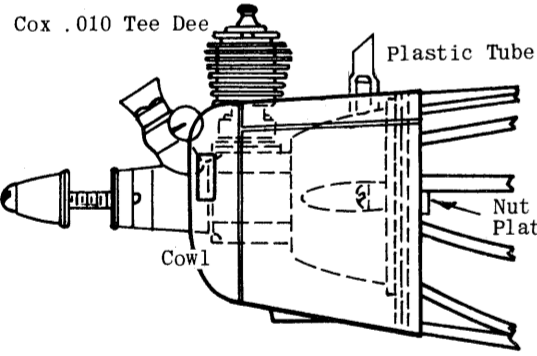


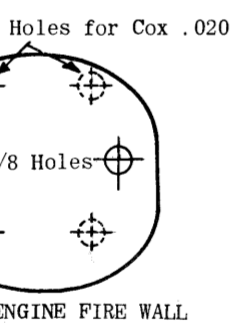
FINAL ASSEMBLY

Wing, tail and fuselage are now covered as described in Silkspan Tissue Note before proceeding. Cement H between wing ribs W1 against W5, flush with top of ribs; allow to dry. Remove hatch door die cut into H which opens for hopper loading. Cement a length of 1/16 square to bottom of H across rear of opening to act as door stop. Wing is now securely cemented to top of fuselage. Bottom of ribs W1 rest directly on cabin sides, rear of H is against front of F5. Hold firmly down in place with pins until dry, being certain that bottom of wing rests on top of cabin for proper incidence, OTHERWISE MODEL MAY NOT FLY! It is necessary to have access to rear hook for rubber motor. Cut out tissue and bottom keel between bulkheads F7 and F8. Fit a piece of 1/16 balsa into space. Cement cloth tape to front (half over door and half over fuselage) to act as hinge. Cement a strip of 1/16 square to F8 to act as door stop, to keep door flush with surface. Hold rear in place with Scotch Tape. Cement stabilizer horizontally in place. Cement rudder to top of stabilizer and against rear of fuselage. ALIGNMENT OF WING AND TAIL SURFACES IS NOW CHECKED. Tips are equal distance from flat surface when model is at rest and rudder is vertical. Replace hatch in H. Hinge front in same manner as rubber band access door. Hold rear closed with Scotch Tape. H is now covered with silkspan, slitting tissue so that door can be opened. Round off landing gear struts LG's to cross section shown and make groove (with pencil point) for wire struts 1/16" from front as shown on side view. Cement both LG's securely in place, wrapping with silkspan for maximum strength. Install cowl. Trim excess material carefully to edge of cowl and sand smooth. Cowl may be placed on bulkhead F1 for support while sanding. Use pencil to punch out center hole for nose bearing. Cement cowl securely to F1. Use light coats of cement, applied sparingly.



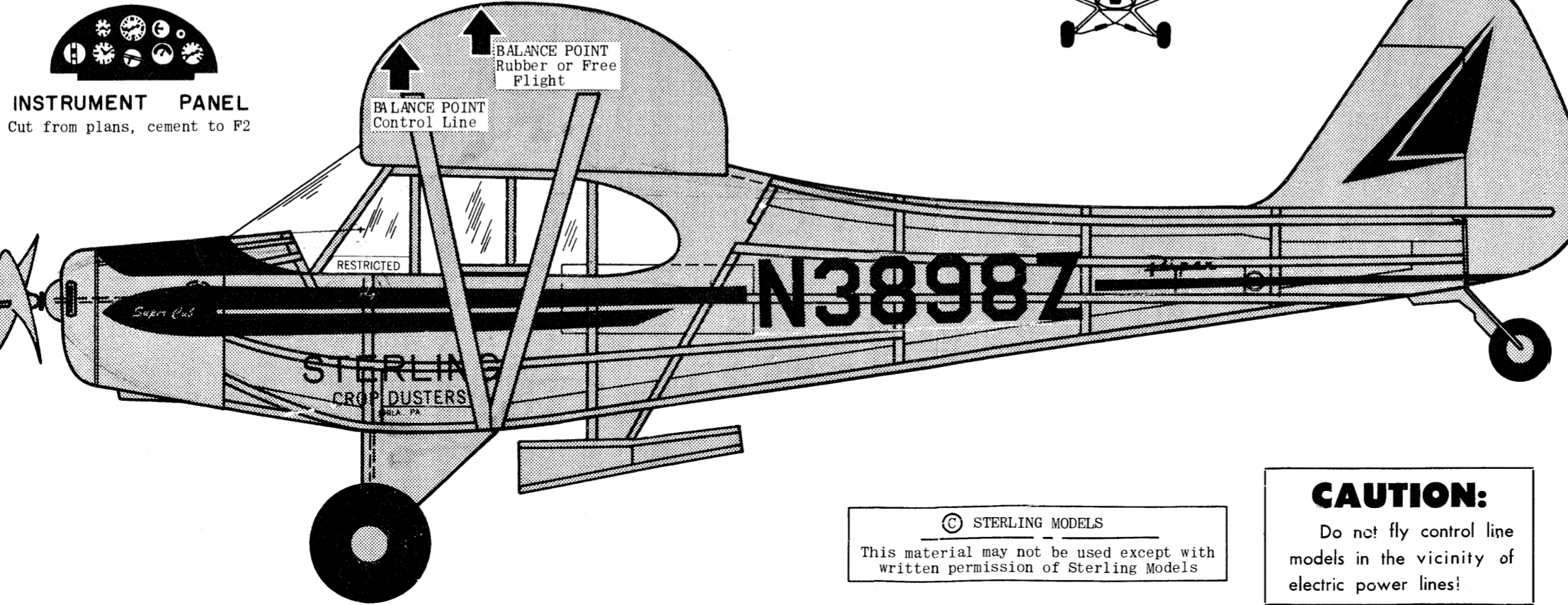
ENGINE INSTALLATION

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 for a Cox .010 Tee Dee engine which is suitable for both control line and free flight. The .020 Pee Wee and similar size engines can be used for control line only if more power is desired. Fuselage should be covered at least back to F5 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, drilling holes indicated. Note center holes are for Cox .010 engine, other four holes for Cox .020 engine. Mount engine to fire wall with #2 nuts and bolts, tightening nuts securely. Cut plastic nut plates from molded sheet, trim to 1/8" around nut itself to provide gluing surface, then cement to back of fire wall over nuts, drilling hole through 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. Engine fire wall is now securely cemented to front of F1, after F1 has been notched to clear nut plates. Engine is then installed after model has been painted. Add a 3/4" length of 1/16 I.D. plastic tubing to fuel tank fill and overflow tubes. Cut top of tubing at angle facing forward for easy admission of air stream. If needle valve extension is necessary, force a length of 1/8 I.D. plastic fuel tubing over head of needle valve, then insert a length of 1/8 dowel into end of tubing. Dowel should protrude at least 1/2" past side of fuselage. Engine is then installed. Cut out front and top of cowl for engine clearance. Cowl can either be cemented in place, breaking glue joint each time engine is removed, or it can be made removable by cementing small blocks to plywood fire wall which receive tiny wood screws through cowl.



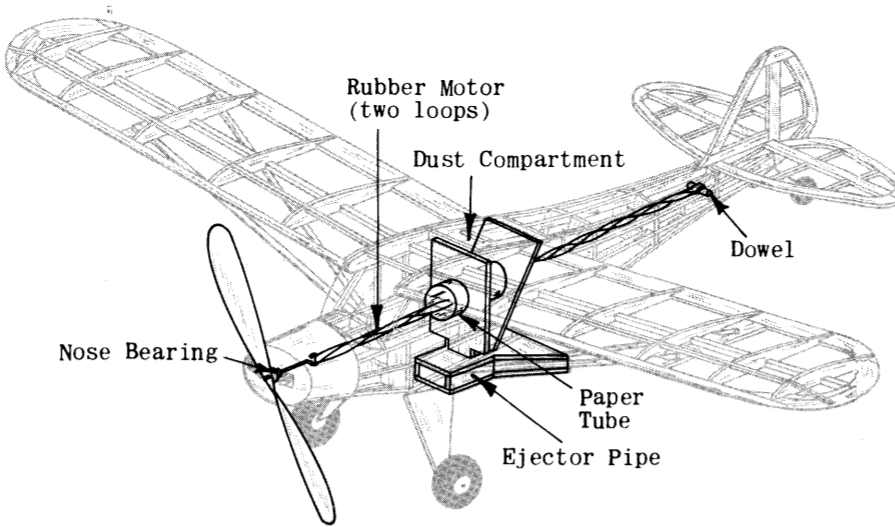
PLASTIC COWL

Sketch above shows how plastic cowl looks trimmed and ready for installation in Final Assembly Note.



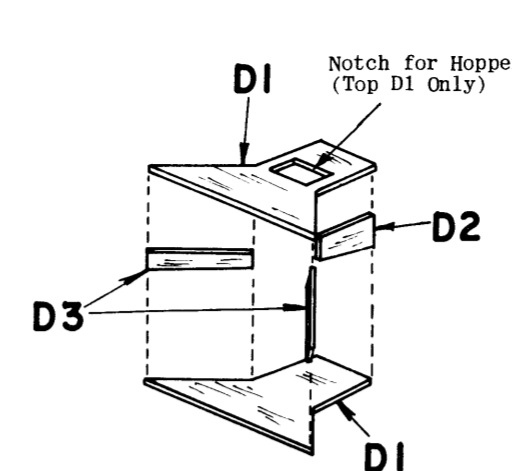
INSTRUMENT PANEL

Cut from plans, cement to F2



CROP DUSTING DETAIL

Crop dusting, using Talcum Powder, is done automatically in flight by vibration action of rubber motor while unwinding. Build dust ejector pipe as shown and described in detail note. Pipe is cemented to bottom of dust bin protruding through fuselage as shown on side view. To operate simulated dusting, fill dust bin to desired amount with Talcum Powder. While model is in flight, rubber motor vibrates and slaps within tube, breaking up powder, forcing it down into ejector pipe, where the air stream blows it out the rear, similar to the full size aircraft.



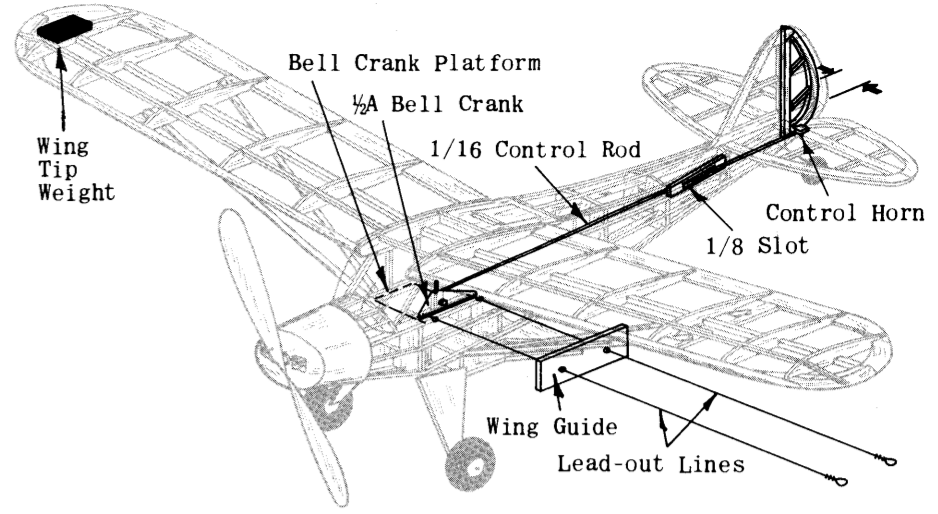
EJECTOR PIPE DETAIL

Cement all D parts together as shown. Cut out notch in top D1 ONLY (at impression marks in part) to fit snugly over bottom of hopper protruding from fuselage. D2's and D3's fit between D1's. Hold with pins and when dry, sand smooth and round off corners. Paint, then cement to bottom of dust bin as shown, after model has been painted.



CONTROL LINE INSTALLATION

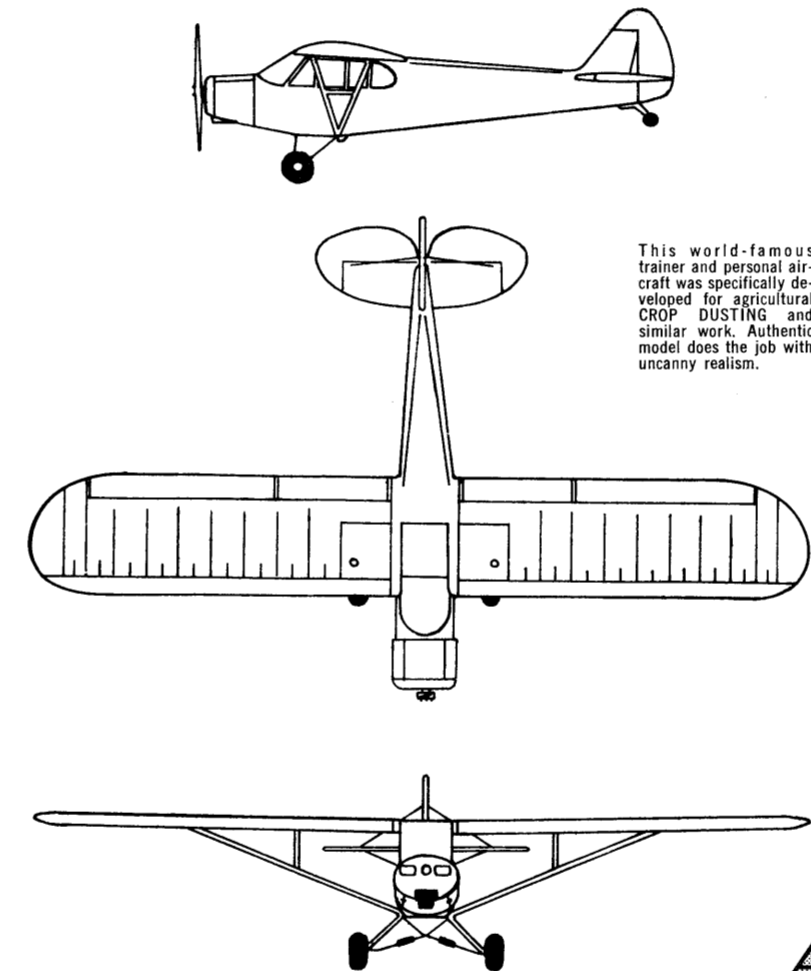
Materials required for control line installation are not provided in kit. INSTALL CONTROLS AFTER FUSELAGE STEP 4 HAS BEEN COMPLETED. Obtain 1/16 plywood and cut out bell crank platform, using drawing provided; drilling hole indicated. Fill in area between bulkhead F-7 to F-8, and between stringers as shown in sketch with scrap 1/16 sheet balsa, flush. Cut 1/8 slot in rear covering for control rod as shown. Mount 1/2 bell crank to plywood platform as described in instructions that come with bell crank. Cut two 15" lengths of lead-out lines and fasten them to bell crank. Cement platform securely in fuselage, against front of F3, and on top of L4's. Lead-out lines come through fuselage at holes made in windows. Use cement generously, applying at least two coats on entire installation. Cover fuselage with tissue as described in detail note. Cut stabilizer in half through wide main spar as shown by dotted lines on full size drawing. Round edges and install control horn at location shown on drawing, then join together with cloth hinges shown. Cement stabilizer horizontally to top rear of fuselage. Tape elevators in neutral position (in line with stabilizer, neither up or down). Obtain a piece of 1/16 music wire at least 12" long for control rod, and bend 1/4" of one end at right angle. Loosen bell crank and insert rod from bottom, with spur vertical, then secure bell crank.



Rod rests on plywood platform and should be in line with elevator horn; if not, bend accordingly so that rod slides through slot freely. Make a right angle bend at rear end of rod at the exact location of hole in elevator horn, with bell crank in neutral position as shown. Clip off excess wire and insert into horn. Solder washer on end to prevent rod from coming off. Controls are now in neutral position. Remove tape from elevator and check that controls work freely and easily. Cut rudder in half through wide rudder post as shown by dotted lines on full size drawing. Cement together with rudder angled 1/2" to right side as shown above. Cement rudder to top of stabilizer and against rear of fuselage. Cement wing to fuselage as described in Final Assembly Detail. Make wing guides from 3/32 balsa, drilling holes indicated. Cement securely to wing struts under horizontal member. Reinforce holes in fuselage and wing guide with washers or eyelets. Thread lines through 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. CAUTION: MODEL MUST BALANCE (OR BE SLIGHTLY NOSE DOWN) AT POINT SHOWN ON SIDE VIEW FOR CONTROL LINE! If necessary, add weight. Use regular 1/2A control lines and handle when flying your Piper Super Cub PA-18A Agricultural Crop Duster. GOOD LUCK AND GOOD FLYING!!!

PIPER SUPER CUB PA-18A SPECIFICATIONS AND COLOR SCHEME

Wing Span - 35 Ft. 4 In.
Length - 22 Ft. 6 In.
Height - 6 Ft. 8 In.
Weight Empty - 930 Lbs.
Gross Weight - 1750 Lbs.
Fuel Capacity - 36 Gal.
Engine - Lycoming O-320
150 H.P. at 2700 RPM
Maximum Speed - 130 M.P.H.
Cruising Speed - 115 M.P.H.
Landing Speed - 43 M.P.H.
Service Ceiling - 19,000 Ft.
Maximum Range - 460 Miles
COLOR SCHEME
Box top shows typical factory paint job. Decals are supplied in kit. Paint jobs varied however depending on individual owner and type of use. For further color schemes, etc., write Piper Aircraft Corp., Lock Haven, Pa.



This world-famous trainer and personal aircraft was specifically developed for agricultural CROP DUSTING and similar work. Authentic model does the job with uncanny realism.

FLIGHT INSTRUCTIONS

When model has been completed, it must balance at point shown on side view, when held at wing tips. DO NOT ATTEMPT TO FLY MODEL UNTIL BALANCE HAS BEEN ACHIEVED, add weight if necessary. Model is now ready. Pick a calm day for test flying. Wind propeller clockwise about 100 to 150 turns and launch into any prevailing wind (slightly nose down) at a point on the ground about 50 feet ahead of you. DO NOT THROW MODEL, but push gently into the air after first allowing propeller to spin for a second or two. If model noses up, then falls off and stalls (AFTER MODEL WAS BALANCED), then bend elevators down slightly, using breath in same manner as steam, described in Covering Note. 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 contest flying, it is recommended that the loops of rubber be lubricated with model lubricant

(available at some hobby shops) or Castor Oil. Apply sparingly and KEEP IT OFF KNOT OR IT WILL COME UN-DONE! Use winder, which you can buy at hobby shop or can make by tightening hook into hand drill. To store winds in motor, slowly stretch rubber out three to five times original length, then proceed to wind, moving slowly back to model. Feel rubber from time to time to be certain it doesn't get too taut so it breaks. Upon reaching the nose, motor should be completely wound. When replacing rubber motor, purchase contest grade T56 Brown Rubber at your hobby shop. Engine powered free flight models are tested and flown in same basic manner as above, with engine at lowest possible speed until model is adjusted to fly properly. If model glides well but stalls under power, point front of engine down (down thrust) by placing washers behind top of tank or where necessary. Engine speed then can be slowly increased. GOOD LUCK AND GOOD FLYING!!!

CROP DUSTING AUTOMATICALLY !

PIPER SUPER CUB PA-18A

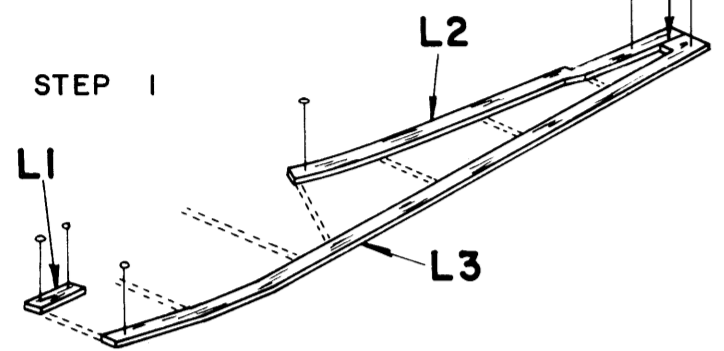
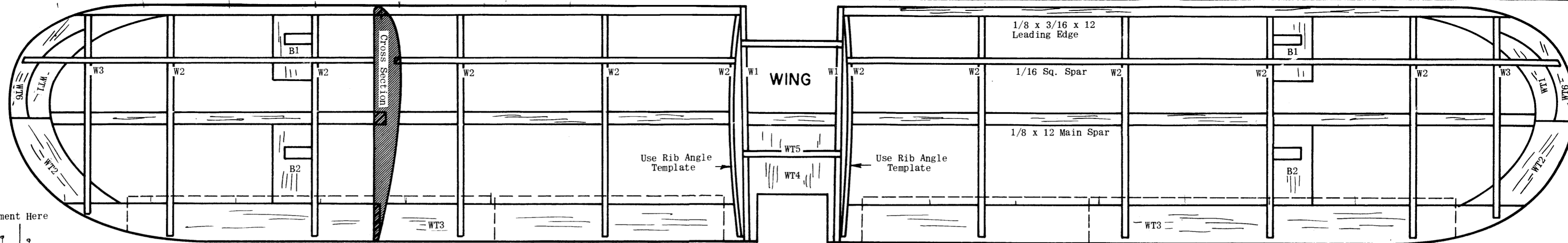
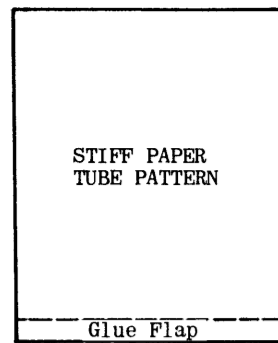


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CAUTION:
Do not fly control line models in the vicinity of electric power lines!

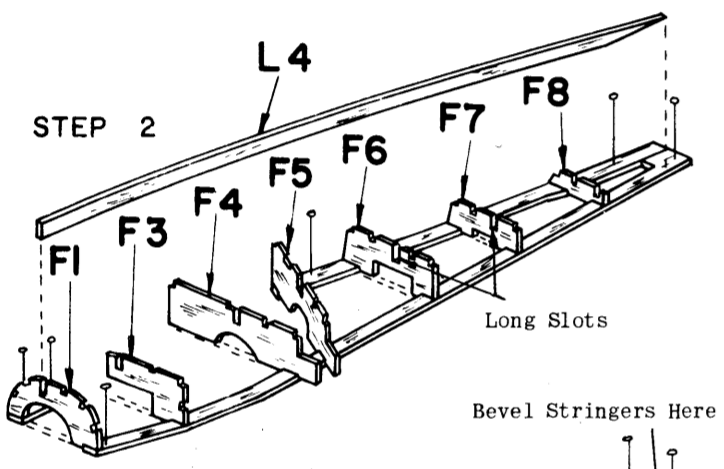
Sterling
MODELS
PHILA. PA. USA

KIT A7-98
WING SPAN 18"

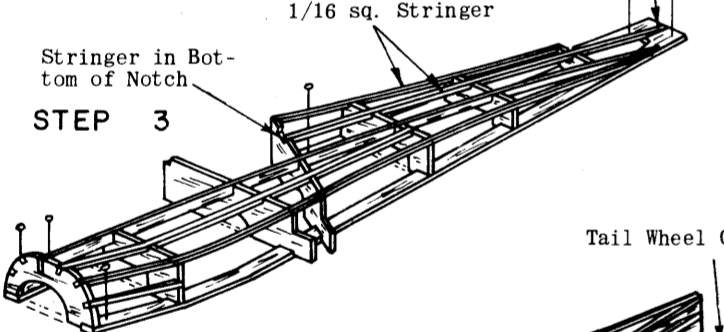


FUSELAGE ASSEMBLY

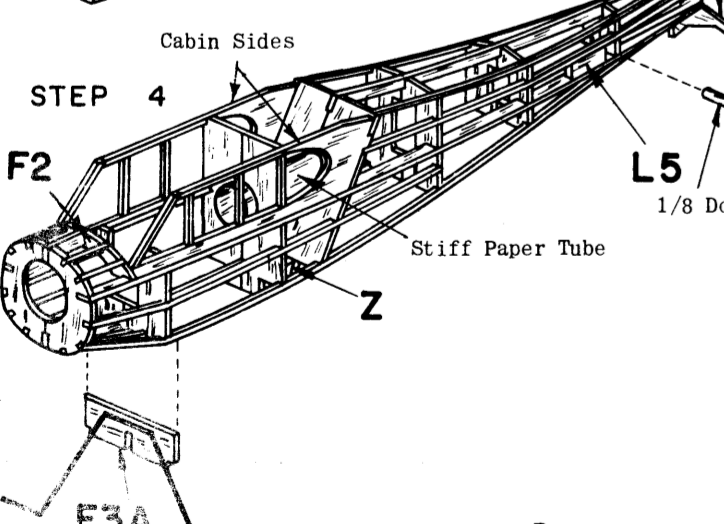
STEP 1
Build fuselage directly on plan. Pin L parts in place as shown, cementing where they join at rear.



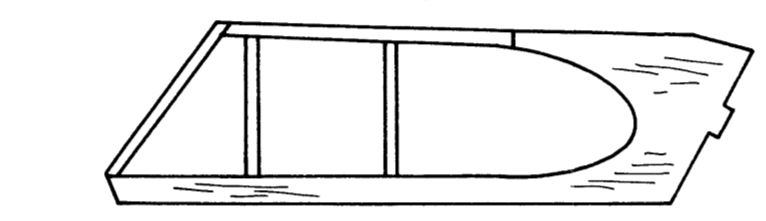
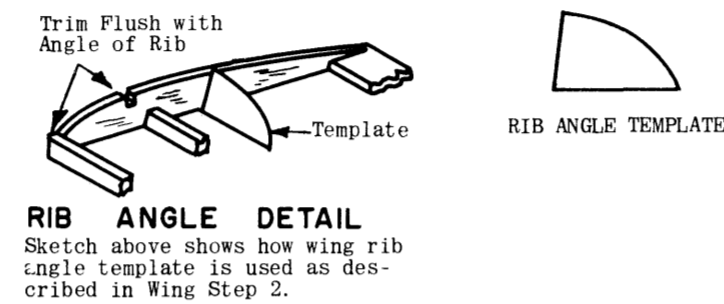
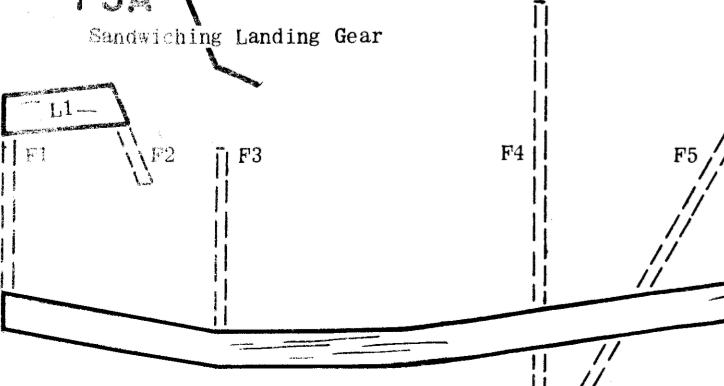
STEP 2
Cement bulkhead halves from F1 to F8 (except F2 which is installed in Step 4), vertically in place as shown. Insert and cement L4 into long slots in center of bulkheads.



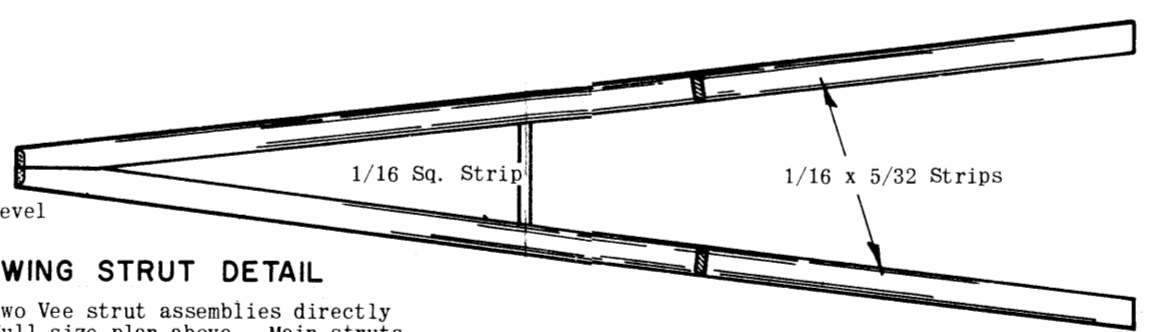
STEP 3
Build two cabin sides, see detail note. Cement 1/16 sq. strip (stringers) into notches for same as shown, bevelling rear to knife edge. Note that stringer above side keel L4 is cemented to bottom of notch in F5 as shown. Stringer below L4 ends at F6. Stringers can be more easily bent if necessary by soaking in hot water. Allow frame to dry overnight to prevent warping. Wing or tail can be started meanwhile.



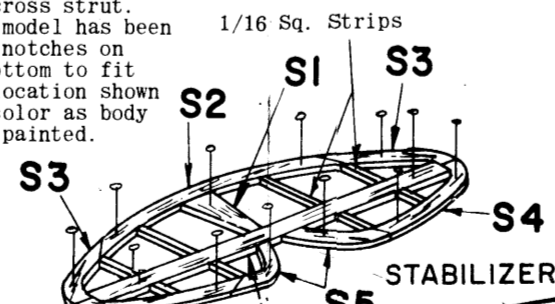
STEP 4
Pull out pins and remove frame from flat surface, then cement opposite halves of bulkheads in place followed by L4. Cement all 1/16 sq. stringers in place. Cement both cabin sides in place. Cement bulkhead F2 in place, slipping L1 into notch. Bottom of F2 is against front of cabin. When dry, add 1/16 sq. stringers. Sandwich landing gear between F3A and F3. Landing gear struts rest against bottom corner stringers on each side. On engine powered models, it is recommended that landing gear be duplicated from 1/16 music wire. Cut tube from stiff paper, using pattern provided, and cement together along overlap portion shown in dotted lines. Cement tube through hole in F4 and F5. Cement an L5 to top of L4, 3/16" forward of bulkhead F3 on each side of fuselage as shown. 1/8 dowel provided is inserted in this space to hold rubber band as described in Final Assembly Note. Do not install at this time. Bend 1/8 spur on tail wheel gear as shown on side view, then sink spur into rear of fuselage. Cement to bottom of fuselage against front of tail wheel gear. Use cement generously and allow to dry thoroughly. Bulkheads F4 and F5 extend below bottom of fuselage to form hopper. Cement sides Z between bulkheads flush with bottom. Cement a length of 1/16 square between bulkheads against Z to provide shoulder for tissue covering. Frame is now complete. Allow to dry thoroughly, then sand lightly to present a smooth surface for tissue covering, which is described in its detail note. If model is to be engine powered, see Engine or Control Line Note BEFORE COVERING FUSELAGE.



Pin L6 on plan. Remainder of frame is 1/16 balsa strips cut to length and pin in place on plan as shown in Assembly Sketch. MAKE ACCURATELY so that wing will have proper angle of incidence, OTHERWISE MODEL MAY NOT FLY! Use cement generously and allow to dry thoroughly before removing from flat surface. Make two exactly alike.

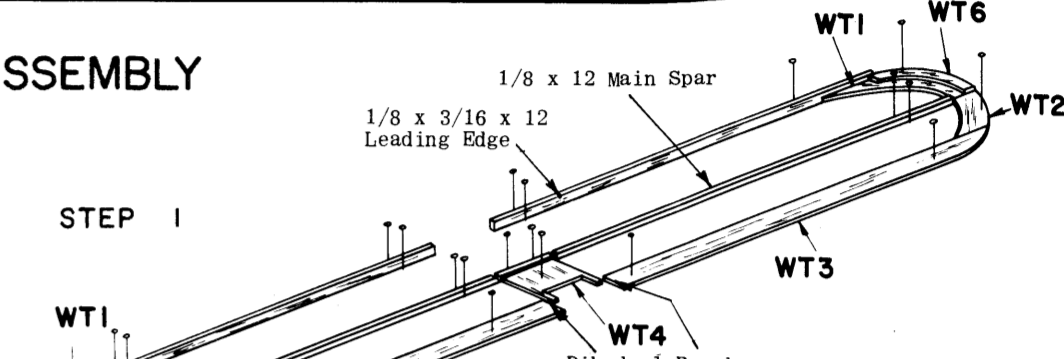
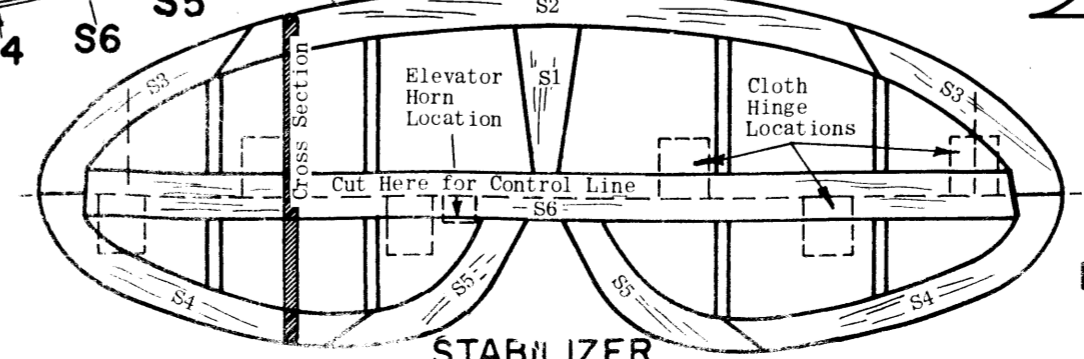


Make two Vee strut assemblies directly over full size plan above. Main struts are 1/16 x 5/32 balsa, which is cut to length and bevelled. Round edges to cross section and cement together over plan. Add 1/16 sq. balsa cross strut. Make two assemblies. When model has been completed, insert in strut notches on bottom of wing and bevel bottom to fit against lower stringer at location shown on side view. Paint same color as body and install after model is painted.



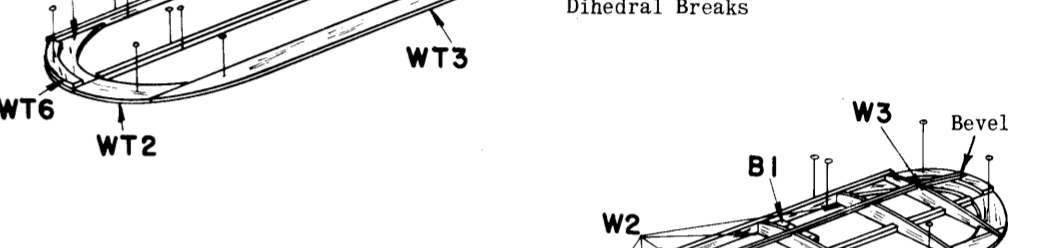
TAIL SURFACE ASSEMBLY

Assemble stabilizer by pinning all S parts directly on plan as shown, cementing to each other where they join. Cut 1/16 sq. strips to fit, and cement in place. Rudder is built in same manner, using R parts shown. Allow assemblies to dry thoroughly on flat surface, then sand smooth, rounding edges (except R1 and R6) as shown on cross section. If model is being built for control line, check note before covering with tissue.

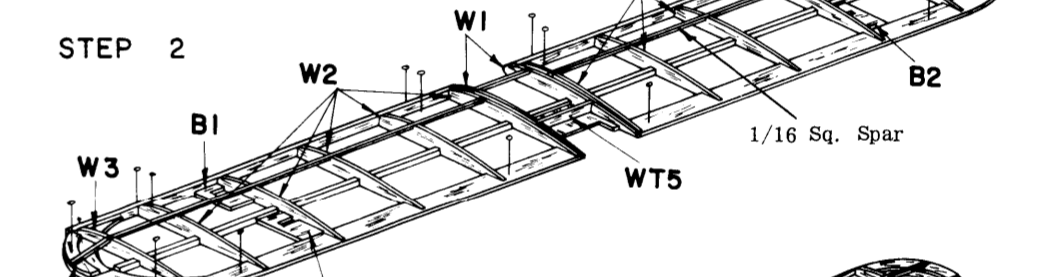


WING ASSEMBLY

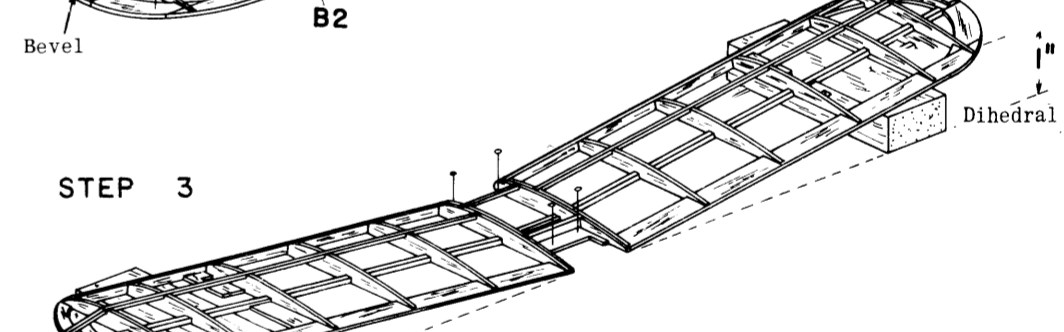
STEP 1
Build wing on flat surface directly on plan. Pin all WT parts in place, except WT6's. Cut 1/8 sq. x 12 main spars to proper length. Pin in place, joining over dihedral breaks in center, and cement to tips. Cut 1/8 x 3/16 x 12 leading edges to length and pin in place, cementing to front of WT1's. Cement WT6's flush with outside of WT1's, against leading edges as shown.



STEP 2
Cement ribs W1 to W3 in place as shown. Rib W2 that adjoins center ribs W1 are set at angle using rib angle template as shown in detail sketch. This insures proper dihedral angle. All other ribs, including W1, are vertical. Do not cement W1's to W2 since panels are separated for dihedral angle in next step. Cement strut gussets B1 and B2 on either side of wing. Cement WT5 into notches between center ribs W1. Cement 1/16 sq. spars into notches along top of ribs. Spars crack at W3 and are bevelled on bottom where they are cemented to WT6 as shown. Allow frame to dry thoroughly before removing from flat surface.



STEP 3
Pull out pins and remove frames from flat surface. Separate panels and trim & sand leading edge to shape shown on wing cross section. Round off tips, blending WT6 into WT2, flowing it into leading and trailing edge to make a smooth rounded wing tip. Trim leading edge, spars and trailing edge flush with angle of W2. Pin center section down on flat surface. Cement panels to center section, blocking up tips 1" for dihedral angle as shown. Use cement generously and allow to dry thoroughly. When dry, sand frame smooth to prepare for tissue covering.



SILKSPAN TISSUE COVERING

The finest grade wet strength silkspan tissue provided in this kit, permits covering of compound curves without wrinkling WHEN FIRST MOISTENED WITH WATER BEFORE APPLYING TO FRAME. Tissue shrinks when dry, to tight smooth surface. Use clear dope to attach tissue to frame as follows: Apply a coat to the outside edges of area to be covered. When dry, cut tissue to shape needed, about 1/4" larger on all sides. Place tissue on flat surface and dampen with moistened cloth. Apply a second coat of clear dope to frame, then place moistened tissue in place. 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 area that wrinkles (bounded by nearest framework) and re-cover section in same manner. Apply two 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 1/4 ounce of weight to right wing tip. Cover top and bottom of wing from dihedral breaks to tip with one piece each. Center section is left uncovered. COVER TAIL SURFACES NEXT: Cover both sides of rudder and stabilizer with one piece each. COVER FUSELAGE NEXT: Cover sides of fuselage (from front to back) with one piece each. Cover top rear of fuselage from F5 to F8 in one piece. Cover top front with one piece. Cover entire bottom in one piece, cutting out square notch for protruding dust hopper. Apply four coats of thinned dope to tissue covering on fuselage. Check wings and tail surfaces for warps before assembling. Warps are removed by holding over steam (from boiling kettle) and twisting gently in opposite direction. Finished model must be warp-free if successful flights are to be obtained.

