevent wood parts from adhering to and tearing or soiling plan when they are removed. While working over plan hold down balsa parts with small thin pins. (See Figs. 1 and 5.) The wings are assembled in two units, namely, right and left panels. (See Fig. 14.) Place spars and trailing edges in position—insert ribs beginning with A, B, C, etc. After all ribs are in place, fit leading edges in position and complete wings by inserting wing tips. (See Fig. 5.) Cement all joints carefully and when they are thoroughly dry remove wings from plan.

Step No. 5 Elevators and Stabilizer

The tail is assembled in two units, namely, stabilizer and elevators. Work over top view. Sandpaper all strips as explained in Step No. 2, before cutting to required lengths. Use waxed paper and pins in assembly. Cut cross-members and cross-braces to required sizes and cut curved re-enforced tips from rib sheet. First, place cross-members and then front and rear edges in position. Pin down firmly. Apply small amount of cement to cross-braces and re-enforced curved pieces before inserting and pinning down into position. (See Fig. 3 and 8.) When all pieces are in their proper places, allow cement to dry thoroughly before removing from plan. Two black strips are printed on rear of plan near dummy motor. These are to be used for paper hinges. Cut off hinges to required sizes and slit balsa cross-members as shown in Fig. 2 at positions indicated and insert hinges. Apply cement only to outer edges of hinges.

Step No. 6 Fin and Rudder

Cut required parts from re-enforced rib sheet. Assemble rudder in two units, namely, first the fin and then the rudder. (See Fig. 8.) Work over side view. Rudder is assembled in the same manner as stabilizer. Allow cement to dry thoroughly before removing from plan. Paper control hinges can now be inserted.

Step No. 7 Body-Sides

Cover side view of plan with waxed paper. Assemble body sides over side view. First pin down longerons. Next put in upright members. Start at front and work toward rear. Cut uprights to size and apply cement to ends before dropping into their correct positions. Now put in diagonal braces (see Fig. 4). When thoroughly dry, remove body sides from plan. As two such sides are required, replace waxed paper over plan and make another similar body side.

Step No. 8 Body-Square

The second body construction step is the assembly of the two sides into the completed frame. Work over top view. Start construction by cutting out formers and cross-braces to size. Start at rear and work toward front. Crack or bend longitudinal members as necessary. Cement all joints carefully. After all formers and cross-braces are in place and cement is dry, check trueness of body by holding frame so that it can be viewed from front to rear along center line. Check corners to be sure they are at right angles and perfectly aligned. (See Fig. 12.) After the body has been assembled into a square frame, cut out stringer notches. Make them a trifle smaller than the printed outlines to assure a tight fit for the stringers.

Step No. 9 Body-Stringers Material: Balsa 3/32" sq. The same kind of materials are used for both longerons and stringers. Smooth with sandpaper, cut to required lengths and cement into positions indicated BY NOTCHES IN FORMERS as stringers are purposely not shown on plan. They run lengthwise along outside of body to help round out body and support coverings.

Step No. 10 Templates Printed on Plan All stiff paper templates are shown in full size on plan. With carbon paper trace these templates onto stiff paper. Cut out traced forms to exact size, bend to required shape and cement into position during the process of assembly. Apply cement to proper edges and hold or pin into position until cement is thoroughly dry.

Step No. 11 Motor Cowl and Material: Balsa 1/2"x3"x5" and Tern-plate "A" Cut motor cowl circle from heavy balsa block. Cut around outside printed circle with razor blade or scroll saw. Sandpaper edge until smooth and circular. Next cut around inside circle line to a depth of 1/8" inch and remove inside portion as shown in Fig. 11. This indentation gives a more realistic appearance when dummy motor is inserted. Peel off paper template from front of cowl block and round edge of block to conform to shape shown in top and side views. Trace cowl cover template from front of plan onto stiff paper. Bend into a cylindrical form, overlap one edge until it reaches dotted line and then cement together. While this part is drying slip it over motor cowl block to check size and attain a snug fit to motor cowl. Cement motor cowl block to front of body. DO NOT cement cowl cover to motor block until the entire model has been completely covered with tissue.

Step No. 12 Propeller Material: Balsa A machine cut propeller is supplied. However, it is not completely finished. Sandpaper corners and edges round. Propeller must be balanced. Do this by piercing propeller center with a very thin pin which in turn is stuck to the edge of a board, thus permitting propeller to revolve freely. When propeller is properly balanced it will remain stationary, on its shaft, in any position. Sandpaper heavier blade until balance is attained.

Step No. 13 Bearing, Etc. Material: Furnished The bearing, shaft and washers are all furnished ready to use. Note that the shaft is placed first through the bearing then through the washers and next through the propeller. Bend shaft over into a "U", pull back into hub of propeller and cement securely. (See Fig. 13.) Be sure shaft is aligned properly with blades so they will revolve truly. As tension of rubber motor will hold nose bearings in position, DO NOT cement it to motor cowl. This will permit propeller unit to be readily removable from front of ship. Now insert rear motor hook in position shown on side view. Cement securely. (See Fig. 10.)

Step No. 14 Landing Gear and Tail Wheel Material: Thick Balsa Block From the thick cowl block cut the pieces required to build the landing gear. The landing gear strut is built up from two pieces, namely, the

main strut and streamlined fairing. (Fig. 15) Cut the streamlined fairing block to required angle, where it connects with main strut, before inserting pin re-enforcement and cementing together. Apply a thick layer of cement to both surfaces before pressing together. When thoroughly dry cut to required shape and sandpaper smooth. Attach to body as indicated and pin into position until dry. Wheels can now be attached with thin pins.

The tail wheel is made from four separate pieces. Cut them from the re-enforced rib sheet. Cement the various pieces together and "crossgrain" every individual piece. This is done to attain extra strength and to avoid warping. The two middle pieces have slots or notches for inserting tail wheel strut. These notches or slots must be matched when building up tail wheel as tail wheel STRUT is inserted into them. After cement is thoroughly dry, round outer edges to a tire shape. Now insert tail wheel strut. The landing gear and tail wheel are not attached until the final assembly.

Step No. 15 Tappet Covers Material: Balsa The tappet covers are cut from the thick block with razor or scroll saw. Sandpaper edges until smooth. Slice into three separate pieces. Sandpaper every one to a streamline shape. (See Fig. 6.) Do not cement them to cowl until the final assembly.

Step No. 16 Covering, Etc. All individual complete parts are to be covered all around or on all sides. First sandpaper all rough edges and make all corners slightly rounded. Cover top and bottom of wing panels first. Apply light colored tissue to top of wing first and then to bottom. A cross-hatched diagram is shown in the top view of drawing. Cut the darker colored tissue to this shape and apply to top surface of wing. Cover all parts completely and apply as much tissue in one section as possible without undue wrinkling. Cover body sections, where stringers are used, in narrow longitudinal strips applied between each stringer over entire length of body. This prevents undue wrinkling and produces a much smoother appearance when tissue is tightened by shrinking, as explained. With a very fine atomizer or insect gun, spray entire covering of framework very lightly with water. Allow parts to dry. The tissue shrinks as it dries. This gives the parts a smooth tightly stretched covering. When parts are completely covered and dry they are ready for final assembly.

Step No. 17 Assembling When all individual parts are completed they are ready for final assembly. Cement elevator and rudder into positions shown and allow cemented joints to dry thoroughly. Attach wing panels and block up wing tips until proper dihedral angle is attained. After these parts are completely dry attach tail wheel, cowl cover and tappet covers.

Step No. 18 Windshield and Cabin Windows Material: Transparent Stock Make windshield and cabin windows from transparent stock supplied. Cut and fit material until proper size and shape are attained. Insert pilot and instrument panel before cementing windshield into position. Apply cement to outer edges of pieces and place into positions

Step No. 19 Decorations Material: Printed on Sav-A-Plan Strips Cut various decorations from Sav-A-Plan strips. Apply a thin layer of cement to backs and place in positions.

Rudder numbers are printed in small type at top of Sav-A-Plan strip. Cut out and attach to both sides of rudder at uppermost crossbrace. Cement dummy motor into front indentation of cowl block.

Step No. 20 Rubber Motor Material: Rubber 1/32"x3/16"x7" (2 Bands) Two large rubber bands are supplied. Tie them together to form a two strand rubber motor about 14" long. Sketch shows how bands are joined. Attach rubber motor between propeller shaft and rear motor hook. Rubber motor can be easily inserted by threading or pulling into position with a piece of string dropped through body if held in a vertical position. At front of ship nose plug is removable, but at rear of ship a small opening in the covering should be provided for inserting the rubber motor.

Step No. 21 Scale Propeller Material: Not Furnished A view of the scale propeller is shown on front of plan for those who do not wish to use the machine cut propeller supplied.

Step No. 22 Flying When model has been completely assembled it must be checked for center of gravity balance before trial flight is attempted. Place the forefingers at the midpoint of the wing tips and lift model to see whether it balances. If tail has a tendency to drop it denotes tail heaviness which may be overcome by adding a little weight to nose of ship. If nose has a tendency to point downward, add a little weight to tail. Use this procedure until proper balance is attained. Tacks or pins can be inserted into front or rear of model to produce proper balance. When plane remains horizontal, while suspended on finger tips, it can be considered balanced. A few short trial glides should be made AFTER the model has been properly balanced (not before). When gliding, if ship has tendency to climb and if it does not make a gradual glide downward, it indicates that tail is still a little too heavy. This must be offset by additional weight at front of model. To be certain that ship is correctly balanced, hold it, unwound, in position for launching and if the glide after leaving the hand is steady and consistent and goes forward 10 or 15 feet, ship can be considered as making a normal glide. Model is now ready for its trial flight. When gliding the ship do not launch it upward. Launch it with the nose pointed slightly downward which permits gravity to take effect. Before trying a powered flight it is advisable to test motor by winding propeller with right forefinger. Permit rubber motor to unwind completely, two or three times. At this time check trueness of propeller rotation. While turning propeller and thus winding rubber motor, hold model firmly by its noseblock. The proper number of turns for rubber motor is attained when its coils or twists are fairly small and tight.

Step No. 23 Save Your Plan and Colored Portrait on Box Although your model is finished your plan PROPER is still complete or intact. That is, no parts or templates should have been cut from it. Therefore, it can be looked over for small, possibly forgotten details. Carefully remove the colored portrait from packing box. With razor blade, slit rear of plan along dotted diagonal lines in detailed instruction section. Insert corners of colored portrait into slits as you would a photograph in an album. Sav-A-Plan can now be filed away for future references.