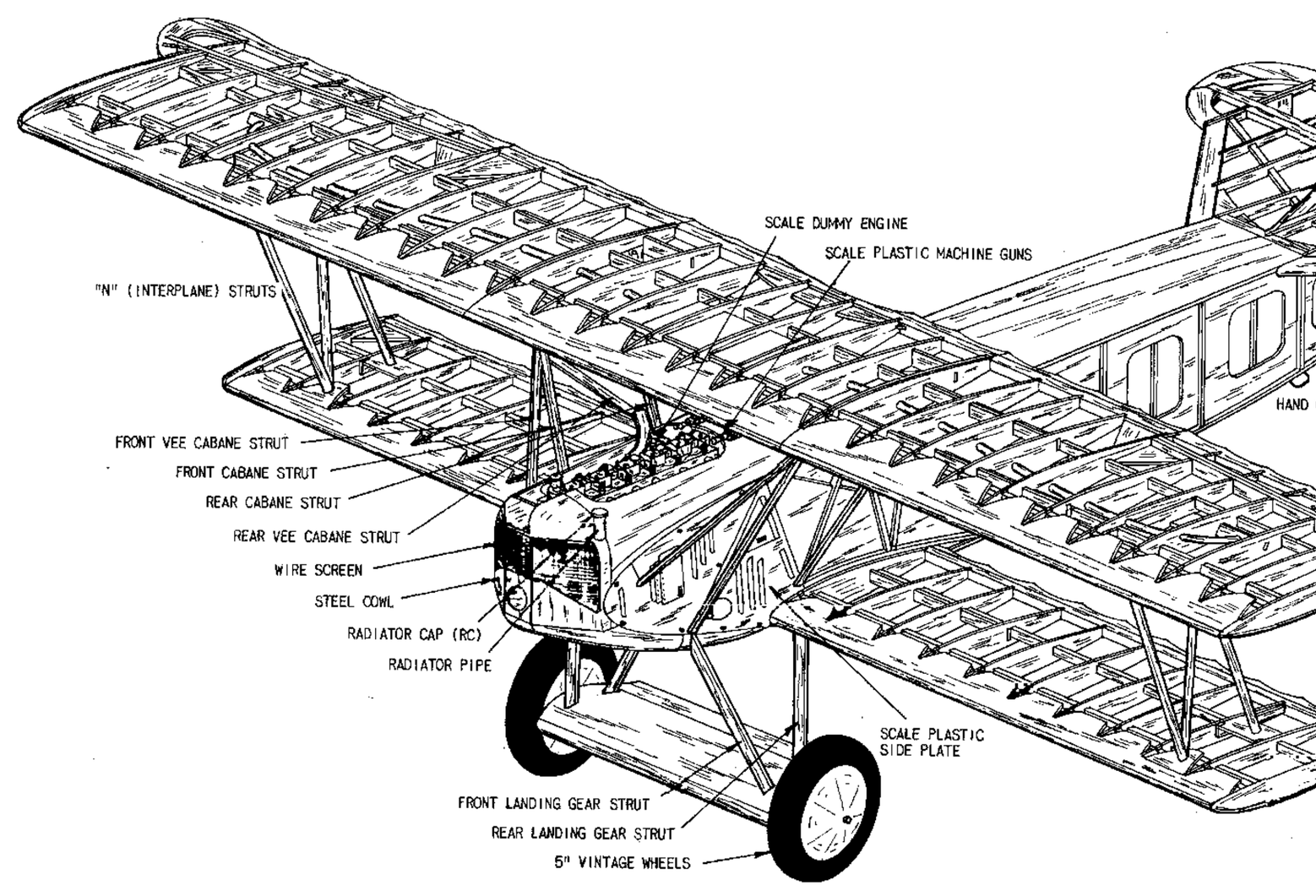
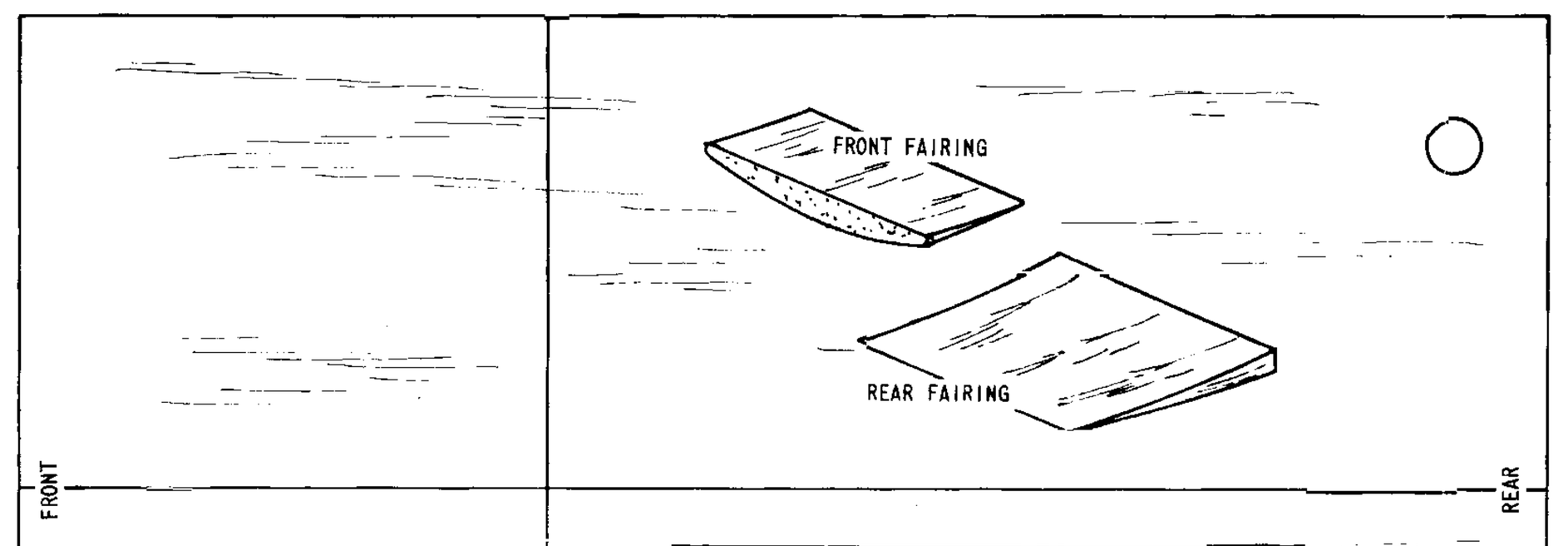


FINAL ASSEMBLY

At this time servo locations must be determined so that nylon pushrods can be installed. It is recommended that the servos actually be installed on the 1/8 x 4-7/16 x 8 plywood servo base and unit mounted right in place on servo beams. LARGE nylon tubes for elevator, rudder, and engine throttle are now installed. Drill 3/16 holes at proper location through bulkhead F6 to suit position of rudder and elevator servos. Cut large tubing to length and secure to F6 with No. 10 nuts on each side as shown, flat side of nuts against bulkhead. End of rudder tubing comes out on left side of fuselage. A 3/16 scrap filler block is cemented in place at that point to provide covering surface for fabric as shown on side view. Epoxy tubing in place. Install elevator tubing on right side in same manner. Install throttle tubing in same manner to suit engine. Linkage is completed in same manner as ailerons after all construction has been completed. Entire fuselage (including wood covered sections) is now covered with silk, nylon, or similar fabric (not provided in kit). Cement stabilizer to rear of fuselage, checking that it is horizontal. Shim with scrap if necessary. Cement vertical fin in place, flush with rear of stab, directly over SI's. Be certain fin is vertical. Assemble elevator to stab, and rudder to fin and fuselage, using nylon hinges installed as described in hinge detail. Be certain that rudder and elevator move freely. Make a right and left balsa Wing Saddle Filler block as described in detail note and full size layout, shaping as shown. Filler blocks, followed by WSB's are now mounted on wire cabane struts as shown in fuselage step 7. Be certain to mount so that 3/16 holes face outer edges as shown. Slip balsa filler blocks on rear wire cabane struts. Lower far enough, and hold at angle, so that front struts can be manipulated so that they can be inserted through front hole. Install the plywood WSB's in the same manner as blocks. WSB's are now securely fastened against bottom of wire spurs as shown. Drill tiny holes along sides of spurs, then tightly bind in place using strong nylon thread. DO NOT CEMENT AT THIS TIME. Top wing is now set in place, WSB's fitting into recesses against WST's in wing. Cut 4 nylon screws to 3/4'' length and insert through 1/4'' holes and tighten into nut blocks so that WSB's and WST's are tightly against each other. Balsa wing saddle filler blocks are now securely cemented against bottom of WSB's. They should be flush with bottom shape of wing. Shape all strut material and assemble (interplane) struts as described in detail note and layout drawing. Maple center cabane struts which have been shaped and slotted as described in strut detail, are now fitted between fuselage and wing saddle blocks. Cement securely in place. When dry, wrap with fabric for added strength. Plastic scale side plates are trimmed as described in plastic parts detail and cemented to fuselage sides using Epoxy or Contact cement. Fit rear Vee strut in place. It is beveled to fit against rear of front cabane strut, at bottom of wing saddle. Opposite end is installed at top rear corner of plastic, through a hole drilled into fuselage at that point, where F4 is notched to receive it. Top of front Vee strut is beveled to fit against front of cabane strut at location shown on side view. Opposite end is installed through hole in fuselage (between front two louvers) and seats against cowl block for maximum strength. Exact location of Vee struts can be seen on full size side view and picture on box top and plan. Use cement generously on entire installation and wrap all joints with fabric or thread for maximum strength. Allow entire strut assembly to dry thoroughly, then remove wing and securely cement spurs to top of WSB's. Shape maple landing gear struts as shown and described in strut detail note, then securely cement to wire landing gear strut at positions shown on side view. Note that bottom of both maple struts are inserted and cemented down into recesses for them in spreader bar. When dry, apply an additional heavy coat of cement around all joints and wrap with fabric for maximum strength. Enlarge the 1/8 holes in F4 to 1/4'' to receive locating dowels in bottom wing. Holes are drilled at least 5/8 deep into block. Install wing by slipping rear landing gear struts into wells through lower wing and inserting dowels into F4. Rear is secured with nylon screws. Be certain bolt holes in wing permit screws to be pushed easily through hole and screw into nut block only, otherwise screws will not tighten properly. Since only main (front) landing gear strut is attached, it permits single strut type shock absorbing action with rear struts moving through wells freely. Lower wing fairing blocks are now fitted and installed between front and also rear of lower wing and fuselage, as shown and described in full size layout drawing and detail. Locate and drill an oil drain hole (at least 1/4'') straight through bottom of cowl flush with front of F2 as shown on side view. This should be cleaned regularly during flying season to permit free drainage of excess fuel and residue. Original model was flown with excellent results, using an Enya 60-2 TVC Engine as shown on plan. Any similar type RC engine of .45 to .65 displacement may be used. Temporarily bolt engine in place. Steel engine cowl is now installed, and should fit right in place on front of fuselage as shown. Cowl is held in place by cementing hardwood strips on each side of fuselage as shown in fuselage step 7 sketch. Drill holes for, and secure to fuselage using 1/2 x 2 wood screws provided. Engine must be fitted with exhaust extension which should protrude at least 1/2'' past side of fuselage as shown in photo. Trim fuselage and cowl as necessary, allowing at least 1/8'' air space around metal exhaust extension and fuselage. Remove cowl and engine from fuselage. Cut wire screen to shape using pattern provided, and solder securely to inside of cowling as shown. Make radiator pipe by cementing plywood RC cap in place over 1/2'' dowel provided. Unit can be installed by either cementing pipe to front of F2 and cutting cowl to fit around it or bottom of pipe can be trimmed to fit curve of cowl and then held in place by drilling hole at proper location in top of cowl and securing with wood screw from bottom. Cowl is now reinstalled on fuselage and wire screen, which is painted black, is taped off. Model is now ready to be painted. Paint scheme and decoration shown on full color box wrap is authentic. After model is painted, install decals. Assembly dummy engine and machine guns as shown and described in plastic parts detail. Twin machine guns are securely cemented to top of fuselage in front of cockpit using Epoxy cement. Dummy engine is cemented to engine platform EP with Epoxy cement. It may be necessary to cut part of dummy engine away to clear operating engine. It is recommended, however, that dummy engine be removed when flying model. Cut 1/8 doweling to fit for stab struts and cement securely in place. Paint same color as fuselage. Bend 2 handgrips from 1/16 wire to full size pattern provided and cement into lower stringer on both sides of fuselage at location shown on side view. Flying wires of heavy nylon thread are now added to front landing gear strut and tail as shown. Fuel tank used on original model was Sullivan 10 oz. Nevr-Leak and is installed directly behind engine as shown on side view. Lash in place with rubber bands. N struts (interplane) are held captive between both wings. In the event of a landing where wings pop off, struts are thrown clear without damaging any structure. Insert struts into slots in lower wing, then mount top wing, engaging struts at the same time. Trim struts if necessary. Main landing gear wheels are the 5'' vintage-type manufactured by Williams Bros. (wheels not provided in kit). Secure wheels in place. Cut instrument panel from plan and cement to front of cockpit. Edge of cockpit can be lined with black tubing to simulate cockpit coaming. Radio equipment installation and/or control line installation can be made after model is painted. Check respective detail notes. CAUTION: MODEL MUST BALANCE PROPERLY WHEN FINISHED. See flying instructions before attempting any flights. Good luck and good flying! !

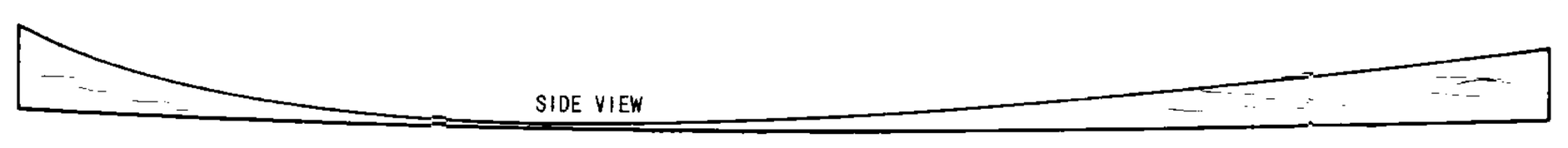
RADIO CONTROL NOTE

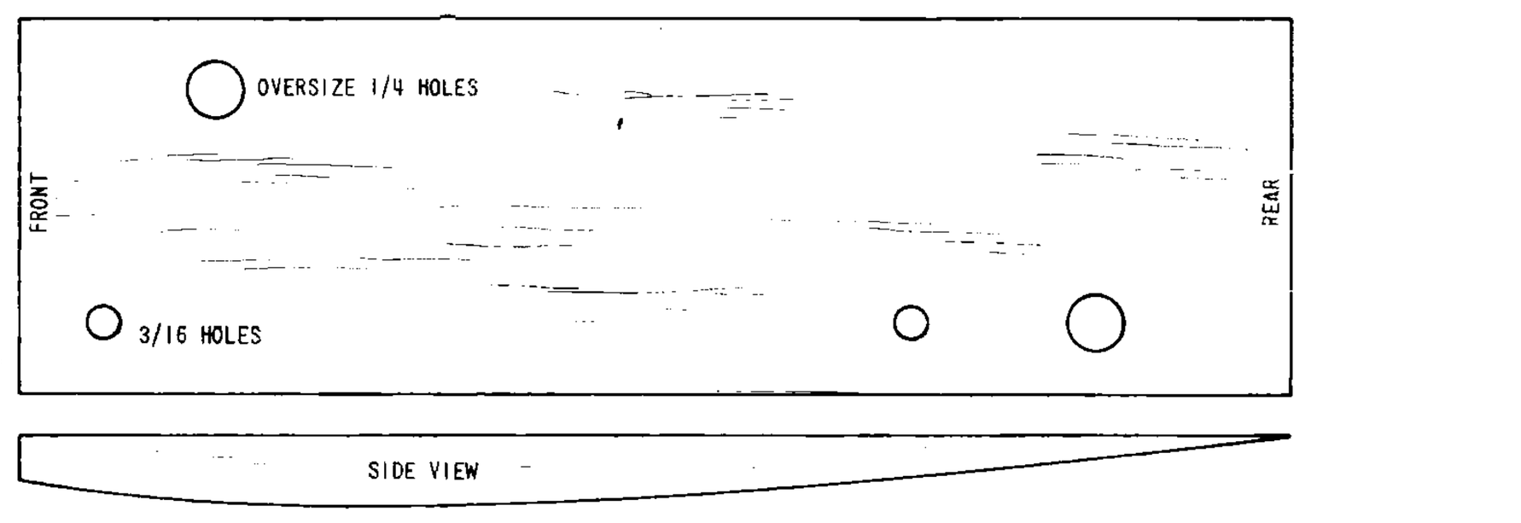
Original model was flown with Citizenship Proportional Radio Equipment with excellent results. Any other suitable full house equipment may be used. Aileron servo is mounted in top wing servo compartment. Other servos are mounted in fuselage on 1/8 x 4-7/16 x 8 plywood servo platform, according to your RC manufacturer's instructions. Servos with mount are installed to locate and install nylon tube pushrods as described in final assembly. Linkage to engine throttle should be as direct as possible. Aileron linkage is shown in detail sketch, full size top wing drawing. Detailed installation instructions are in top wing step 4. Be certain that all linkages operate smoothly and freely, binding may be the possible cause of a crash. Original model balanced properly (see radio control balance point on side view) with battery pack located between bulkheads F3 and F4, and receiver located between bulkhead F4 and F5. MODEL MUST BALANCE AT POINT SHOWN. If necessary shift components or add as much weight as necessary to balance model. Weight can be installed by hollowing out bottom front cowling. Hollowed compartment is then filled with the required weight of lead (solder) which is melted and poured right into hollowed out section. RC equipment is installed according to the manufacturer's instructions, and all controls should be checked for free and positive operation before each and every flight. Good luck and good flying!!



LOWER WING FAIRING BLOCKS

Lower wing fairing blocks are made from 1/2 x 3 x 18 balsa. Blocks are fitted in two halves (lengthwise) to accommodate slight dihedral angle built into lower wing, therefore they are chamfered at center joint. Side view shows how blocks are cut to rib shape. They are fitted and cemented to bottom wing as described in final assembly, with wing bolted in place. Sketches above show approximate shape of blocks after they are trimmed. If blocks are fitted properly, they should appear to be a continuation of the fuselage. Be certain not to cement the blocks to fuselage, only wing



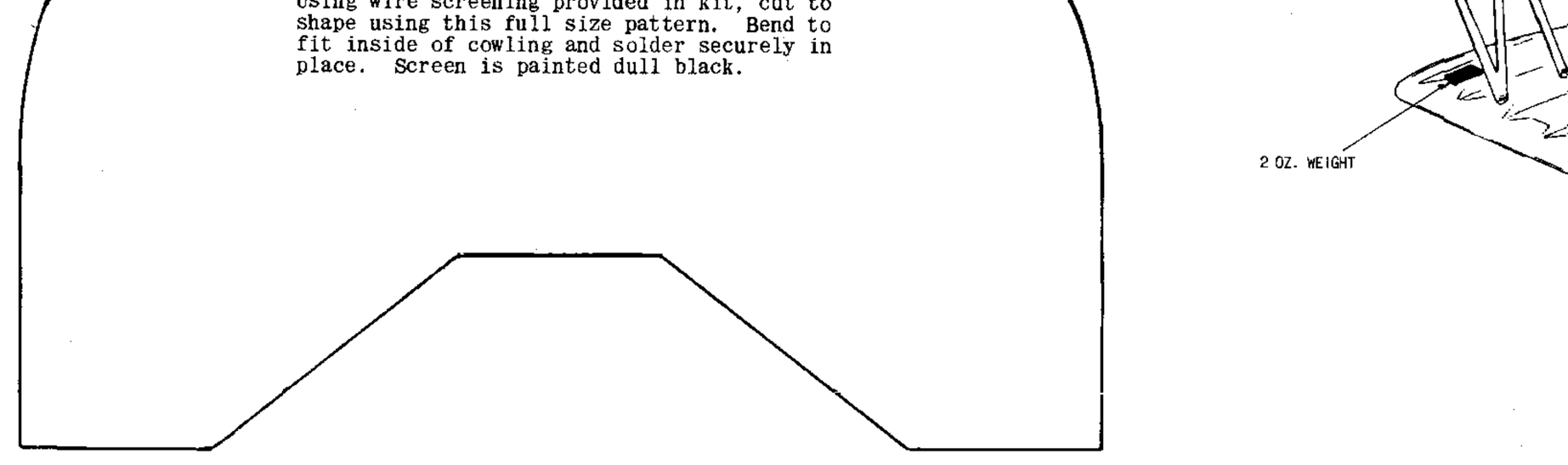


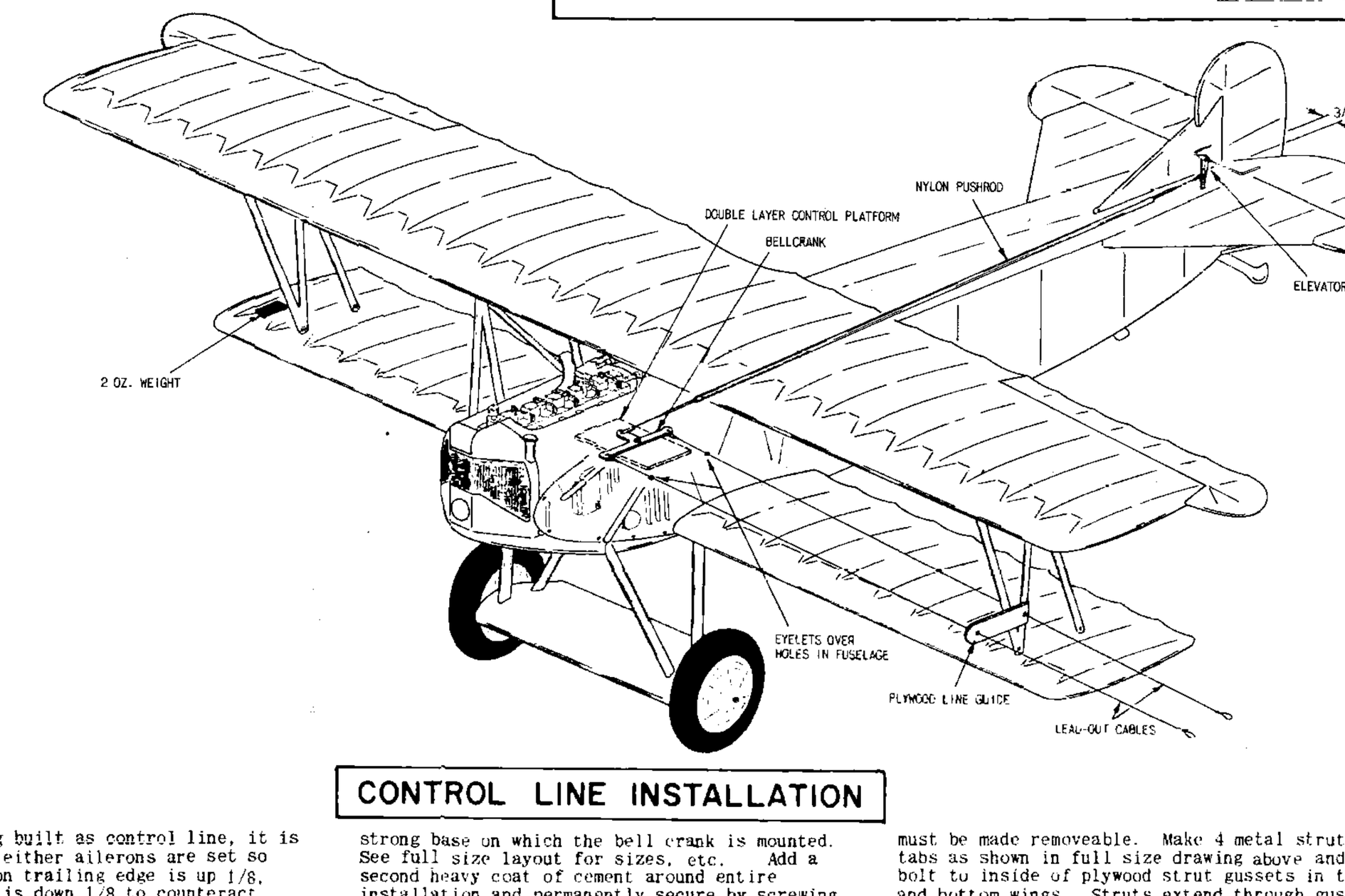
WING SADDLE FILLER-BLOCKS

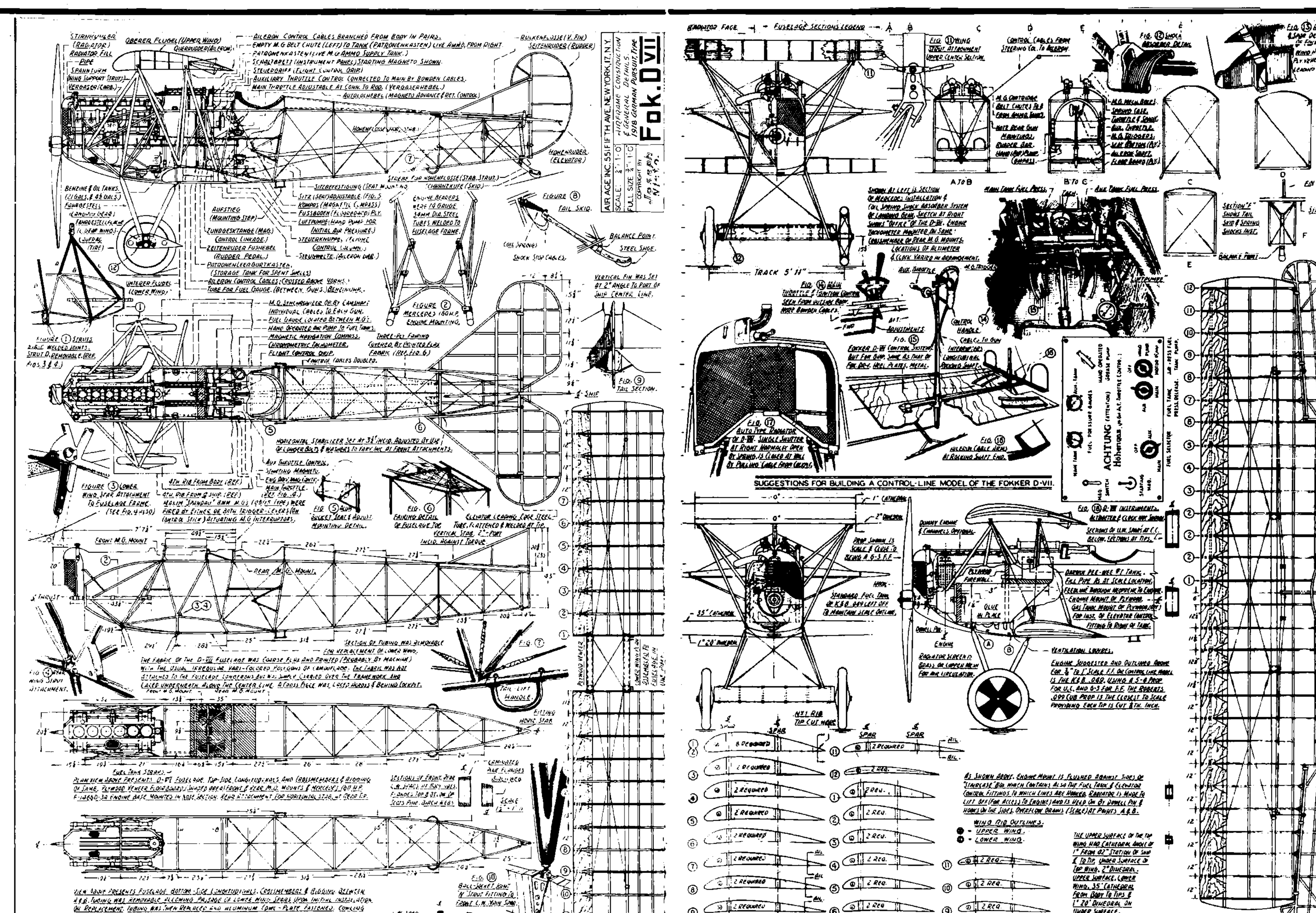
Using 3/8 x 2 x 6-5/8 balsa, cut both blocks to top view shape of full size drawing above. Drill all holes as marked. Rough shape both blocks to side view making a right and left so that holes face outwards when mounted as shown in step 7 fuselage sketch. Final sanding of curved bottom is matched to adjoining wing ribs when installing wing-saddle filler blocks as described in final assembly.

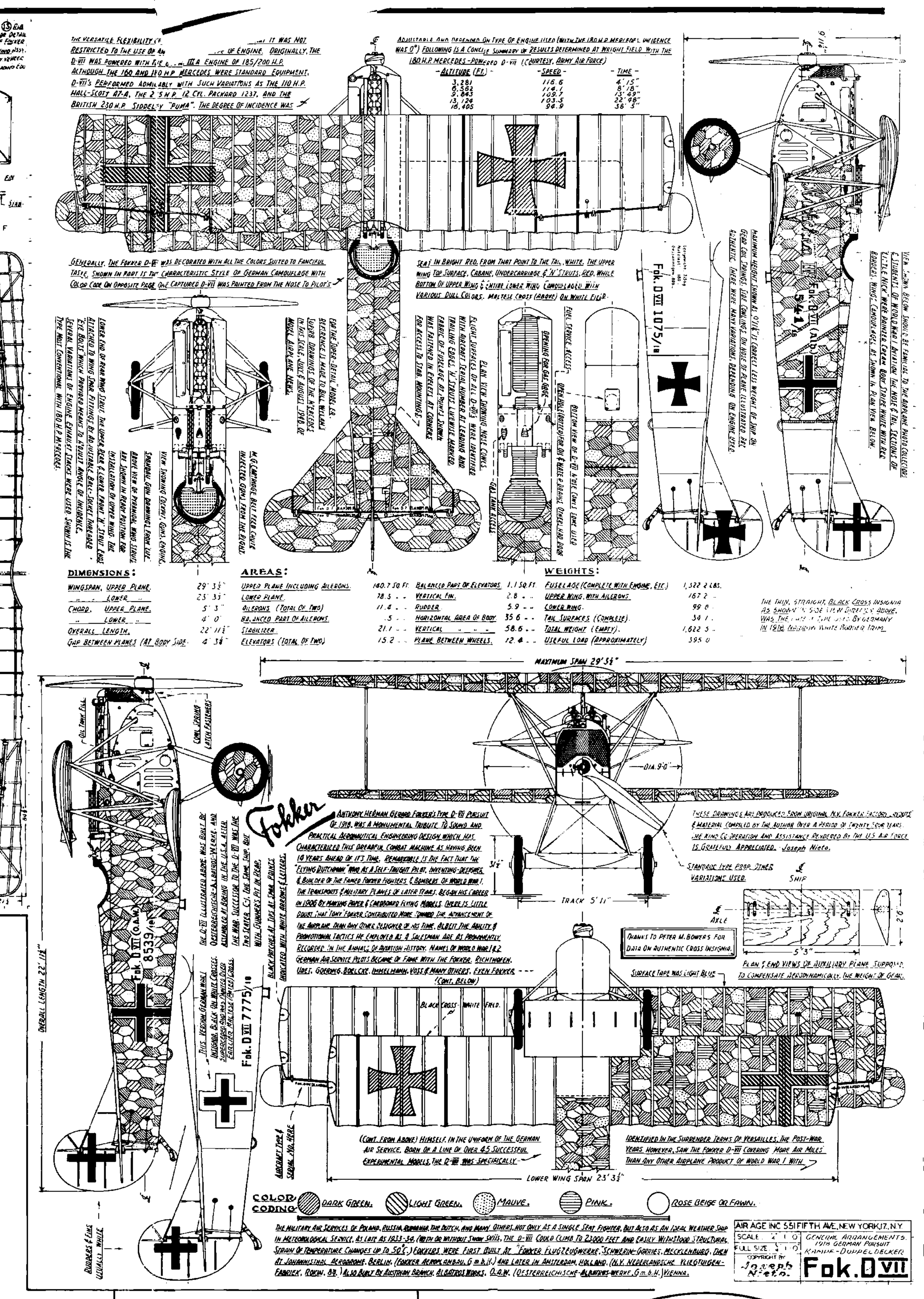
WIRE SCREEN TEMPLATE

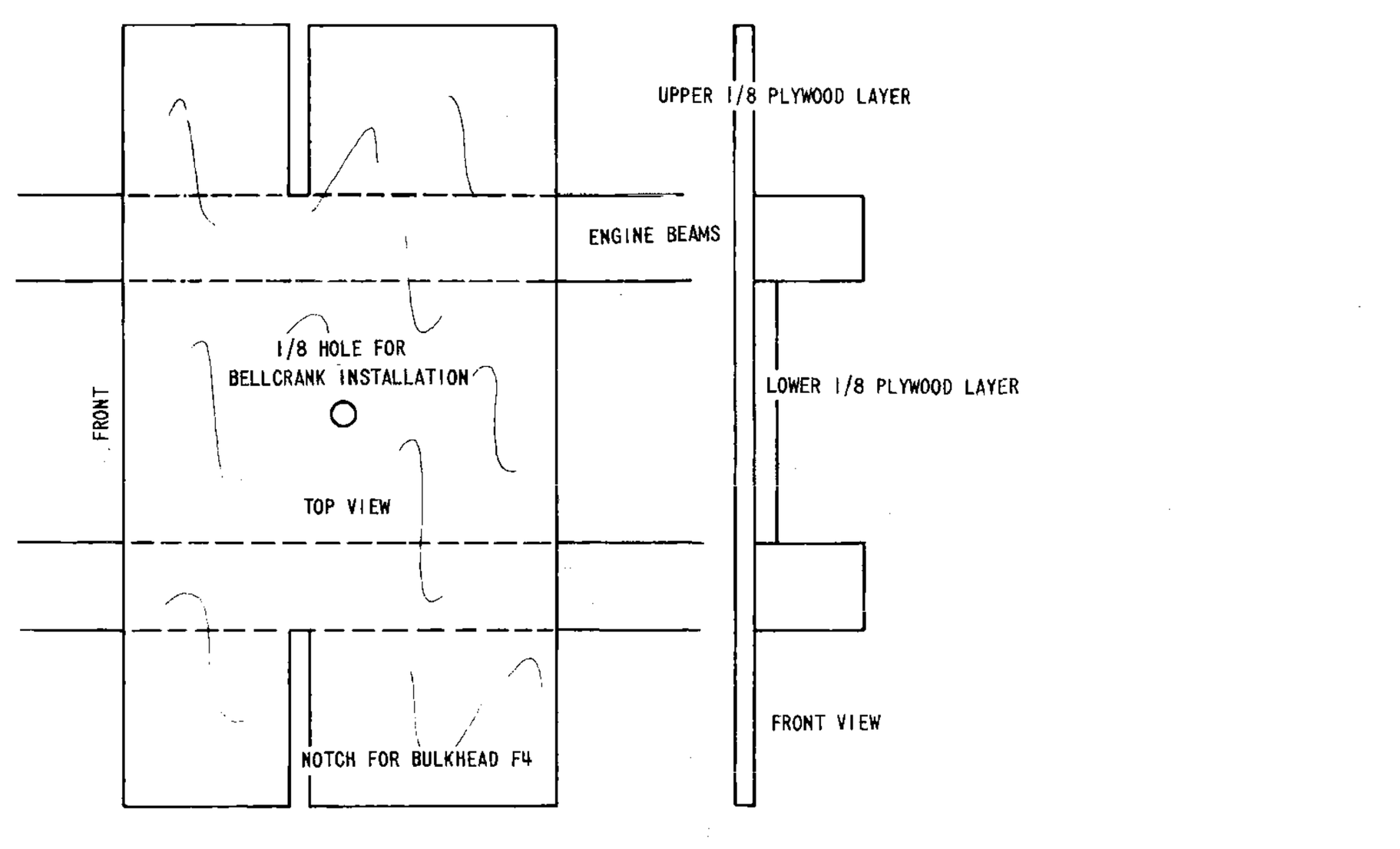
Using wire screening provided in kit, cut to shape using this full size pattern. Bend to fit inside of cowling and solder securely in place. Screen is painted dull black.









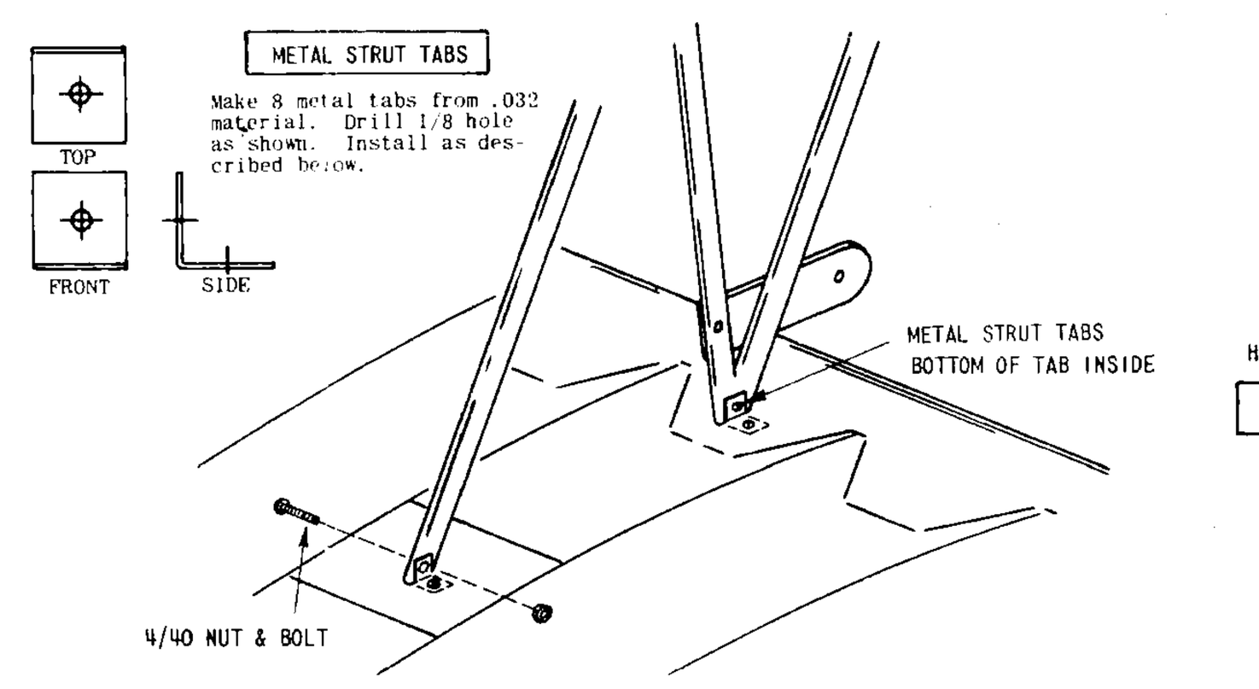


CONTROL LINE INSTALLATION

If model is being built as control line, it is recommended that either ailerons are set so that right aileron trailing edge is up 1/8, and left aileron is down 1/8 to counteract weight and drag of the flying lines; or ailerons are cemented in place neutral and 2 oz. of weight is installed in right wing tip of lower wing. Both alternatives are described in lower wing assembly. Bell crank assembly, all lines, and any other material required for control line installation is not included in the kit, but must be purchased separately by the modeler. It is recommended that a #223 Perfect Bell Crank (or similar type) be used. As noted in fuselage step 5, it is recommended that new motor mounts of the same size but longer length be installed so that they extend back to bulkhead F6 to provide a means of installing the control platform. The control platform is made of 1/8 plywood cemented together to form a double layer. The lower layer fits between motor mounts and the upper layer fits across top of motor mounts, thus making strong base on which the bell crank is mounted. See full size layout for sizes, etc. Add a second heavy coat of cement around entire installation and permanently secure by screwing platform to motor mounts with #2 wood screws. Install bell crank on platform according to manufacturer's instructions. Nylon elevator pushrod is installed and engaged in elevator horn in same manner as described in final assembly. Throttle pushrod (if used) is also installed at this time. Linkage connection is made with Kwik links as described. Lead-out cables engaged in bell crank, come through holes made in side of fuselage. Cement scrap 3/16 to side of fuselage BEFORE COVERING where rear cable comes through. It is recommended that eyelets be installed to finish off and reinforce holes. 'N'' (interplane) struts are made as described in strut note, however in addition, a 1/8 plywood line guide (shown by dotted line on drawing) is made and securely cemented to left strut assembly at position shown. For transportation purposes, struts must be made removeable. Make 4 metal strut tabs as shown in full size drawing above and bolt to inside of plywood strut gussets in top and bottom wings. Struts extend through gusset openings and are secured with bolt going horizontally through metal tab and strut as shown in sketch. 4/40 bolts are recommended for this installation. Loops on lead-out cables coming out of fuselage should be at least 3'' past wing tip, and both cables must be the same length when elevator and bell crank are in neutral position as drawn. Be certain controls work freely and easily. Rudder must be cemented to fin and fuselage, with rear angled 3/4'' toward right as shown. It is imperative that model balance level or slightly nose down at control line balance point shown on side view. DO NOT ATTEMPT TO FLY MODEL UNTIL THIS BALANCE IS ACHIEVED!! Add as much weight as is needed to balance, in which case front lower cowl block can be hollowed out and lead (solder) melted and poured into hollowed out section. Good luck and good flying!!

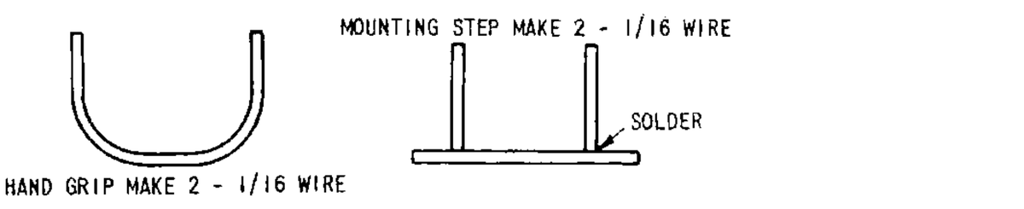
METAL STRUT TABS

Make 8 metal tabs from .032 material. Drill 1/8 hole as shown. Install as described below.



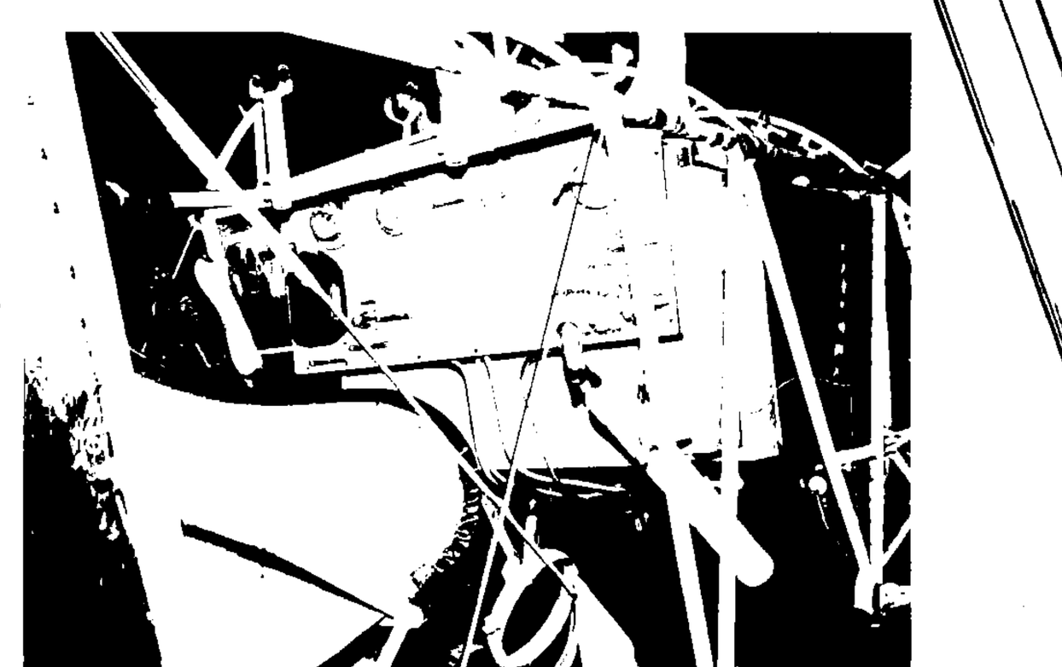
MULTI VIEW SCALE DRAWINGS

Detail multi-view drawings and explanatory text above are authentic drawings of the Fokker D-7 published in the August and September, 1951 issues of Model Airplane News. Drawings are reproduced courtesy of Model Airplane News and Mr. Joseph Nieto who drew them. They are authentic and fully acceptable as such, for scale contests.

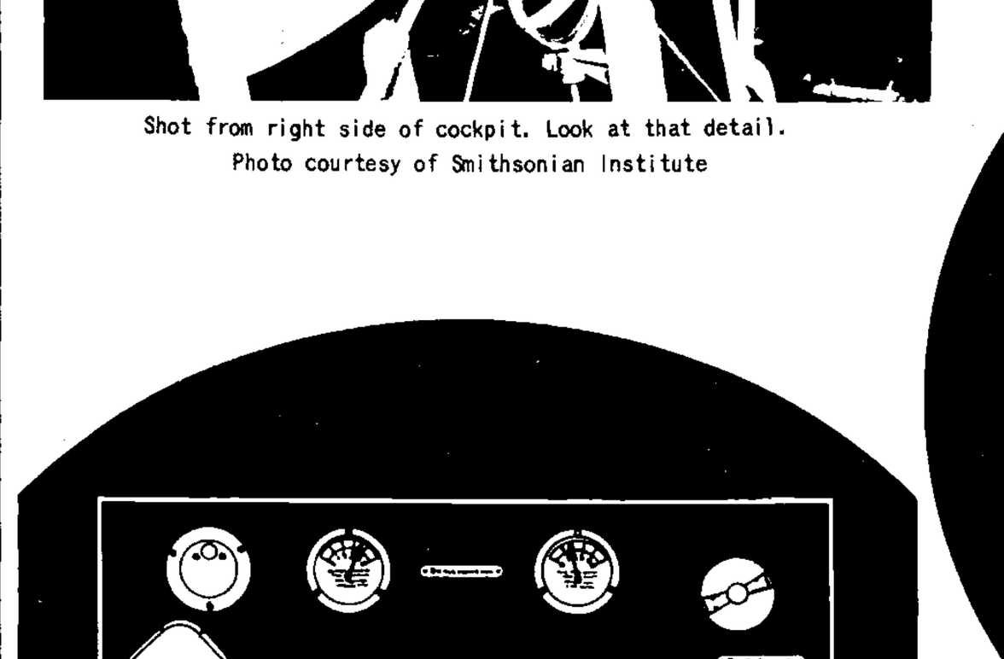


HAND GRIP AND MOUNTING STEP

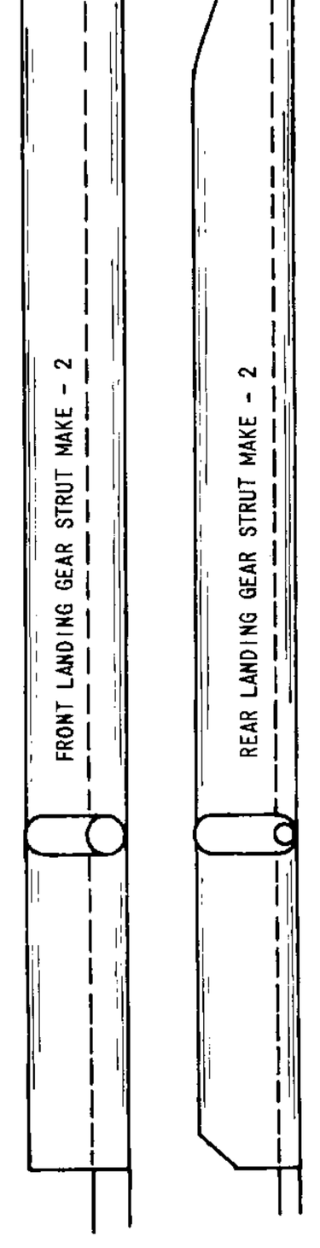
Bend two fuselage hand grips from 1/16 wire, using full size pattern above. Make holes and securely cement to corner stringer on both sides of fuselage as shown on side view. Make 2 mounting steps from 1/16 wire. Cut pieces to length and solder together over full size drawing. Cement to fuselage at rear of cockpit as shown on side view.



Shot from right side of cockpit. Look at that detail.
Photo courtesy of Smithsonian Institute

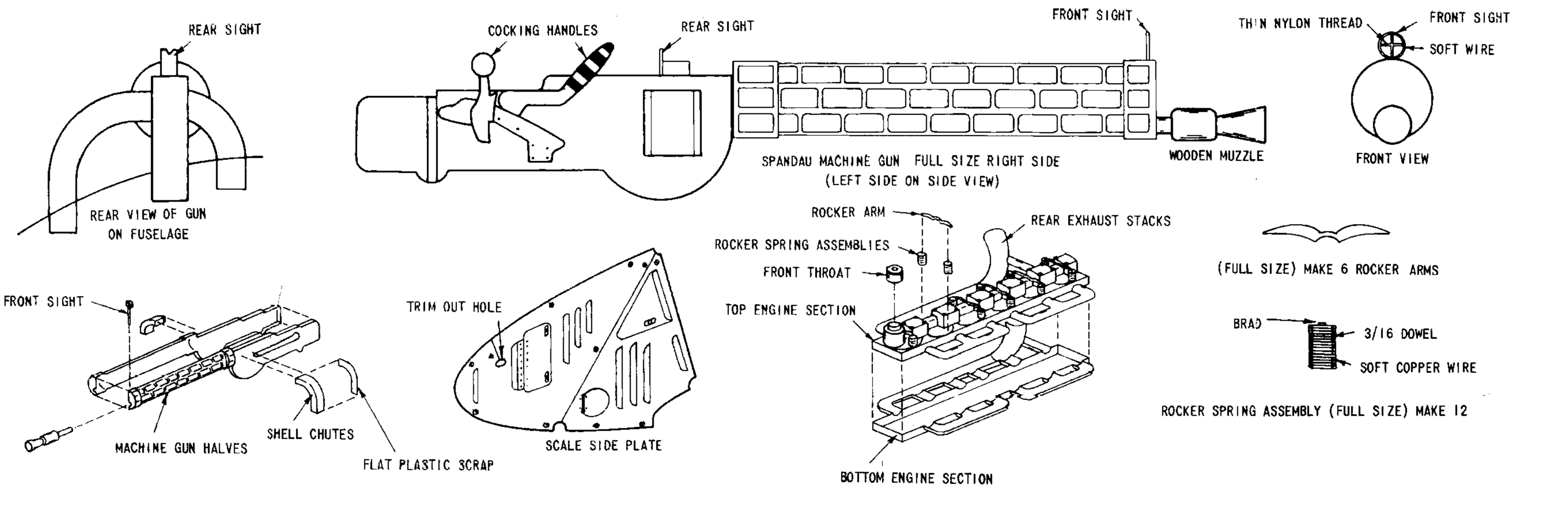


INSTRUMENT PANEL



LANDING GEAR STRUTS

3/16 x 1/2 maple is provided for landing gear wood struts. Cut and trim to shape shown on full size drawings at left, then notch out for wire struts (as indicated by dotted lines) and round off corners. Struts are installed on wire landing gear as shown and described in final assembly. Use two heavy coats of cement and wrap with fabric for maximum strength.



PLASTIC ENGINE & PARTS ASSEMBLY

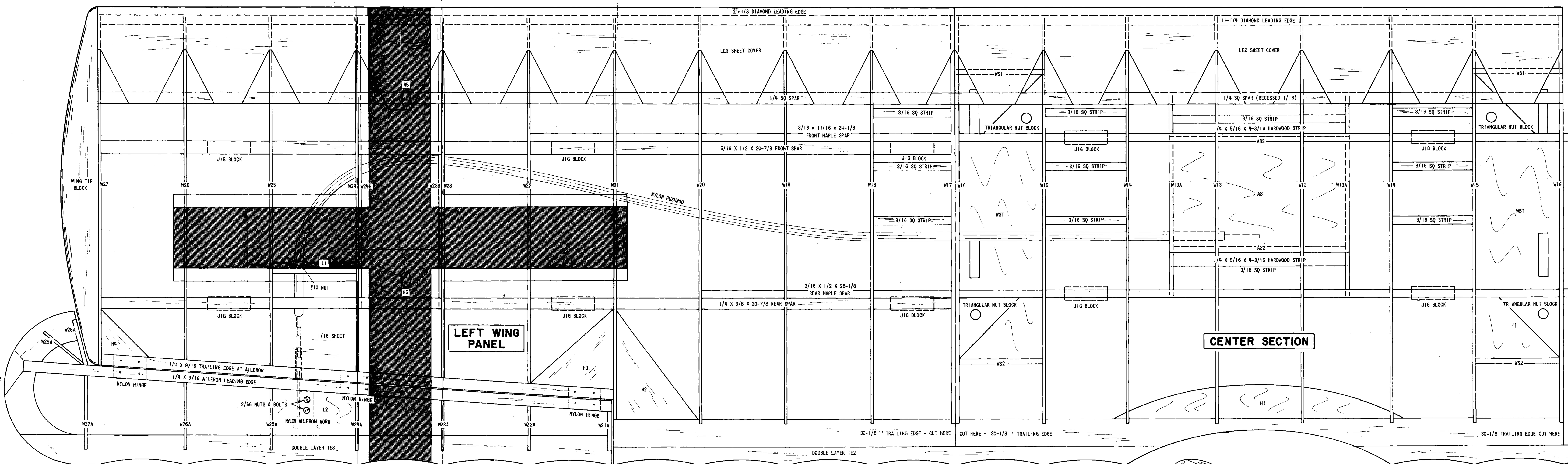
Cut machine gun halves from plastic sheet. Trim carefully along barrel and stock. Sand bottoms flat by carefully drawing over large sheet of sandpaper in one sweeping stroke. Cement halves together with PLASTIC CEMENT (other type glue will not hold). Cut shell chutes from plastic. Cement to flat plastic scrap to cover open side. When dry trim and sand corners round to match molded side. Cement gun chute to each side of machine gun as shown, smaller chutes face each other. Cut rear sight from black plastic scrap and cement in place. Wrap soft wire around 3/16 rod to make front gunsight ring. Cross hairs are thin nylon thread cemented in place. When complete, cement front gun sights in place. Drill hole and cement wooden muzzle to front of machine guns. Cocking handles are made from 1/16 scrap balsa. Round off edges. Ball on top of vertical lever on original model was an imitation pearl of a proper size cemented in place. Handle on angled lever is rounded then wrapped with thin paper strips or tape secured in place. Assembled machine guns are painted dull black. Locate on fuselage and cutout skin covering to receive gun chutes and rounded bottom section of stock. Cement in place as shown on side view and detail drawings. Cut top and bottom engine sections from flat sheet, sand flat and cement halves together. Cut front throat from sheet and cement to bottom throat section at front of engine. When dry trim flush. Cut top and bottom rear exhaust stacks from sheet, sand flat and cement together, then cement to assembled engine so that exhaust manifolds match. Unit angles down slightly. Rocker spring assembly shown full size is made by cutting 12-3/8 lengths of 3/16 dowel. Wrap with soft copper wire to simulate springs. On original model, a long length was wrapped, a thin coat of cement added to hold wrapped wire in place, then 3/8 sections were cut off. Drive small brad in center of spring unit to simulate attachment point, then cut 6 rocker arms from 1/16 sheet using full size drawing shown, then round off. Cement a spring unit on each side of fuselage centered on exhaust outlets, then cement rocker arms in place, ends on brad heads. Engine is painted dull black and installed as described in final assembly. Cut scale side plates from plastic sheet and trim out corners and molded hole between front two louvers. Install as described in final assembly. Plastic model paint MUST be used when painting parts. Use of model airplane dope or lacquer-based cements or paints will warp or deform plastic.

PAINT & SCALE DETAIL

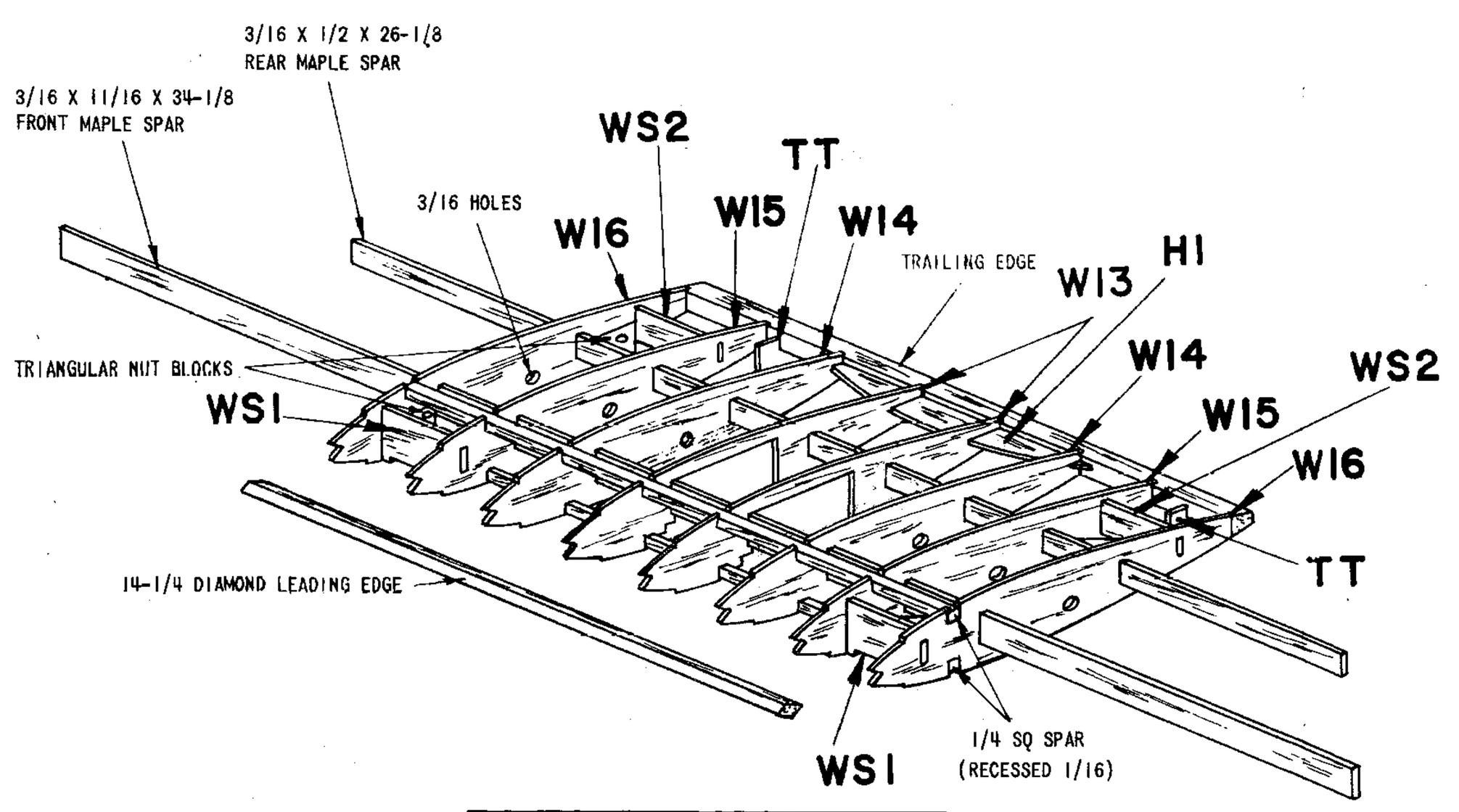
Original model is painted and finished authentically as shown in full color on box top. Entire model with exception of white rudder is painted Fokker Red. Use full color box top reproduction as a guide in painting details. Use sufficient coats of clear dope to fill weave of fabric, then apply color dope. When painting is completed, apply decals at locations shown on drawings. Hand grips and mounting steps made from 1/16 wire to full size patterns provided, are cemented in place on sides of fuselage at locations shown on side view. See detail note. 2'' scale dummy pilot is available at your favorite hobby shop (not included in kit). It may be cemented into cockpit for added realism. Flying wires of heavy nylon thread may be installed permanently between landing gear struts and stab & fin. Thread should be stretched enough to prevent sagging, yet not so tight that it may cause warping. Tie and cement in place. A close search of the drawings of the full size craft on the plans may reveal many other details which may be added if desired, by the modeler.

PRE-FLIGHT & FLIGHT NOTE

Be certain there are no warps in wings or tail surfaces, since this may seriously impair performance or even cause a crash. Warps can be removed with additional coat of dope, heat, or steam; which will loosen fabric slightly. Twist in opposite direction and hold until absolutely dry. An improperly balanced model may seriously impair performance or cause a crash. DO NOT FLY MODEL UNLESS IT BALANCES LEVEL AT BALANCE POINT SHOWN ON SIDE VIEW. If necessary, shift components or add weight to achieve proper balance. Balancing should be done with empty fuel tank. Model as shown has 1 degree positive angle of incidence on top wing, 1 degree in bottom wing and stab from thrust line; resulting in a built-in 1 degree engine downthrust. Flight testing proved this set-up correct. Incidence should be very carefully checked by setting up finished model on flat surface, and measuring to incidence checklines shown on side view. Incidence on top wing can be varied by adding shims between plywood plates, either front or back, to increase or decrease incidence. Push model on flat surface to be sure wheels are in line for proper tracking. If necessary, straighten wheels accordingly. Check all controls with engine operating in all speeds. This must be done before each flight. Under power, with all controls in neutral position, model should fly in straight line and climb smoothly. If model turns to one side, it can be adjusted by trim in R/C equipment. Pushrods may also be adjusted to offset turn, or giving engine sidethrust away from the turn. Before each flight, check that wings are secure and in position and that radio is functioning properly. Your comments on the assembly of this kit and the flight of your Fokker D-7 will be appreciated. Direct your letters to Sterling Models, Philadelphia, Pa., 19144 - Att: Engineering Dept. Good luck and happy landings!!!!!

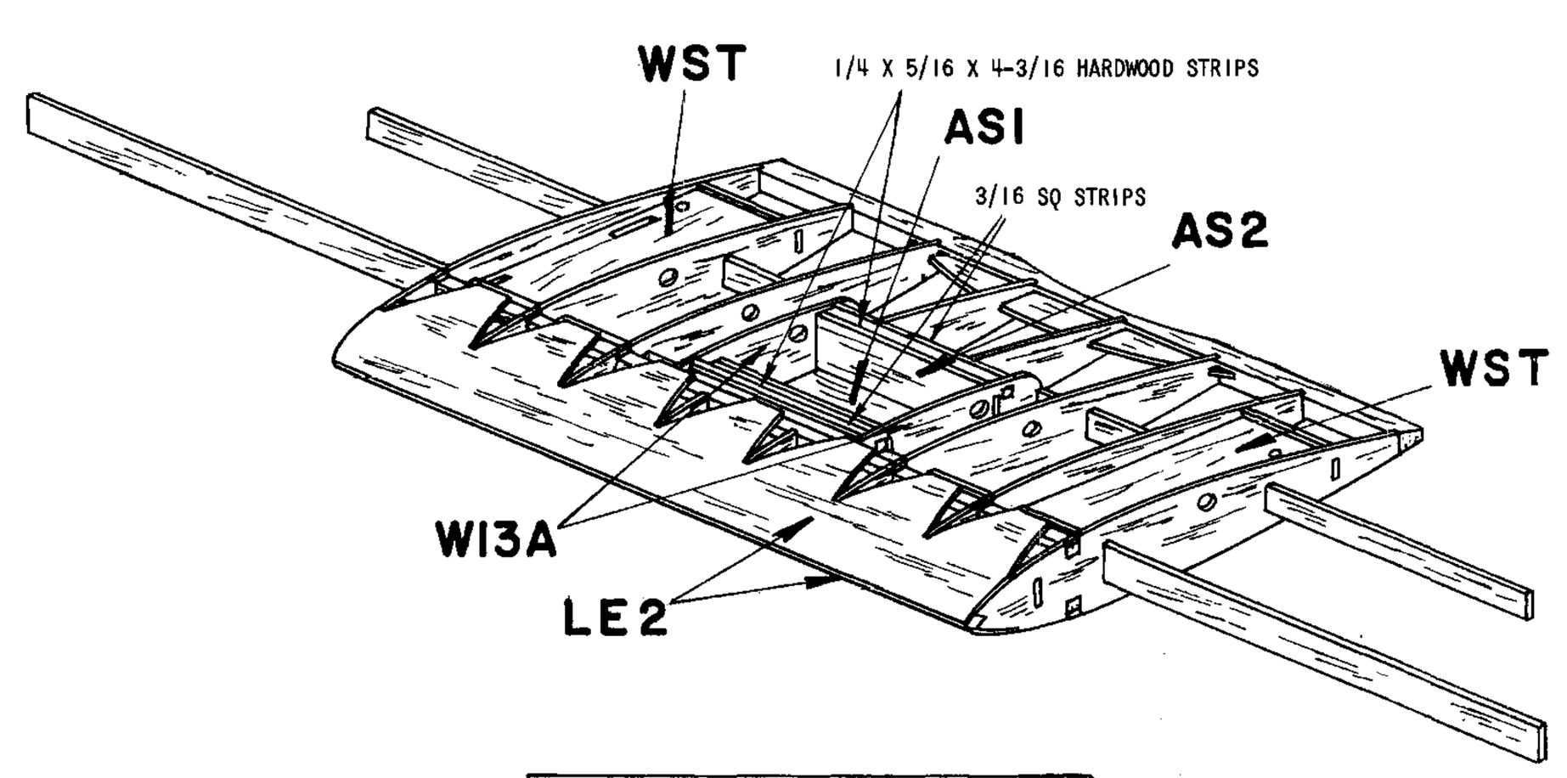


TOP WING ASSEMBLY



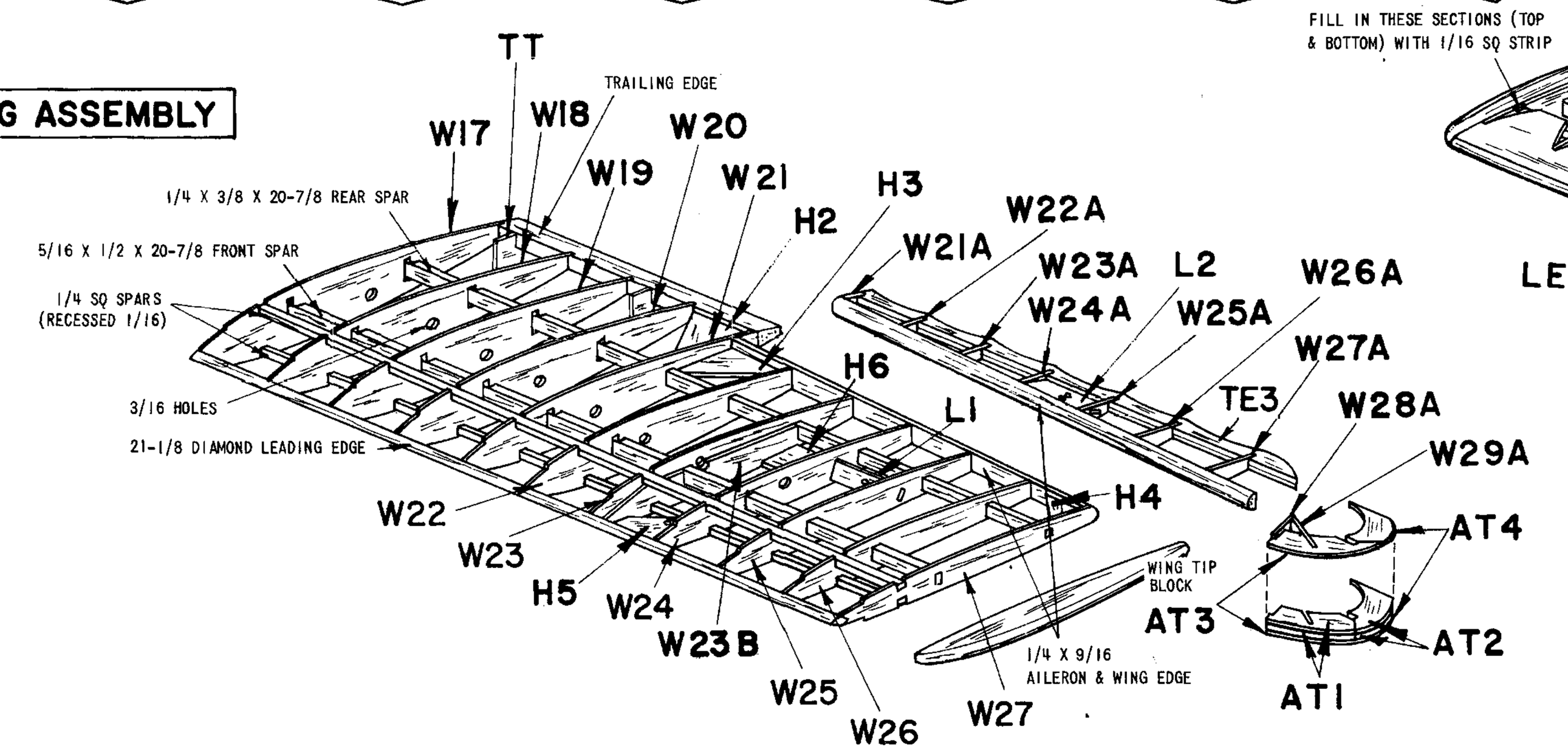
STEP 1 CENTER SECTION

Drill 3/16 holes through punch marks in ribs W14 to W24 inclusive for pushrod installation. This can be omitted for control line models. Wings are assembled on jig blocks which are used to position the spars at the proper height from the table, so that wing may be constructed over the plans easily and free from warps. Cut 16 pieces 1'' long from 5/16 x 3/4 strip wood provided for jig blocks. Assemble center section by marking center section rib locations on 3/16 x 11/16 x 34-1/8 front maple spar. Spar extends equally into both wing panels so be sure center section rib locations are marked properly. Insert spar into notches in ribs W13 to W16 and position ribs on marks as shown, then insert 3/16 x 1/2 x 26-1/8 rear maple spar. DO NOT CEMENT RIBS AT THIS TIME. Pin jig blocks on plan at locations marked, then position frame over drawing, pinning spars to jig blocks. Insert H1 into notches across rear of ribs W13 and W14. Trailing edge is provided in one length from aileron to aileron. This is cut apart by placing over wing drawing, lining up notches, then cut off sections as marked. Install center trailing edge by inserting rear of ribs into notches. Place both TT's under trailing edge to support and locate it at proper height and angle. Insert WS1's and WS2's into notches as shown between outer ribs W15 and W16. Leading edge is now cemented to front of ribs and all joints are given a liberal coat of cement. 1/4 sq spar is cut to fit and cemented into notches in top of ribs. When spar is seated properly into notches, it is 1/16 below the top of the ribs. Triangular nut blocks are shown in sketch for position only. They are installed in next step. Allow frame to dry overnight before removing from jig blocks and proceeding to next step.



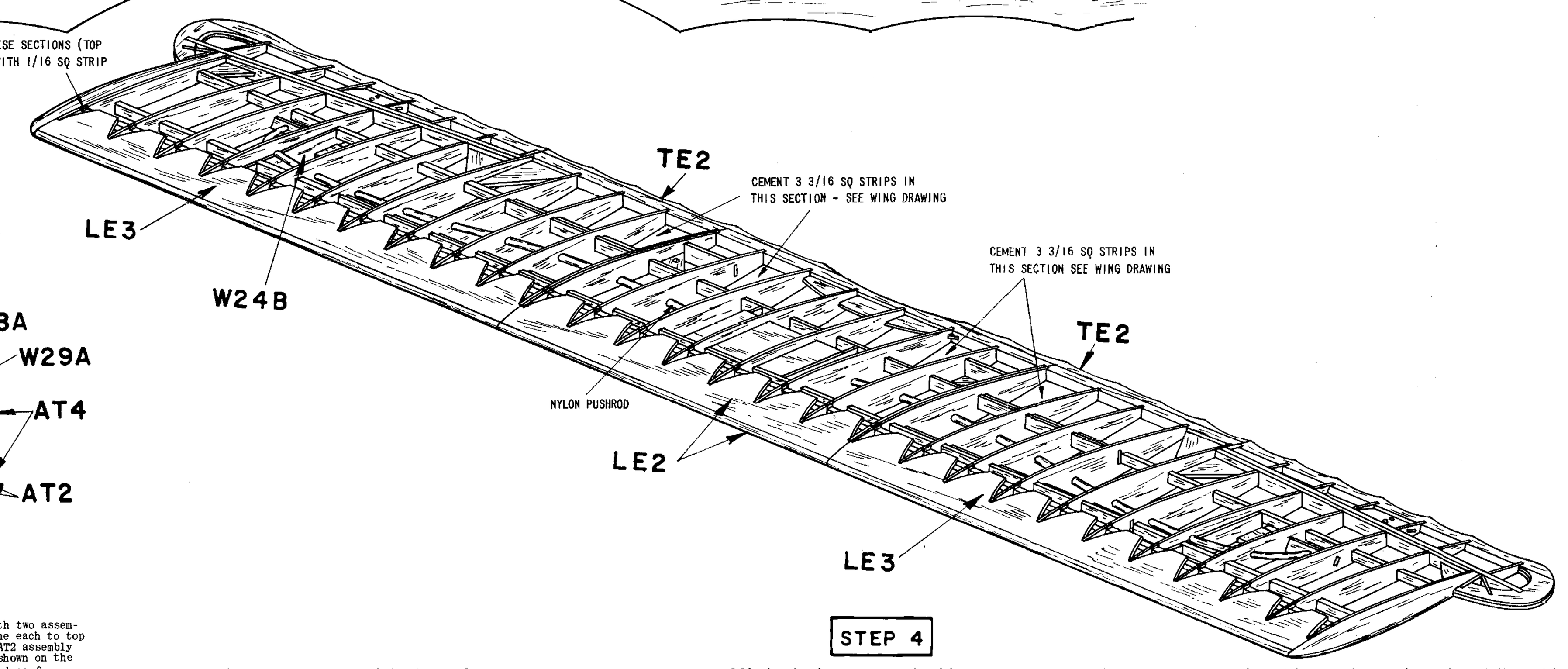
STEP 2 CENTER SECTION

This sketch shows BOTTOM of center section. Drill holes slightly over 1/4'' through both punch marks in both WST's (so that nylon screws pass through easily) then securely cement WST's in place against bottom of hardwood spars between WS1 and WS2; and ribs W15 and W16 as shown. Slots are on outer sides. Servo compartment is now assembled in wing. Check detail sketch while following assembly instructions. Place AS1 in cutout in center ribs W13's then slide both ribs W13A's in place at the previously marked location on front spar. Insert both 1/4 x 5/16 x 4-3/16 hardwood strips, into notches across W13A's, followed by AS2 and AS3. Entire unit is now squared off so that both rib W13A's are vertical and flush with edges of AS1 as shown in sketch. Entire unit is now given a generous coat of cement. Hold with pins if necessary and allow to dry thoroughly. Cement bottom 1/4 sq strip into rib notches in same manner as top, then cement a 3/16 sq strip into notches across W13A's as shown. Turn center section over and cement the four triangular hardwood nut blocks in place at the corners (on WST's) as shown in sketch and wing drawing. Holes in nuts line up with holes in WST's. Small open rib section above recessed 1/4'' spars (on top and bottom) are now filled with 1/16 sq strips provided, to complete rib shape. Cement die cut leading edge covering LE2 in place as shown to top and bottom of wing, holding in place with pins until dry.



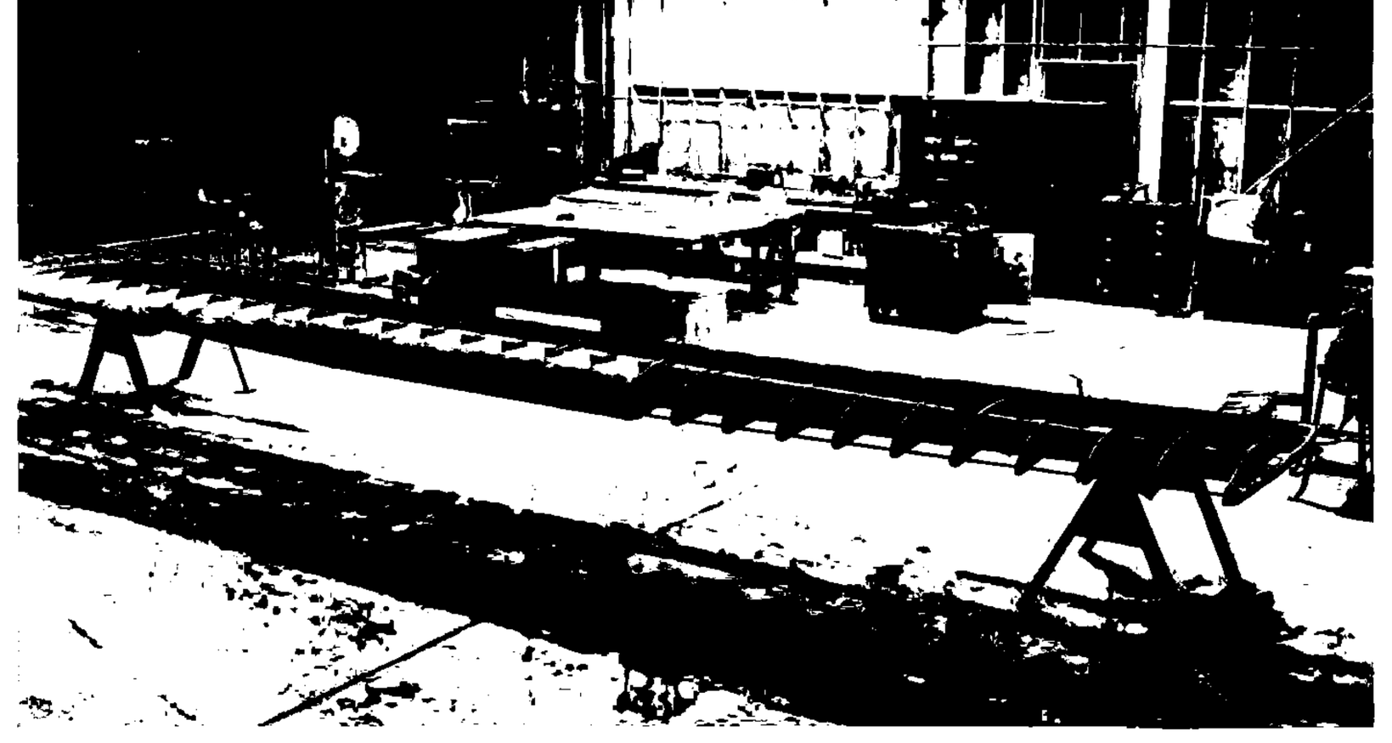
STEP 3 WING PANELS

Build wing panels by tapering spars using full size patterns provided, then marking off rib locations on both 5/16 x 1/2 x 20-7/8 front spars and 1/4 x 3/8 x 20-7/8 rear spars. Slide ribs in place by the number as shown on sketch and full size drawing, WITHOUT CEMENT. Spar jig blocks are placed under spars while building the wing to keep spars at proper height from surface which will insure a warp-free wing. This is clearly shown in jig block assembly detail. Pin jig blocks in place on plan at locations marked. Place frame over drawing, pinning spars to jig blocks and lining up ribs and spars with drawing. Cement trailing edge in place. Die cut parts TT are placed under trailing edge to support and locate it at proper height and angle as shown on jig block drawing. Cement 21-7/8 diamond shaped leading edge to front of ribs holding in place with pins. All rib joints are now cemented liberally. Make two wing trailing edges at aileron from 1/4 x 9/16 strip, using full size pattern provided, then cement in place. Wing tip block and triangular gussets H2, H3 and H4 are now cemented in place as shown. Drill 3/16 hole through punch mark in L1 and cement as shown between ribs W24 and W25. Cut to length and taper 1/4'' sq spars (using full size pattern provided), then cement into notches across ribs seating down 1/16 lower than ribs. Allow frame to dry overnight to prevent warping. Remove panel, then cement W23B and W24B in place as shown from the bottom. Cement tapered bottom 1/4 sq spar in place in same manner as top, then cement H5 and H6 into notches between W23B and W24B as shown on sketch and wing drawing. Cement aileron tip sections AT1 & AT2 together on flat surface, make a second assembly and cement the two together. Do likewise with two assemblies of AT3 & AT4; then cement one each to top and bottom of double layer AT1 & AT2 assembly to form a 4-layer aileron tip as shown on the sketch. Make two aileron leading edges from 1/4 x 9/16 strip using pattern provided. Cement aileron trailing edge sections TE3 together to form double layer. Assemble aileron by cementing ribs as marked, into notches in aileron trailing edge TE3. Drill 3/32 holes thru punch-marks in L2 then insert between W24A and W25A. Cement leading edge in place, lining up assembly over drawing. Slide double layer tip in place, centering on leading and trailing edge. Install tip ribs W28A and W29A as shown. Allow to dry thoroughly, checking against warpage. Make opposite wing panel and aileron in same manner, lefthand wing panel shown in sketch.

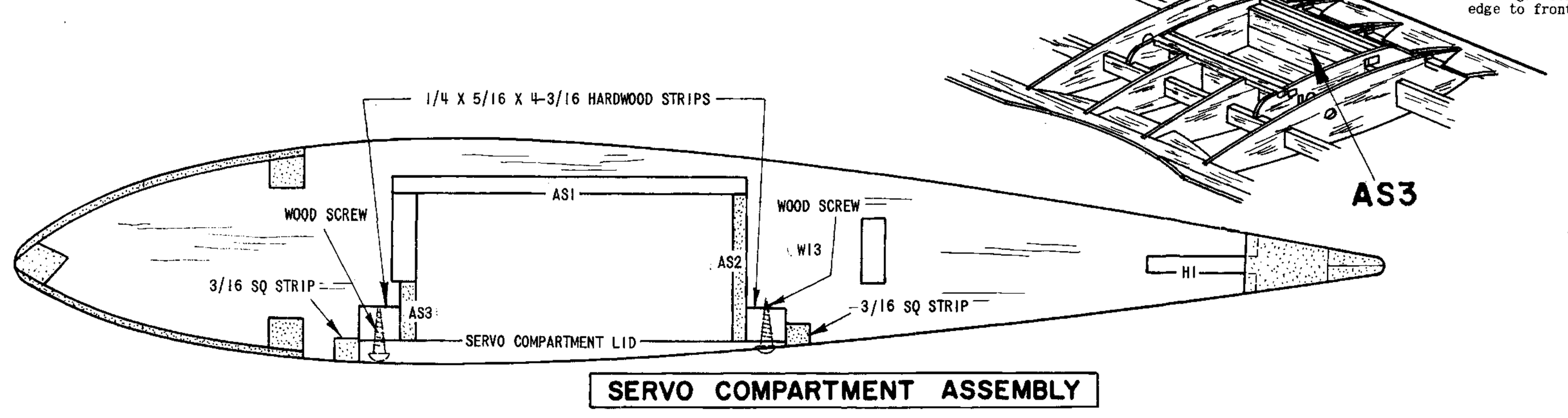


STEP 4

Using cement generously, slide wing panels on to center section, inserting maple spars through notches for them in ribs of outer wing panels. Be sure outer panels are pinned tightly against center section and use cement generously over all connecting joints. Check to see that wing is not warped, then allow to dry overnight before proceeding. Die cut leading edge covering sections LE3's are now cemented to top and bottom of both wing panels as shown, in same manner as center section. Bottom covering is trimmed out to fit around H5's. Fill in open rib sections above recessed 1/4'' spar (on top and bottom) with 1/16 strip in same manner as center section. Make two double layer scalloped trailing edge assemblies by cementing two TE2's together for each side. When dry, cement to rear of trailing edge as shown. Cut 3/16 sq strips to size and cement 3 strips between ribs W14 and W15, and W17 and W18 on both sides of wing at locations shown on full size drawing. Strips are 1/8 from bottom of ribs, so that covering material will not touch them. Allow frame to dry thoroughly, then sand entire structure smooth. Leading edge and tips are rounded off to cross section shown on plan, and are blended smoothly into one another. Trailing edge and scalloped section are sanded to tapered cross section shown, so as to appear as one unit. Trailing edge at aileron is rounded off to cross section shown. Complete center section trailing edge cut out to match full size drawing and round off smoothly. Sand both aileron assemblies smooth, rounding off tips and leading edge to cross section shown, and tapering trailing edge. Install both ailerons using nylon hinge material provided as shown and described in hinge detail. For control line models ailerons can be permanently cemented in place. Either 2 oz. of weight is securely installed on right wing tip of lower wing or the same effect can be achieved aerodynamically by cementing the right aileron 1/8 up and left aileron 1/8 down at trailing edge where it joins rest of wing. Nylon pushrods supplied with kit work excellently and should be installed as follows: Cut the LARGER diameter tubing to length over full size wing drawing, then insert through holes in ribs starting from center. Before inserting the tubing through L1, install No. 10 nut on tubing flat side facing rear. Cross section drawing shows how tubing is secured by the addition of a second nut, flat side facing forward. Nuts are tightened toward each other against L1 to secure tubing permanently in place. Be certain that tubing maintains curve shown on wing drawing. Opposite end of tubing is secured to W13A with Epoxy cement. Bolt nylon horn to L2 using 2/56 nuts and bolts provided, flat side of nut against horn. SMALLER nylon tubing is inserted through large tubing as shown, and extends past it on each end. Length is determined by servo used. Original model used Dubro Kwik links which will screw tightly into end of small tubing. Attach to horn as shown on cross section drawing. Other end is cut to size and linkage completed as required. Both ailerons are linked in same manner. To provide covering surface, cement 1/16 balsa in place between ribs where tubing and horn protrude, notching as required for clearance. Wing is now ready to be covered. Silk, nylon, or similar fabric (not provided in kit) is recommended. Check wing constantly for warps while covering and doping. Any warps that develop can be removed by an additional coat of dope and twisting wing in opposite direction while dope is still wet, and holding until dry. See final assembly and box lid for paint scheme.

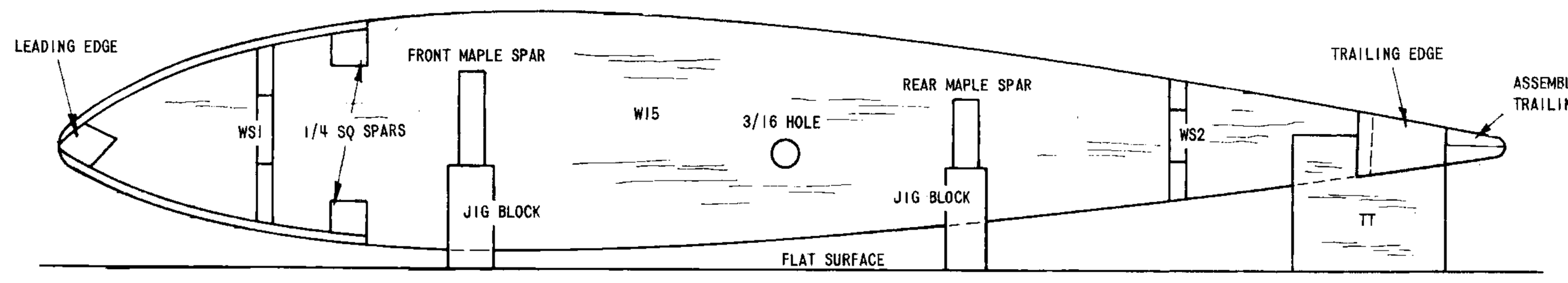


Fokker D-7 Top Wing in production. Look at that "scale" Leading edge covering. Photo courtesy of Smithsonian Institute



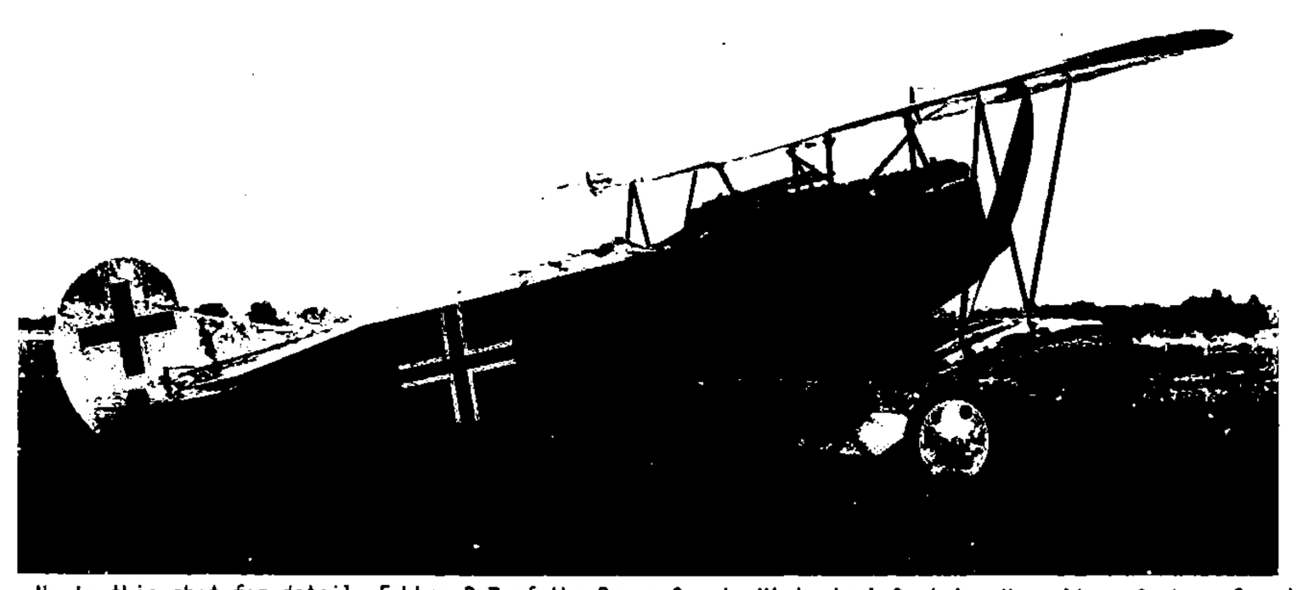
SERVO COMPARTMENT ASSEMBLY

Full size drawing and rear view sketch above, shows how servo compartment is built into cutout in ribs W13's as described in wing step 2 center section note. Follow instructions in wing step 2 referring to sketch and to full size view above which clearly shows the location of the parts used to assemble servo compartment. When wing servo compartment is completed, the 3/16 x 3-5/16 x 4 compartment lid is fitted in place. This is trimmed and sanded to airfoil shape as shown and held in place with 1/2 x #2 wood screws. Drill holes in hardwood strips to receive screws to prevent splitting. Remove screws and allow lid to remain in place while covering wing. After wing is covered, cut out carefully with sharp razor blade and remove to make sure it is not stuck in place. Lid is then screwed back in place and is painted as part of the wing.

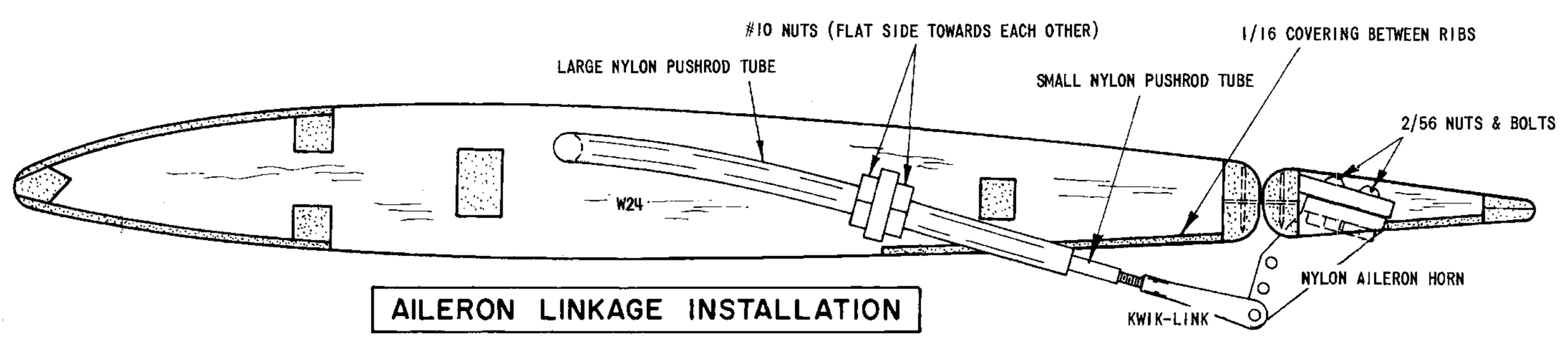


JIG BLOCK ASSEMBLY

Full size drawing above shows how wing, when assembled, rests on 3/4 high jig blocks under front and rear spars. Cut 16 pieces 1'' long from 5/16 x 3/4 strip wood provided for jig blocks, as described in wing step 1. Note how die cut TT's are placed under trailing edge to support it at proper height and angle. This system permits construction of wing on flat surface right over plans. To prevent warps be certain wing frames are permitted to dry overnight before removing from flat surface.

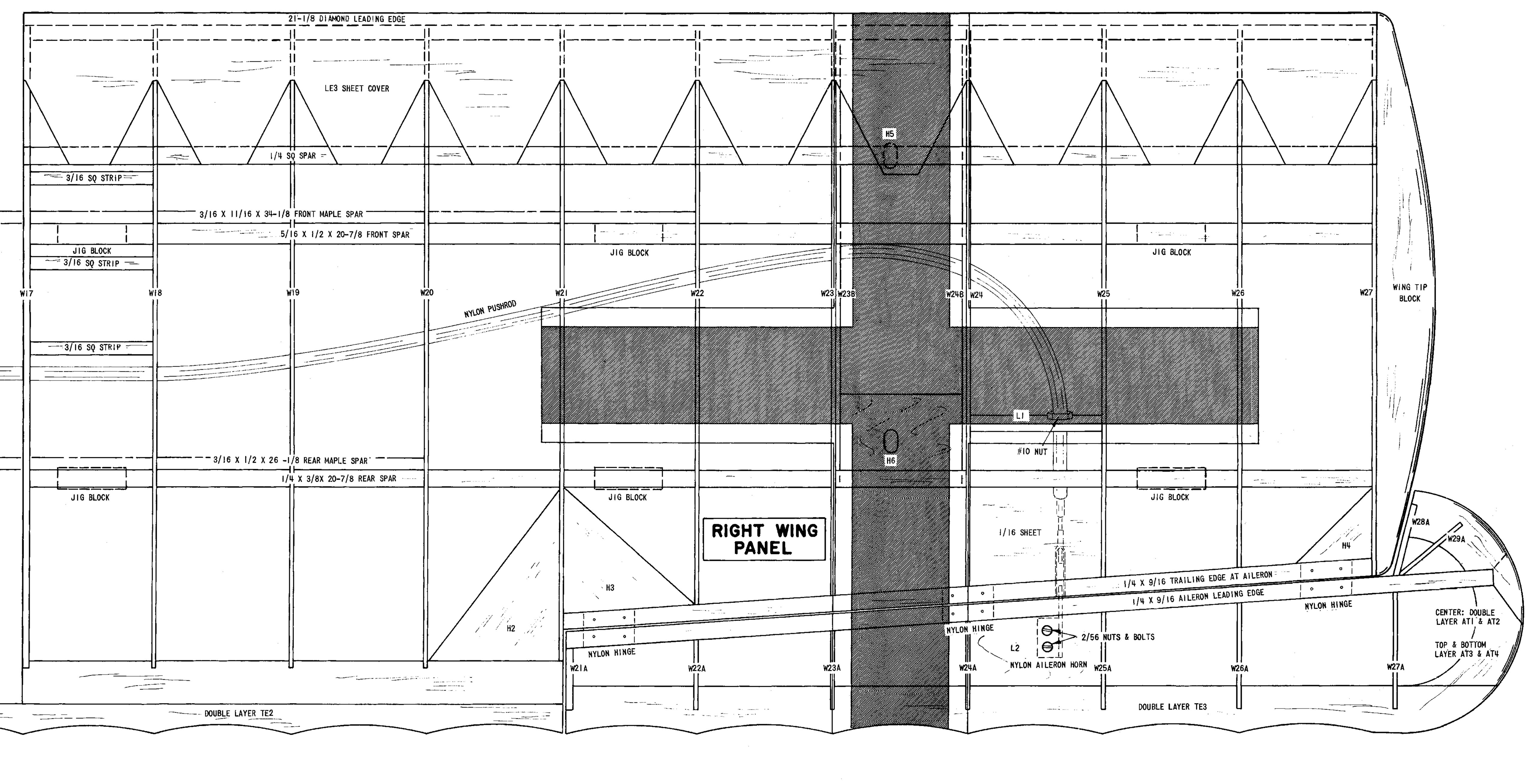


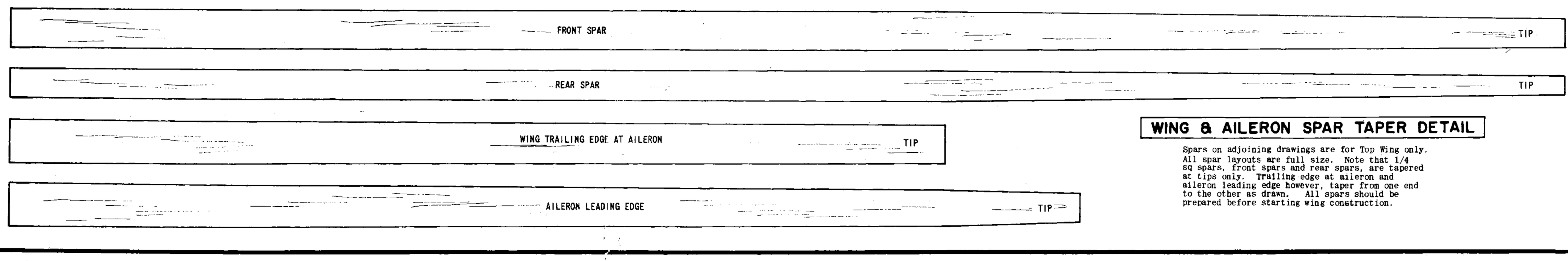
How's this shot for detail. Fokker D-7 of the Brome County Historical Society, Knowelton, Quebec, Canada
Photo courtesy of Canadian Forces



AILERON LINKAGE INSTALLATION

Full size drawing above shows linkage (when viewed from side) at Rib W24. Full size wing drawing shows how system looks from top. After aileron has been hinged to wing, bolt nylon horns to L2 using 2/56 nuts and bolts provided, flat side of nut against horn. Installation of nylon pushrods and linkage connections shown above are made and described in wing step 4. Drawing above shows position of components and how and where they fit. When installation is complete, system must move free and easily. Remove any binding action then solder or cement nuts to prevent loosening. Bottom sections between rib W24's and W25's, are covered with 1/16 sheet balsa as shown. Slot as necessary to clear linkage and horn. Be certain that aileron movement is correct and that a movement of the control stick to the right results in the right aileron going up, and vice versa.

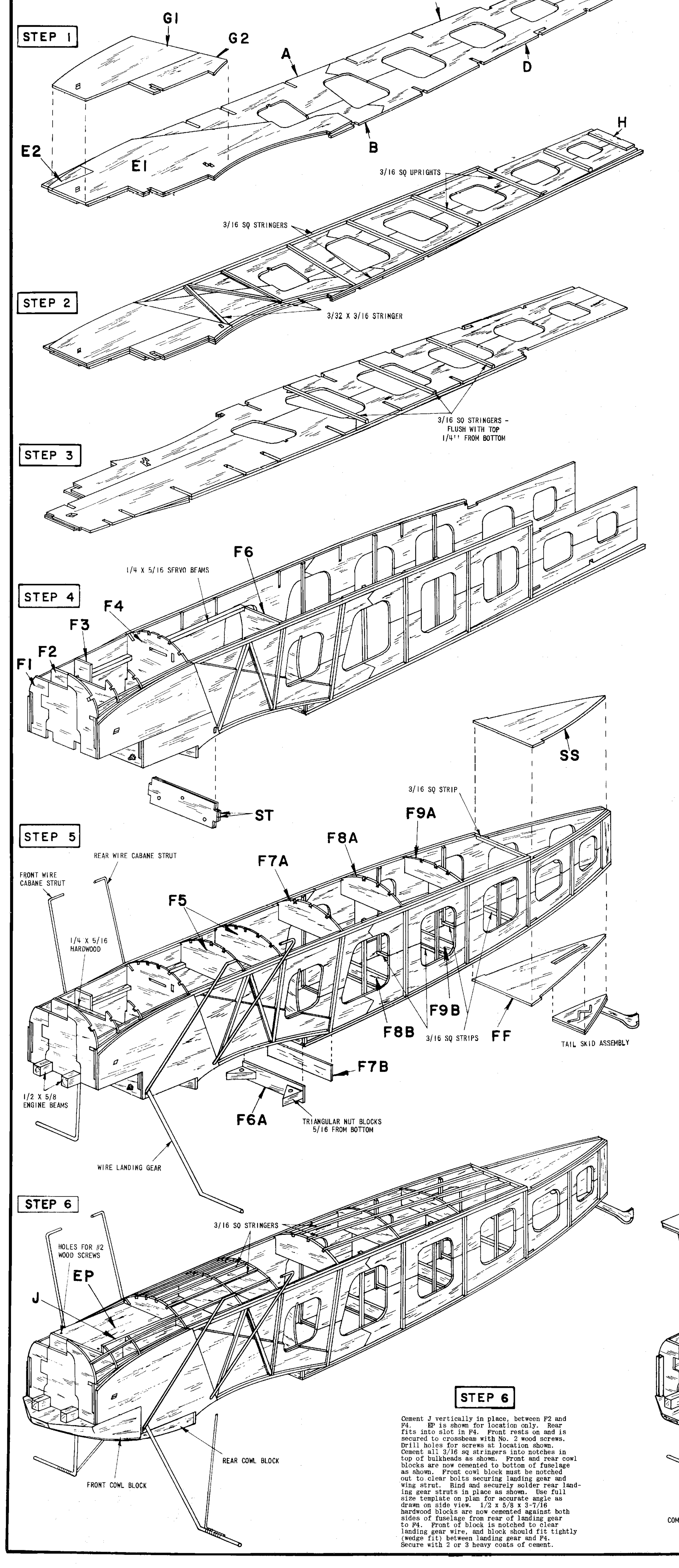




WING & AILERON SPAR TAPER DETAIL

Spars on adjoining drawings are for Top Wing only. All spar layouts are full size. Note that 1/4 sq spars, front spars and rear spars, are tapered at tips only. Trailing edge at aileron and aileron leading edge however, taper from one end to the other as drawn. All spars should be prepared before starting wing construction.

FUSELAGE SIDE FRAME ASSEMBLY



STEP 1

Assemble side by cementing sections A, B, C, and D together over full size Fuselage Side Frame Assembly layout. Cement E1 and E2 in place as shown, followed by G1 and G2 which completes the 3 layer nose section. This makes left side as drawn in sketch. Assemble A, B, C, and D in same manner but when dry, turn over to make a right side and complete in same manner.

STEP 2

Top and bottom stringers are 3/16'' square. Cut to fit on sides as shown. Cement top stringer in place but bottom stringer is cemented only back as far as F9. Rear is left loose to permit bending when assembling fuselage in later step. Uprights from F7 back are 3/16 sq. Fit between stringers and cement in place. Cement H in place at rear. Note that upright location lines are drawn past sides to permit accurate location since sides cover drawing. Curved lower stringer from F4 to F7 is 3/32 x 3/16 Moisten to permit bending, then cement in place holding with pins until dry. The remaining three uprights are 3/32 x 3/16. Fit and cement in place. Use a double layer from plywood up. Complete the right side in the same manner.

STEP 3

Turn both sides over and cement the three 3/16 sq uprights in place at the location shown on the Fuselage Side Frame Assembly layout and sketch. Stringers are flush with top but are 1/4'' from bottom as shown. Drill 1/8 holes thru bottom puch marks in bulkhead F4.

STEP 4

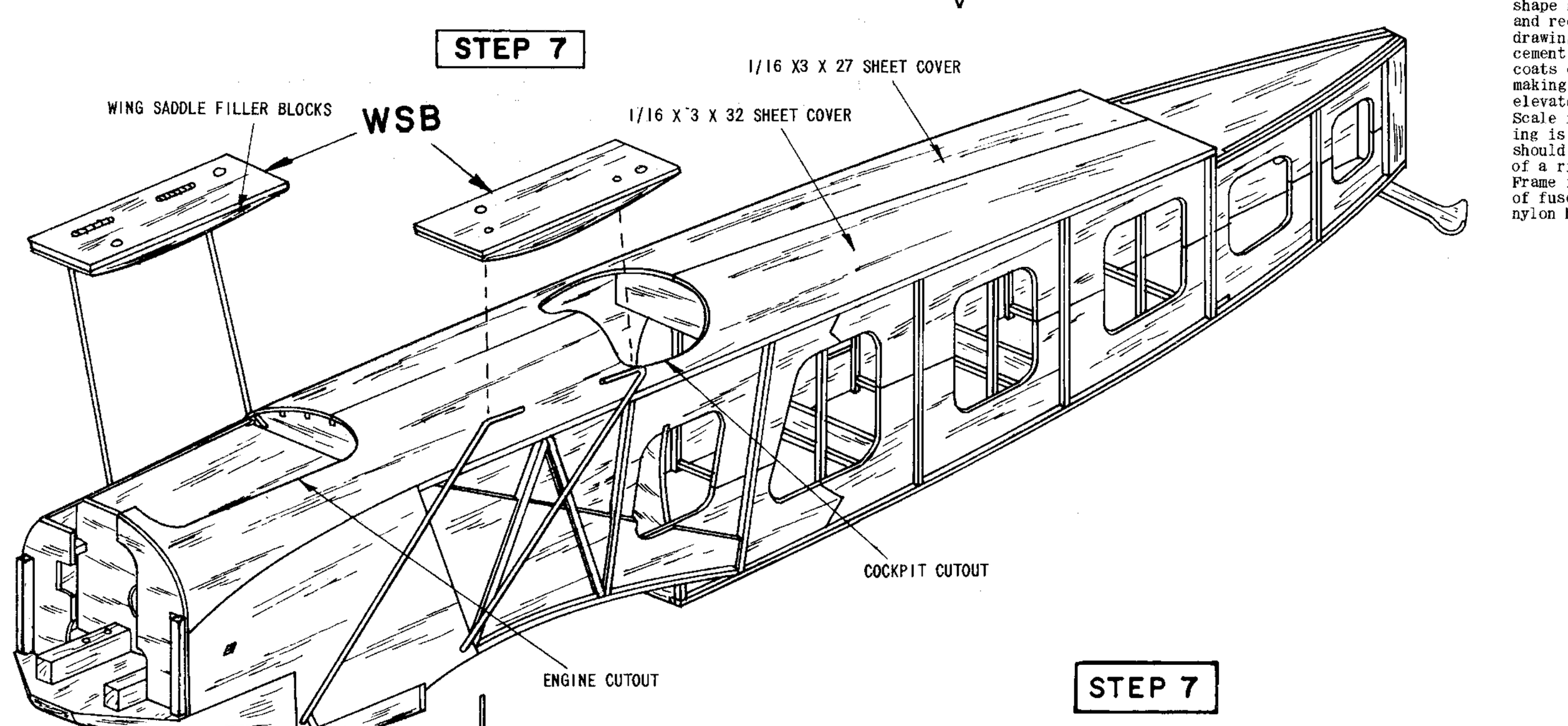
Assemble bulkhead F3 as shown in assembly sketch and also cement both ST's together. Cement bulkheads F2 to F6 (F1 and F5's are omitted at this time) into notches between sides as shown, adding double layer ST at the same time. Hold together with pins or rubber bands and immediately insert 1/4 x 5/16 servo beams into notches in both sides of bulkheads as shown, then add F1 to front of fuselage. Right servo beam is flush with front of F2, left beam is flush with F1. Keep F1 in one piece - center is knocked out in later step. Be certain that assembly is square when viewed from top and sides are in line with each other when viewed from the side. Allow unit to dry overnight before proceeding.

STEP 5

Cement both F5's into notches across fuselage, followed by F7A, F8A and F9A (which are cemented across the top) and F7B, F8B and F9B (which are cemented across the bottom) into their respective notches. Bottom bulkheads are 3/16 above bottom of sides, to allow for 3/16 sq strips which are now cut to length and cemented in place making the bottom flush with the sides. Cut 3/16 sq strips to fit across fuselage against bottom of inside-uprights, installed in Step 3. Bottom of strips remain 1/16 above bottom of sides. SS and FF are now cemented into their respective notches as rear of fuselage is pulled together around them. Hold with rubberbands and pins until thoroughly dry. It may be necessary to moisten sides to make the bend. Cut 3/16 sq strip to length and cement into notches in sides across rear of top stringers. Cement 3/16 sq strip across fuselage, against bottom, and flush with front of FF. Moisten rear of both bottom stringers to permit bending, then carefully bend and cement both stringers in place at the same time. Hold with pins and/or rubberbands until dry. 3/16 sq strips are now cut to length and cemented to both sides, flush with top at rear section adjoining SS as shown Strips must be moistened and pre-bent before cementing in place. Make tail skid assembly as shown and described in detail note, then cement securely to bottom of FF between sides. Cement F6A to crease-marked position in front of F6. Securely cement a hardwood triangular nut block into each corner formed by F6A and fuselage sides, 5/16 from bottom. Insert 1/2 x 5/8 hardwood engine beams through bulkheads until they are flush with rear of F4, then cement securely in place. If model is being built for control line, beams of a similar size hardwood should be installed at same level back to F6 to provide for bell crank platform as shown on side view and control line detail sketch. Cement a length of 1/4 x 5/16 hardwood across the rear, and 1/8 below (parallel with top) of F2 as shown. Wire center section cabane struts are now installed using landing gear lugs as described in detail note. Center section of front strut (mounted on bulkhead F3) is bent so that top of strut angles back as shown on side view. Rear strut (mounted on ST) leans back at same angle of ST. Be certain that struts are installed on correct bulkhead and that top of spurs face each other, and that they are at the proper angle as shown on sketch and side view. Install landing gear as described in same detail note. Original model was flown with excellent results, using an Enya 60-2 TVC Engine as shown on plan. Any similar type RC engine of .45 to .65 displacement may be used. Engine used is placed upside down on bottom of motor mounts and mounting holes are located. Drill 1/8 holes then secure blind nuts in holes (add drop of cement) and drawing up tight with 4/40 bolts, sinking spurs into motor mounts.

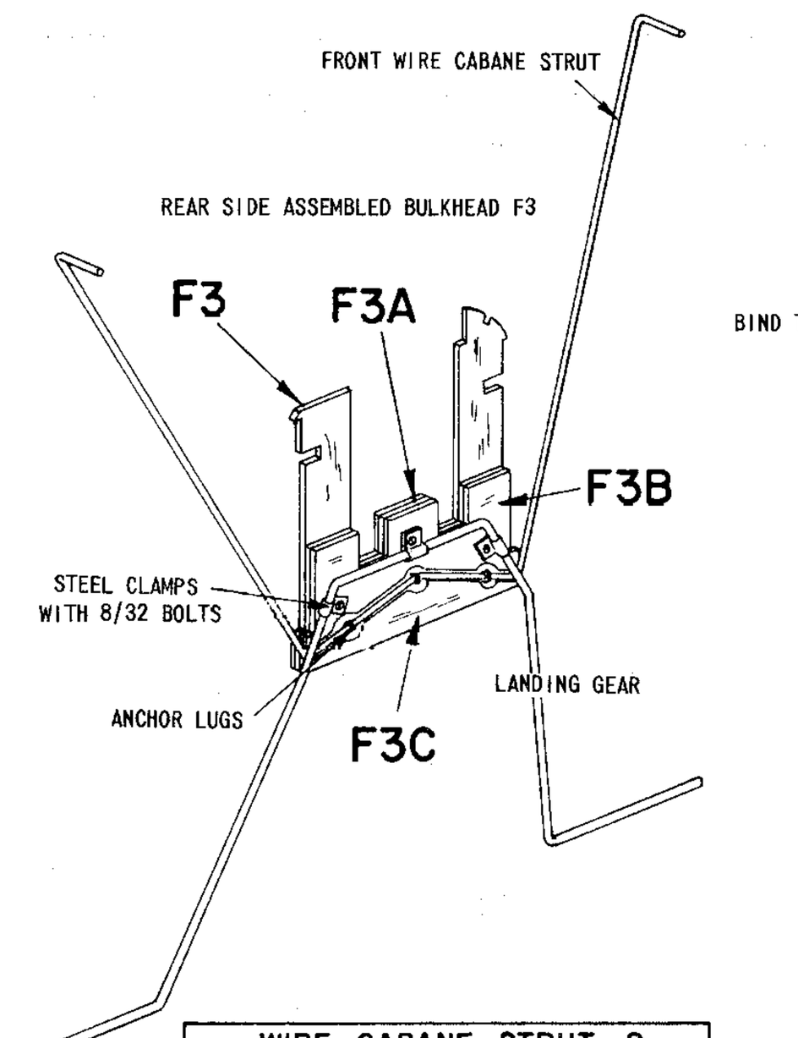
STEP 6

Cement J vertically in place, between F2 and F4. EP is shown for location only. Rear fits into slot in F4. Front rests on and is secured to crossbeam with No. 2 wood screws. Drill holes for screws at location shown. Cement all 3/16 sq stringers into notches in top of bulkheads as shown. Front and rear cowl blocks are now cemented to bottom of fuselage as shown. Front cowl block must be notched out to clear bolts securing landing gear and wing strut. Bind and securely solder rear landing gear struts in place as shown. Use full size template on plan for accurate angle as drawn on side view. 1/2 x 5/8 x 3-7/16 hardwood blocks are now cemented against both sides of fuselage from rear of landing gear to F4. Front of block is notched to clear landing gear wire, and block should fit tightly (wedge fit) between landing gear and F4. Secure with 2 or 3 heavy coats of cement.



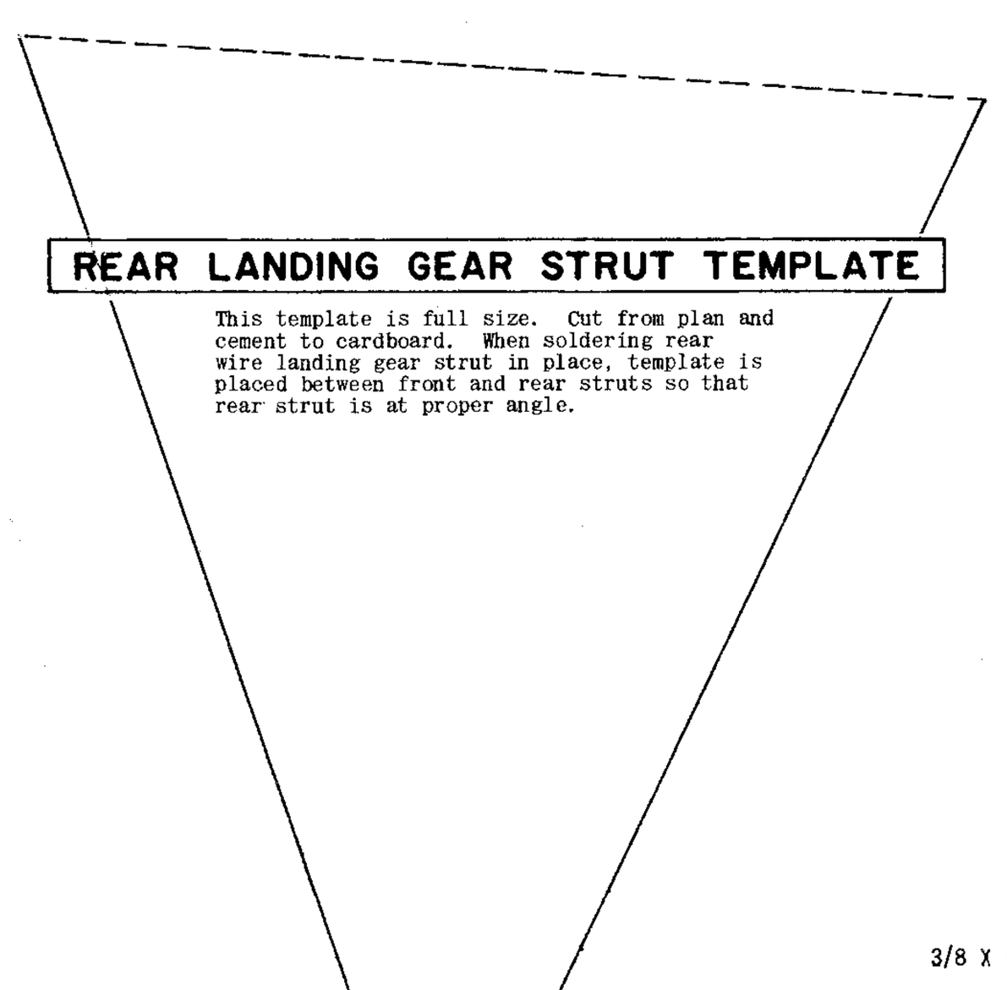
STEP 7

Cover top of fuselage with 1/16 x 3 balsa provided. Use 27'' length for right side, and 32'' for left side as shown. Hold with pins until dry. When dry, sand smooth and cut out cockpit and engine openings using patterns provided. Top wing saddles WSB's are shown in this sketch for clarity and position only. They are installed as described in final assembly steps. Die cut center of F1 is now removed as shown. Spreader bar frame is now installed on landing gear and completed as described in spreader bar assembly notes.



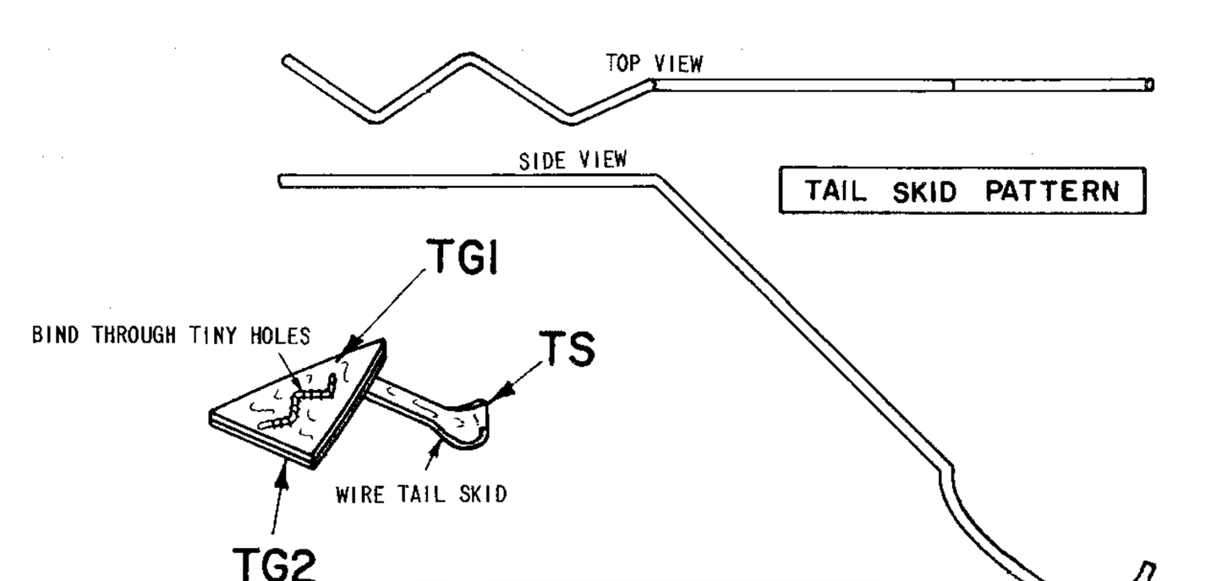
WIRE CABANE STRUT & LANDING GEAR INSTALLATION

Sketch above shows how installation of front wire cabane strut and landing gear, is made on rear side of bulkhead F3. Installation is made in fuselage step 5. Framework of fuselage is omitted from above sketch for clarity. The various parts of bulkhead F3 should be assembled as follows: F3A is cemented to rear and flush with bottom of F3, followed by F3B cemented flush to top of F3A, and F3C cemented flush with bottom of F3A, to form triple layer, and create a recess to receive wire cabane strut which is now installed using anchor lugs. Be certain that spurs of cabane strut face rearward as shown on sketch. Slip lugs over front wire cabane strut (this one is bent so that when center is bolted flat in place, top of struts lean towards rear) and insert lugs through holes as shown. INSTALLATION MUST BE ACCURATE!! Cut front wire cabane strut template from plan and place on bulkhead. When struts are in perfect position, secure permanently with 6/32 nuts, flat side of nut against plywood. Solder or cement nuts permanently to prevent loosening. Rear wire cabane strut is mounted to rear of ST's after they are installed in fuselage in same manner. Be certain spurs face forward and both struts angle back as shown on side view. Check both struts with wire cabane strut template and secure nuts by soldering. Slip the 3 steel clamps in place on landing gear, and install 8/32 x 5/8 bolts through holes in clamps and through bulkhead layers as shown. Secure with 8/32 nuts, closed side MUST be against plywood. Use solder or cement over nuts to permanently prevent loosening.



REAR LANDING GEAR STRUT TEMPLATE

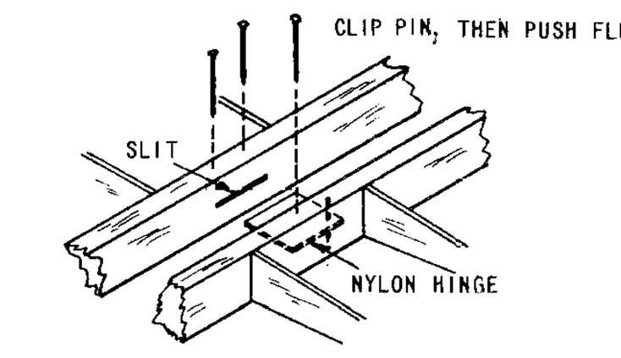
This template is full size. Cut from plan and cement to cardboard. When soldering rear wire landing gear strut in place, template is placed between front and rear struts so that rear strut is at proper angle.



TAIL SKID PATTERN

TAIL SKID ASSEMBLY

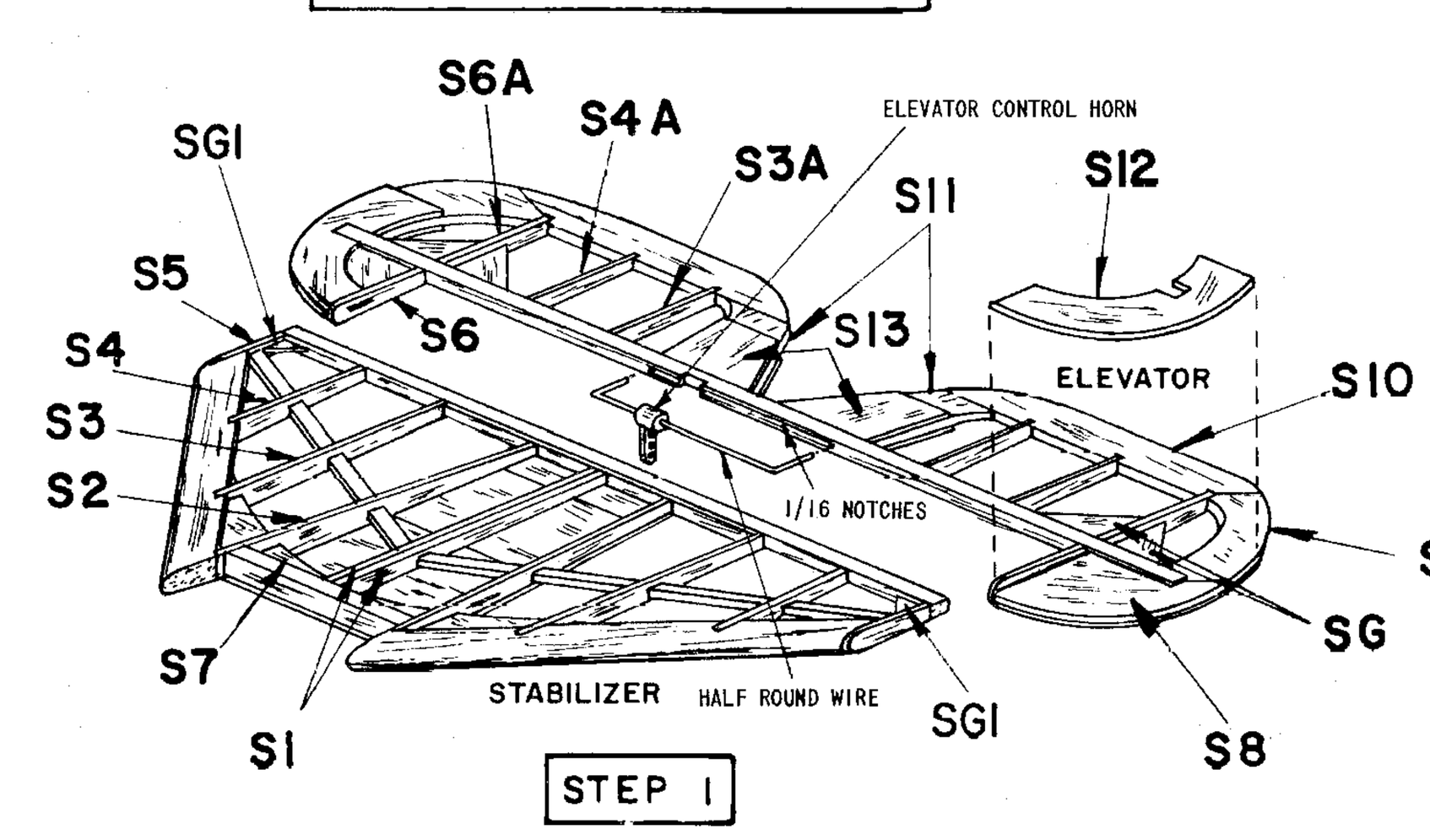
Using 1/16 wire provided, bend wire portion of tail skid to shape using full size top and side view drawing above. Insert top through 1/16 hole drilled in TG1 and cement in place. Drill tiny holes alongside of wire and bind and cement top to TG1 as shown. Drill 1/16 hole through TG2 and insert gear through hole, securely cementing TG2 to bottom of TG1. TS is cemented to rear of gear as shown. Use cement generously and wrap with fabric for maximum strength. Assembly is cemented in place as described in fuselage step 5.



NYLON HINGE DETAIL

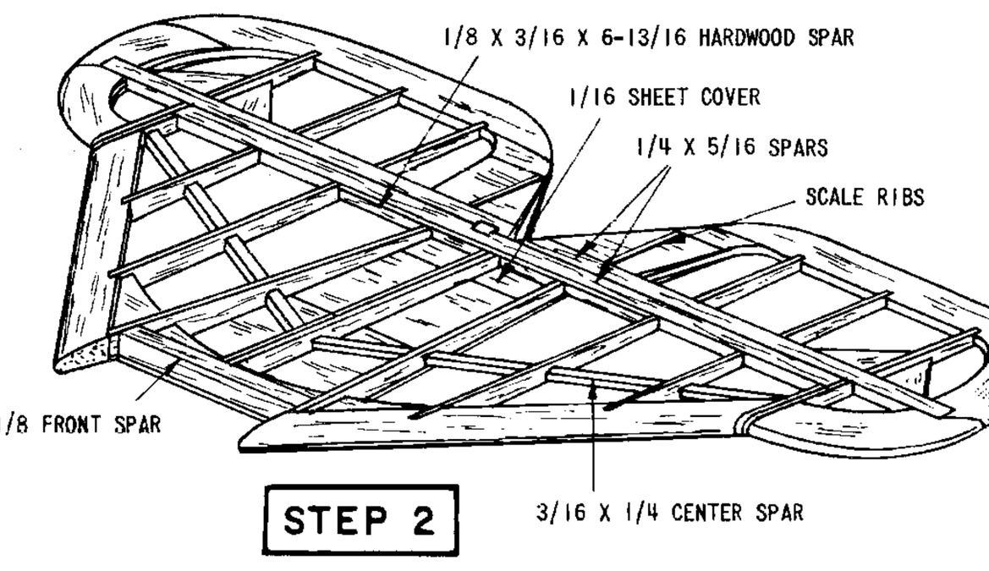
Ailerons, rudder and elevator are hinged using method shown above. Cut 13 hinges 1/2''long from strip of nylon hinge material provided. Joining edges of Ailerons, Rudder and Elevator must be rounded to cross section shown on their respective full size drawings. Mark hinge locations on ailerons & wing, elevator & stab, and rudder & fin, from full size drawings. Make slit at hinge locations with knife or razor, opening slits slightly by bending knife or razor. For proper alignment, be certain that slit is in the center of thickness. Coat 1/2 of nylon hinge with EPOXY CEMENT, then insert into slit while holding slit slightly open with knifeblade. Push straight pin through balsa as shown until you feel the nylon hinge, then clip off top of pin leaving 3/16 protruding. Pin is now pushed through nylon until it is flush with balsa surface. Assemble units by coating nylon hinge with Epoxy Cement. Push into place leaving about 1/16 space between units and complete by installing pins in same manner. Be certain all surfaces move freely and easily.

STABILIZER ASSEMBLY



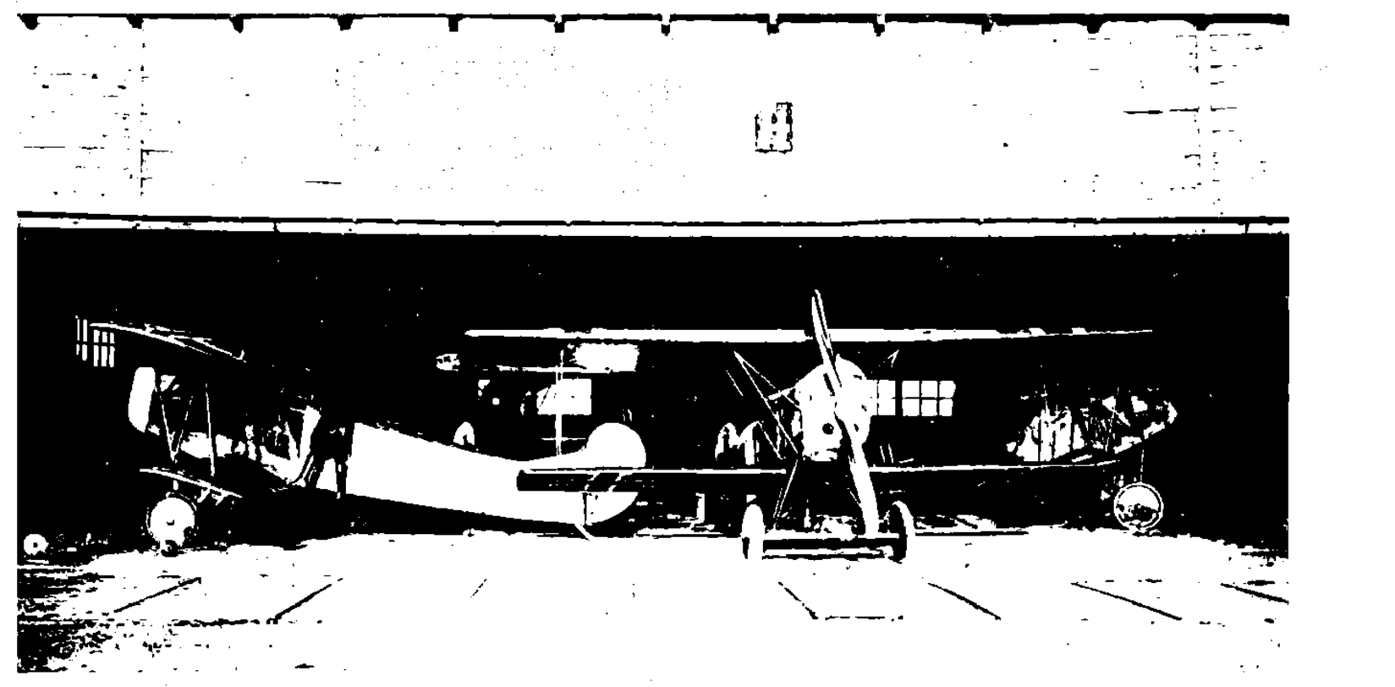
STEP 1

Shape of stabilizer makes it necessary to taper the leading edges and also makes angled notches necessary. Taper leading edges using full size pattern provided. Cut both sections to length exactly to full size drawing, then mark off rib locations and cut notches using a set-tooth hacksaw or keyhole sawblade that will make a 1/16 cut. Build stab over plan on flat surface. Although sketch shows stab and elevator separated, they are built together as one unit. However, DO NOT CEMENT ELEVATOR TO STAB since they are separated after construction. Control horn and notch for same is shown for location and clarity, but is installed in Step 2. Cut 3/16 x 1/4 center spars to length over plan and set aside. Cut and pin both 1/4 x 5/16 spars in place (flat) to drawing. Using 1/16 x 3 x 12 install bottom center section sheet covering, cut to fit to outside of ribs S2's , from front of spar to front of stab. Cement 1/8 x 3/16 x 6-13/16 hardwood reinforcement spar across center, over 1/16 sheet, against spar as shown. Cement the two center ribs S1's together and cement to center of balsa sheet followed by angled ribs S2's which cement to top of, and flush with outer sides of sheet covering. Insert S7 into front notches of ribs, then cut 3/8 x 15/32 x 4-1/8 front spar to size and cement over sheet covering between ribs as shown. Cement ribs S3's and S4's in place as shown, then pin and cement leading edge in place. Slide previously cut center spars in place through notches in ribs, then cement tip ribs S5 in place as shown , and add gussets SG1. Assemble curved elevator trailing edge by cementing S8, S9, S10 and S11 together over plan. Allow to dry thoroughly, then remove from plan and cement an S12 to top and bottom of each tip as shown, to form a triple layer. Do likewise with S13's which are cemented to top and bottom of S11's as shown. Allow to dry thoroughly, then pin in place on plan cementing to spar. Cement tip ribs S6's in place (to elevator only) and then complete by cementing ribs S3A, S4A, and S6A in place. Add corner gussets SG's as shown. Allow framework to dry overnight before removing from flat surface.

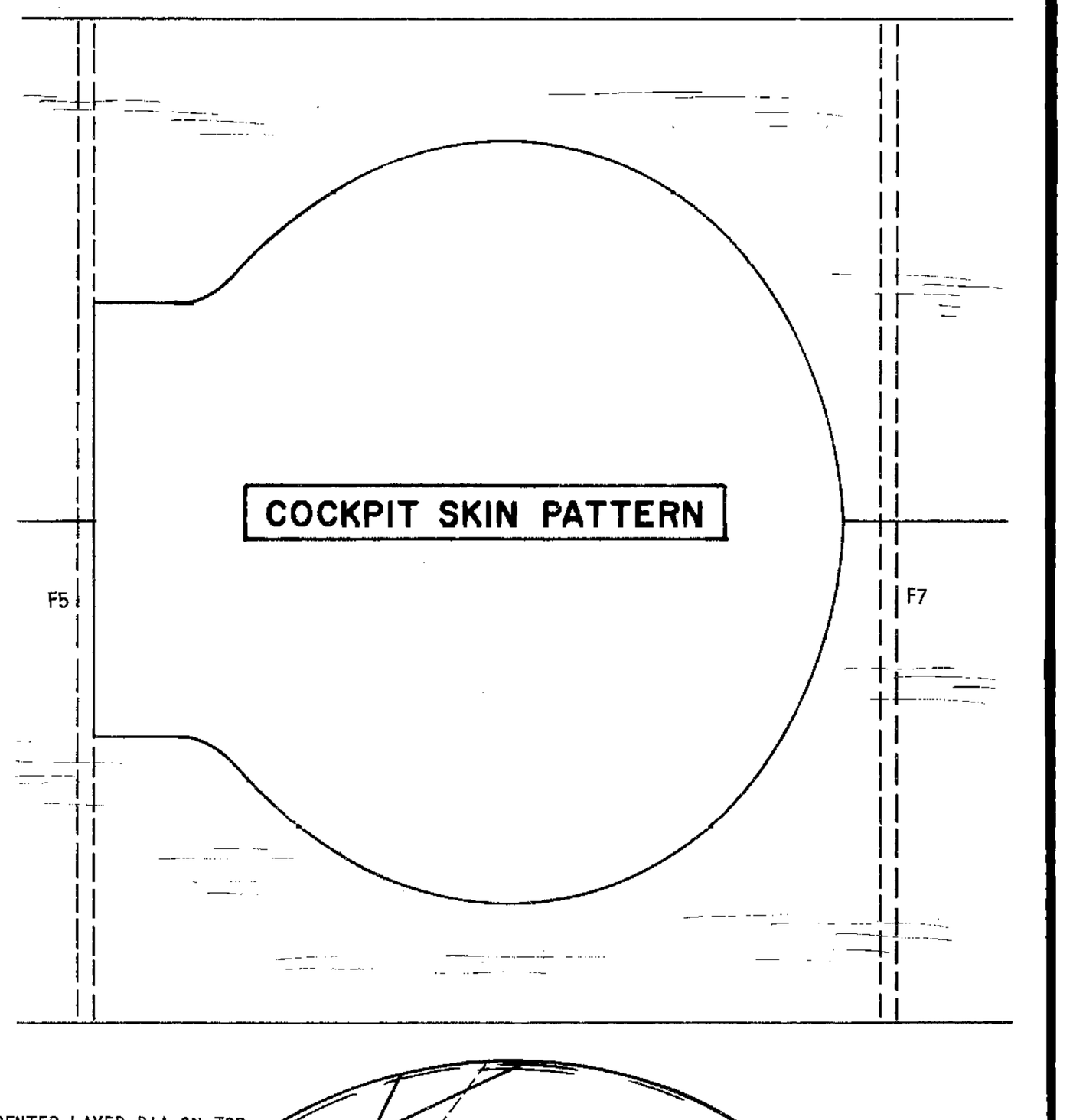


STEP 2

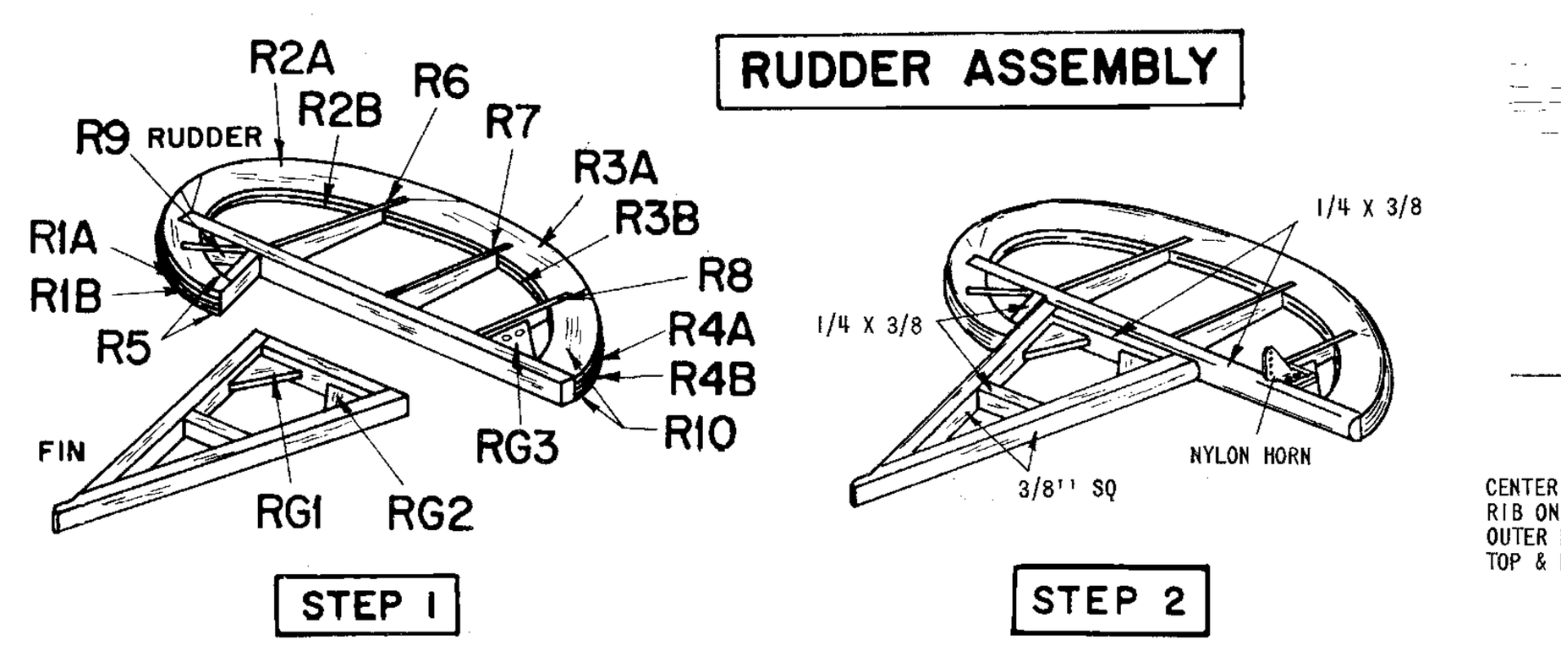
When stab is dry, remove from flat surface then sand smooth rounding all tips, etc., to cross sections shown, including spars at hinge joint. Insert 1/2 round wire through nylon elevator horn, and bend ends to form spurs to shape shown in full size drawing. Drill holes and recess spars at location shown on full size drawing to receive spurs and horn, then securely cement assembly in place. Use at least 2 heavy coats of cement and allow unit to dry thoroughly making certain that horn is vertical. Separate elevators by cutting spar out in center as shown. Scale ribs shown in sketch and full size drawing is 1/16 strip, about 1/32 high. These should only be high enough to create an impression of a rib at those locations. Add to top and bottom. Frame is covered with silkspan to keep rear end of fuselage light. Stabilizer is recessed for nylon horn before installing in final assembly.



Here's a trio of captured Fokker D-7's. Photo courtesy of Canadian Forces



RUDDER ASSEMBLY

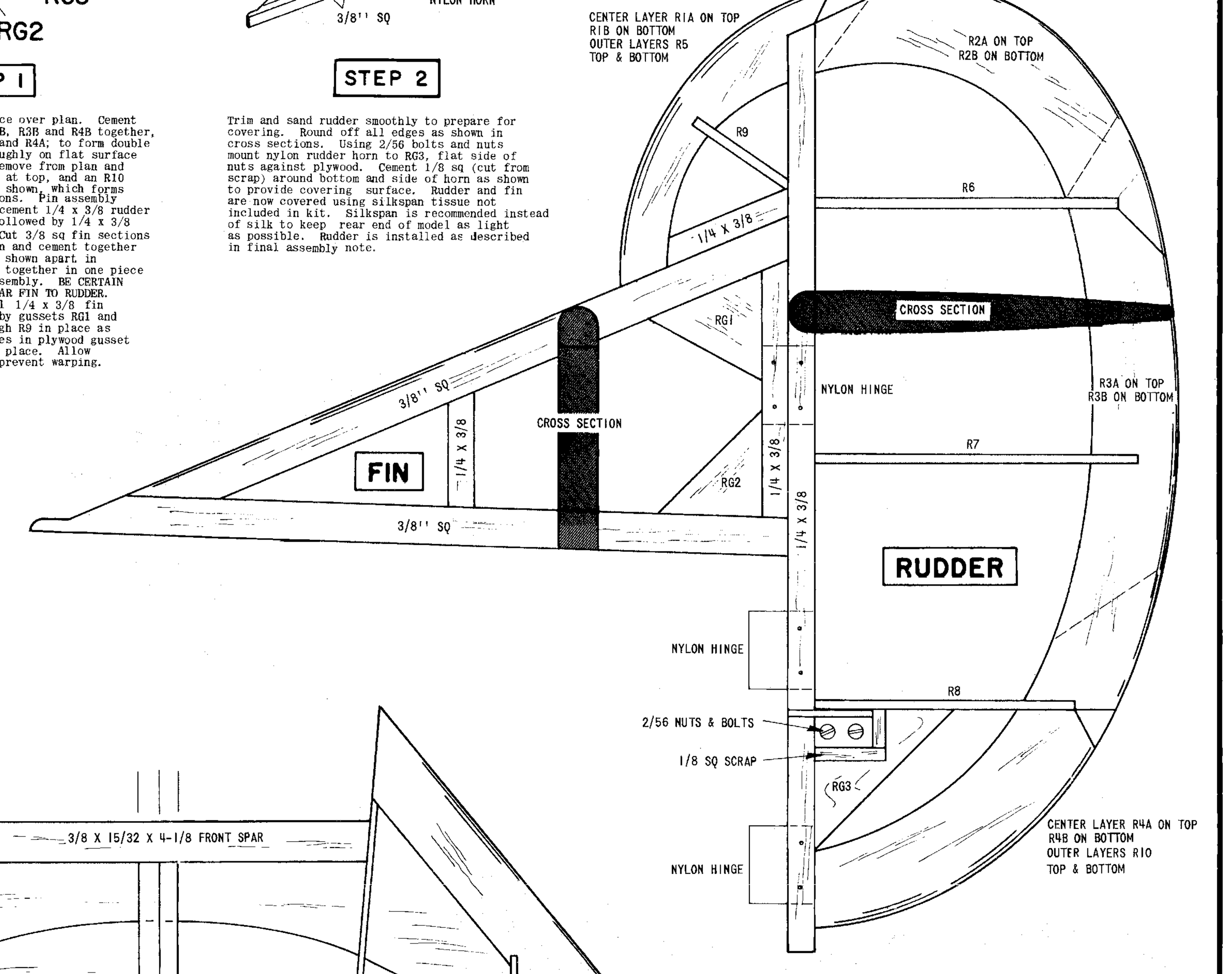


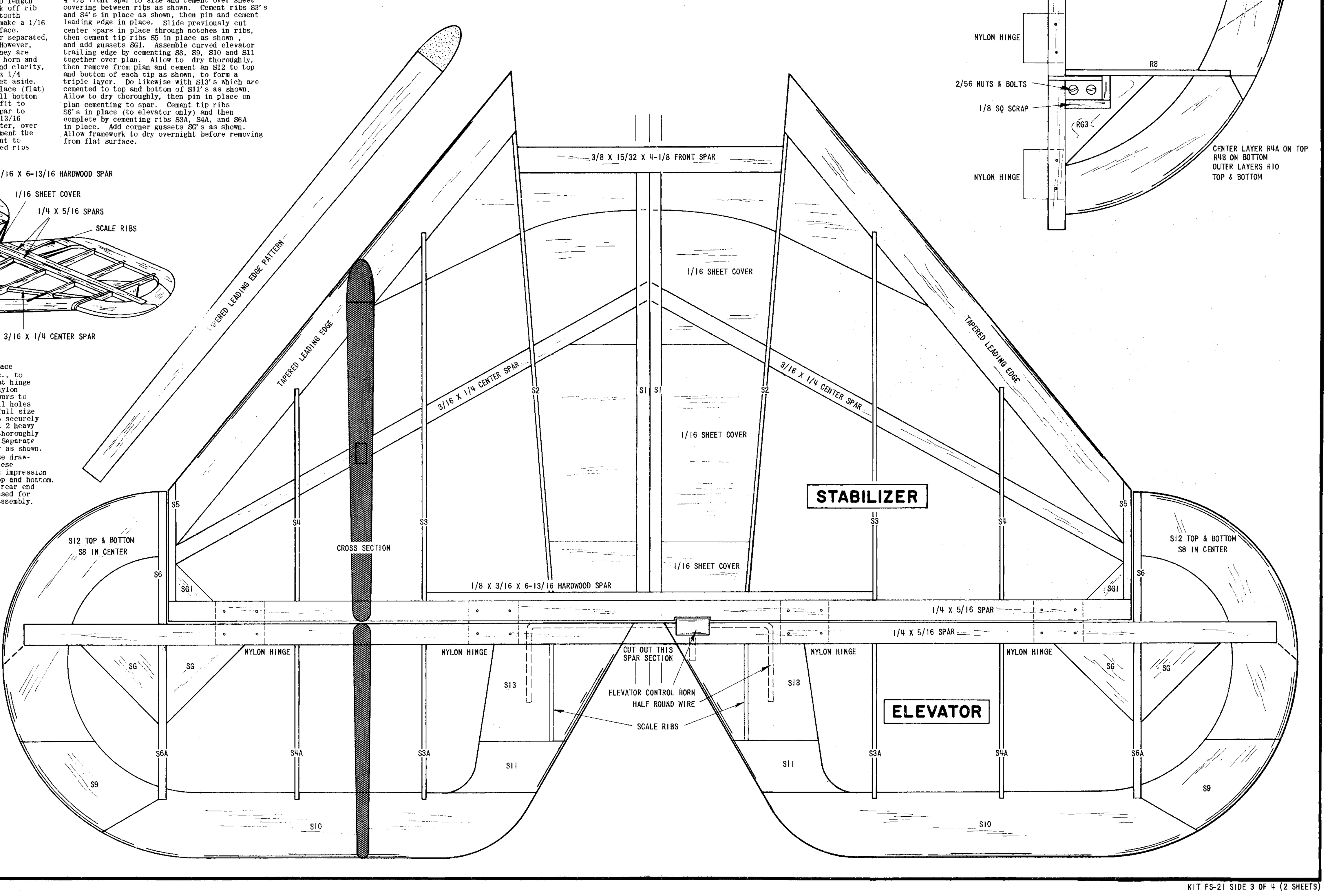
STEP 1

Build rudder on flat surface over plan. Cement bottom layer parts R1B, R2B, R3B and R4B together, followed by R1A, R2A, R3A and R4A; to form double layer. Allow to dry thoroughly on flat surface to prevent warping, then remove from plan and cement an R5 to both sides at top, and an R10 to both sides at bottom as shown, which forms four layers at those sections. Pin assembly back to plan then cut and cement 1/4 x 3/8 rudder post vertically in place followed by 1/4 x 3/8 section opposite rib R6. Cut 3/8 sq fin sections to shape and size, then pin and cement together over plan. Rudder and fin shown apart in sketch, are actually built together in one piece and are separated after assembly. BE CERTAIN NOT TO CEMENT THE TRIANGULAR FIN TO RUDDER. Cut and cement the vertical 1/4 x 3/8 fin members in place followed by gussets RG1 and RG2. Cement ribs R6 through R9 in place as shown, then drill 3/32 holes in plywood gusset RG3 and cement securely in place. Allow frame to dry overnight to prevent warping.

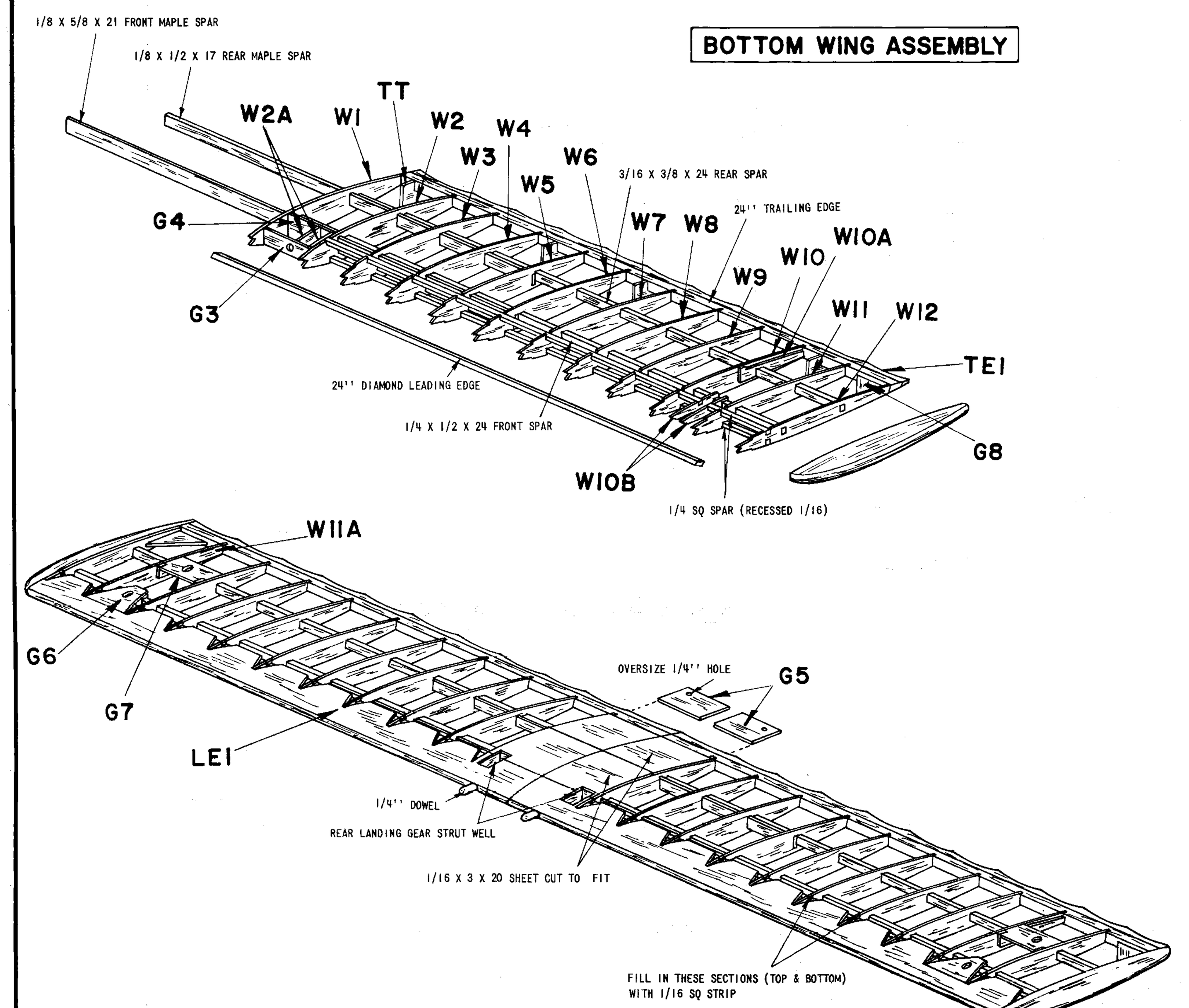
STEP 2

Trim and sand rudder smoothly to prepare for covering. Round off all edges as shown in cross sections. Using 2/56 bolts and nuts mount nylon rudder horn to RG3, flat side of nuts against plywood. Cement 1/8 sq (cut from scrap) around bottom and side of horn as shown to provide covering surface. Rudder and fin are now covered using silkspan tissue not included in kit. Silkspan is recommended instead of silk to keep rear end of model as light as possible. Rudder is installed as described in final assembly note.





BOTTOM WING ASSEMBLY

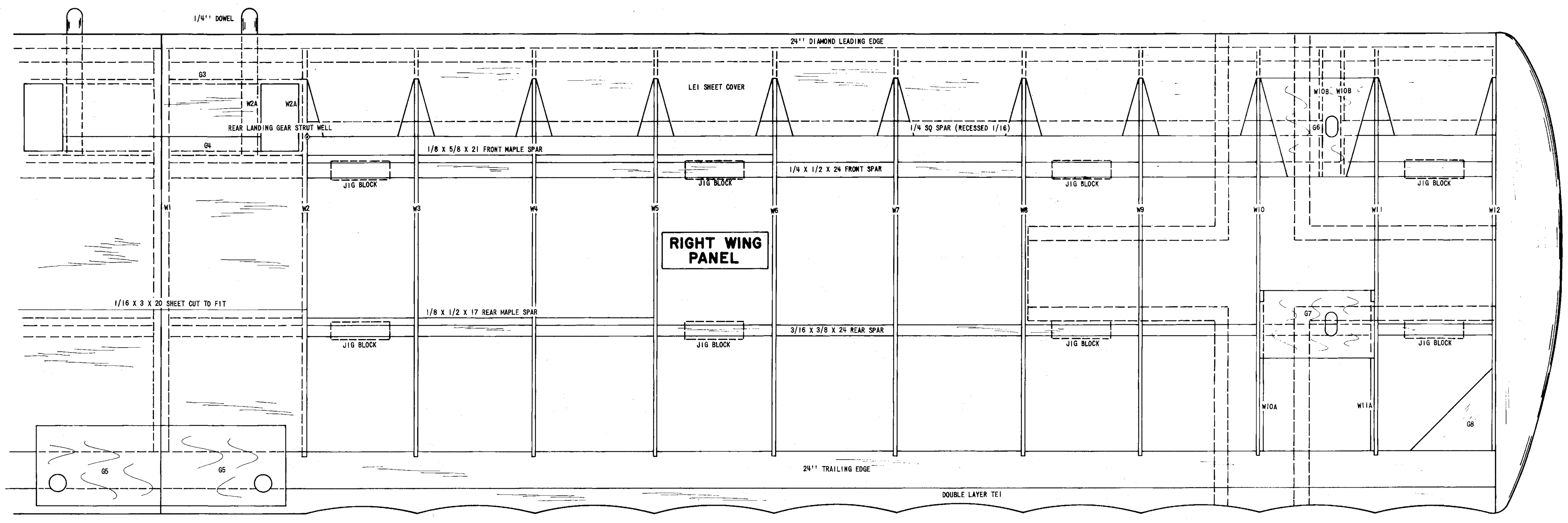


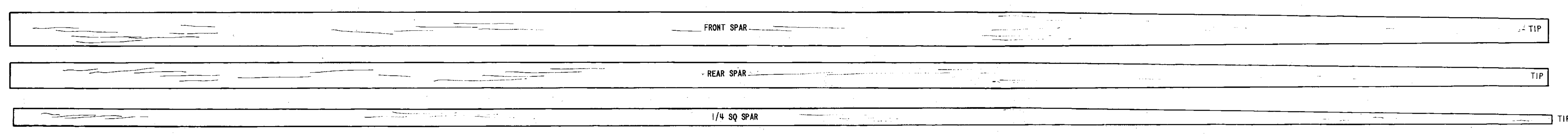
STEP 1

Bottom wing is constructed basically in same manner as top wing. 1/4 x 1/2 x 24 front spar and 3/16 x 3/8 x 24 rear spar are tapered using full size patterns provided. Mark rib locations on spars, then slide ribs in place (without glue) as shown on sketch Assembly is now pinned down on jig blocks, lining frame up over plan. Install trailing edge by installing rear of ribs into notches and supporting it with TT's. Cement the 24'' diamond shaped leading edge to front of ribs. Insert the 1/8 x 5/8 x 21 front maple spar and the 1/8 x 1/2 x 17 rear maple spar into rib notches to the location shown on sketch and full size wing drawing. All joints are now given a liberal coat of cement. Using full size pattern provided, taper 1/4 sq spar then cement into notches across ribs, recessed 1/16 lower than ribs. Cement W10A and W11A to rear of their respective ribs. Front tab is flush, rear forms 1/16 recess as shown. Cement both W10B's in place at location shown on sketch and wing drawing, between ribs W10 and W11. Cement G8 into rear corner, then cement wing tip in place. Drill 1/4'' holes through punch marks in G3 and G4. G4 is cemented between ribs W1 and W2, against maple spar. Front (3/16) wire landing gear strut is the only one secured to the fuselage. Rear struts travel through wells built into lower wing to provide shock absorbing gear which in effect is single strut. Cement a W2A against inside of W2 and front of G4 as shown, then cement the second W2A between ribs at location shown on sketch and full size drawing. G3 is now securely cemented to front of W2A's between ribs. Allow frame to dry overnight to prevent warping. Cement 2 TE1's together to form double layer, then cement it to rear of trailing edge. Cement 1/4 sq tapered spar into notches in bottom of ribs, recessed 1/16. Build opposite wing panel in same manner, left-hand panel shown in sketch.

STEP 2

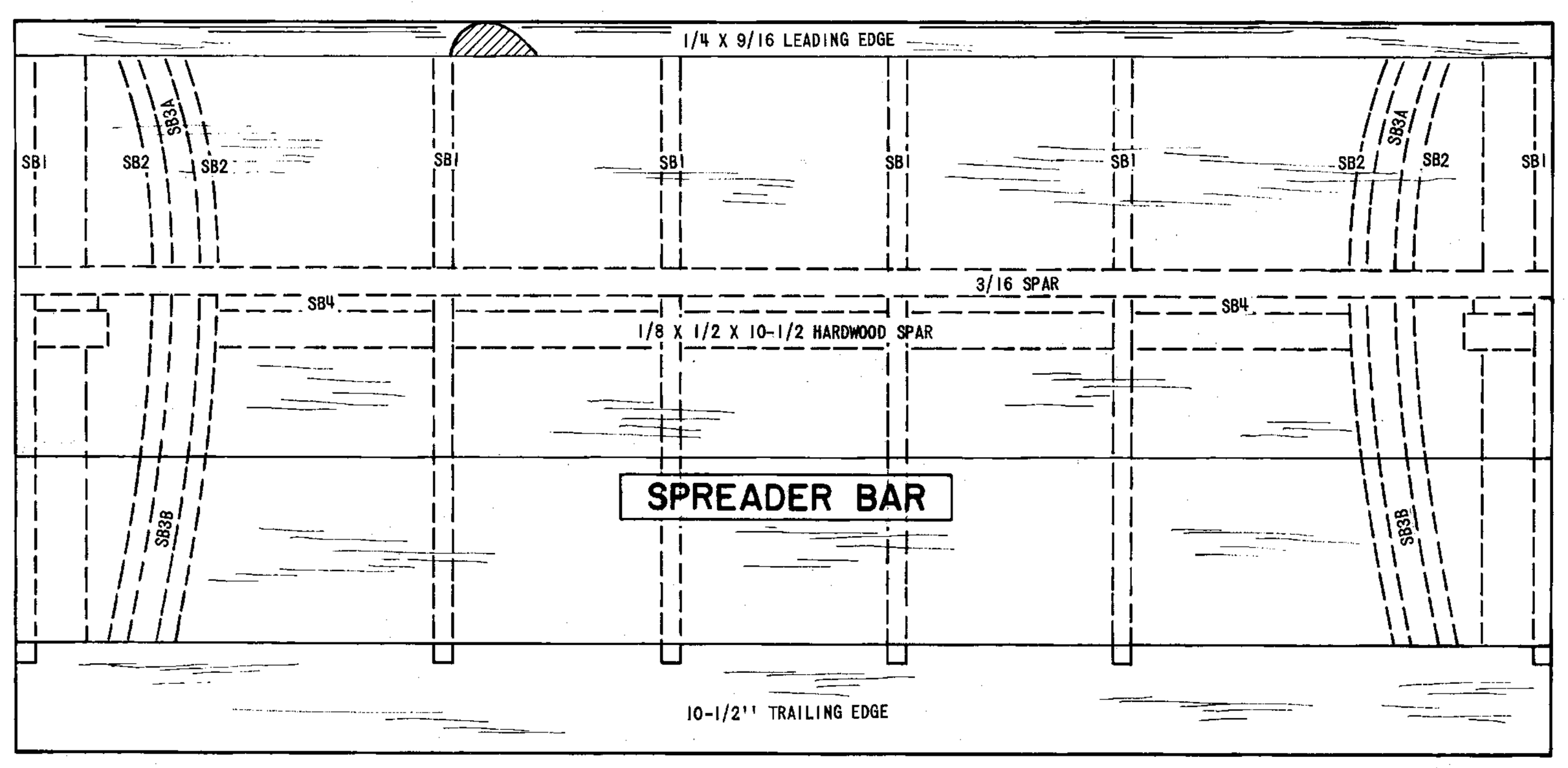
Cement G6 and G7 to both panels as shown, then join the two wing panels together in same manner as top wing. Die cut leading edge covering sections LE1 are now cemented to top and bottom of both panels as shown. Top panel is trimmed out to fit around G6. Fill in open rib sections above 1/4'' recessed spars (on top and bottom) with 1/16 strip wood in same manner as top wing. Cover top of center section as shown, using 1/16 x 3 x 20 sheet. When dry, cut out Strut wells between W2A's, G3 and G4's as shown in sketch and wing drawing. Make 1/4'' cutout in leading edge for both 1/4'' dowels at location shown on sketch and wing drawing. Cut two 2-1/2'' lengths of dowel, round one end and then insert opposite end through leading edge cutout and holes in G3 and G4 seating against maple spar. Cement securely in place from bottom, then cover bottom of center section and cut out strut wells in same manner as top. Sand entire frame smooth, then cement both G5's in place. When dry, drill oversize 1/4'' holes at punch marks completely through G5's and trailing edge so that nylon screws pass through easily. If model is being built as control line and weight is to be used, cement 2 oz. securely to right wing tip. Wing is now covered.

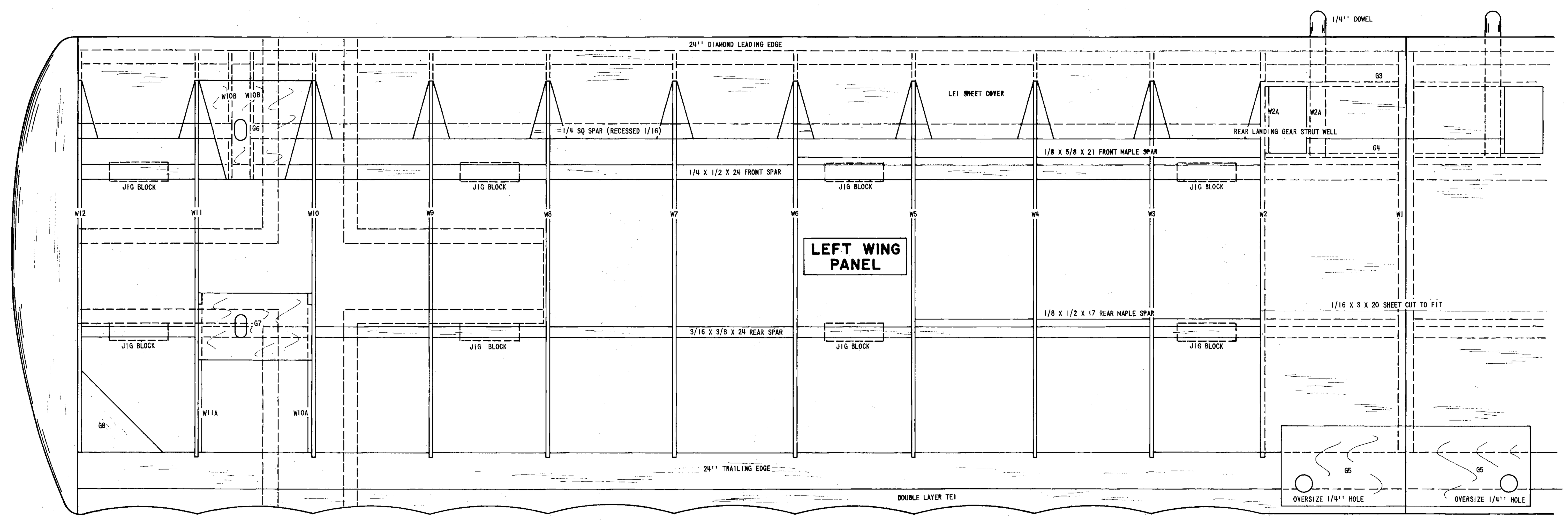




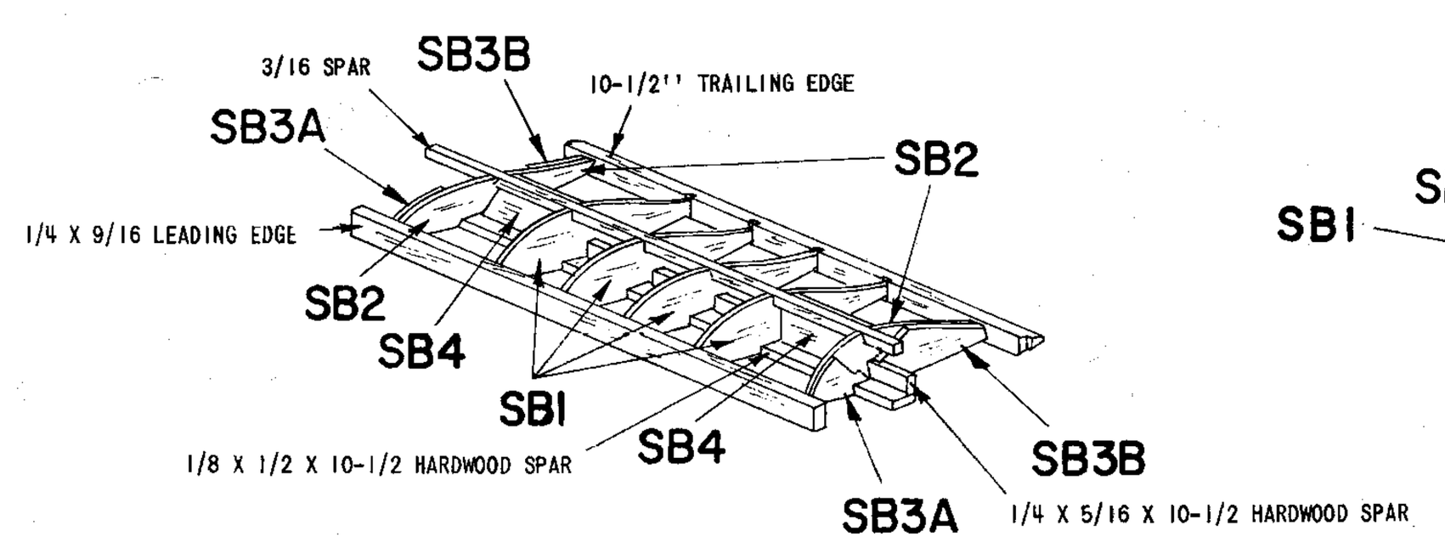
TAPERED WING SPARS

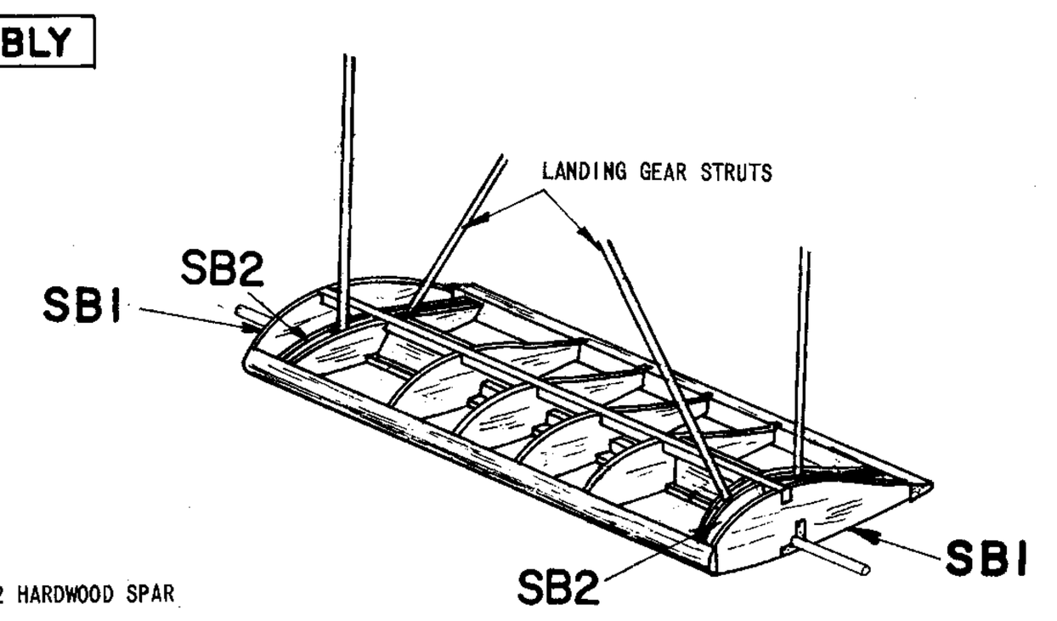
Spars above are for bottom wing only. All spar layouts are full size. Note that spars are tapered at tips only. All spars should be prepared before starting wing construction.

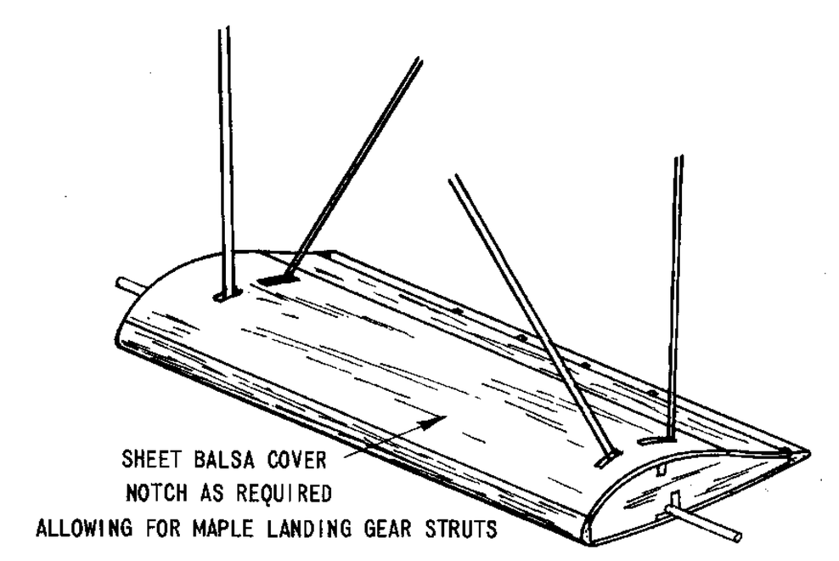




SPREADER BAR ASSEMBLY







STEP 1

Place 1/8 x 1/2 x 10-1/2 hardwood spar on full size drawing, then cement 1/4 x 5/16 x 10-1/2 hardwood spar vertically to top of it, flush with rear, to form L section as shown in sketch. Cement the four CENTER (only) SB1 ribs in place, then cement SB4's to top of 1/8 x 1/2 spar, against front of 1/4 x 5/16 spar, sq side against rib as shown. Do likewise on opposite side. Rib SB2 is cemented against angled side of SB4 so that it assumes proper angle for landing gear.

Spacers SB3A are then cemented to front of SB2's and spacers SB3B are cemented to rear of SB2's as shown. 1/4 x 9/16 strip for leading edge is pinned and cemented in place centered to front of ribs. Trailing Edge is cemented in place centered on rear of ribs which are inserted into notches. Cut 3/16 spar to length and cement into notches on top of ribs. Allow assembly to dry thoroughly before removing from plan.

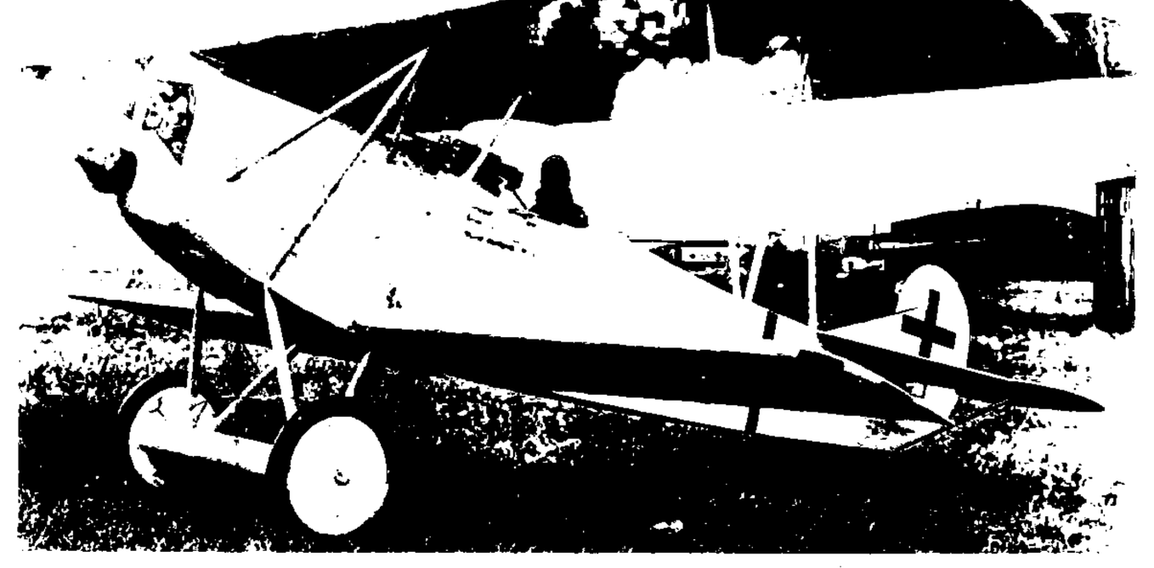
STEP 2

Spreader bar frame is now installed on landing gear by slipping frame between wire struts so that bottom of struts fit into pocket formed between SB3A and SB3B. Spread cement generously and complete sandwiching of landing gear by cementing outer SB2's in place. Horizontal portion of gear within spreader bar frame, is heavily cemented and wrapped to hardwood spars. Outer SB1's are now cemented in place and entire unit is allowed to dry thoroughly before proceeding.

STEP 3

Bevel top of SB2's and SB3's to match SB1's, then cover top and bottom of spreader bar between leading edge and trailing edge with 1/16 x 3 x 22 and 1/16 x 2 x 22 sheet as shown. When dry, sand spreader bar smooth shaping leading edge to proper cross section.

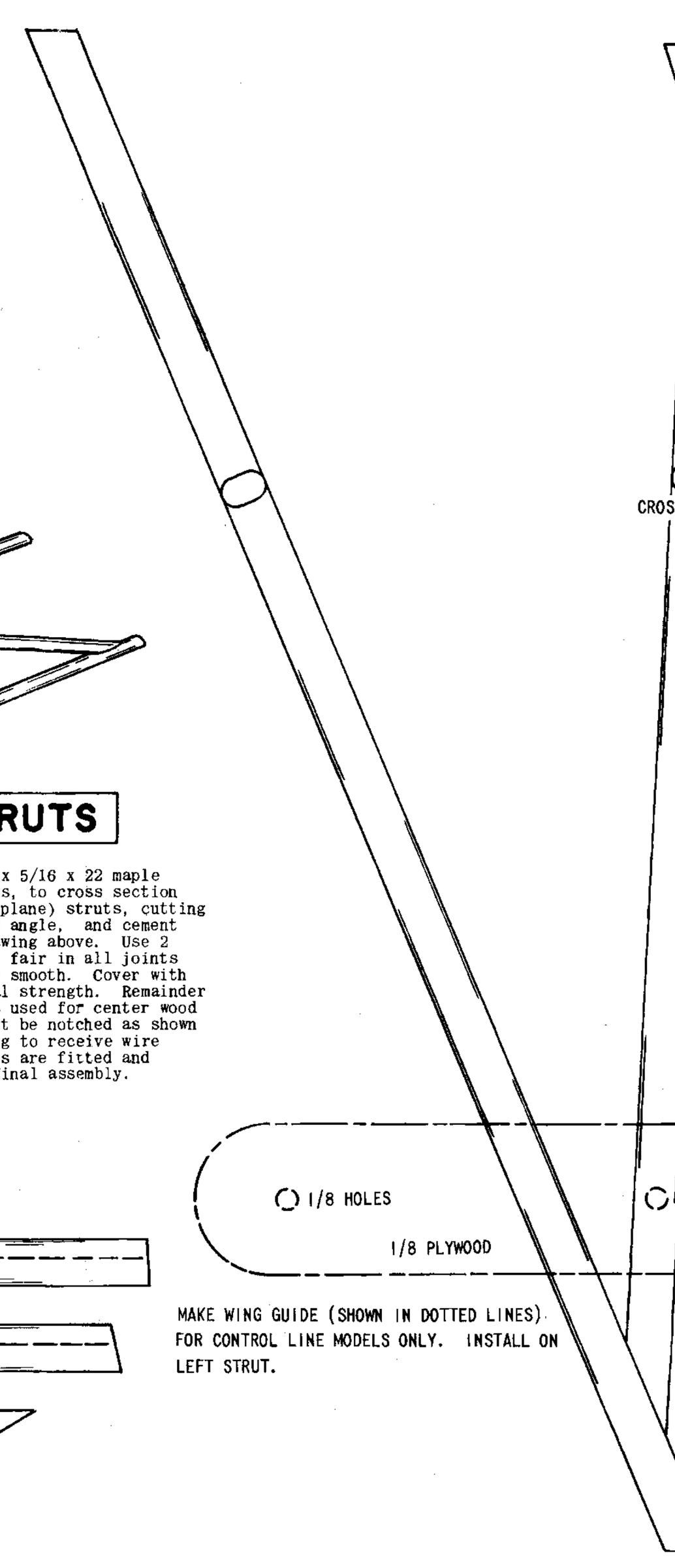
Beautiful shot of Fokker D-7 at Trier, Germany in 1919. Photo courtesy of Smithsonian Institute



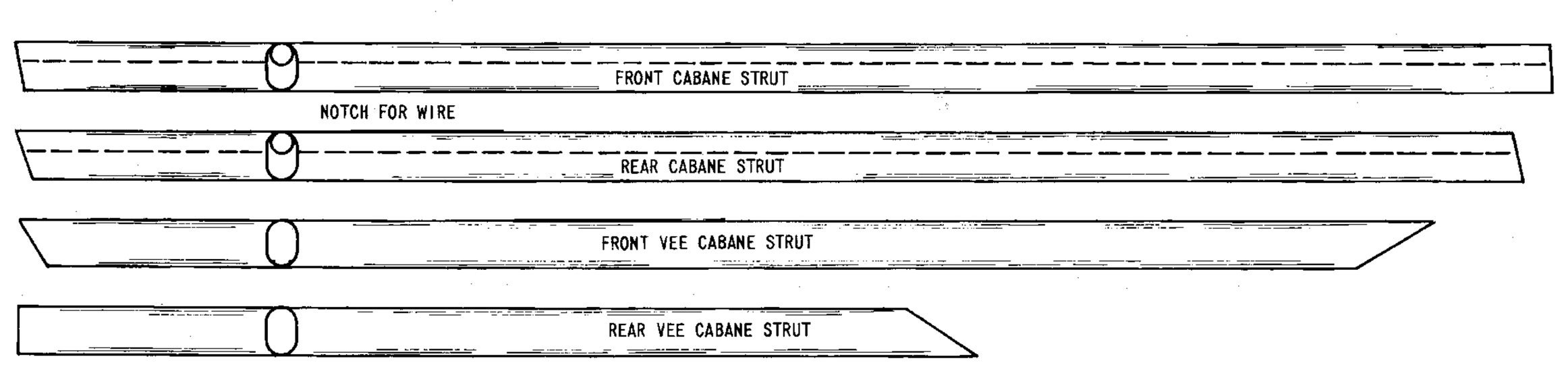
Herman Goering's white Fokker D-7, isn't she a beauty. Photo courtesy of Smithsonian Institute

WING STRUTS

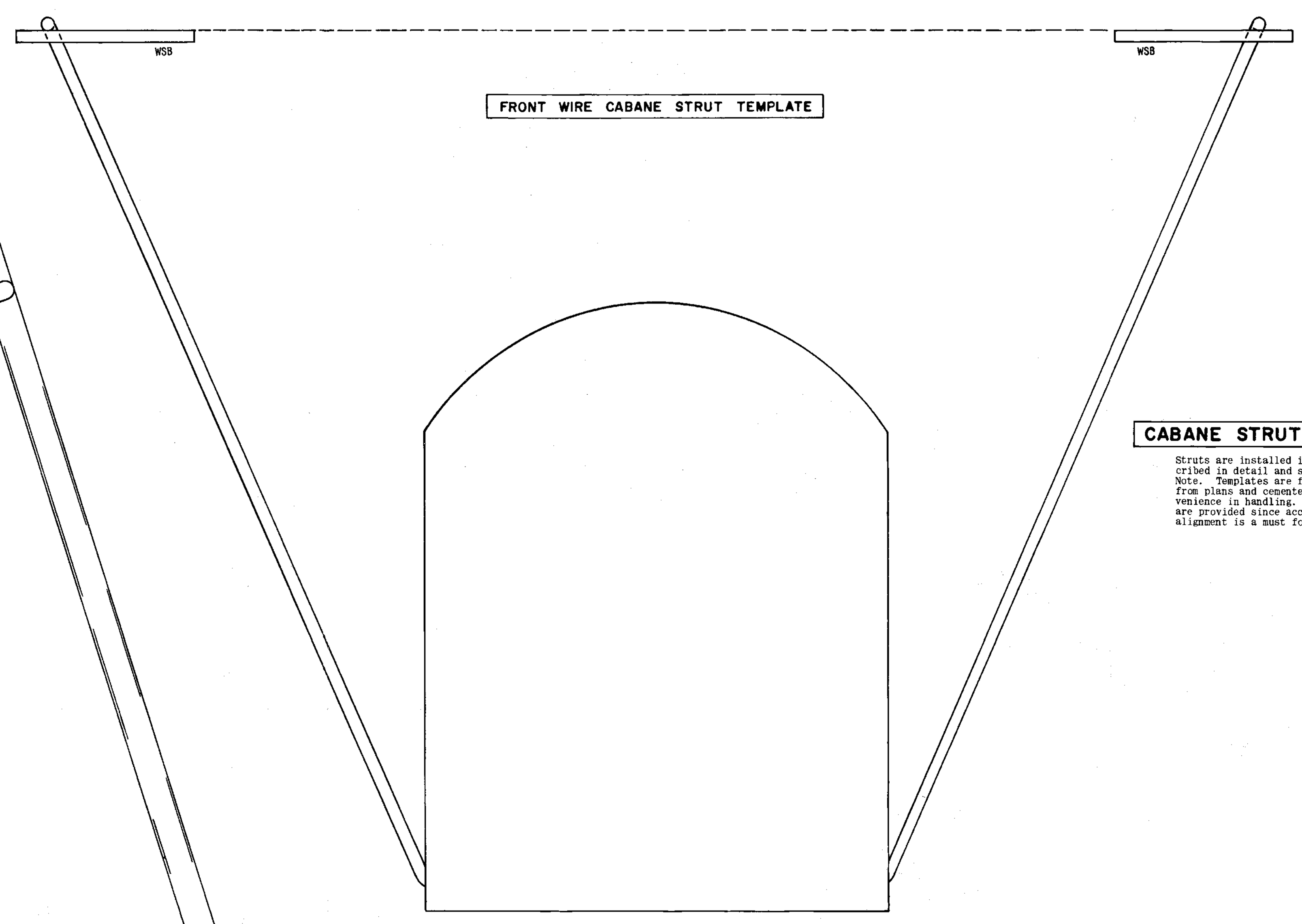
Shape all 7 pieces of 3/16 x 5/16 x 22 maple provided for all wing struts, to cross section shown. Make 2 ''N'' (interplane) struts, cutting strips to proper length and angle, and cement together over full size drawing above. Use 2 heavy coats of cement, then fair in all joints with plastic balsa and sand smooth. Cover with silk or nylon for additional strength. Remainder of shaped strut material is used for center wood cabane struts and front must be notched as shown in section of layout drawing to receive wire center cabane strut. Struts are fitted and installed as described in final assembly.



MAKE WING GUIDE (SHOWN IN DOTTED LINES) FOR CONTROL LINE MODELS ONLY. INSTALL ON LEFT STRUT.

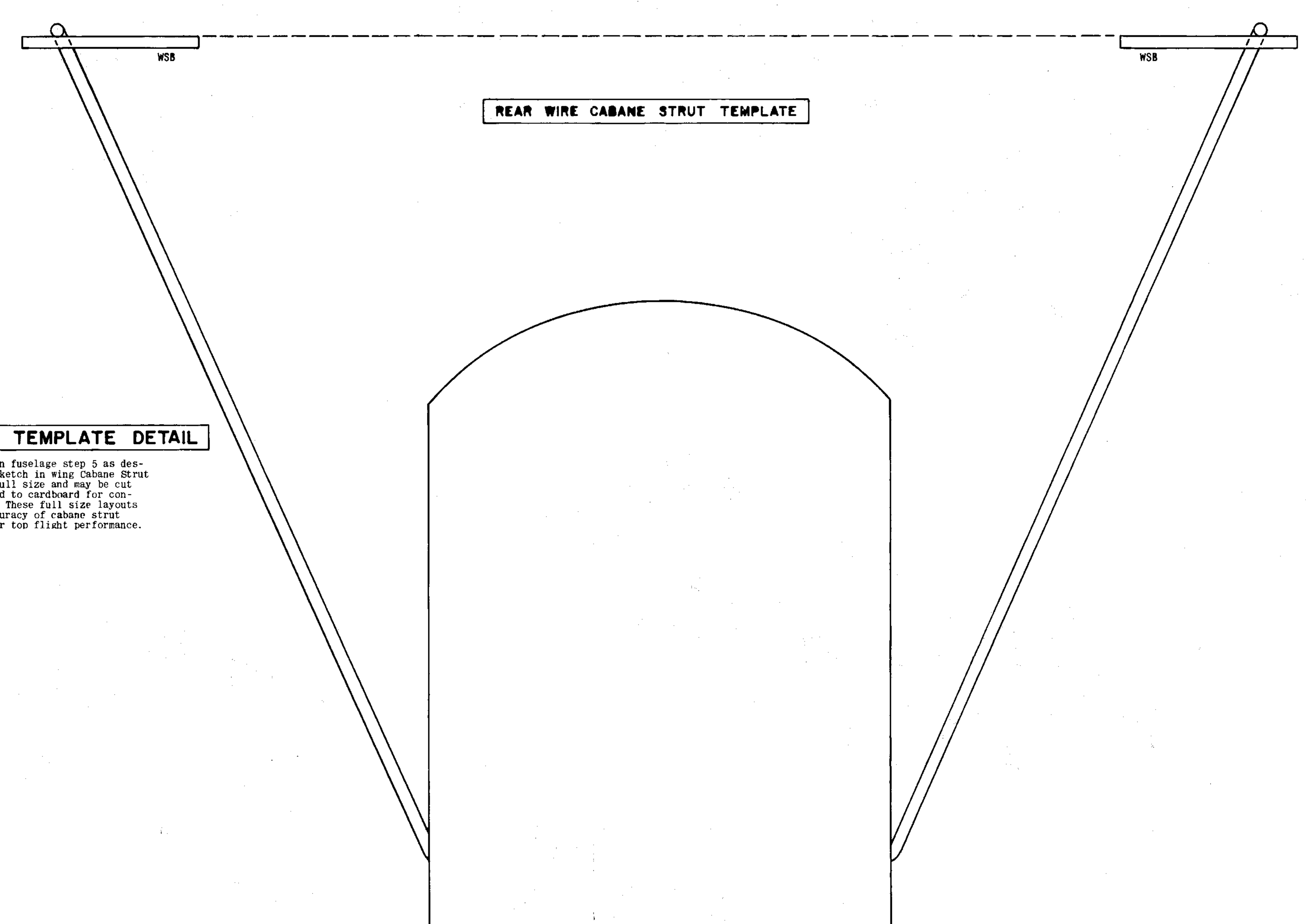


CENTER WOOD CABANE STRUTS



CABANE STRUT TEMPLATE DETAIL

Struts are installed in fuselage step 5 as described in detail and sketch in wing Cabane Strut Note. Templates are full size and may be cut from plans and cemented to cardboard for convenience in handling. These full size layouts are provided since accuracy of cabane strut alignment is a must for top flight performance.



FOKKER D-7

Kit FS-21, Scale: 2" = 1 ft. Engine Size: .45 to .65 Wing Area: Approx. 950 sq. in.