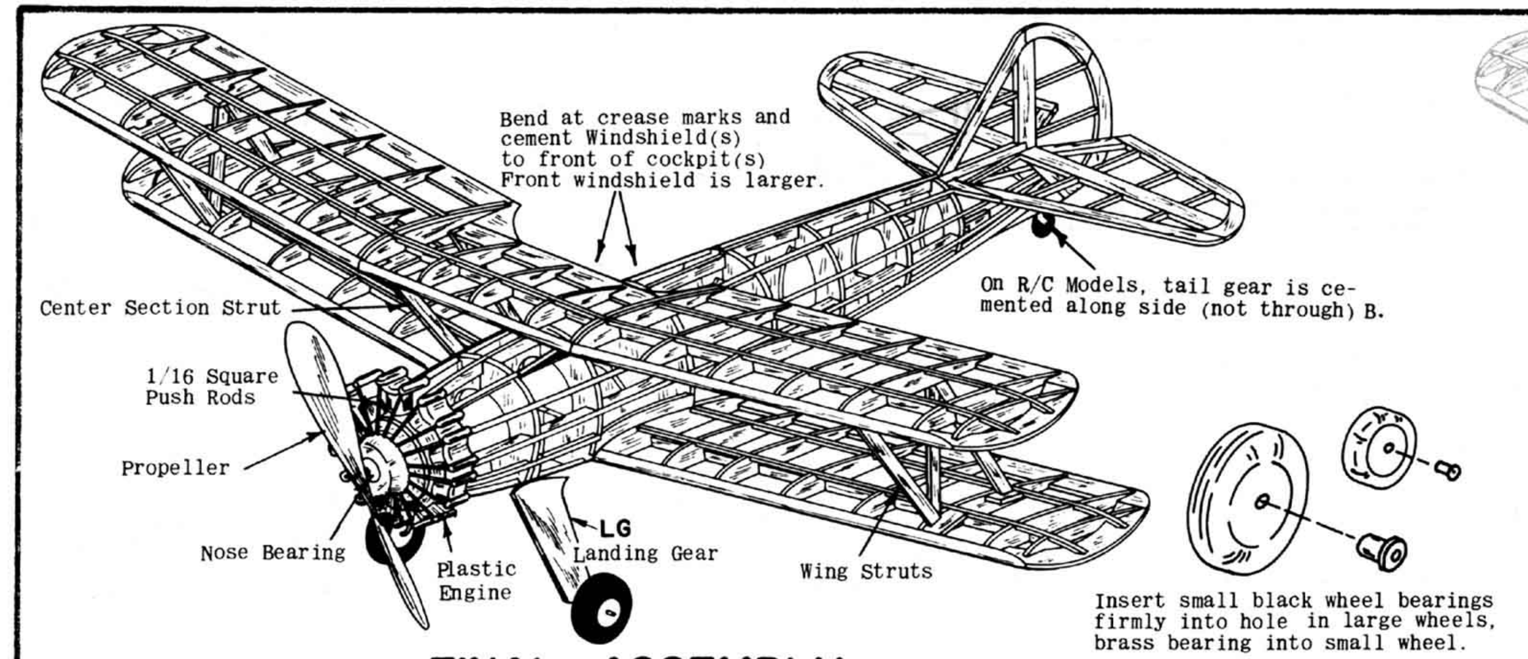
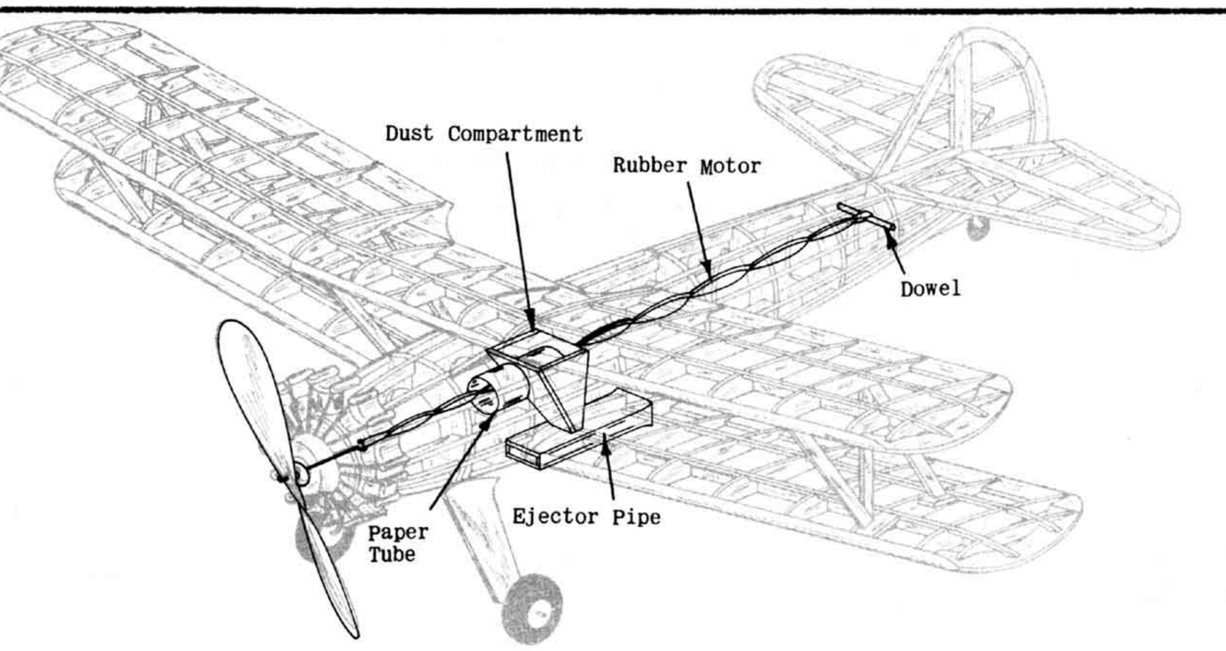


FINAL ASSEMBLY

Cement stabilizer on ST against F8. Cement rudder to top of stabilizer and against rear of fuselage, in line with center stringer. If model is to be used as Crop Duster, rear 1/16 wing spar and sections of center ribs W1's must be cut off so that square opening formed by both BS's is clear to fit over dust bin installed in Fuselage Step 4. Cut out is shown in dotted lines on full size drawing. Lower wing is now cemented in place to bottom of fuselage, dust bin fitting into square cut-out. Adjoining ribs line up with outside keels C. Stabilizer should be horizontal and both wing tips the same height from flat surface. Hold with pins and allow to dry thoroughly before proceeding. If model is being built as Duster, front cockpit is covered (see pattern) as shown in picture on box and top center keel T is cut out only between bulkheads F4 and F5. If both cockpits are open, then top center keel is also trimmed out between F3 and F4. Trim out notches in all strut gussets in upper and lower wing. Build struts as described in detail note, then cement bottom of struts (not SA's which are later removed) into notches in lower wing. CAUTION: Push down firmly until SA's rest on wing for proper incidence, otherwise model will not fly. When struts are dry, put top wing into position on struts, pressing down firmly until wing is seated against top strip. CAUTION: Wing must rest on top strip for proper incidence, otherwise model will not fly. Cement top of struts only. Make four center section struts from 3/32 x 1/4 strips cut to size shown on full size layout. Round off corners to cross section. Cement two struts on each side of center section. Top of struts go into notches for same in top wing, bottoms are cemented to stringer at bulkhead F2 and F3 respectively. Use cement generously. Temporary horizontal pieces on top of struts, and SA's on bottom of struts, are now removed. It is necessary to have access to dowel holding rubber motor. Make door between bulkhead F7 and F8, trimming out stringer immediately above side keel S. Fit 1/16 sheet into area (flush with surface), moistening with water to achieve bend. Cover inside of door with silkspan to hold curve permanently. Check curve while drying. Hinge door by cementing cloth tape along top, half over door and half on fuselage. Cement a piece of 1/16 square on side keel S for door stop to keep door flush with surface. Hold free end with Scotch Tape. Straighten top of tail wheel gear and bend 1/8 spur as shown on side view. Sink spur in place as shown and cement securely. Round off landing gear struts LG's to cross section shown. Groove (with pencil point) for wire struts, then cement securely in place as shown. When dry, assembly may be covered with silkspan for maximum strength. On engine powered models, it is recommended that struts be made of hardwood. Assemble and trim all plastic parts, see detail note. Make dust pipe as described in detail note. Entire model should now be covered as described in Silkspan Tissue Covering. Model is now painted. If it is to be painted scale colors, see three view drawing on 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 front of cockpits. Outlines of scale control surfaces can be drawn with India Ink. Place wheels on axles. Secure by bending up end of axle or with drop of cement or solder. Cement finished engine and air intake in place. Cement pilot in cockpit. Insert straight end of propeller shaft through rear of nose bearing. Slip on two washers provided and insert shaft through back of free wheeling propeller. Bend about ¼" of shaft at right angle, as shown on side view. Make two loops of rubber. Insert rubber through trap door and engage on rear dowel. Slip remainder of rubber into fuselage and shake down towards nose. Make hook on end of a piece of wire. Slip through hole in engine and capture rubber on hook. Pull through engine and engage prop shaft. Nose bearing fits into center hole in engine. Your Stearman PT-17 is now completed. See flight instructions before flying model. GOOD LUCK AND HAPPY LANDINGS!!!

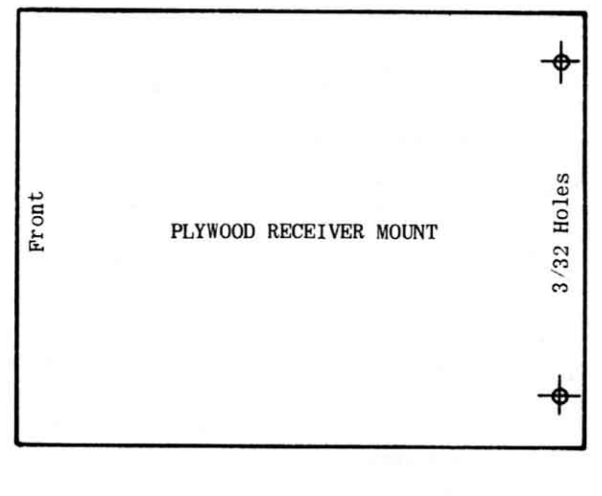


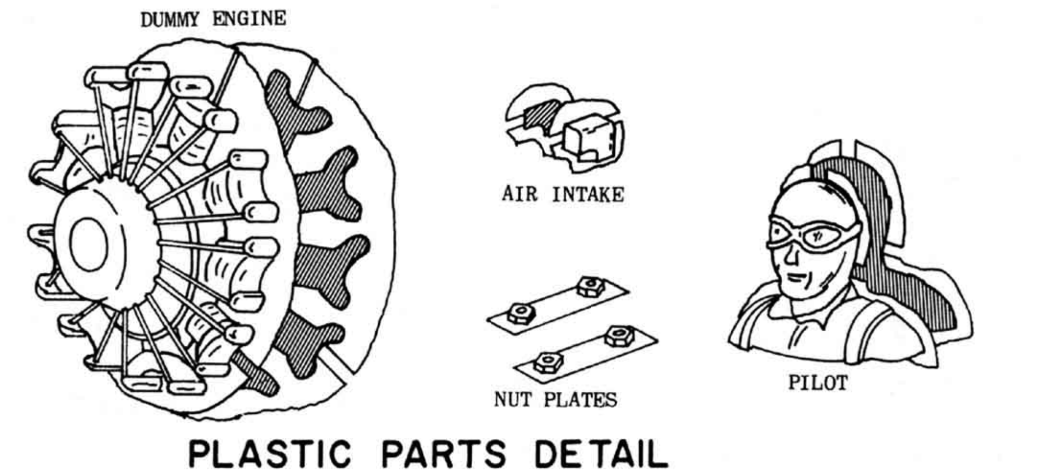
CROP DUSTING DETAIL

Crop dusting, using Talcum Powder, is done automatically in flight by vibration action of rubber motor while unwinding. Dust compartment inside of fuselage is built as described in detail note and installed in Fuselage Step 4. Build dust ejector pipe as shown and described in detail note. Pipe is cemented to bottom of dust bin protruding through fuselage and lower wing 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.

CAUTION:

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

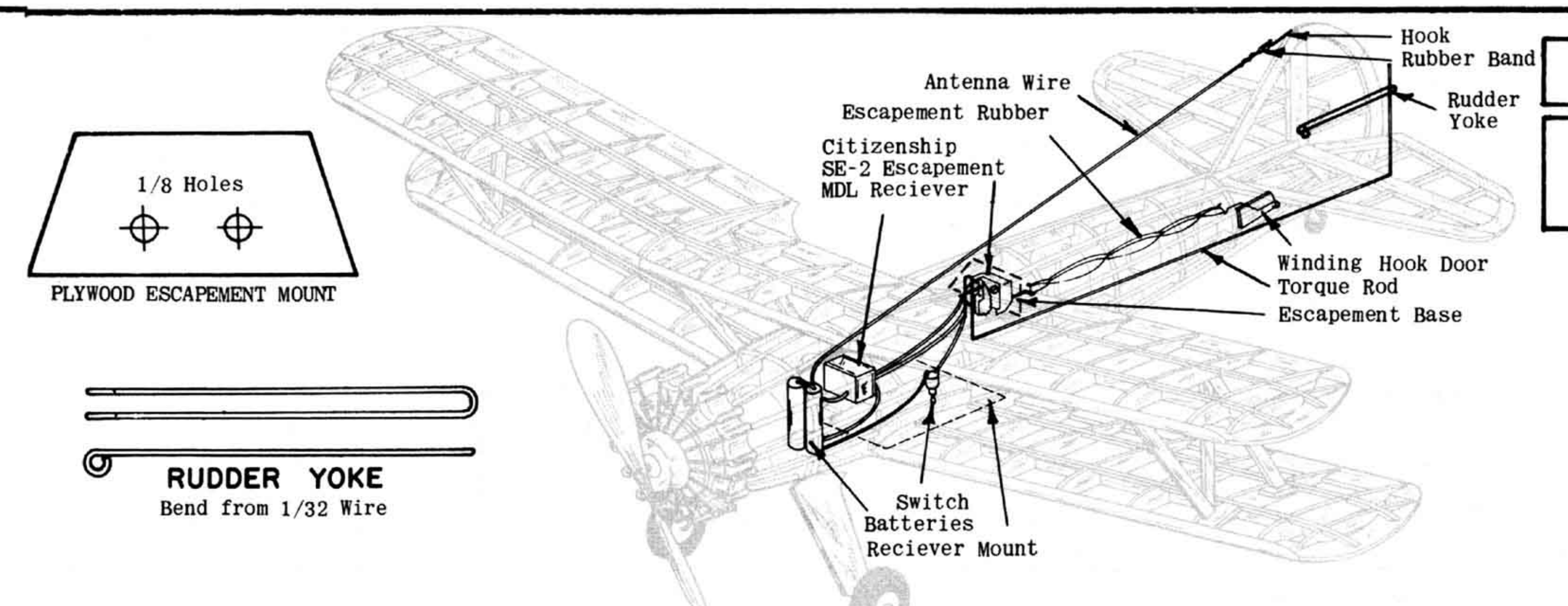


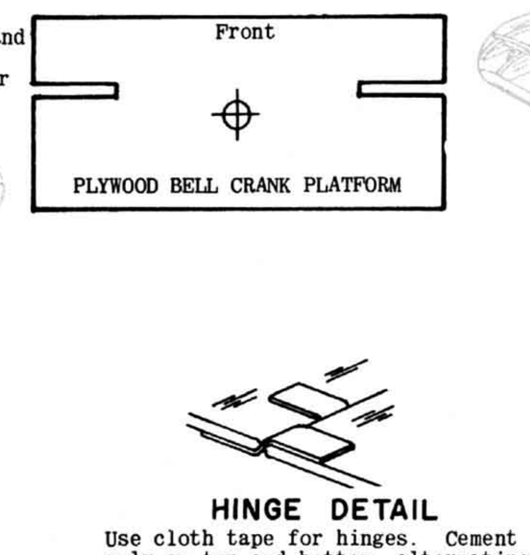


PLASTIC PARTS DETAIL

Follow instructions carefully. DUMMY ENGINE: Engine is molded in two halves. Cut both parts out of sheet in a complete circle, leaving 1/8" excess material. Note scribe line on one cylinder. Line appears on both halves for accurate alignment. Trim out slots about 1/8 wide on other three sides as shown in sketch, right to the edge of the cylinders. Engine halves can now be lined up accurately. Cement halves together, carefully lining up scribe line and slots. Since plastic is Polystyrene, regular plastic cement can be used. Model airplane cement can also be used, however use sparingly since excessive use of cement may distort the plastic. After assembly allow to dry thoroughly. When absolutely dry, excess material is carefully trimmed out around and between cylinder heads, then center hole is cleared for nose bearing. Round off 1/16 sq. strips and cement between notches in crank case and underneath of rocker arm covers as shown. PILOT: Cut halves from plastic sheet, leaving about 1/8" material. Cut 1/8 slots on all four sides as shown, then carefully cement together in same manner as engine, making sure that parts line up correctly. AIR INTAKE: Cut from sheet and trim 1/8 slots on sides as shown, and cement together in same manner. NUT PLATES: Cut from sheet right along trim line and install as described in Engine Installation. PAINTING: Regular plastic model paint or enamel can be used. Model airplane dope can be used only if applied in LIGHT spray coats, allowing plastic to dry thoroughly between coats. Excessive use of dope may deform plastic. Parts may be used red as provided or if painting parts a lighter color than red, apply a light coat of silver, followed by a light coat of white before painting final color. Darker paints may be applied directly to red plastic. When cementing parts in place on model, use light coats of cement applied sparingly If necessary, use more than one coat, but DO NOT APPLY A THICK COAT AT ANY TIME. Install engine as described in either Final Assembly Note or Engine Installation. Cement air intake to front top of fuselage, see side view. Cement pilot against back of either cockpit, as desired.

Thousands of U.S. and Allied pilots earned their wings in this Famous Training plane of World War II. After the war they were outfitted with a 450 H.P. P. & W. engine and front seat removed for CROP DUSTING which our model does with amazing likeness.





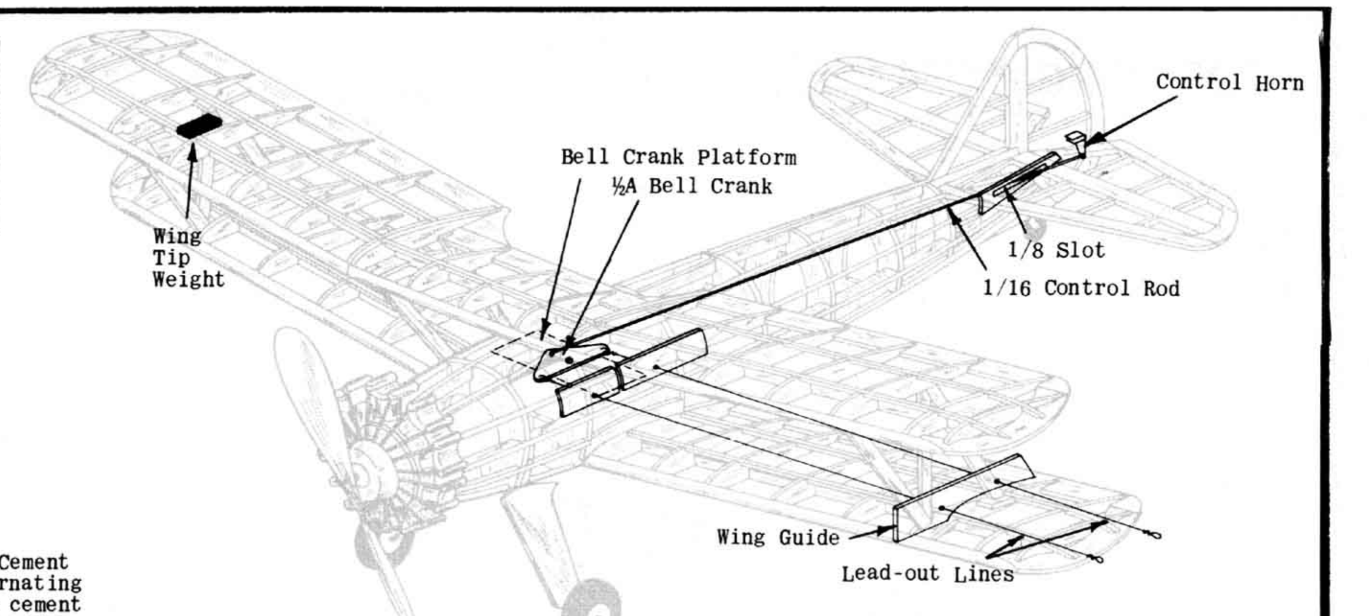
HINGE DETAIL

Use cloth tape for hinges. Cement only on top and bottom, alternating hinges as shown above. Keep cement out of hinged area between sections.

RADIO CONTROL INSTALLATION

It is recommended that the entire fuselage or at least back to Bulkhead F5, be covered with 1/32 or 1/16 sheet balsa for addtional strength needed. Test models used, and drawing shows, Citizen-Ship MDL Receiver, SE2 Escapement, used with SPX Transmitter. This equipment and other material necessary is not provided in kit. Radio is installed after lower wing is cemented in place as described in Final Assembly, before bottom is covered. Cut receiver mount from 1/16 plywood. It fits from F3 to trailing edge, between ribs under fuselage side keels C. Front rests on bottom of leading edge. Rear rests on 1/4 square hardwood strip cemented across front of trailing edge, 1/16 from bottom to act as stop. Cement a length of cloth tape across front, half on mount and half on fuselage, for hinge. Rear is secured to 1/4 square hardwood strip with #2 wood screws. Mount is opened for access to R/C equipment. Cut rudder apart at location shown by dotted lines, then assemble together with cloth hinges. Bend wire yoke from 1/32 wire, install on rudder with 2/56 nut and bolt. Cut escapement base from 1/16 plywood and mount escapement, then cement to front of bulkhead F5 as shown; installing through cockpit. Make 1/16 hole in bottom of fuselage right behind tail gear for torque rod. Using a length of 1/16 wire at least 15" long, insert through hole, then bend U in front of wire according to R/C manufacturer's instructions and as shown above. Pull back and engage U in escapement. Bend rear at right angle as shown, to engage in yoke. Cut off wire 3/4" above yoke. Raising and lowering yoke will increase or decrease the amount of rudder movement. Mount receiver on foam rubber to plywood mount with contact cement according to R/C manufacturer's instructions. Wire all radio equipment together in accordance with R/C manufacturer's instructions. Batteries are stored between F2 and F3. After they have been soldered, line compartment with foam rubber, then insert batteries. Close radio mount door and secure with screws. Bend small wire hook for antenna attachment and cement to front of rudder. Bring antenna out of cockpit and fasten to hook with rubber band as shown.

When model has been completely finished, it must balance 1¾ from top wing leading edge as 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 Silkspan Covering. 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!!!

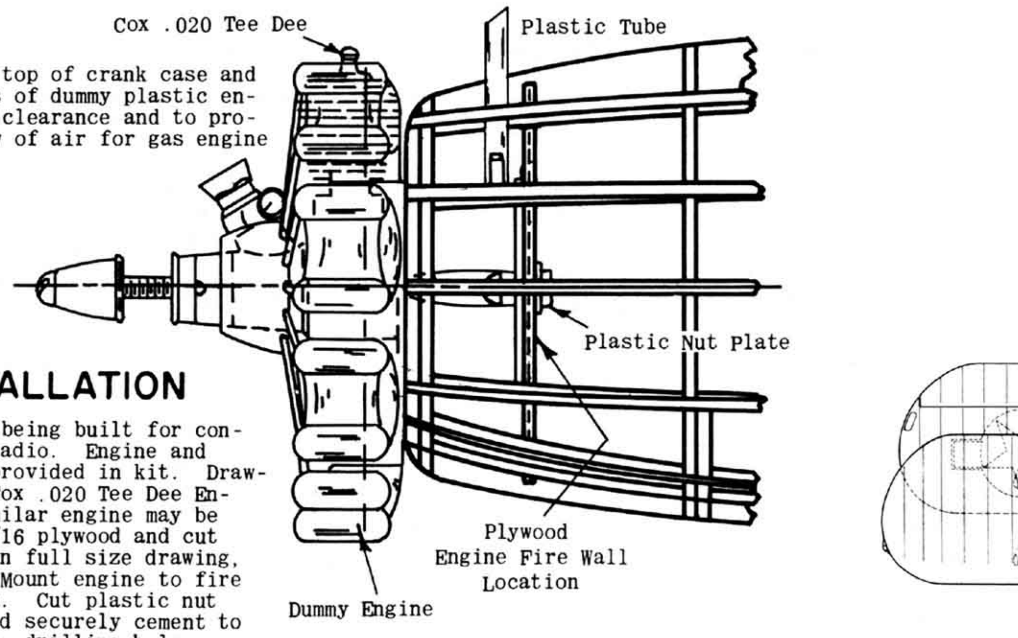


CONTROL LINE INSTALLATION

Materials required are not provided in kit. Bell crank platform must be installed at BEGINNING of Step 4 as described, then controls are installed after Step 4 has been completed. Fill in area between F2 and F4, from side keel S to stringer above it, with scrap 1/16 sheet balsa. Covering is flush with outside of frame. Cover area from F8 to rear between S and stringer above it in same manner. Cut 1/8 slot in rear for control rod as shown. Cut two 15" lengths of lead-out lines and fasten them to bell crank. Push rod is 1/16 wire at least 12" long. Make a right angle bend at one end. Place in fuselage, insert in bell crank, and mount assembly to plywood platform as described in instructions that come with bell crank. Cut stabilizer in half through wide main spar as indicated by dotted lines. 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). Make a right angle bend at rear end of control rod at precisely the location of hole in elevator horn, with bell crank in neutral position as shown. Trim off excess and insert horn. Solder washer on end to prevent rod from coming off. Controls are now in neutral position and must work freely and easily. Cement rudder to top of stabilizer, against rear of fuselage, at angle so that rear of rudder if off-set ½" towards outside of circle flown. Assemble wings to fuselage as described in Final Assembly Detail. Make wing guide from 3/32 balsa, drilling holes indicated. Cement securely to bottom wing against struts as shown. Reinforce fuselage and wing guide holes 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. 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 lines and handle when flying your Stearman PT-17. GOOD LUCK!!! GOOD FLYING!!!

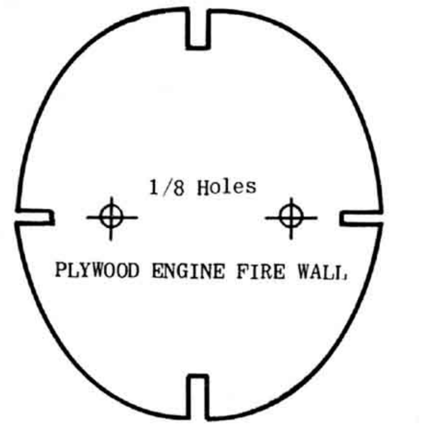
R.C. WINDING HOOK DOOR

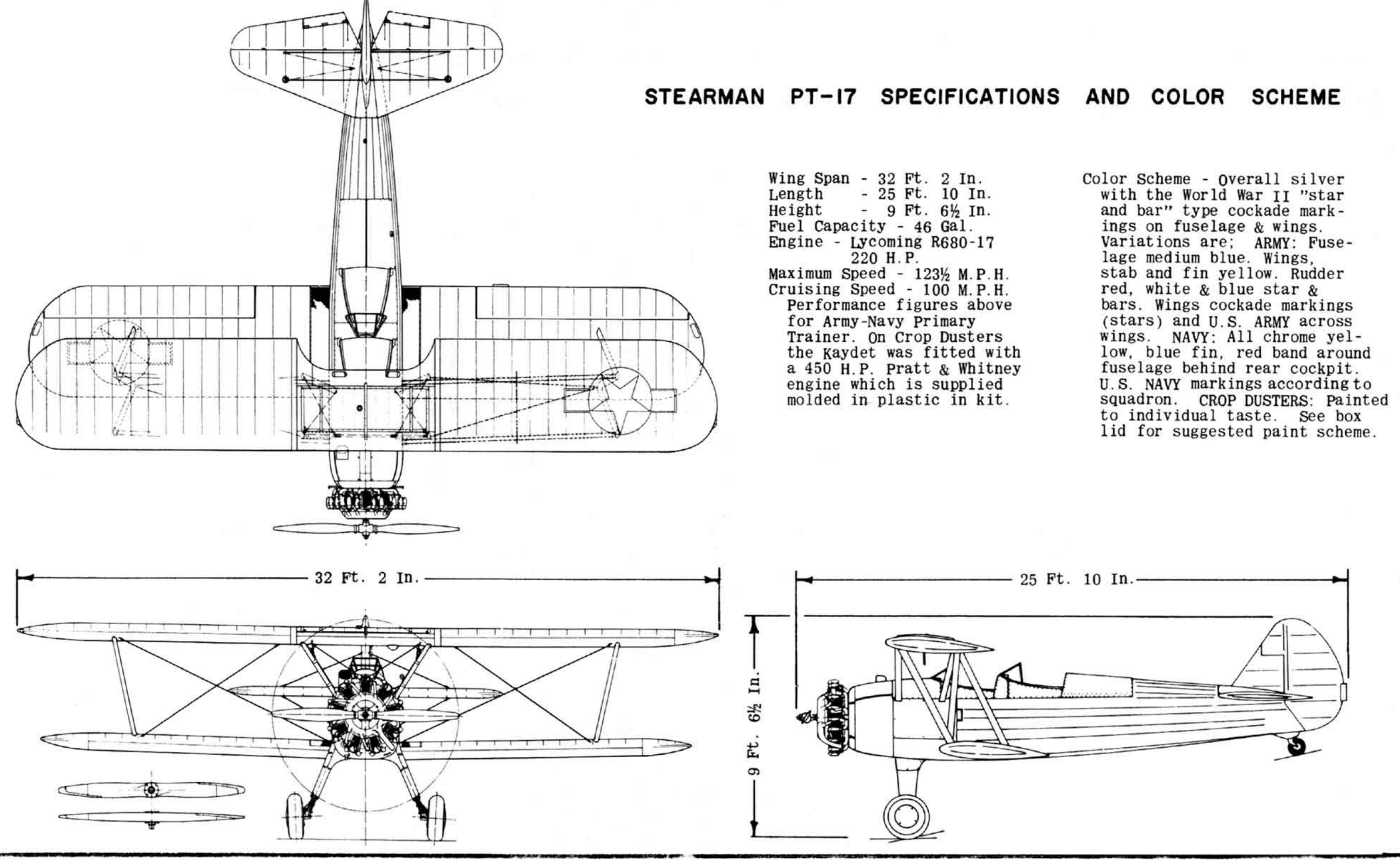
Inset 1/16 sheet in area between F8 and rear, from side keel to ST, removing stringer. When dry, cut out square hole 3/8 x 5/8. Cement piece cut out to 1/16 x 1/2 x 3/4 (grain running crosswise) as shown above, to form door. Bend half of hook shown from 1/32 wire and push straight end in door - then bend hook on other end as shown in top view. Cement hook securely to door in position shown. Place loop of rubber between escapement and hook on inside door.



ENGINE INSTALLATION

Engine is used if model is being built for control line, free flight or radio. Engine and installation material not provided in kit. Drawing shows installation of Cox .020 Tee Dee Engine, however any other similar engine may be used. Obtain a piece of 1/16 plywood and cut engine fire wall as shown in full size drawing, drilling holes indicated. Mount engine to fire wall with #2 nuts and bolts. Cut plastic nut plates from molded sheet and securely cement to back of fire wall over nuts, drilling holes through, so that bolts can protrude. Use cement generously. Nut plate keeps nuts from turning, so engine can be moved by just unscrewing, bolts from front. When dry, remove engine, then slip fire wall into fuselage and cement in position shown. Cut away top cylinder and top of crank case on plastic engine for both clearance and cooling of gas engine. Cement to front of F1, see side view. 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 at least 1/2" past plastic engine. Cut 1/16 I.D. plastic tubing for filler and over-flow and force tubing on metal tubes on top of fuel tank. Tubing should extend about 1/2" above fuselage and top should be cut at angle facing forward for easy admission of air stream. Engine is removed for painting and then replaced.

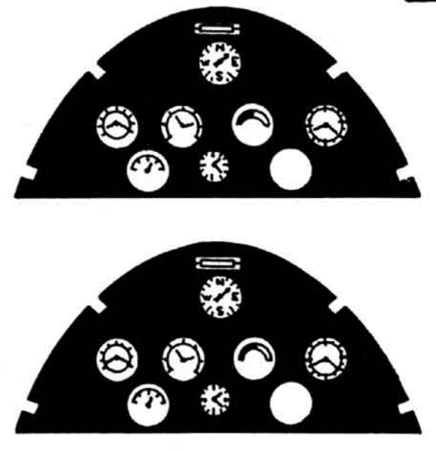




STEARMAN PT-17 SPECIFICATIONS AND COLOR SCHEME

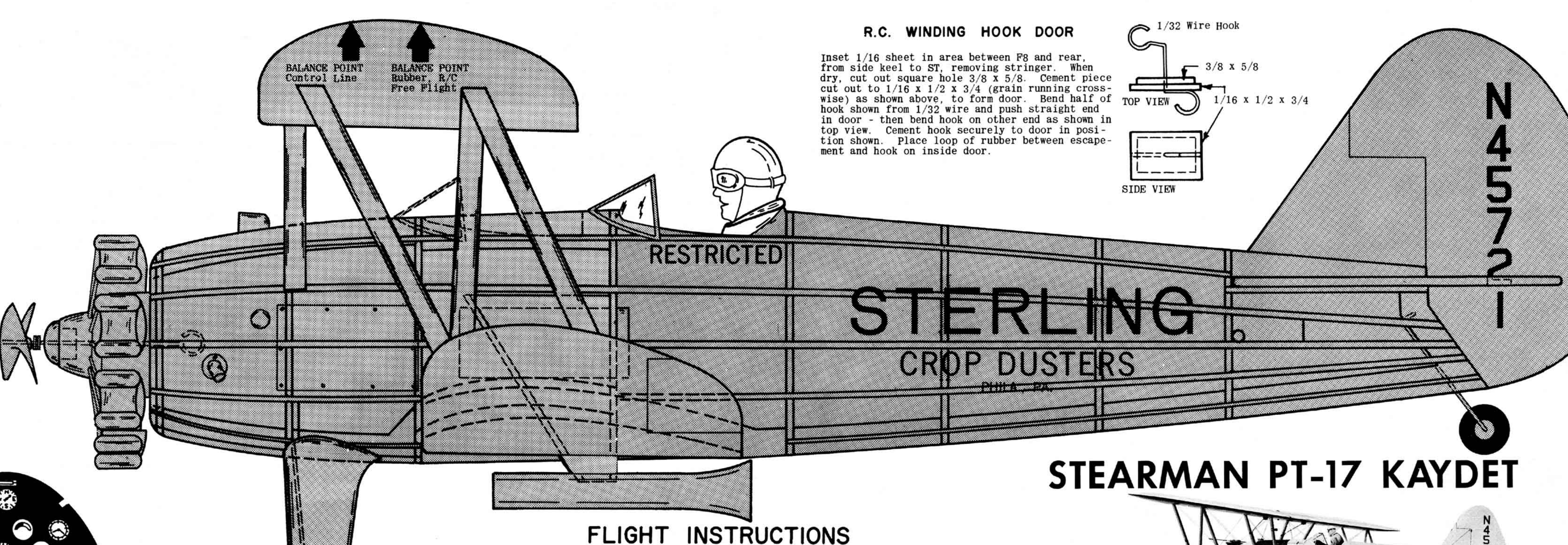
Wing Span - 32 Ft. 2 In.
Length - 25 Ft. 10 In.
Height - 9 Ft. 6⅛ In.
Fuel Capacity - 46 Gal.
Engine - Lycoming R680-17 220 H.P.
Maximum Speed - 123½ M.P.H.
Cruising Speed - 100 M.P.H.
Performance figures above for Army-Navy Primary Trainer. On Crop Dusters the kaydet was fitted with a 450 H.P. Pratt & Whitney engine which is supplied molded in plastic in kit.

Color Scheme - Overall silver with the World War II "star and bar" type cockade markings on fuselage & wings. Variations are; ARMY: Fuselage medium blue. Wings, stab and fin yellow. Rudder red, white & blue star & bars. Wings cockade markings (stars) and U.S. ARMY across wings. NAVY: All chrome yellow, blue fin, red band around fuselage behind rear cockpit. U.S. NAVY markings according to squadron. CROP DUSTERS: Painted to individual taste. See box lid for suggested paint scheme.



INSTRUMENT PANELS

Cut from plans and cement to front of cockpit(s).



STEARMAN PT-17 KAYDET

FLIGHT INSTRUCTIONS

When model has been completed, it must balance 1¾" from front of wing at top-wing tips as shown on side view. DO NOT ATTEMPT TO FLY MODEL UNTIL BALANCE HAS BEEN ACHIEVED, add weight if necessary. Check wing and tail. If warps have developed, remove using steam method described in Silkspan Step. Model is now ready. Pick a calm day for test flying. 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 UN-DONE! 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. Feeling 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 AND GOOD FLYING!!!

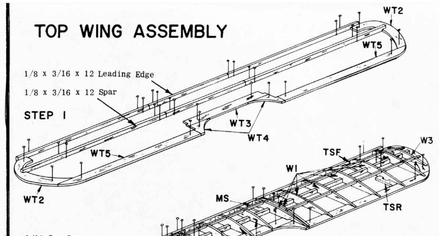
Sterling MODELS PHILA. PA. USA

CROP DUSTER

KIT A-2
WING SPAN 20"

0 1 2 3 4 5 6

TOP WING ASSEMBLY



STEP 1

Build wings on flat surface directly on plan. Pin all WT parts in place, cementing to each other where they join. Using 1/8 x 3/16 x 12, cut main spar comprising of two outer spars and center section, to proper length. Pin in place upright, cementing to each other over plan where they are joined. 1/8 x 3/16 x 12 is also used for leading edge. Cut three sections in same manner and pin in place in upright position, cementing where they join.

STEP 2

Ribs W1's, W2's & W3's are now cemented in place. Top wing of real Stearman PT-17 had no dihedral. Your model top wing may be built flat ONLY IF MODEL IS BEING CONSTRUCTED FOR CONTROL LINE FLYING. In this case, center section ribs W1's are vertical as well as rest of ribs. On all other models, except control line, use rib angle template which will give the 1-1/8 dihedral as shown in Step 3 Sketch. Cement the strut gussets (2 each) MS, TSF & TSR in place as shown above and in full size wing plan. Cement 1/16 x 3/32 strips to front of WT3 on each side, to complete notch for center wing struts. Cement 1/16 square spars into notches along top of ribs, beveling end at tips as shown. Allow frame to dry thoroughly before removing from flat surface.

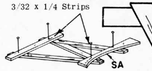
STEP 3

Pull out pins carefully and remove frame from flat surface. Separate sections and trim & sand leading edge to shape shown on wing cross section. Round off tips & trailing edge as shown, to blend smoothly into each other. Trim off leading edge, spar and trailing edge flush to angle of ribs W1, then cement sections together on flat surface, blocking up each side 1-1 8 at tip rib as shown. Measurement must be the same at leading and trailing edge so that wing is not warped. Center section should be pinned or weighted to keep flat on surface. Use cement generously and allow to dry thoroughly. When dry sand frame smooth to prepare for tissue covering.

CENTER SECTION STRUTS

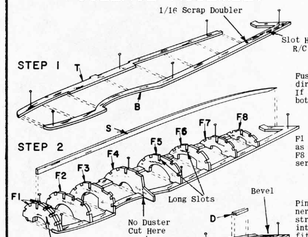
Make 4 from 3/32 x 1/4 Strips cut exactly as drawing above. Round off corners to cross section. Install in Final Assembly.

WING STRUT DETAIL



Use 3/32 x 1/4 strips for entire frame, except bottom which is die cut part SA. Round off strips to cross section shown. Cut strips to exact size shown. Make 2 assemblies directly over plan. KEEP ACCURATE!

FUSELAGE ASSEMBLY



STEP 1

Fuselage construction is started on flat surface directly over plan. Pin T & B in place as shown. If omitting dust installation from model, cut off bottom of F4 at dotted lines (Step 2) as shown.

STEP 2

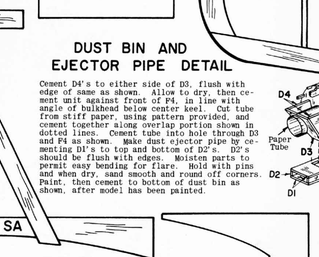
F1 is double thickness bulkhead. Cement together as shown. Cement all bulkhead halves from F1's to F8 vertically to frame, then add S which is inserted into long slots in center of bulkheads.

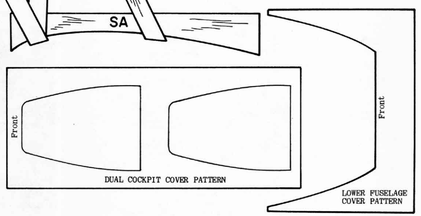
STEP 3

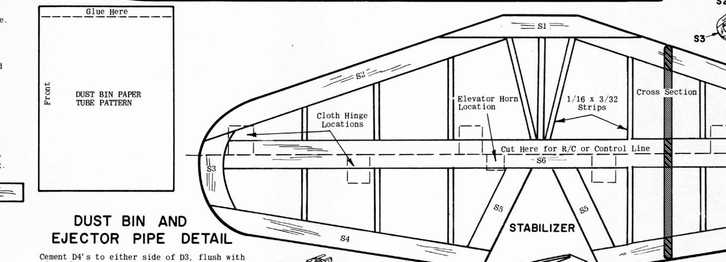
Pin and cement side keel C into notches in corners from F3 to F4. Note 1/16 space left for stringer at F3. Cement all 1/16 square stringers into their respective notches, beveling ends to fit at rear. Cement D in place as shown on sketch and side view. It is recommended that assembly be permitted to dry over night to prevent warping or twisting. 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 (on control line models only plywood bell crank platform is cemented between halves of bulkhead F3) then add S. Landing gear provided in kit is now installed. In the event that model is to be gas engine powered, it is recommended that you obtain a piece of 1/16 dia. music wire and bend a new landing gear to exact shape of one provided in kit. Installation of both are similar, being sandwiched between rear of F2 and F2A as shown in detail sketch. Use cement generously and pin F2A tightly in place. Make and install dust storage compartment (see detail note) then cement the balance of 1/16 square stringers into their respective notches. Cement D in place. Cement ST into rear of F6, resting on B. Straighten top of tail wheel gear and bend 1/8 spur as shown on side view. Sink spur into rear of fuselage (see side view) and cement securely in place. Allow fuselage frame to dry thoroughly, then sand lightly to present a smooth surface for tissue covering described in detail note. See respective notes if installing Duster or R/C, Control Line, etc.





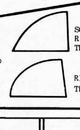


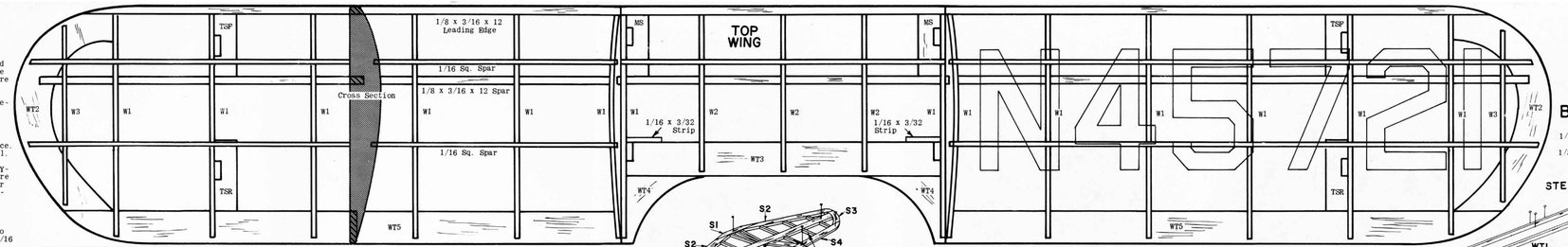
DUST BIN AND EJECTOR PIPE DETAIL

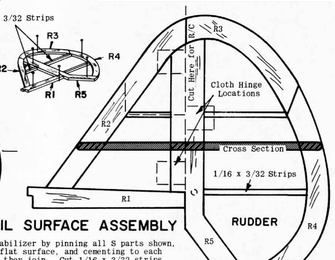
Cement D4's to either side of D3, flush with edge of same as shown. Allow to dry, then cement unit against front of F4, in line with angle of bulkhead below center keel. Cut tube from stiff paper, using pattern provided, and cement together along overlap portion shown in dotted lines. Cement tube into hole through D3 and F4 as shown. Make dust ejector pipe by cementing DI's to top and bottom of D2's. D2's should be flush with edges. Moisten parts to permit easy bending for flare. 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.

RIB ANGLE DETAIL

Sketch above shows how wing rib angle template is used as described in Wing Step 2.

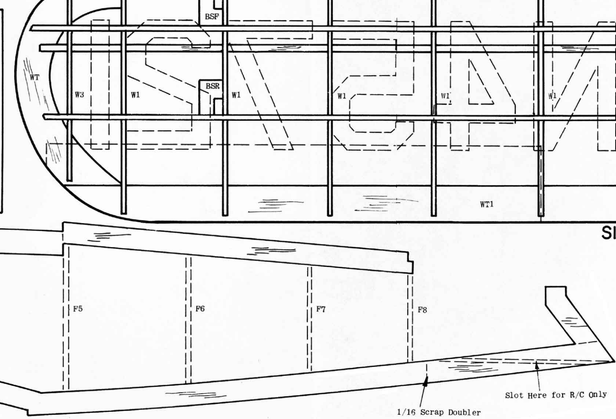




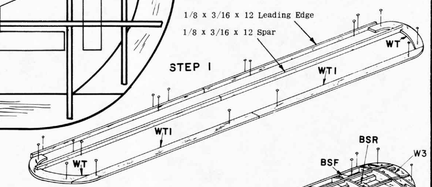


TAIL SURFACE ASSEMBLY

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 and 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 R1 & R5) as shown on cross-section. If model is being constructed for control line or radio, see respective detail notes BEFORE covering with tissue.



BOTTOM WING ASSEMBLY



STEP 1

Build bottom wing in same manner as top wing, using parts shown.

STEP 2

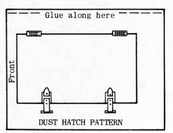
Ribs W1's & W3's are now cemented in place. For scale dihedral on CONTROL LINE MODELS ONLY, use scale rib angle template for center section ribs W1. For all other models use other rib angle template shown. Cement 1/16 square spars into notches along top of ribs, beveling at tips. Cement strut gussets (2 of each) BSF & BSR in place flush with top of rib as shown. BS's are flush with bottom of rib. Allow frame to dry thoroughly.

STEP 3

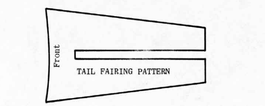
Carefully pull out pins and remove frame from flat surface. Separate sections, shape leading edge, tips and trailing edge in same manner as top wing, then trim leading edge, spar & trailing edge flush with angled ribs. Cement sections together to form 2¾ dihedral angle under tip rib, using block as shown. Pin down and weight other section and see that bottom of both leading and trailing edges are 2¾ from flat surface so that wing is not warped. Dihedral measurement should only be ¾ under tip for (scale) CONTROL LINE MODEL ONLY. When thoroughly dry, remove from flat surface and sand 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 moistened with water before applying to frame. Tissue shrinks when dry, to a tight smooth surface. Follow directions for a smoothly covered warp free flying model. Use clear dope to attach tissue as follows: Apply a light coat to the outside edges of area to be covered and allow to dry. Cut tissue to shape needed, plus ½" over-size. Place tissue on flat surface and dampen with moistened cloth by dabbing. Apply a second coat of clear dope, then place moistened tissue on frame. Pull tissue gently with fingers, working out all wrinkles. WHEN COVERING WINGS AND TAIL SURFACES, PIN FRAMEWORK TO FLAT SURFACE TO PREVENT WARPS AS TISSUE DRIES. Cut out any wrinkled areas (bound by nearest framework) and re-cover. Apply 2 or 3 coats of clear dope, cut 50/50 with thinner; to wing and tail surfaces before assembling, pinning on flat surface to prevent warps. COVER TOP WING FIRST. Cover entire bottom in one piece. Cover top in three pieces from dihedral break to tips, then center section. On Control Line models add ½ oz. of weight to lower wing tip on outside of circle flown. COVER BOTTOM WING NEXT. Bottom wing is covered in same manner as top wing. COVER STABILIZER AND RUDDER NEXT: Cover both sides of each in one piece. COVER FUSELAGE NEXT: Cover sides first with one piece from side keel C up to stringer at side of cockpit. Cover bottom from F1 to F3 in two pieces, joining on center keel B. Cover bottom rear from F5 back in same manner. Top is covered in same manner joining on T. Cut dual cockpit cover from stiff paper using pattern provided and cement to top of fuselage from F3 to F5. For Crop Duster, cut dust hatch from stiff paper, using pattern, and cement right over front cockpit cover. Cut out tail fairings from stiff paper and cement from F8 to rear on both sides of rudder. Cut lower fuselage cover from stiff paper, using pattern, and cement around bottom of fuselage from F4 to F5. 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.



Cut Dust Hatch from stiff paper using pattern above. Cement one side only, placed right over front cockpit cover. Opposite side is held in place with Scotch tape. Open for powder loading.



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