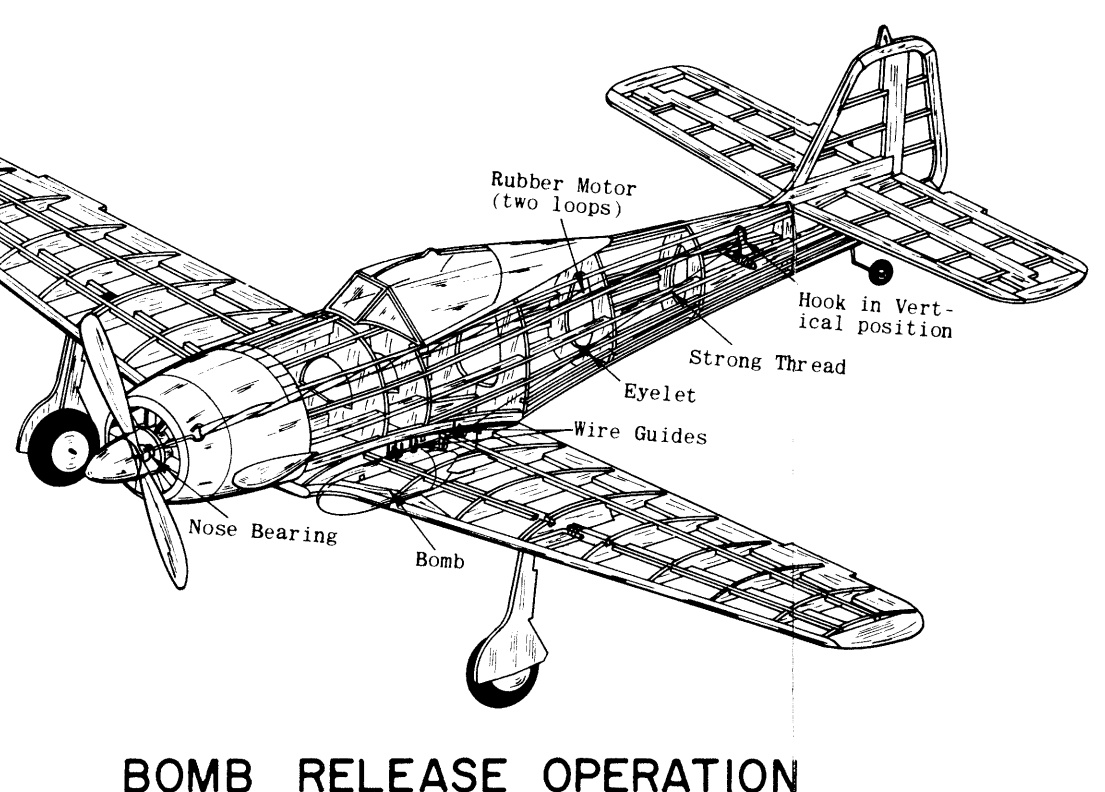


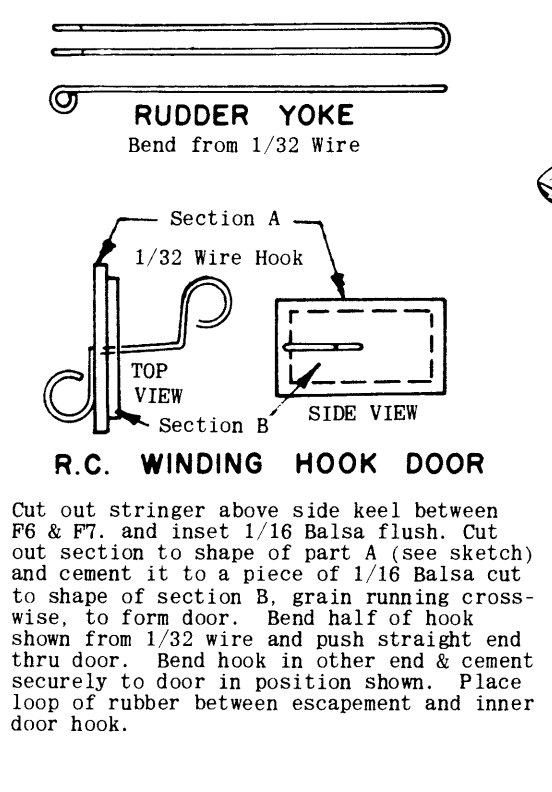
FINAL ASSEMBLY

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 sketch and 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 fairings and cement in place. On rubber powered models with bomb door, cover bottom left side of fuselage from F4 to F5 between L4 and stringer with stiff paper. Assemble all plastic parts, see detail note. Cement sub-cowl to F1. Cement cowl to sub-cowl.



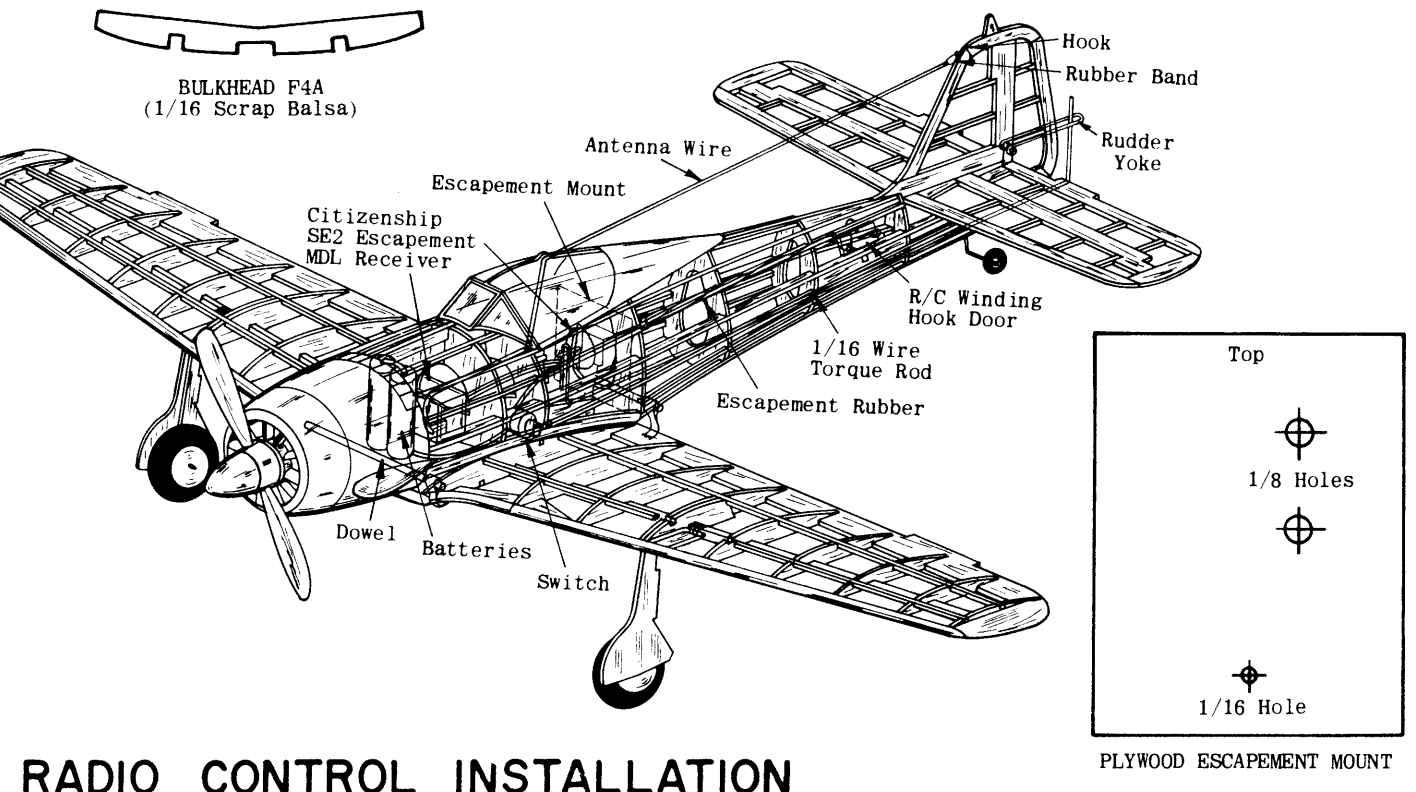
BOMB RELEASE OPERATION

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



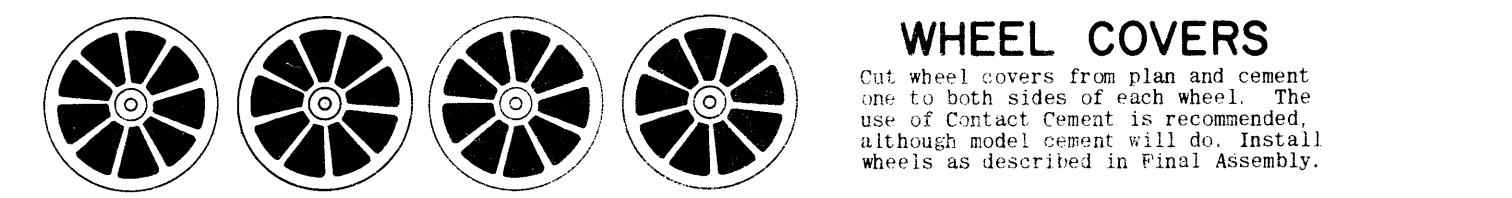
R.C. WINDING HOOK DOOR

Test models used, and drawing shows. Citizen-Ship MDL Receiver, SE2 Escapement; used with SPX Transmitter. This equipment & other material necessary is not provided in kit. On radio models wing is removable. Pin, BUT DO NOT CEMENT, wing into position. Make F4 using pattern above. Cement to bottom of trailing edge, and PIN it to F4. Since wing is removable, be sure cement is not accidentally placed on F4. Complete bottom of wing installation as described in Final Assembly Note, however, all stringers are cut thru at seam between double bulkheads. Cement a 3-1/2" length of 1/8 dowel across rear of F1 and rear of F4 on top of center keel L4. Dowels protrude evenly from fuselage on both sides. For strength & durability, it is recommended that front half of entire fuselage be covered with 1/32 or 1/16 sheet Balsa. Balsa is also covered with silkspan as described in note. Cut rudder apart at location shown by dotted lines, then assemble together with cloth hinges. Bend wire yoke from 1/32 wire and install on rudder with



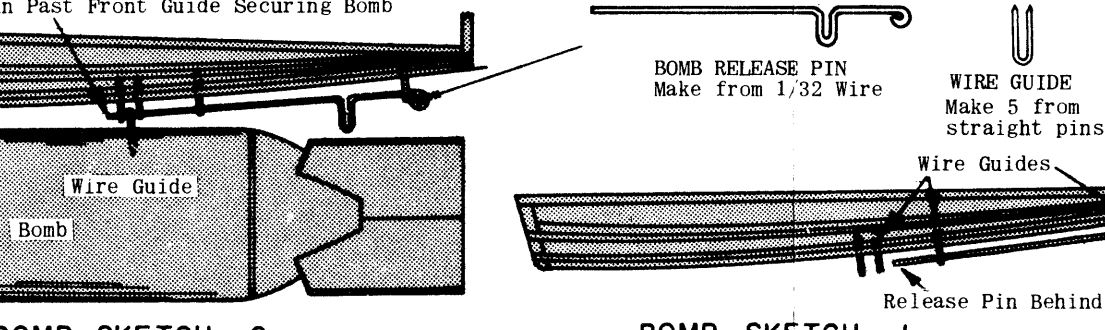
RADIO CONTROL INSTALLATION

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



WHEEL COVERS

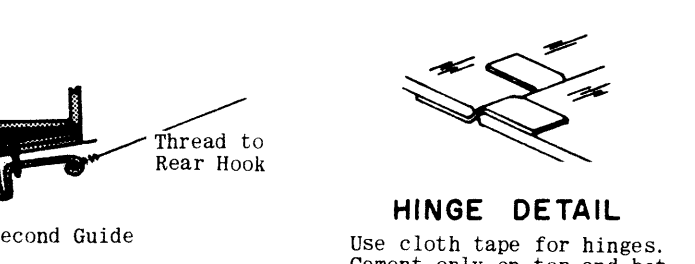
Cut wheel covers from plan and cement one to both sides of each wheel. The use of Contact Cement is recommended, although model cement will do. Install wheels as described in Final Assembly.



BOMB SKETCH—2 and **BOMB SKETCH—1**

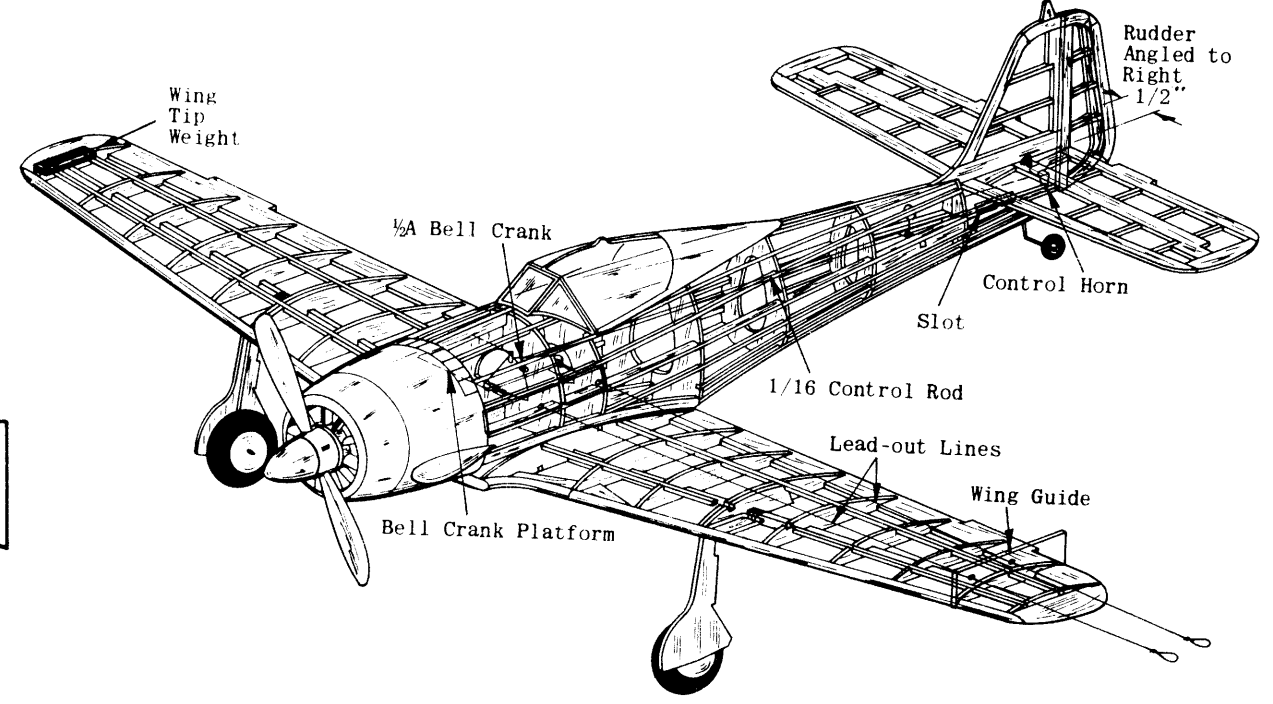
BOMB RELEASE INSTALLATION

Prepare installation by bending 5 wire guides from front and rear release pins 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



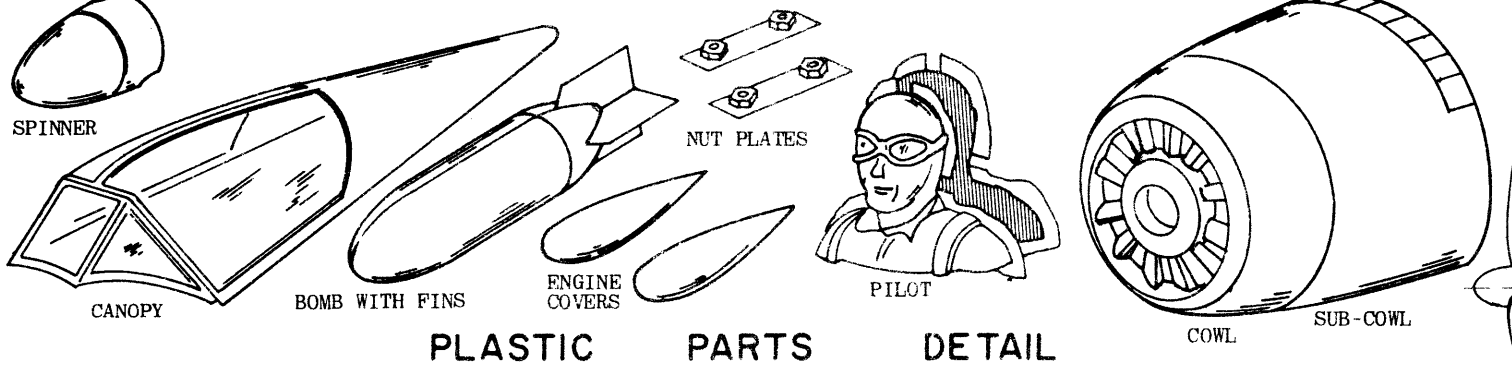
HINGE DETAIL

Use cloth tape for hinges. Cement only on top and bottom, alternating hinges as shown above. Keep cement 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 lead-out 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 cement 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 nor 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



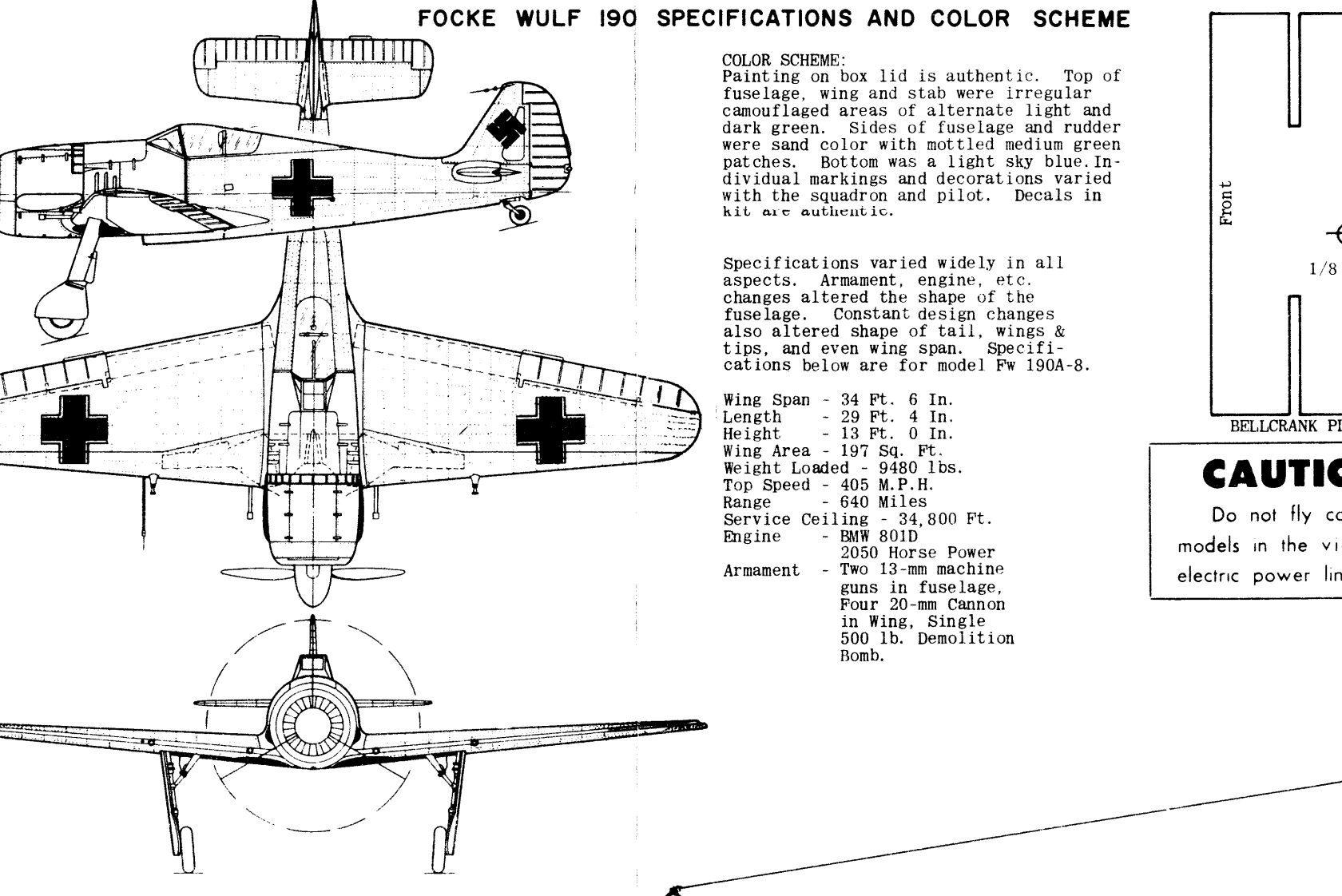
CONTROL LINE INSTALLATION

Materials 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 lead-out 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 cement 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 nor 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



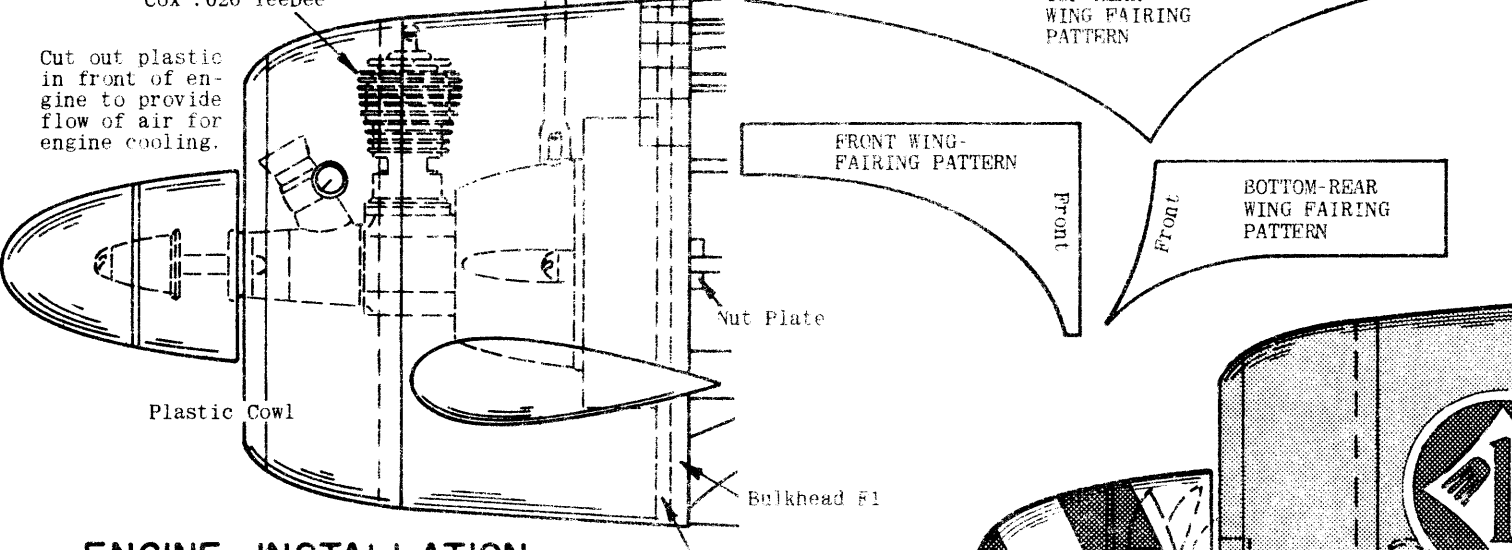
PLASTIC PARTS DETAIL

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 scriber 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 11 scriber 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 step 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 smoothly. 303RB: Cut both halves from sheet and assemble with



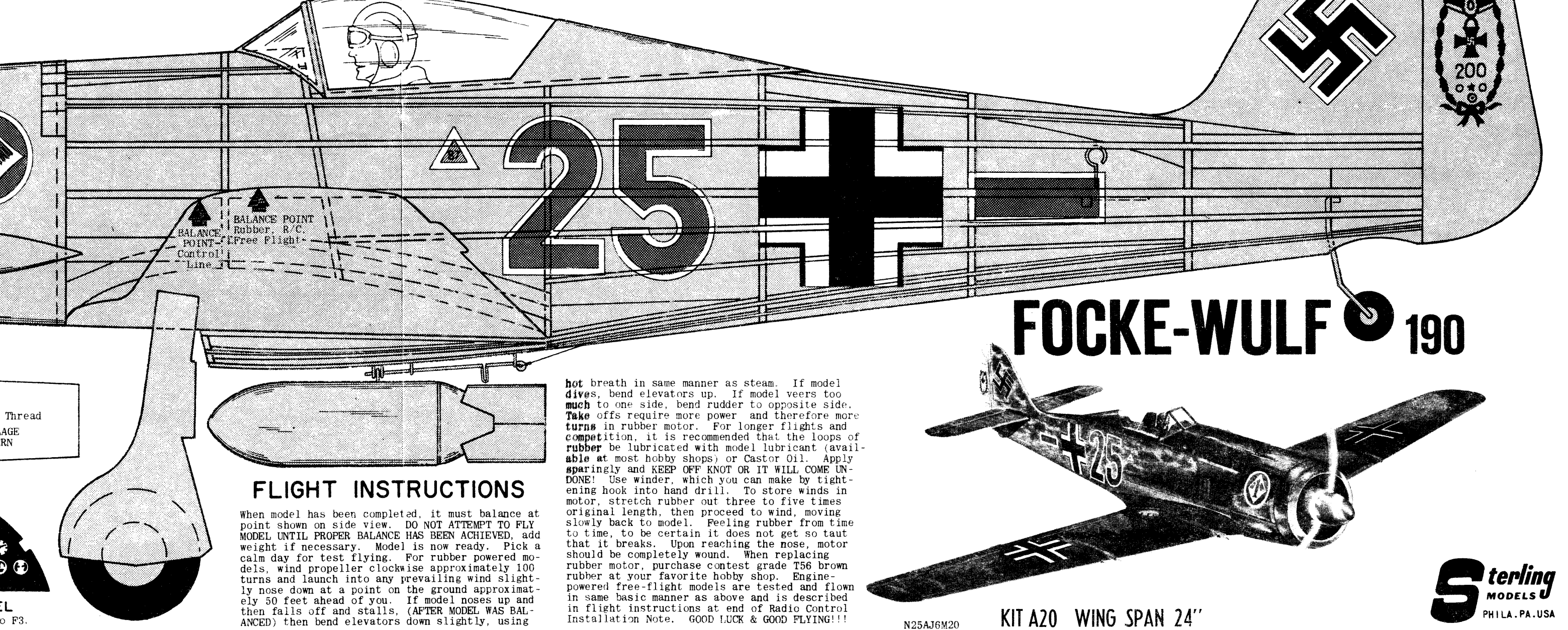
FOCKE WULF 190 SPECIFICATIONS AND COLOR SCHEME

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.



ENGINE INSTALLATION

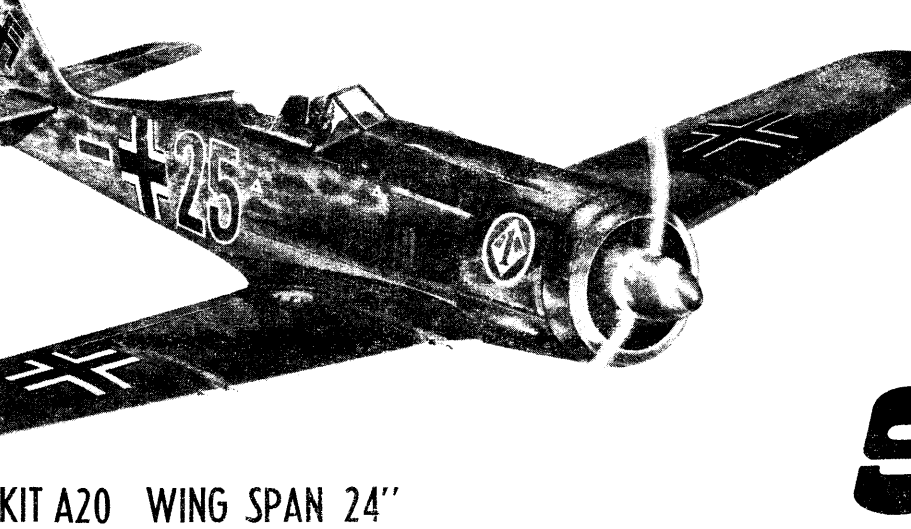
Engine is used, if model is being built for control line or free flight flying. Engine and installation material is not provided in kit. Drawing shows the installation of Cox .020 Tee Dee engine. Front half of entire fuselage should be covered with 1/32 or 1/16 sheet Balsa. Obtain a piece of 1/16 Balsa 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 fire wall 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 out of plastic 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 fuel 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 model 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 can be 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.



FLIGHT INSTRUCTIONS

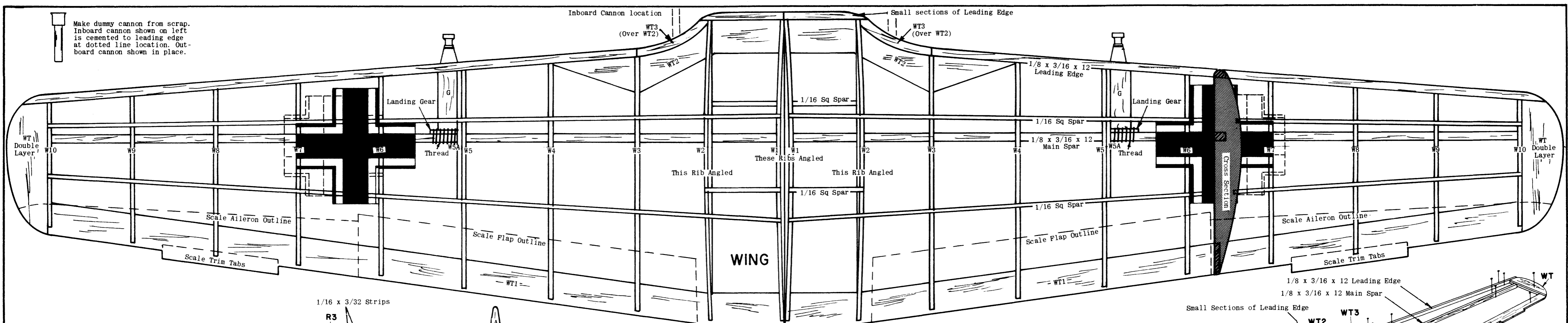
When model has been completed, it must balance at point shown on side view. DO NOT ATTEMPT TO FLY MODEL UNTIL PROPER BALANCE HAS BEEN ACHIEVED, add weight if necessary. Model is now ready. Pick a calm day for test flying. For rubber powered models, wind propeller clockwise approximately 100 turns and 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

FOCKE-WULF 190



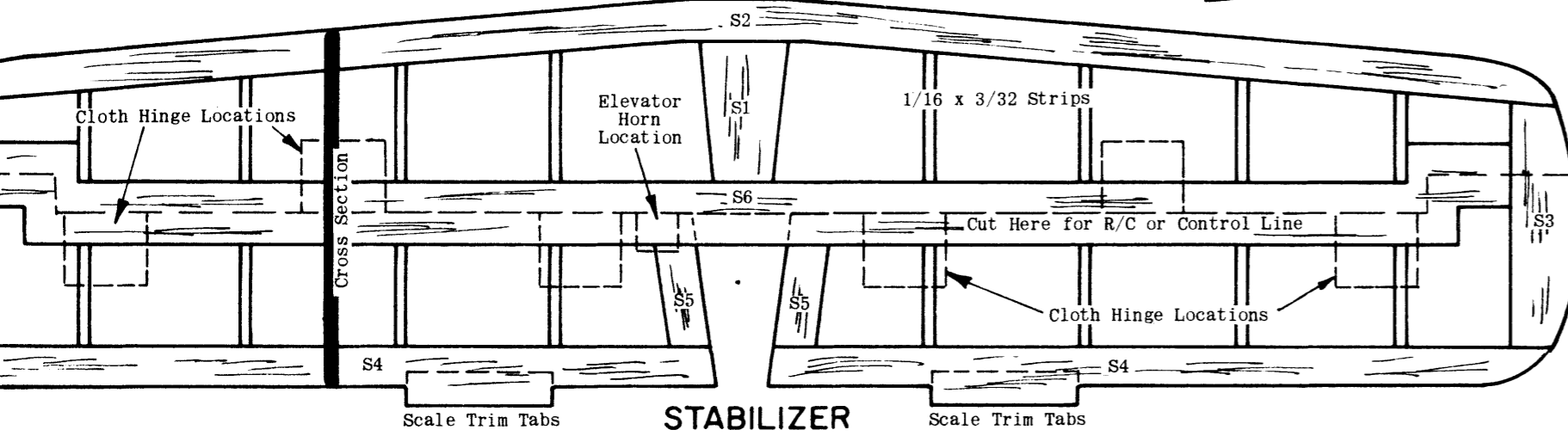
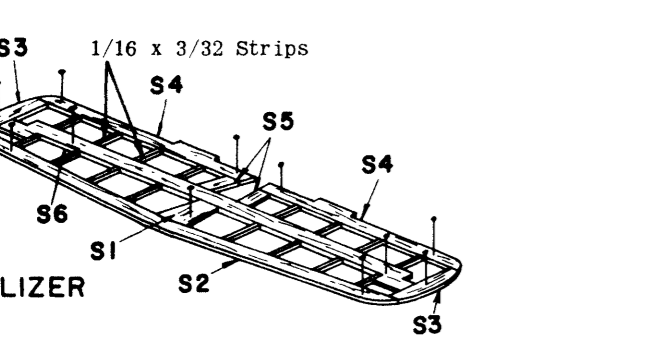
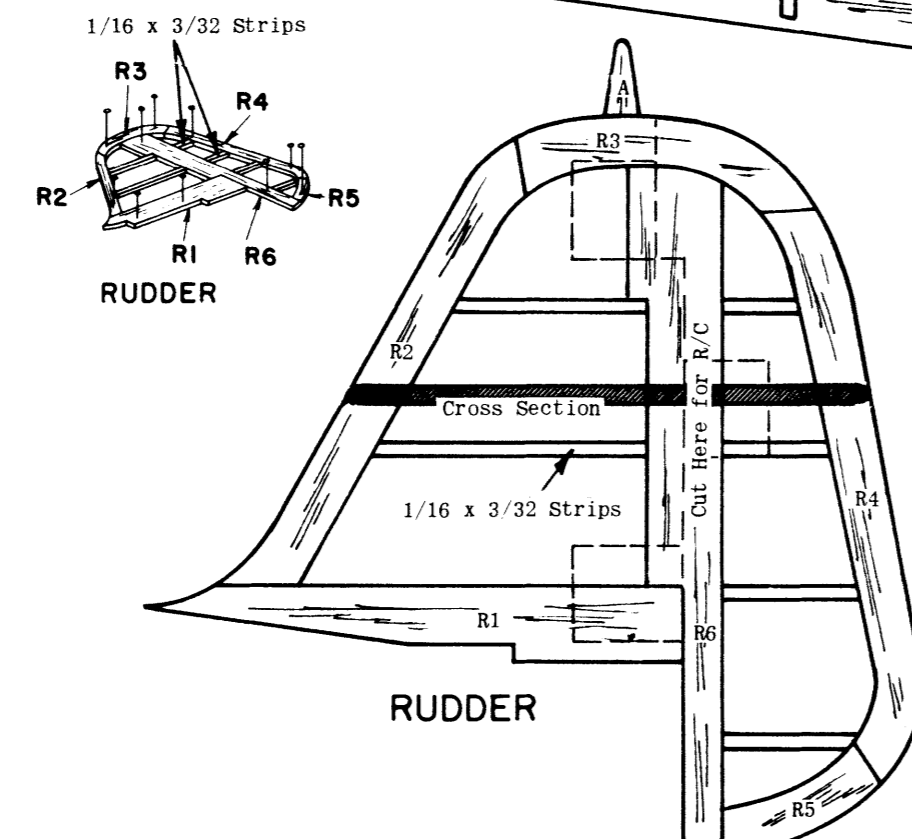
KIT A20 WING SPAN 24"



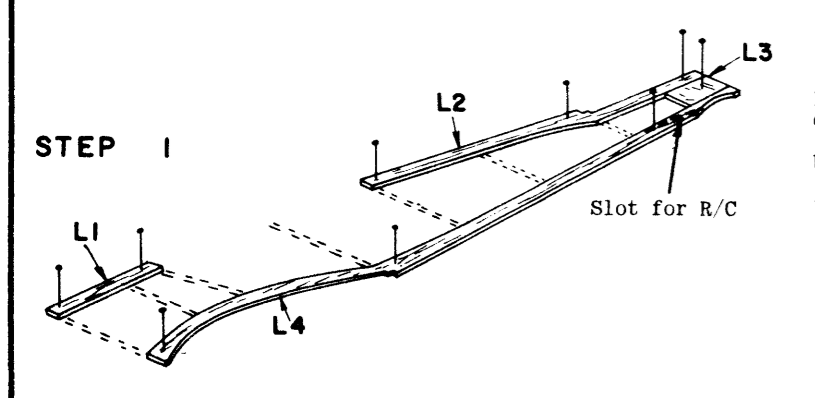


TAIL SURFACE ASSEMBLY

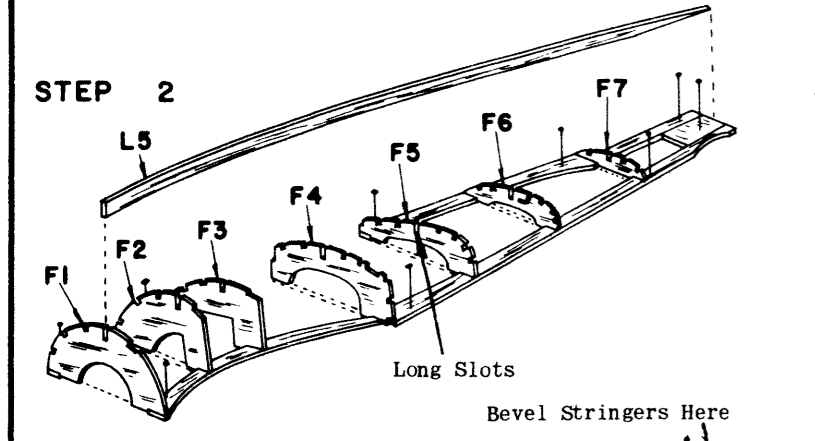
Assemble stabilizer by pinning all S parts shown to plan on flat surface, and cementing to each other where they join. Cut 1/16 x 3/32 strips to fit & cement in place upright. Rudder is built in same manner, pinning all R parts to plan and cementing to each other; then adding 1/16 x 3/32 strips. Allow 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.



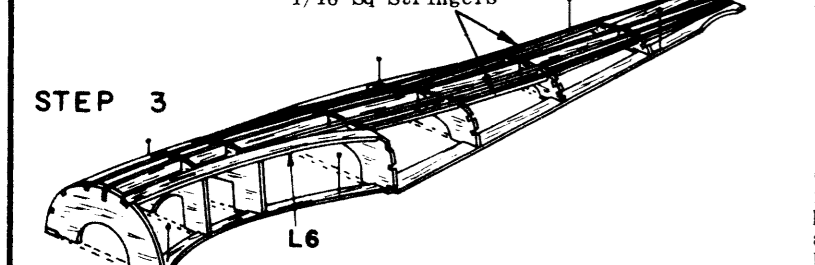
FUSELAGE ASSEMBLY



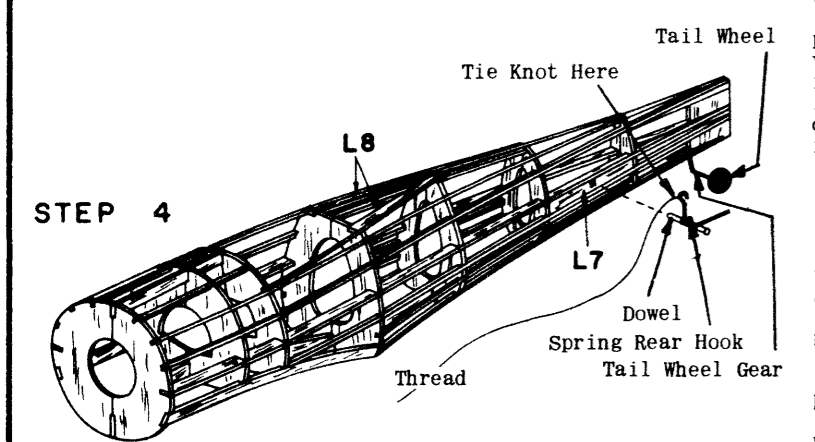
STEP 1
Fuselage construction is started on flat surface directly over plan. Pin all L parts in place as shown. If model is to be R/C, cut out slot in L4 (at rear) as shown in dotted lines. Cement 1/16 (scrap) doubler over slot, from F7 back, tapering rear into L4. Slot is for torque rod.



STEP 2
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.



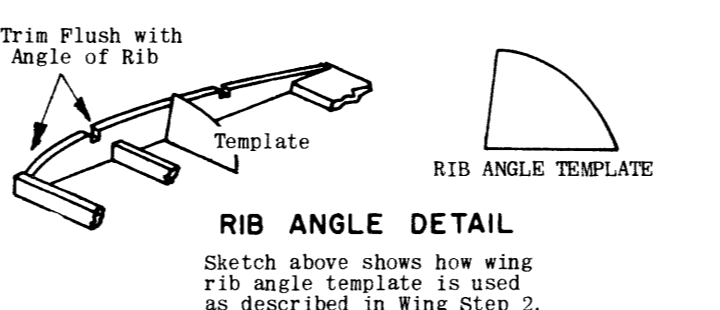
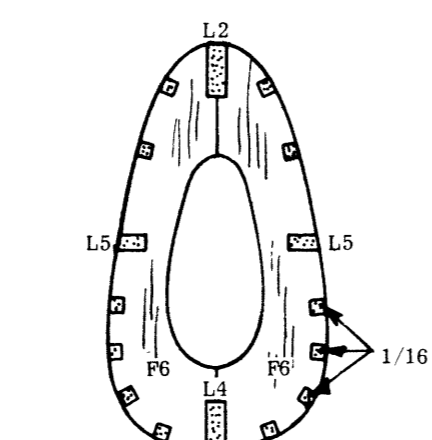
STEP 3
Cement side keel L6 into notches in corners from F1 to F6. Note 1/16 space left above L6 for stringer. Install all stringers, (except 2 on bottom as shown), which are 1/16 sq. into their respective notches. Top stringers, which are not visible, can be seen in next sketch. Bevel ends to fit at 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.



STEP 4
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 L5. 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 F4 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.

TYPICAL CROSS SECTION

Fuselage Cross-section above is at Bulkhead F6. Note that there is only one Fuselage Frame Assembly in center. Bulkhead halves are cemented directly to it - see Step 4.

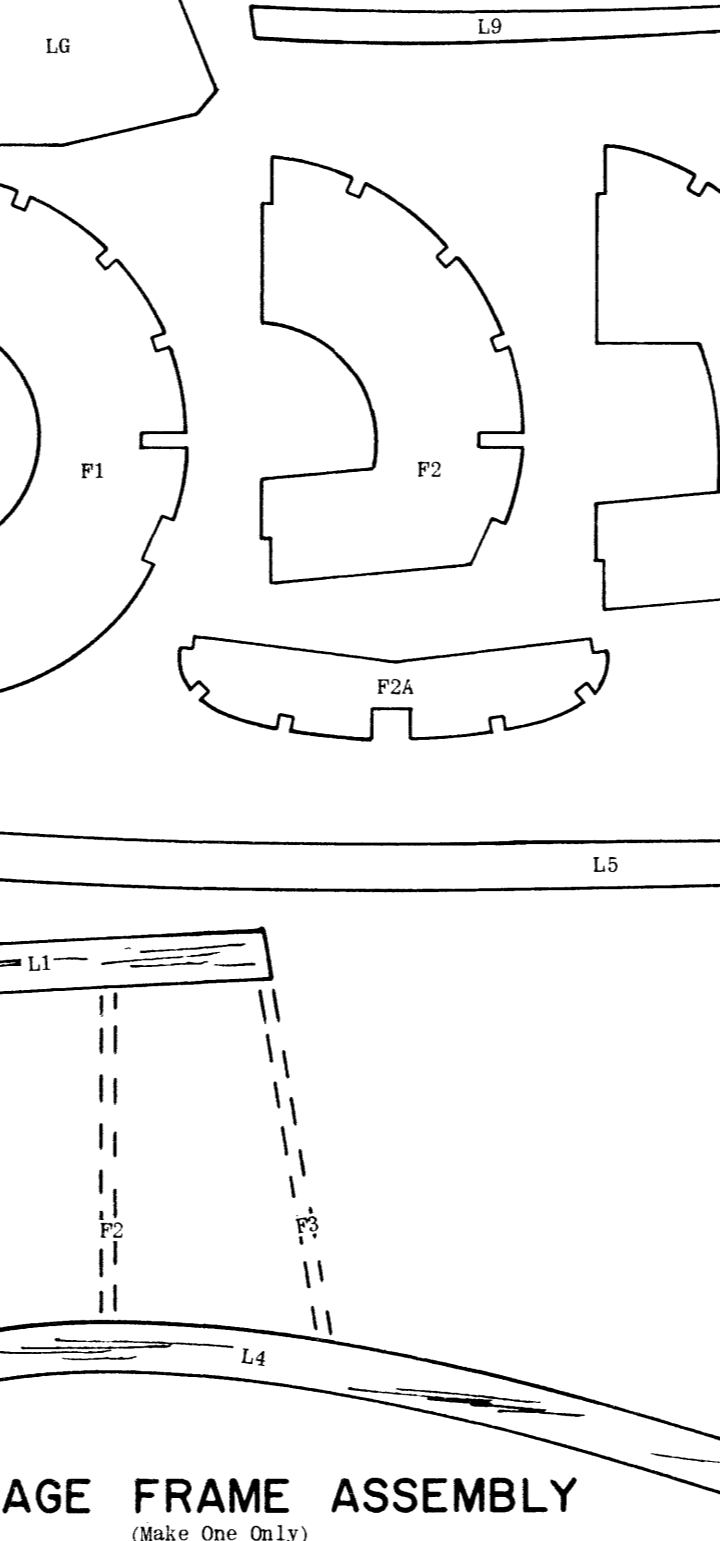


SILKSPAN TISSUE COVERING

The finest grade wet-strength silkspan tissue provided in this kit permits covering of compound curves without wrinkling, when moistened with water before applying to frame. Tissue shrinks when dry to light, smooth surface. Use clear dope to attach tissue as follows: Apply a light coat to the outside edges of area to be covered. When dry, cut tissue to shape needed, about 1/4" over size. Place tissue on flat surface and dampen with moistened cloth by dabbing. Apply a second coat of clear dope to outer edges of frame, then place moistened tissue on frame. Pull tissue gently with fingers, working out all wrinkles. WHEN COVERING WING AND TAIL SURFACES, PIN FRAMEWORK TO FLAT SURFACE TO PREVENT WARPS AS TISSUE DRIES. Cut out any wrinkled area (bounded by nearest framework) and recover. Apply two or three coats of clear dope, thinned 50-50 with thinner, on wing and tail surfaces before assembling to model. COVER WING FIRST: On control line models, add about 1/2 ounce of weight to wing tip on outside of circle flow. Cover bottom of wing on both sides from W1 to tips, with one piece for each section. Cover top of wing from W1 to W10 with one piece, cover tips with separate small pieces. COVER TAIL SURFACES NEXT: Cover both sides of rudder & stabilizer in one piece each. COVER FUSELAGE NEXT: Cover fuselage sides back to P4 with one piece from L6 to top cockpit stringer. Cover top from F1 to F3 in one piece. Cover rear sides from F4 back with one piece from bottom stringer at wing to second stringer above L5. Cover top rear in 2 halves, joining over L2. Cover bottom in two halves, joining over L4 and L9's. Front and rear wing fairings are installed as described in Final Assembly Note. Apply four coats of thinned dope to tissue covering on fuselage. Check wings and tail surfaces for warps before assembly. Warps can be removed by holding over steam (from boiling kettle) and twisting gently in opposite direction. Check again when cool.

DIE CUT PART NOTE

All die cut parts used in construction are given full size, either on 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.

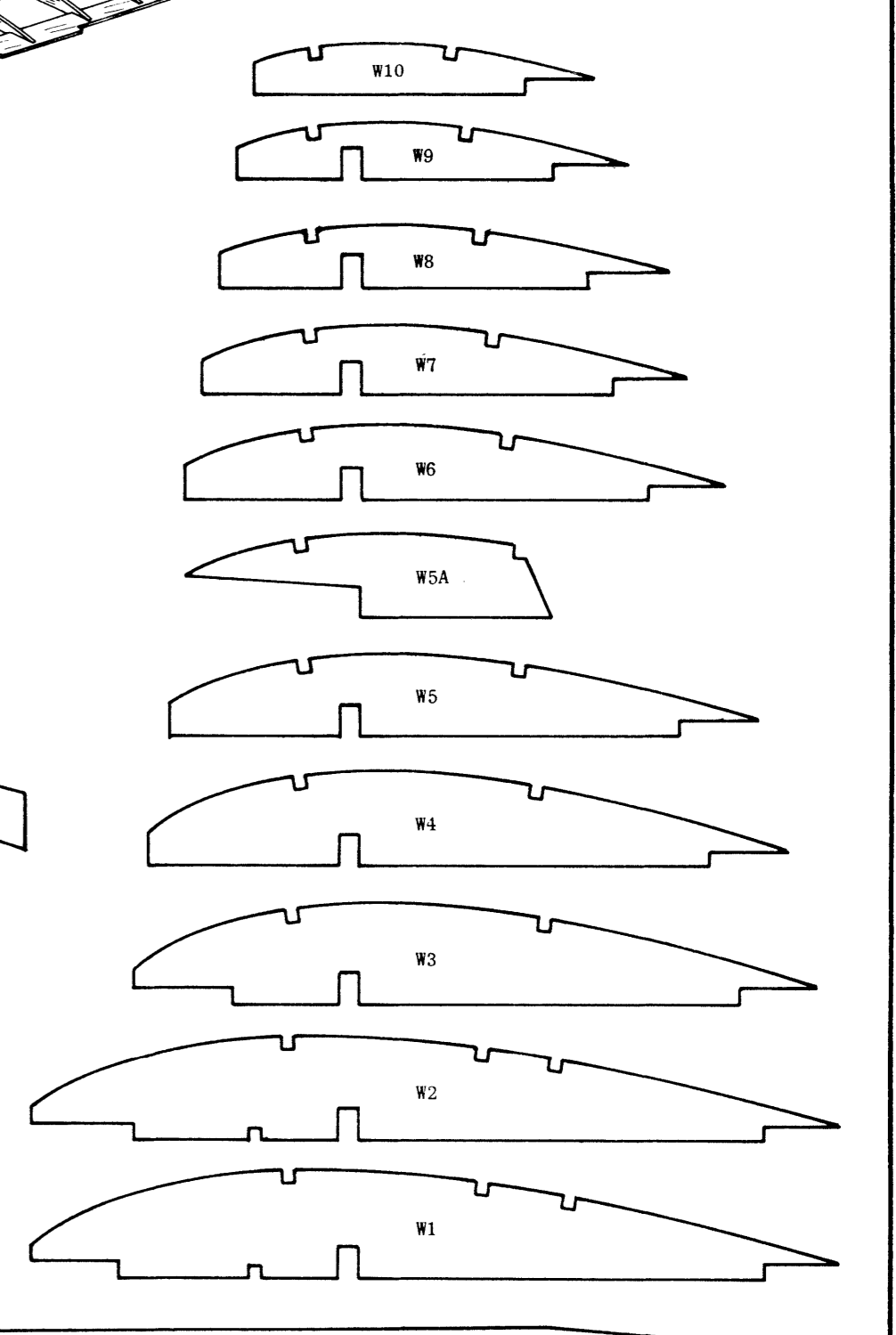
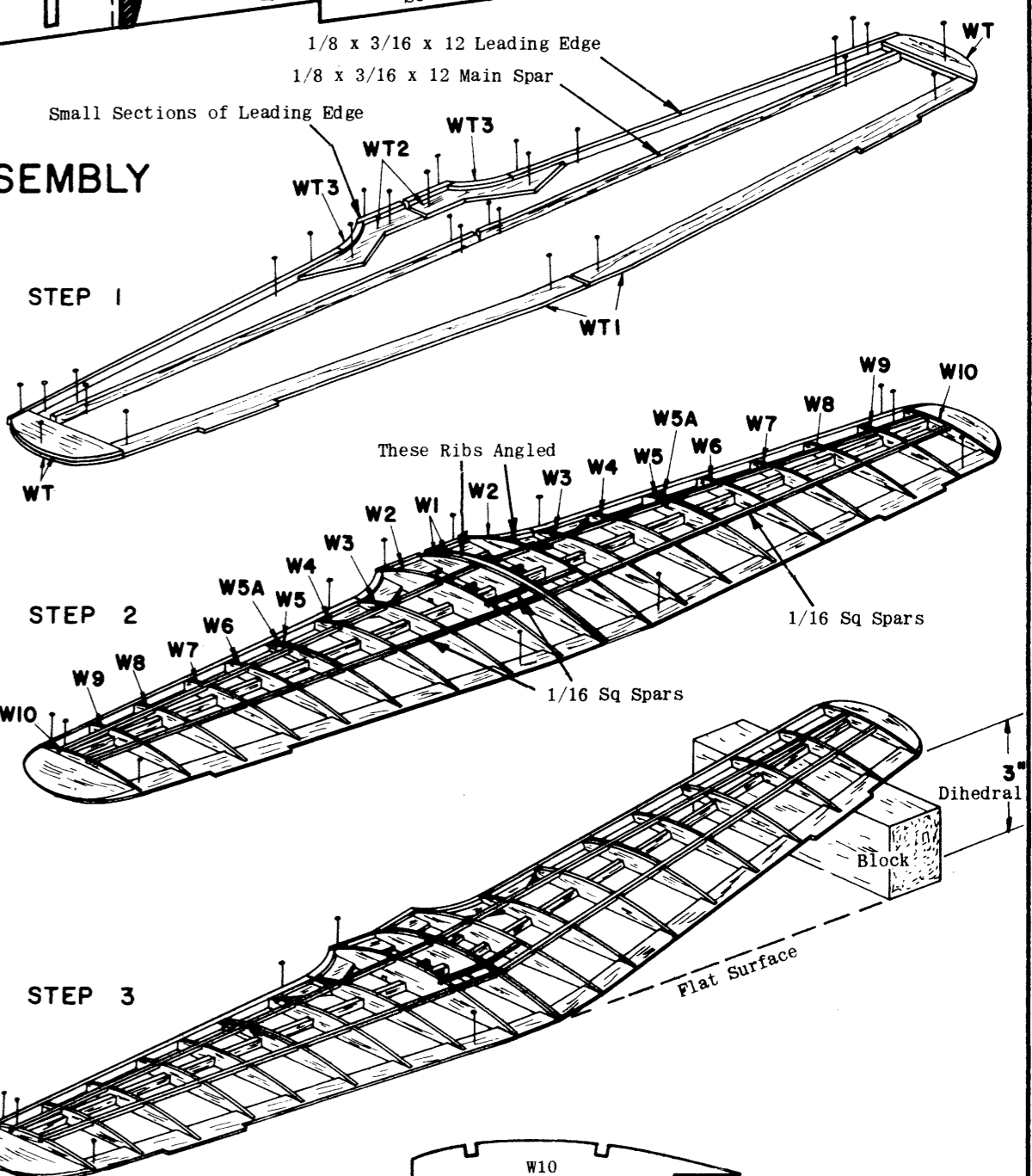


WING ASSEMBLY

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.



FUSELAGE FRAME ASSEMBLY
(Make One Only)