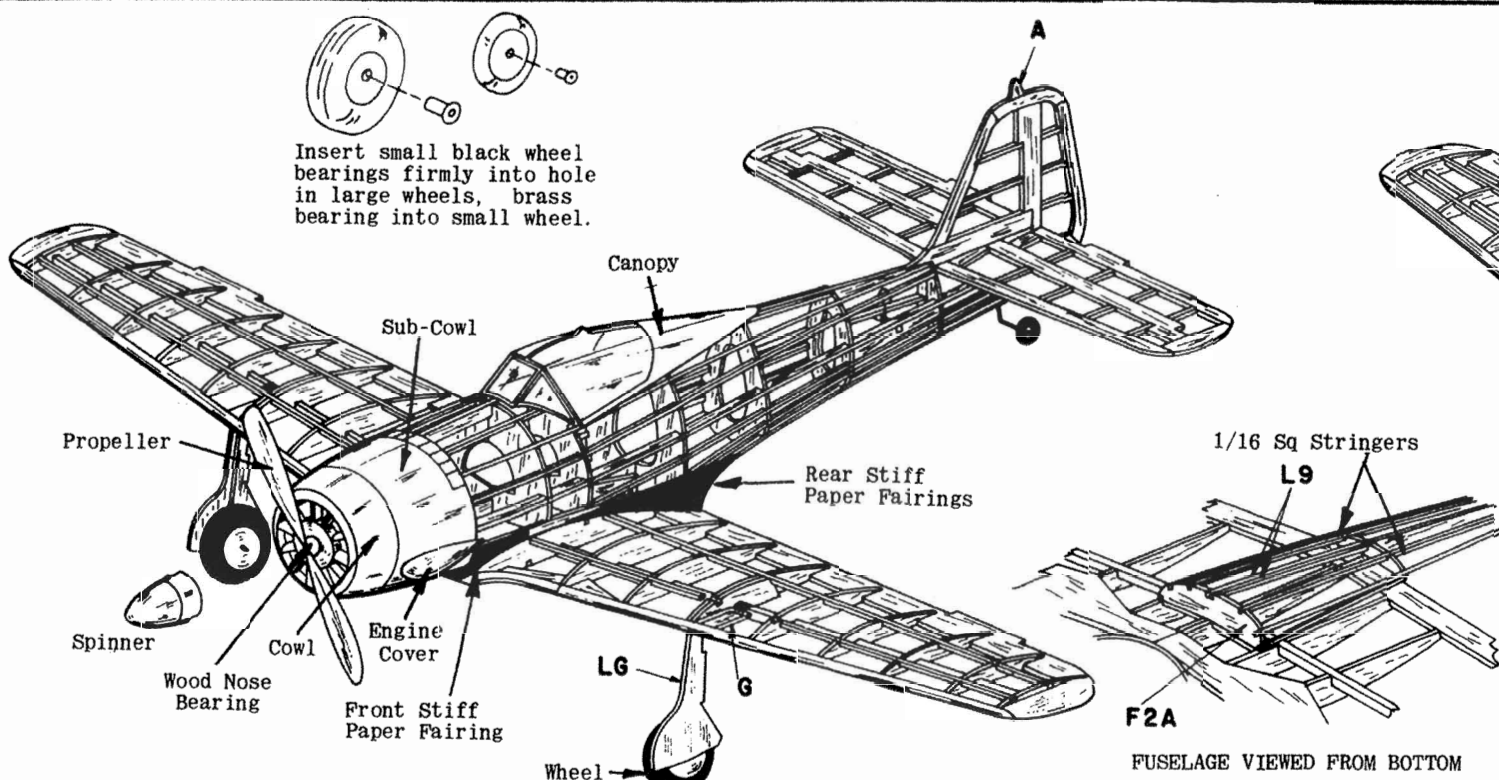
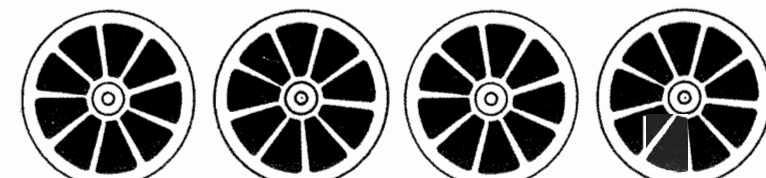




FINAL ASSEMBLY

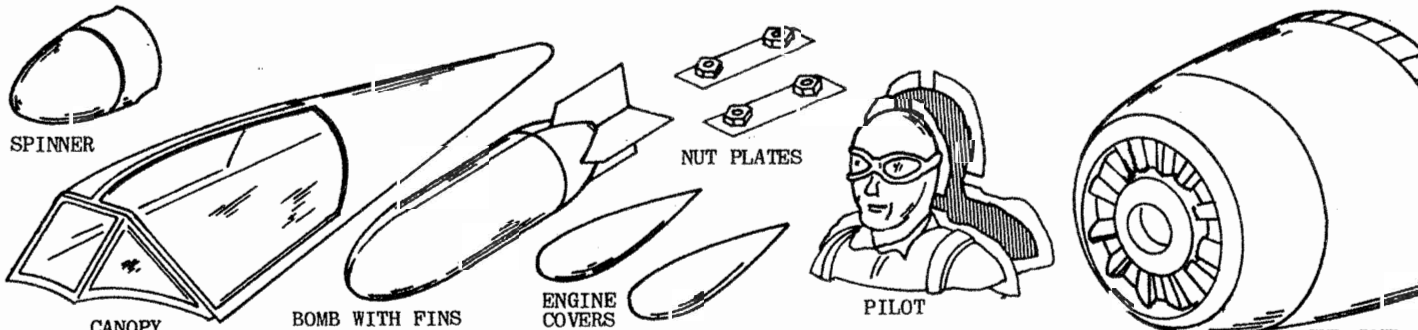
On R/C models, wing is removable as described in R/C Note. For other models, cement wing securely in fuselage between bulkheads F1 & F4, lining up ribs W2's under side keels L6. Press wing tightly against L6's to insure proper incidence, otherwise model may not fly! Hold in place with pins until dry. Cement lower bulkhead F2A to bottom of wing at location shown on side view. Cement two L9's together to form double thickness and cement into center notch in F2A and F4. Install 1/16 sq stringers in notches as shown. It is necessary to have access to rear hook to replace rubber motor. Cut out stringer immediately above side keel L5 on right side, between F6 and F7. Fit a piece of 1/16 Balsa into space. Cement cloth tape to top (half over door and half over fuselage) to act as hinge. Cement a strip of 1/16 sq Balsa to top of side keel L5 which will act as stop to keep the door flush with surface. Hold bottom with Scotch Tape. Cement stabilizer horizontally against rear of F7. Cement rudder vertically to top of stabilizer and L2, against rear of fuselage. Cement A (antenna) to top of rudder. Using patterns provided, cut out rear wing fairings from stiff paper. Cement between wing and fuselage as shown in side view. Three views; side point at trailing edge. Small pieces fit below large fairing and against trailing edge. Hold in place with pins until dry. Cut out front fairings and cement in place. On rubber powered models with bomb drop, cover bottom left side of fuselage from F4 to F5 between L4 and stringer with stiff paper. Assemble and trim all plastic parts, see detail note. Cement sub-cowl to F1. Cement cowl to sub-cowl.

Use cement sparingly or it may deform the plastic. Cement wheel covers LG to outside of wire landing gear struts as shown on sketch and side view. Model is now painted. If it is to be painted scale colors, see 3-view drawings or box top. For best flight performance, use a minimum of color dope. Apply decals by dipping in water and sliding off into position shown. Cut instrument panel from plan and cement to rear of F3 in cockpit. Cement all plastic parts in place as described in detail note. Paint pilot and cement in cockpit in position shown on side view. Make canopy antenna base from scrap Balsa. Paint and cement to top of canopy. Outlines of scale control surfaces can be drawn on with India Ink. Insert the bearings into wheels and place wheels on axles. Secure by bending up end of axles, or with drop of cement or solder. Insert straight end of propeller shaft thru rear of nose bearing. Slip on two washers provided, and insert shaft thru back of propeller. Bend front of shaft to U shape as shown on side view and cement securely to propeller. Tie ends of rubber securely with square knot, wet with water first to prevent fraying. Double up to make two loops. Insert rubber thru trap door and engage on rear hook. Slip remainder of rubber into fuselage & shake down towards nose. Make hook on end of a piece of wire. Slip wire thru nose bearing hole in cowl and capture rubber on hook. Pull thru cowl and attach rubber on prop shaft. Nose bearing fits into center hole in cowl. Your Focke-Wulf 190 is now complete. See Flight instructions before flying. GOOD LUCK AND HAPPY LANDINGS!!!



WHEEL COVERS

Cut wheel covers from plan and cement one to both sides of each wheel. The use of Contact Cement is recommended, although model cement will do. Install wheels as described in Final Assembly.

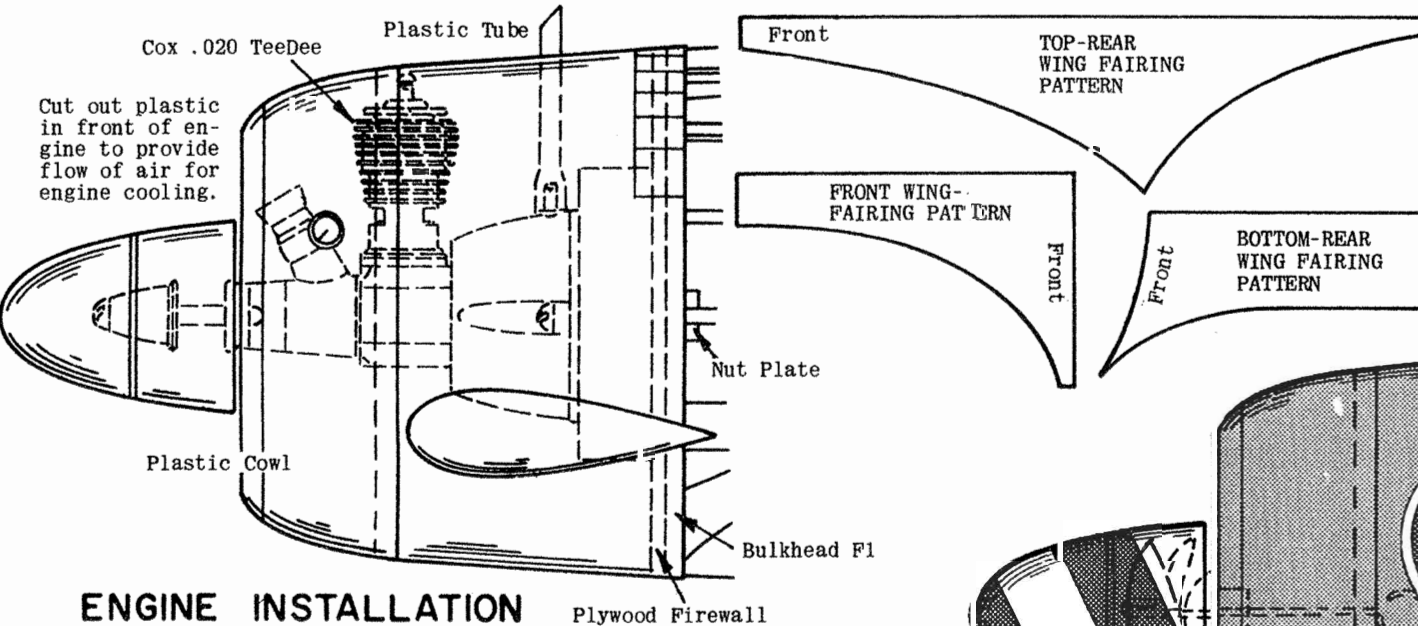


PLASTIC PARTS

For best results, follow instructions carefully. SPINNER: Cut from plastic sheet leaving 1/16 excess material for trim. Plastic trims easily. Sand and trim off excess material carefully. Cut out for propeller at scribe lines, then cement spinner to propeller AFTER PROPELLER IS IN PLACE. SUB-COWL: Cut from sheet, leaving about 1/16 of material for trim. Slip sub-cowl over bulkhead F1, for support while trimming excess material away. Cement in place on F1 with center line of the II scribe lines centered on L1. Use cement VERY SPARINGLY. Excessive use of cement will melt and distort plastic. COWL: Cut from sheet leaving 1/16 excess for trim. Rear of cowl fits into slot in sub-cowl. Trim to fit. PLASTIC ENGINE COVERS: Cut from sheet, trim, then cement to sides of sub-cowl as shown on side view. PILOT: Cut both halves from sheet, leaving about 1/8 excess material. Carefully cut out slots about 1/8 wide on top, sides & bottom, right to the edge of the pilot half as shown. This will permit accurate assembly. Cement halves together, lining up carefully at slots. Use cement VERY SPARINGLY, since excessive use may distort or melt plastic. After assembly is thoroughly dry, trim and sand off smooth. BOMB: Cut both halves from sheet and assemble with

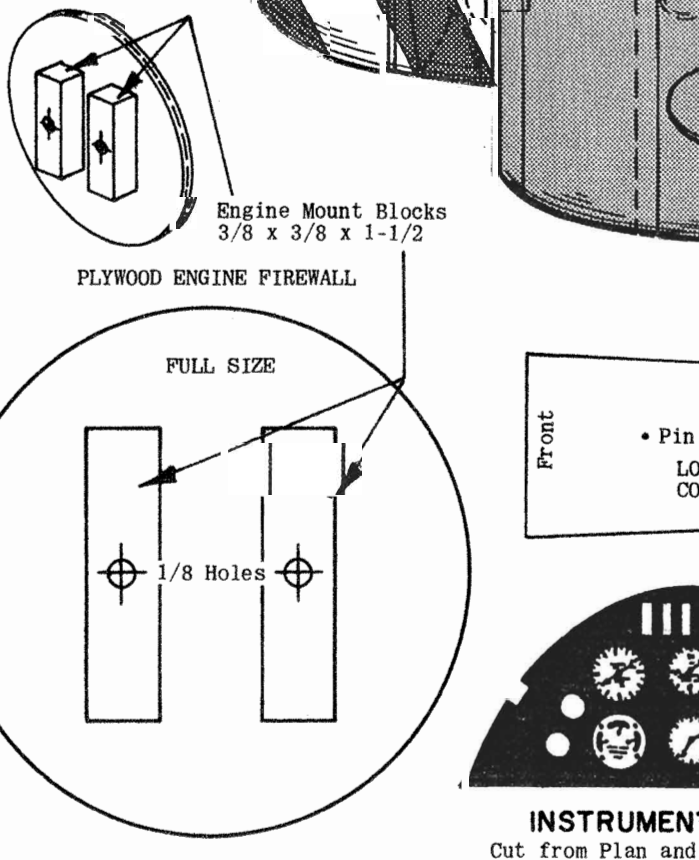
DETAIL

slots in same manner as pilot. When dry, trim and sand smooth. Cut the 4 bomb fins scribed on plastic sheet. Cement the fins to end of bomb at right angles. Make "U" shaped wire guide as described in bomb release note. Install at location shown in bomb sketch #2. Make pin holes, then insert and cement guide in place. NUT PLATES: Cut from sheet on trim lines and install as described in Engine Installation. CANOPY: Trim edges and fit in place on fuselage. Paint raised portions (frame) of canopy same color as fuselage. AFTER READING PAINT INSTRUCTIONS AT END OF THIS NOTE! PAINTING: Use regular plastic model paint or enamel. Model airplane dope can be used if necessary but only if applied in LIGHT SPRAY COATS, allowing paint to dry thoroughly between coats. Excessive use of dope may deform plastic. Parts may be used red, or if painting a lighter color, apply a light coat of silver, followed by a light coat of white before painting final color. Darker colors may be applied directly to red plastic. Remember when using cement on plastic, use light coats applied sparingly. If necessary, use more than one coat, but DO NOT APPLY A THICK COAT AT ANY TIME.



ENGINE INSTALLATION

Engine is used, if model is being built for control line or free flight flying. Engine and installation material is not provided in kit. Drawing shows the installation of Cox .020 Tee Dee engine. Front half of entire fuselage should be covered with 1/32 or 1/16 sheet Balsa. Obtain a piece of 1/16 plywood and cut out engine fire wall, using full size drawing. Cut two engine mount blocks 3/8 x 3/8 x 1-1/2 from hardwood. Cement securely to plywood firewall in position shown. When dry, drill 1/8" holes thru blocks & fire wall as shown. Mount engine to fire wall with #2 nuts and bolts, tightening nuts securely. Cut plastic nut plates from molded sheet and cement to back of fire wall, over nuts. Drill hole so that bolts can protrude. Use cement generously. Nut plate keeps nuts from turning so that engine can be removed by just unscrewing bolts. When dry, remove engine. Securely cement fire wall to front of F1. Cut molded engine cowl from plastic sheet as described in detail note & fit over F1. Trim out where necessary at the top front of the cowl for cooling. Make needle valve extension by forcing a length of 1/8 I.D. plastic fuel tubing over head of needle valve, then forcing a length of 1/8 dowel into end of tubing. Dowel should protrude about 1/2" past cowl. Cut 1/16 I.D. plastic tubing for filler and overflow, and force tubing over tubes in fuel tank. Tubing should extend about 1/4" past fuselage, and top should be cut at angle facing forward for easy admission of air stream. After motor and cowl have been painted, install engine, then cement cowl in place. If it becomes necessary to remove engine for any reason, cowl glue-joint is broken carefully and then replaced in same manner. Cowl can also be made removable by cementing small blocks to plywood fire wall which receives tiny wood screws thru cowl.

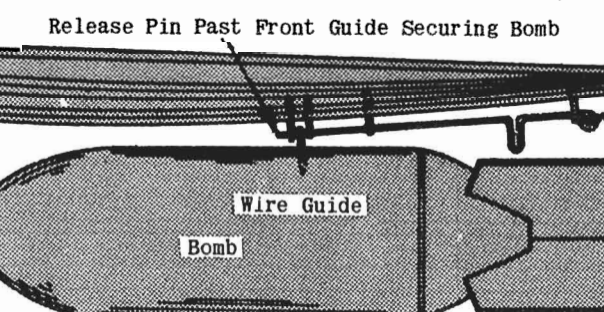


INSTRUMENT PANEL

Cut from Plan and Cement to F3.

BOMB RELEASE OPERATION

Bomb dropping is operational in flight, on rubber powered models only. Installation is simple and action is positive, if directions are followed carefully. Make hole and cement eyelet in center of bulkhead F5, directly over keel. Bend 5 "U" shaped guides from straight pins using pattern provided. Make bomb release pin from 1/32 wire, using full size pattern. Cement four of the guides in place to L9's, see Bomb Release Detail Sketch #1. Assemble bomb as described in Plastic Parts Detail and cement guide in place to bomb as shown. Insert a length of thread thru eyelet and tie securely to rear hook in position shown in Sketch #1; hook in vertical position as shown on side view. Coat knot with cement. Insert thread thru hole in stiff paper lower fuselage cover. Insert bomb release pin thru guides & securely

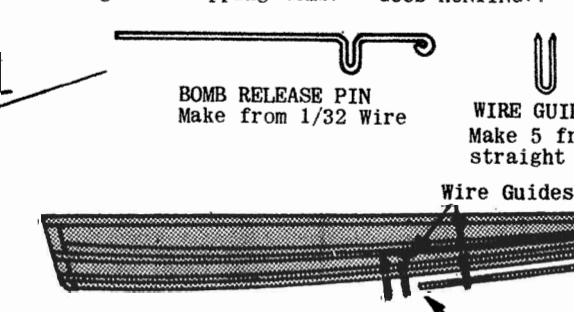


BOMB SKETCH-2

BOMB RELEASE INSTALLATION

Prepare installation by bending 5 wire guides from pins, and bomb release pin from 1/32 wire, using full size patterns above. Cement four guides in exact position shown on Sketch #1, centering over joint between L9's. All guides must be the same level, about 1/8" below bottom of L9's as shown. Sketch #1 shows front of bomb release pin at second guide when motor is unwound and rear hook is in vertical position, and thread snug. Sketch #2 shows position of

tie thread to hook. Front of release pin is in line with second guide as shown, when thread is snug as shown in Bomb Sketch #1. Coat knot on release pin with cement. This completes mechanism. To operate, wind rubber motor. This will pull rear hook forward from a vertical to a horizontal position, loosening thread. This now permits release pin to go forward past front guide to position shown in Sketch #2. Hold bomb in place between first two guides and insert pin past front guide, engaging bomb at same time. Push pin forward until line is snug. Bomb is now loaded. Model is now released & towards the end of the flight, when motor unwinds, rear hook pulls back into a vertical position, tightening line. This pulls release pin past second guide, releasing and dropping bomb. GOOD HUNTING!!



BOMB SKETCH-1

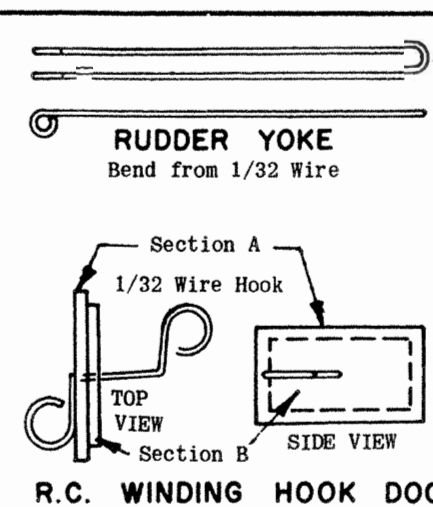
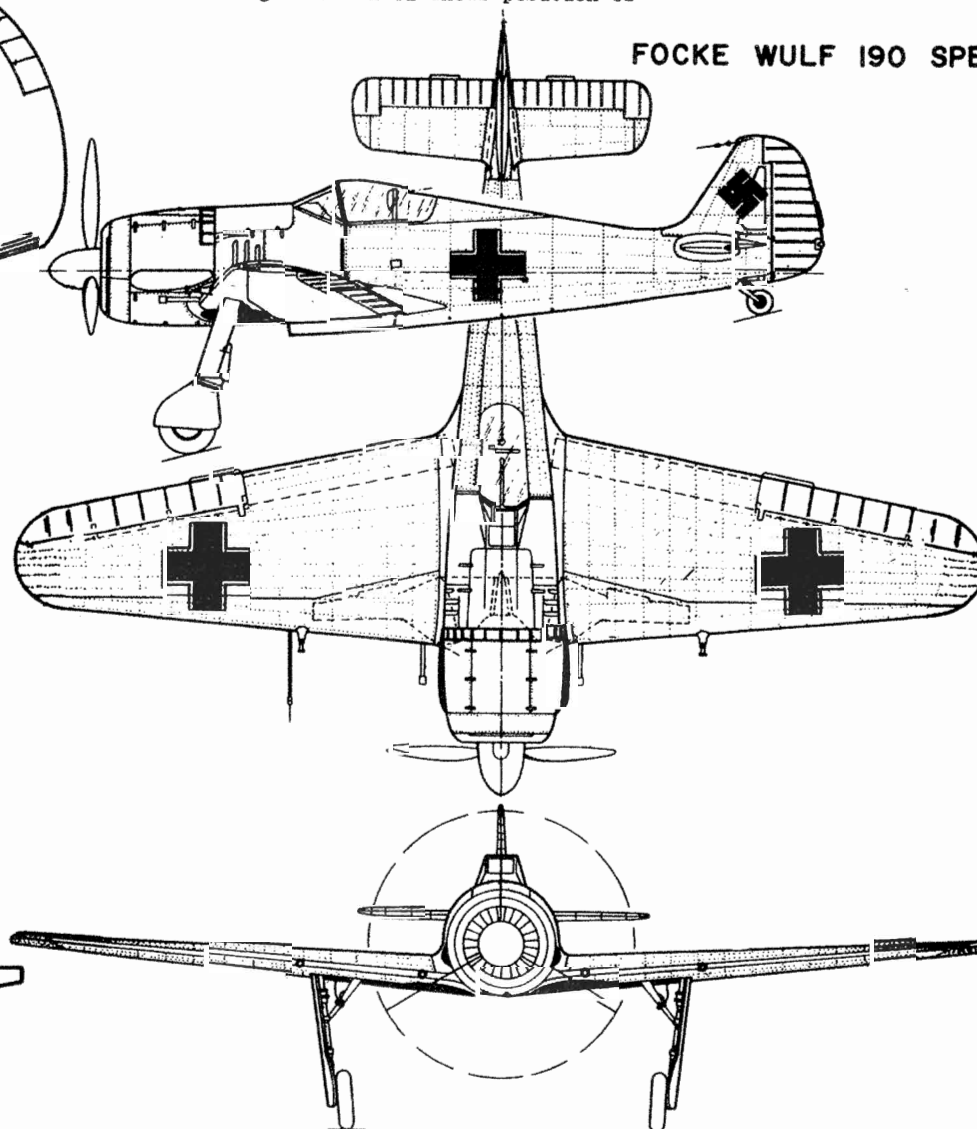
bomb release pin when motor is wound, and rear hook is in horizontal position. Thread is now loose, permitting front of release pin to be inserted thru guide on bomb and front guide, securing bomb in place. Sketch #2 is also used for location of guide in bomb, as described in Plastic Parts Detail. When motor unwinds, hook pulls back to vertical position, pulling release pin out of front two guides, releasing bomb.

FOCKE WULF 190 SPECIFICATIONS AND COLOR SCHEME

COLOR SCHEME: Painting on box lid is authentic. Top of fuselage, wing and stab were irregular camouflaged areas of alternate light and dark green. Sides of fuselage and rudder were sand color with mottled medium green patches. Bottom was a light sky blue. Individual markings and decorations varied with the squadron and pilot. Decals in kit are authentic.

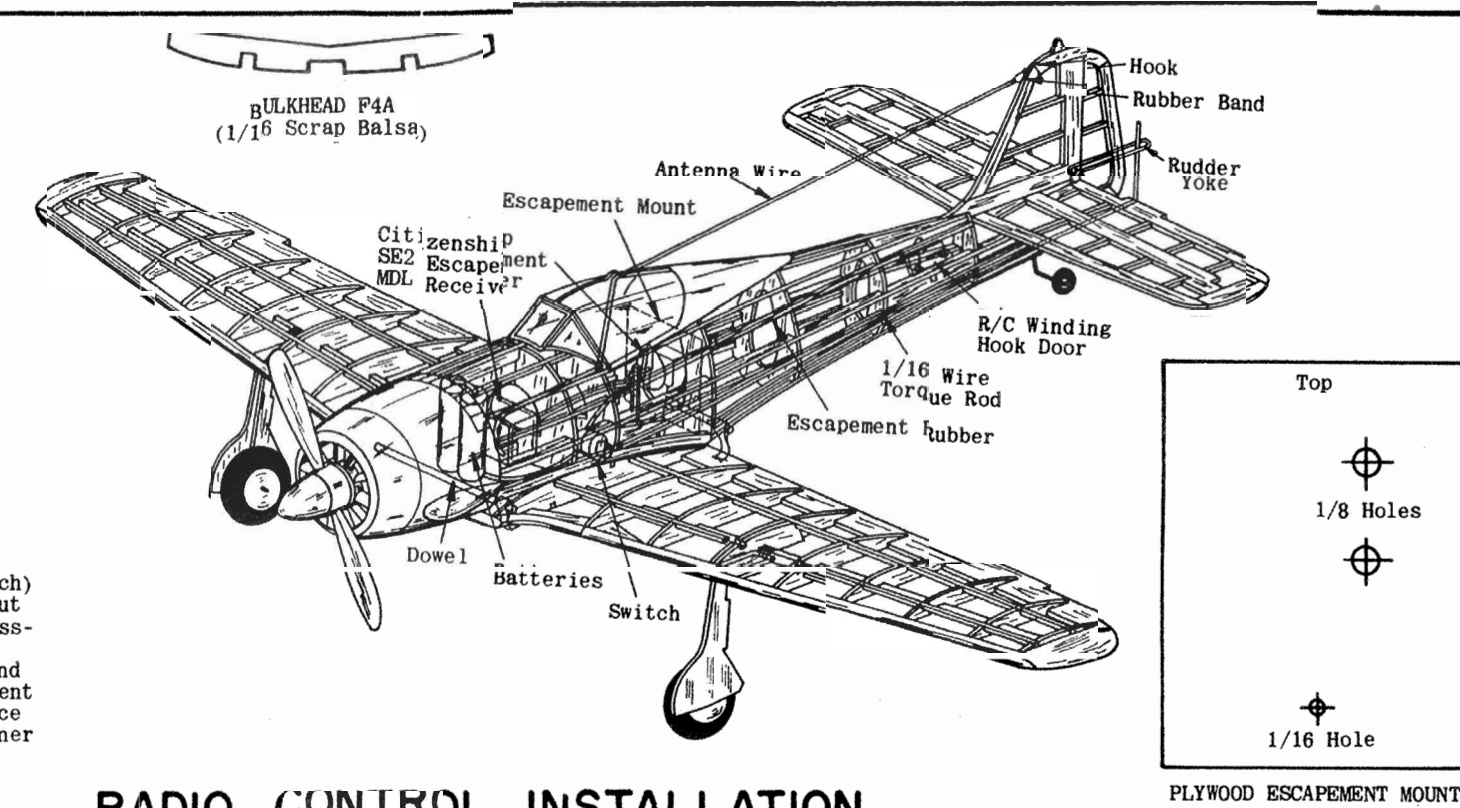
Specifications varied widely in all aspects. Armament, engine, etc. changes altered the shape of the fuselage. Constant design changes also altered shape of tail, wings & tips, and even wing span. Specifications below are for model Fw 190A-8.

Wing Span - 34 ft. 6 in.
Length - 29 ft. 4 in.
Height - 13 ft. 0 in.
Wing Area - 197 Sq. Ft.
Weight Loaded - 9480 lbs.
Top Speed - 405 M.P.H.
Range - 640 Miles
Service Ceiling - 34,800 Ft.
Engine - BMW 801D
2050 Horse Power
Armament - Two 13-mm machine guns in fuselage, Four 20-mm Cannon in Wing, Single 500 lb. Demolition Bomb.



Section A
1/32 Wire Hook
TOP VIEW
Section B
SIDE VIEW
R.C. WINDING HOOK DOOR

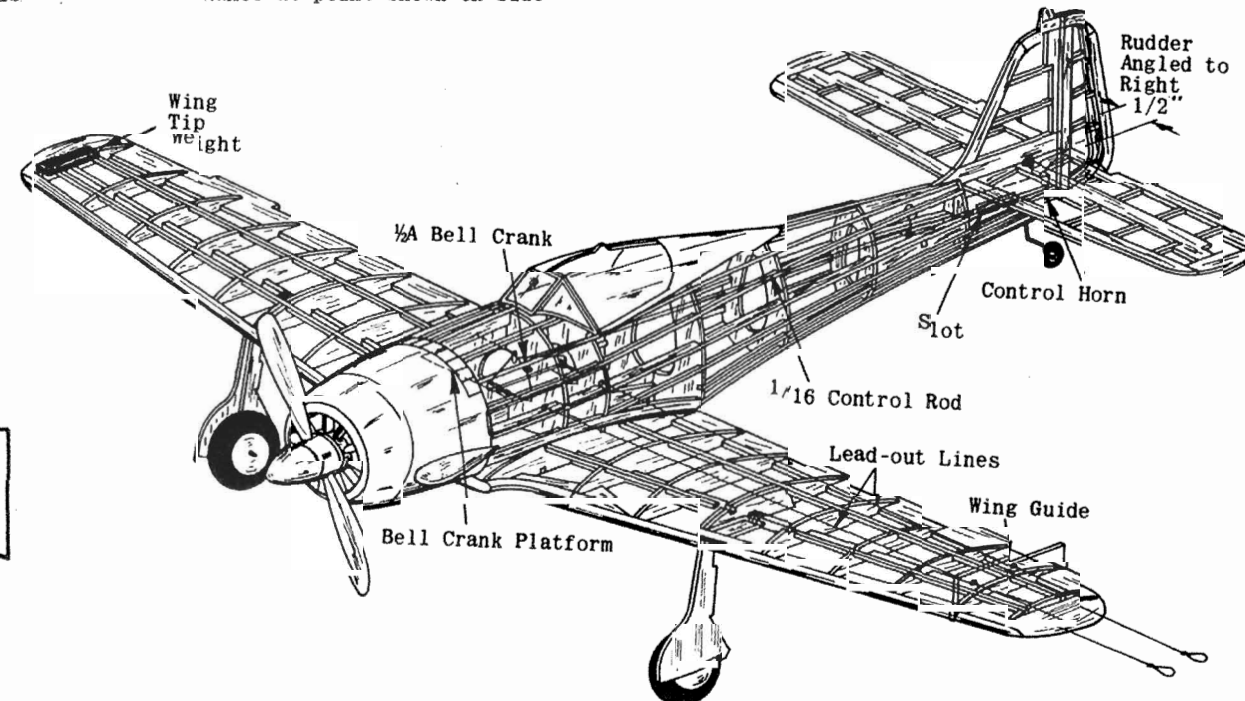
Cut out stringer above side keel between F6 & F7, and inset 1/16 Balsa flush. Cut out section to shape of part A (see sketch) and cement it to a piece of 1/16 Balsa cut to shape of section B, grain running cross-wise, to form door. Bend half of hook shown from 1/32 wire and push straight end thru door. Bend hook in other end & cement securely to door in position shown. Place loop of rubber between escapement and inner door hook.



RADIO CONTROL INSTALLATION

2/56 nut and bolt. Cut escapement base from 1/16 plywood and cement to front of F4. When dry, install escapement with 2/56 nuts and bolts. Insert a long length of 1/16 wire thru slot made in rear of L4 for torque rod. Bend U in front of rod, according to R/C manufacturer's instructions and shown above, then pull back and engage in escapement as shown. Bend rear as shown. Cut off excess wire, then engage in yoke. Raising & lowering yoke will increase or decrease the amount of rudder movement. Batteries are stored in section between F1 and F2. Receiver is located behind batteries. Wire radio equipment in accordance with manufacturer's instructions. After unit is wired, line compartment with foam rubber and insert batteries, followed by receiver. Insert into compartment, being careful not to break any wire connections. Bend small hook for antenna and cement to front of rudder. Bring antenna out of cockpit and fasten to hook with rubber band. When model has been completely finished, it must balance at point shown on side

view. If necessary, add weight, but DO NOT ATTEMPT TO FLY UNTIL BALANCE HAS BEEN ACHIEVED. Check wings and tail for warps; if any have developed, remove with steam method as described in Covering Instructions. Wait for calm weather for test flights. Field test R/C equipment before flying, as described in manufacturer's instructions. Start engine and THROTTLE DOWN TO LOW SPEED, then launch model with nose pointed slightly down at a point 50 or 60 feet in front of you and release at approximate flying speed. Model should fly in a straight line and either maintain or slightly lose altitude. If model turns to either side, rudder or engine may be off set to opposite side to achieve a straight flight, which is how it should glide and fly. If model glides well but stalls under power, point front of engine down (down thrust) by placing washers under top mounting bolts. Increase engine RPM as adjustments are made, checking R/C controls before each flight. GOOD LUCK AND GOOD FLYING!!!



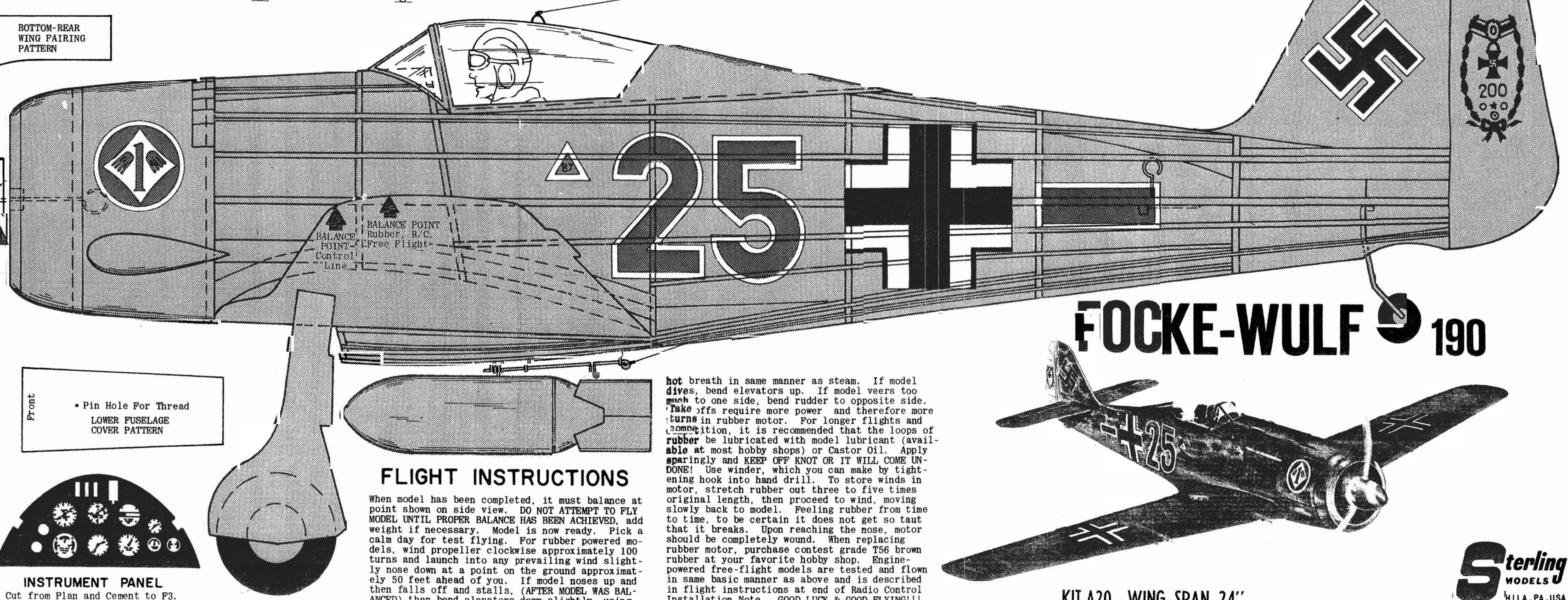
CONTROL LINE INSTALLATION

Material required are not provided in kit. Install controls after fuselage Step 4 has been completed. Fill in area between F1 to F3, from side keel L5 to stringer above it, with scrap 1/16 sheet Balsa, flush with outside of frame; also area from F7 to rear between L5 and stringer above in same manner. Cut 1/8 slot in rear for control rod as shown. Cut two 18" lengths of control lines and fasten them to bell crank. Mount bell crank on plywood platform as described in manufacturer's instructions. Lead-out lines come thru fuselage at holes drilled for them as shown. Cover fuselage as described in detail note. Cut stabilizer thru wide main spars, as indicated by dotted lines on full size drawings. Round edges and install control horn at location shown on drawing, then glue together with cloth hinges shown. Cement stabilizer to fuselage as described in Final Assembly Note. Tape elevators in neutral position (in line with stabilizer, neither up or down). Bend 1/4" of one end of 1/16 wire for control rod at right angle. Loosen bell crank and insert rod from bottom with spur vertical, then secure bell crank. Control rod should be in line with elevator horn, if not, bend accordingly so that rod slips thru slot

freely. Make a right angle bend at rear end of rod at precisely the location of hole in elevator horn, with bell crank in neutral position as shown. Clip off excess and insert into horn. Solder washer on end to prevent rod from coming off. Controls are now in neutral position and must work freely and easily. Cut rudder apart on dotted lines. Notch out R1 and rear of L2 to provide clearance for elevator movement as shown. Cement fin to fuselage. Cement rudder to fin, angled 1/2" to outside of circle flow as shown. Assemble wing to fuselage as described in Final Assembly Detail. Make wing guide from 3/32 Balsa scrap, drilling holes indicated. Cement securely to wing over rib W9 as shown. Reinforce fuselage and wing guide holes with washers or eyelets. Thread lines thru holes in wing guide and tie loops in end of lines at least 2" past wing tip. Lines must be of equal length when elevator is in neutral position. Control system must operate freely and easily. CAUTION: Model must balance (or slightly nose down) at point where front control line comes out of the fuselage. If necessary, add weight. Use regular 1/2A control line when flying Focke-Wulf 190. GOOD LUCK AND GOOD FLYING!!!

CAUTION:

Do not fly control line models in the vicinity of electric power lines!



FOCKE-WULF 190

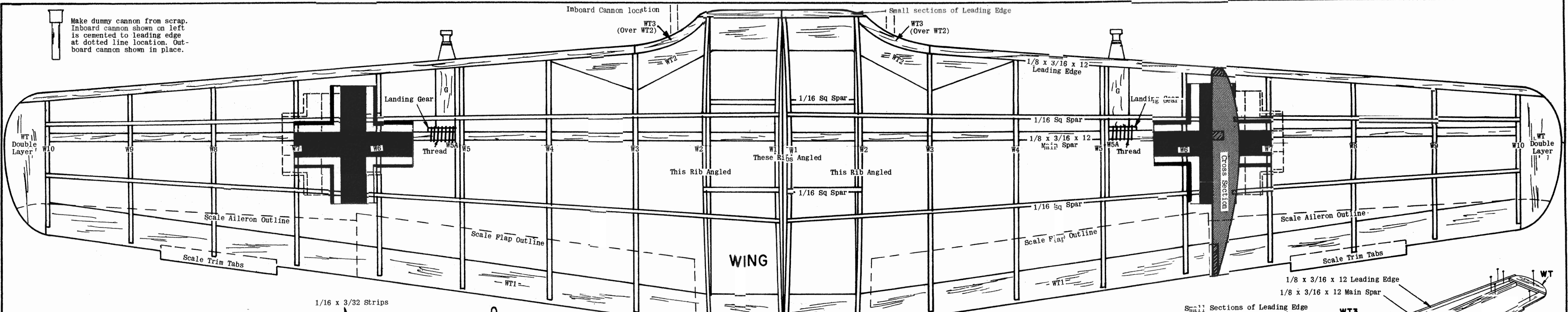
FLIGHT INSTRUCTIONS

When model has been completed, it must balance at point shown on side view. DO NOT ATTEMPT TO FLY UNTIL PROPER BALANCE HAS BEEN ACHIEVED, add weight if necessary. Model is now ready. Pick a calm day for test flying. For rubber powered models, wind propeller clockwise approximately 100 turns and launch into any prevailing wind slightly nose down at a point on the ground approximately 50 feet ahead of you. If model noses up and then falls off and stalls, (AFTER MODEL WAS BALANCED) then bend elevators down slightly, using

hot breath in same manner as steam. If model dives, bend elevators up. If model veers too much to one side, bend rudder to opposite side. Take offs require more power and therefore more turns in rubber motor. For longer flights and competition, it is recommended that the loops of rubber be lubricated with model lubricant (available at most hobby shops) or Castor Oil. Apply sparingly and KEEP OFF KNOT OR IT WILL COME UNWOUND! Use winder, which you can make by tightening hook into hand drill. To store winds in motor, stretch rubber out three to five times original length, then proceed to wind, moving slowly back to model. Peeling rubber from time to time, to be certain it does not get so taut that it breaks. Upon reaching the nose, motor should be completely wound. When replacing rubber motor, purchase contest grade T56 brown rubber at your favorite hobby shop. Engine-powered free-flight models are tested and flown in same basic manner as above and is described in flight instructions at end of Radio Control Installation Note. GOOD LUCK & GOOD FLYING!!!

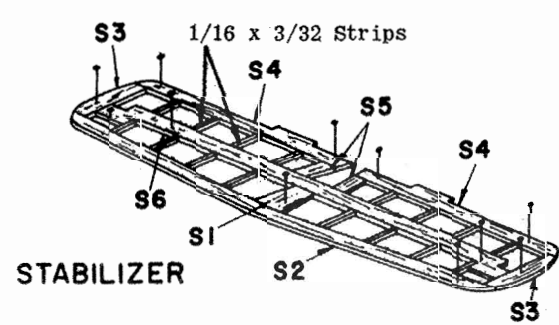
KIT A20 WING SPAN 24"



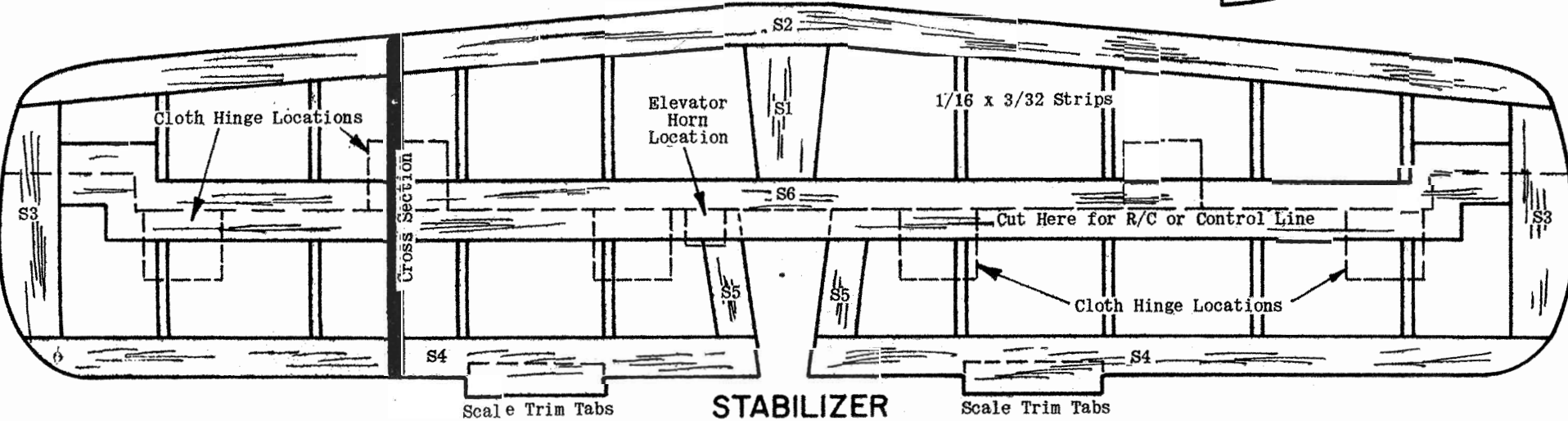


TAIL SURFACE ASSEMBLY

Assemble stabilizer by pinning all S parts shown to plan on flat surface, and cementing to each other where they join. Cut 1/16 x 3/32 strips to fit & cement in place upright. Rudder is built in same manner, pinning all R parts to plan and cementing to each other; then adding 1/16 x 3/32 strips. Allow assemblies to dry thoroughly on flat surface, then sand smooth, rounding edges (except R6 and bottom of R1) as shown on cross-section. If model is being constructed for control line or radio, see respective detail notes BEFORE covering with tissue.

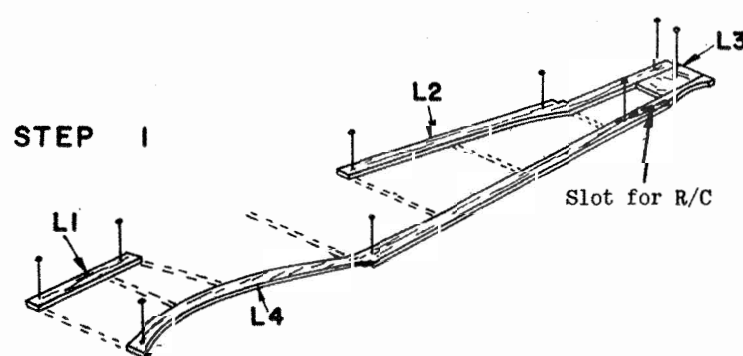


STABILIZER

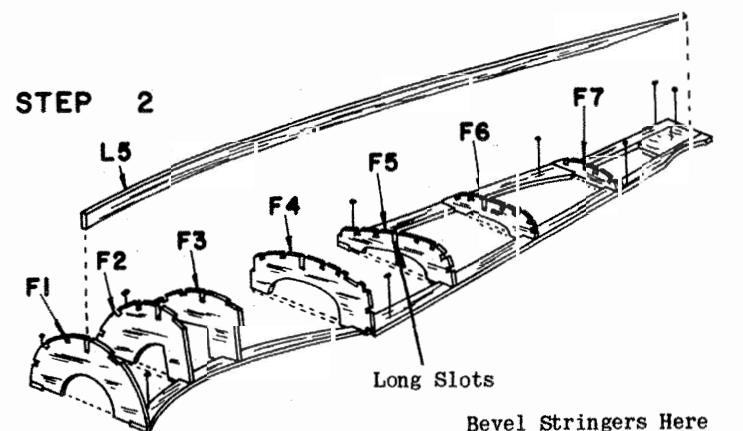


RUDDER

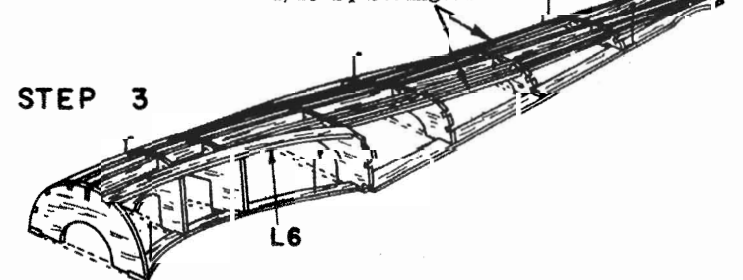
FUSELAGE ASSEMBLY



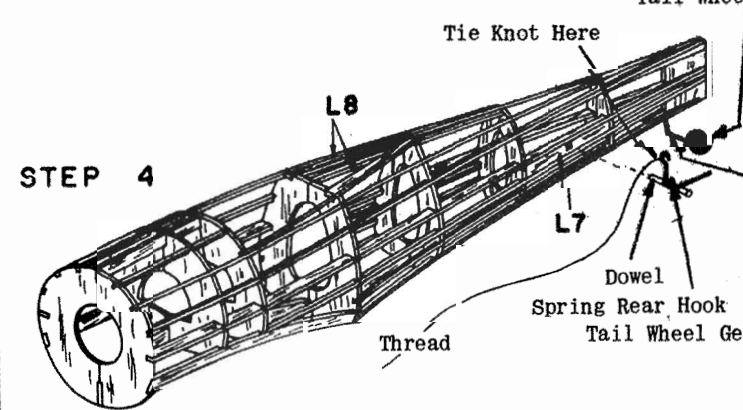
STEP 1



STEP 2



STEP 3



STEP 4

Fuselage construction is started on flat surface directly over plan. Pin all L parts in place as shown. If model is to be R/C, cut out slot in L4 (at rear) as shown in dotted lines. Cement 1/16 (scrap) doubler over slot, from P7 back, tapering rear into L4. Slot is for torque rod.

Cement all bulkhead halves from F1 to F7 vertically to frame as shown, then add L5, which is inserted into long slots in center of bulkheads.

Cement side keel L6 into notches in corners from F1 to F4. Note 1/16 space left above L6 at F3 for stringer. Install all stringers, (except 2 on bottom as shown), which are 1/16 sq, into their respective notches. Top stringers, which are not visible, can be seen in next sketch. Bevel ends to fit at rear. Allow frame to dry thoroughly to prevent warping or twisting. Over night is recommended. Assembly of wing or tail surfaces can be started in the meantime.

Carefully pull out pins and remove frame from flat surface. Cement opposite halves of bulkheads in place to fuselage frame. (Don't make another fuselage frame assembly. Bulkhead halves are cemented to fuselage frame assembly already constructed as described in Steps 1, 2, and 3. If model is being built for Control line, bellcrank platform is now installed. Cut platform from 1/16 plywood, using pattern provided at Control line note. Cement long slot into bulkhead P2 and against top of L5, followed by L6. The opposite bulkhead halves are cemented to the other side of frame as shown in typical cross section. Cement 1/16 (scrap) over open side of R/C slot, if used. Cement both L7's in place. Install spring rear hook (omit on gas powered models) by inserting a 1" length of 1/8 dowel thru coils of rear hook. Insert and cement ends of dowel between L7's. Securely cement straight end of hook to bottom of side keel L5, see side view. Only straight end of hook is fastened, leaving coil free for spring movement. Straighten top of tail wheel gear and bend 1/8 spur as shown on side view. Sink spur into front of L3 and cement securely in place. Remainder of 1/16 sq stringers are now cemented into their respective notches as shown. Cement L8's into notches from bulkheads P4 to F5. Allow fuselage frame to dry thoroughly, then sand lightly to present a smooth surface for tissue covering, described in detail note. If model is constructed other than for rubber power, see respective notes (Control Line, Radio, etc.) before covering fuselage.

FUSELAGE FRAME ASSEMBLY

(Make One Only)

WING ASSEMBLY

STEP 1

Cement two WT's together and pin in place along with all other WT parts as shown, cementing where they join, except at center joint. WT3's cement to top of WT2's flush with front. Cut 1/8 x 3/16 x 12 main spars to proper length. Pin in place in upright position, joining over center, cement only to WT's. 1/8 x 3/16 x 12 is also used for leading edge. Pin in place in upright position, cementing to front of WT and WT2. Cut both small sections of leading edge & cement to front of WT2.

STEP 2

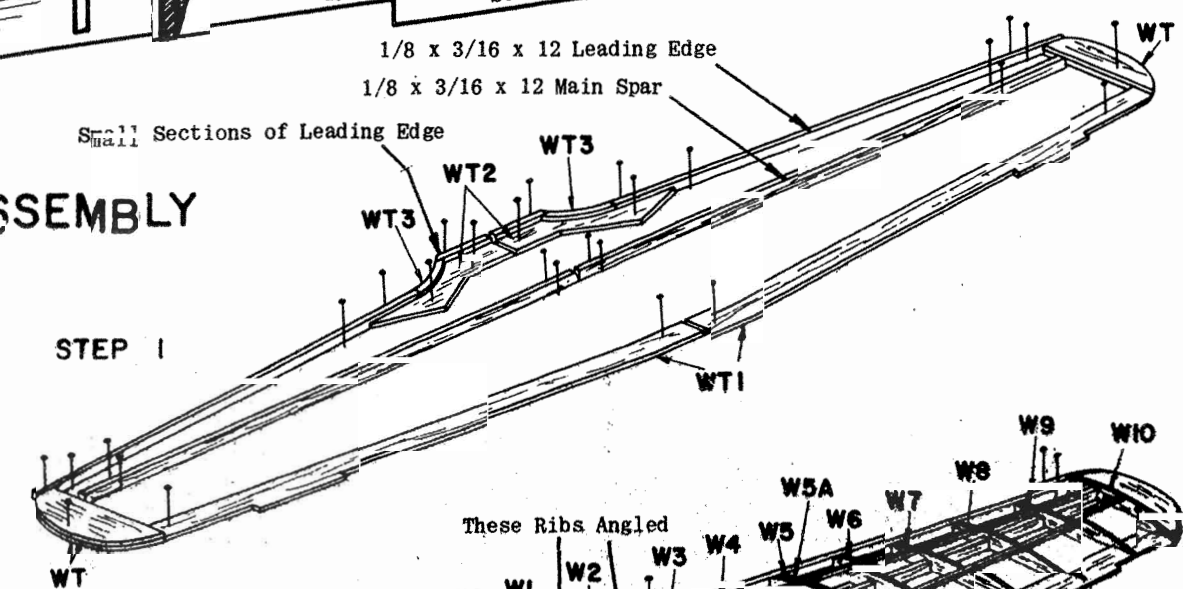
Ribs W1's to W10's are now cemented in place. Ribs W1's & W2's are angled, using rib angle template as shown in detail sketch. This insures proper dihedral angle. All other ribs are vertical. Cement W5A's to outer sides of W5's flush with top. Cement 1/16 sq spars into notches along top of ribs as shown. Allow frame to dry thoroughly (overnite recommended) before removing from flat surface.

STEP 3

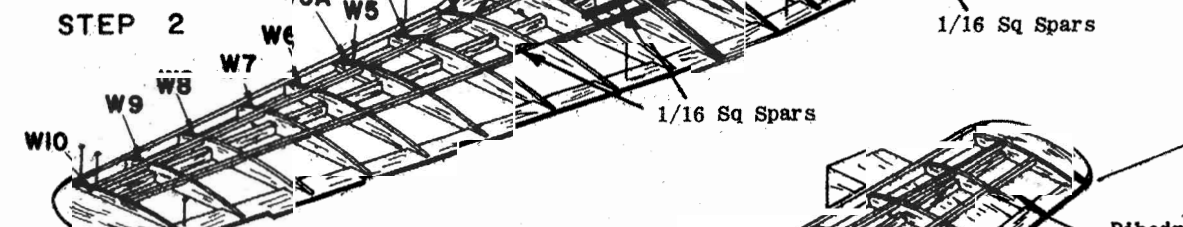
Trim and sand leading edge to shape shown on wing cross section, then round off tips and trailing edge to blend smoothly into each other. Leading edge, spars and trailing edge are trimmed flush with angle of ribs W1. Cement halves together on flat surface, blocking up one side 3" as shown. Measurement must be the same at leading & trailing edge so that wing is not warped. Other panel is weighted or pinned to keep flat on surface. Use cement generously, & allow to dry thoroughly. Completed wing frame is now removed from flat surface & landing gear installation as shown on final assembly sketch is now made. Landing gears are cemented securely in place as shown. Top of gear rests against bottom of W5A which is angled, providing forward angle to landing gear. Rear is tied securely to spar with thread as shown on sketch and wing plan. Axles face inward towards each other. G is now cemented in place flush with bottom of rib W5. When installation is complete, apply a second heavy coat of cement & allow to dry thoroughly. Wing frame is now sanded smooth to prepare for tissue covering.

DIE CUT PART NOTE

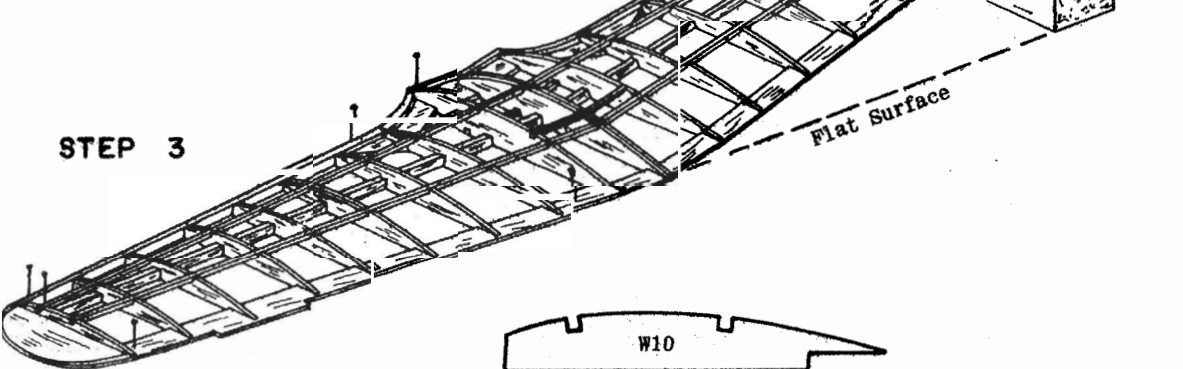
All die cut parts used in construction are given full size, either in full size plan or individual layout. This will enable you to duplicate any part - should it become necessary for any reason. Die cut parts contained in sheet as furnished in kit are also available from the factory as replacements.



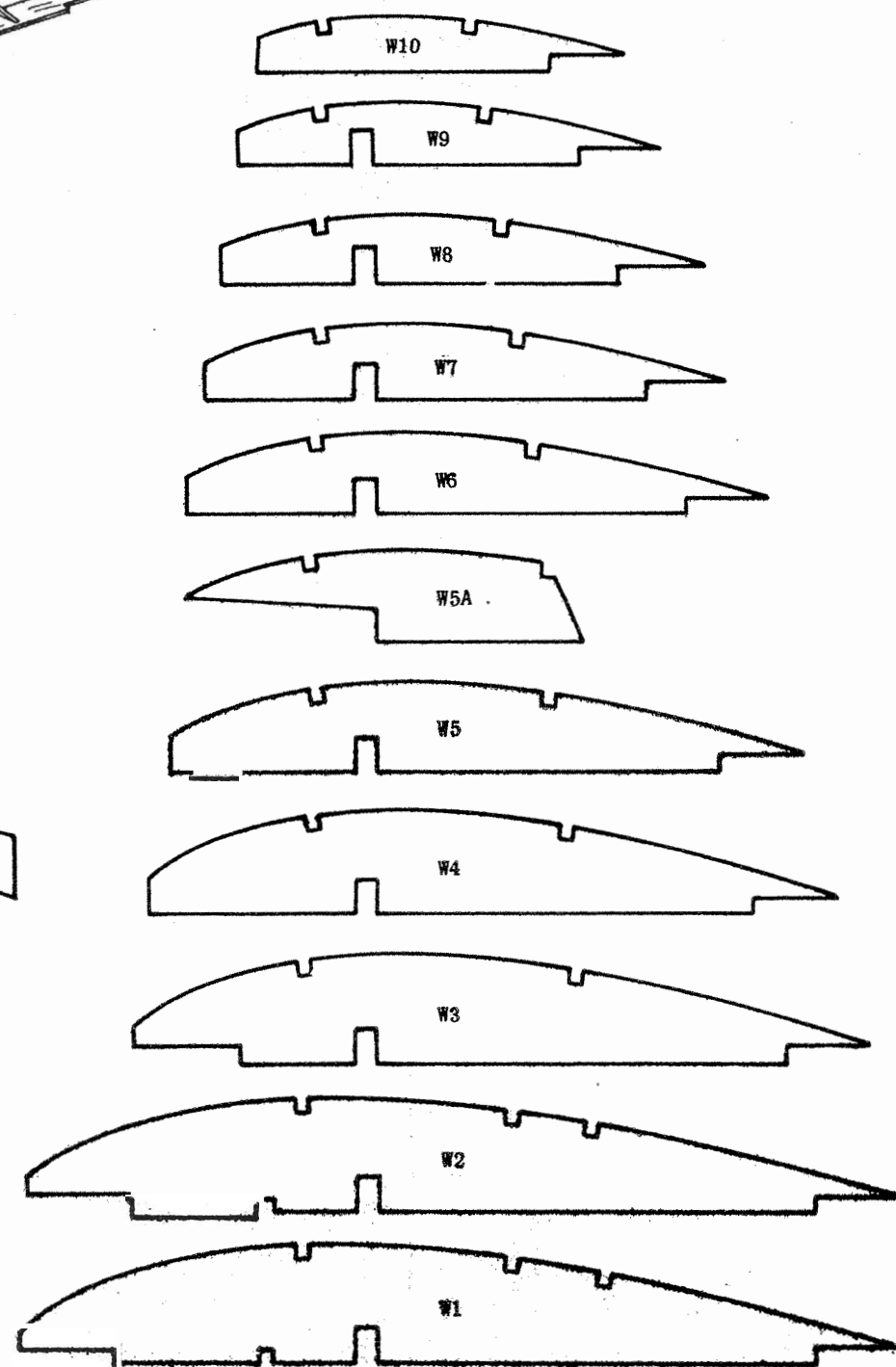
STEP 1



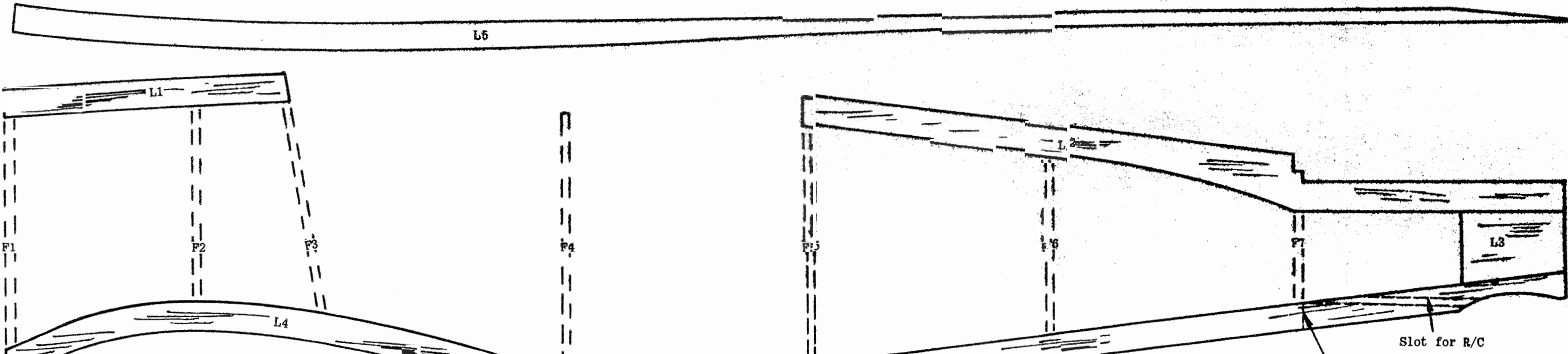
STEP 2



STEP 3



STEP 3



STEP 1

STEP 2

STEP 3

STEP 4