

**STEP 1**

To prevent parts from sticking to Plan, spread Saran Wrap or a similar kitchen film over Plan. For rapid assembly first complete the Sub-assembly shown as follows: Cement Bulkheads #4, #5 and #6 together as shown. Cement Fin sections #13 & #14 together. Assemble Wing Tip by cementing #27 & #28 together as shown. Make 2 Tip Assemblies. Cement Wing Spars #29 & #30 together and do likewise with #25 & #30.

**STEP 2**

Sketches show (and be sure you make) a right hand and a left hand Fuselage side. Cement Doublers #13 & #14 together. Cement #12 flush with top of #1, between notches as shown. Pin and cement 1/8 sq. corner Stringers in place as shown. Cut 4 1/8 sq. strip stiffeners to proper lengths. (see Side View) and cement in place. Be certain you have made a left and a right hand side.

**STEP 3**

Fuselage sides are now assembled. Bevel the 1/8" sq. Stringers at rear permitting sides to be cemented together at rear. Check top view for bevel and to check alignment of Fuselage as it is assembled. After rear has been cemented and pinned together, cement #2 between sides as shown and allow Fuselage to dry. Assembled Bulkhead #4, #5 and #6 and Bulkhead #3, are now securely cemented in place into notches as shown. Cement hardwood Landing Gear Block in place between sides in notches formed by front and rear 1/8" Stringer sections. Cement Spur Blocks vertically in place to Fuselage sides on top of Landing Gear Block and against rear of #3. Cement Floor #10 between Bulkheads #3 & #4 flush with Bulkheads and Stringers. Cement Tail Skid #11 in place at rear as shown.

**STEP 4**

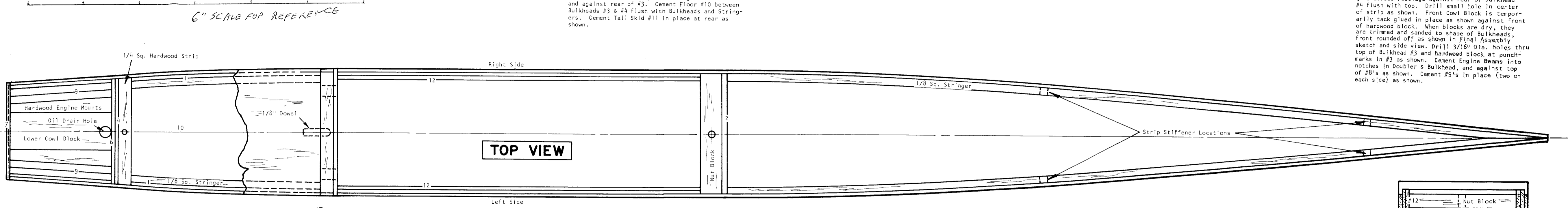
Cement bottom Cowl block in place as shown flush with sides, then cover remainder of Fuselage with 1/16 x 3 x 20 sheet provided, grain running across Fuselage. Notch out where necessary. Note that Landing Gear Block is flush with sheet covering and top surface remains exposed as shown. Notch out rear Skin Covering for Tail Skid #11.

**STEP 5**

Cement front Balsa Doublers #8's in place on each side against bottom block and Bulkhead #5. Cement Fuselage top block in place. When dry place rear of Fin at rear of Fuselage and mark tab location (on bottom of Fin) on Fuselage top block. Drill 1/8" hole in front mark (in center of Fuselage), then complete Fin Slot by trimming out 1/8" wide section between hole and rear. Check to see that Fin fits into slot. Nut Block (hardwood block with threaded hole in it) is cemented against Bulkhead #2 and notch in #12. Use at least three heavy coats of cement on this installation to insure maximum strength and do likewise with hardwood block which goes against front of #3 and also 1/4 sq. hardwood strip which goes across Fuselage against rear of Bulkhead #4 flush with top. Drill small hole in center of strip as shown. Front Cowl Block is temporarily tack glued in place as shown against front of hardwood block. When blocks are dry, they are trimmed and sanded to shape of Bulkheads, front rounded off as shown in Final Assembly sketch and side view. Drill 3/16" Dia. holes thru top of Bulkhead #3 and hardwood block at punch-marks in #3 as shown. Cement Engine Beams into notches in Doublers & Bulkhead, and against top of #8's as shown. Cement #9's in place (two on each side) as shown.

**INTRODUCTORY NOTE**

The Mini-Fledgling is a relatively easy kit to build and fly. Pay careful attention to and follow the notes step-by-step exactly as they appear on the plans. Examine the full-size drawings and Assembly Sketches before starting construction. If any die-cut parts stick in the sheet, they are easily removed by sanding back of sheet lightly. Company models used Cox .049 and .051 Tee Bee engines with two-channel radio equipment. You must decide before assembling wing what control surfaces you wish to use. We recommend the two-channel mode of Elevator and Aileron control since this offers a much larger range of maneuvers which can be performed by the model. It does however, mean that model must be hand launched. It is also a better first step in flight training if you intend to move up to more advanced models with three, four or more channels of R/C equipment. If you choose this control set-up you will use wing spar #27 & #28 which will give you the proper wing dihedral for operating Ailerons. If you choose to have an operating Rudder you will then use spar #29 & #30 which will give your wing a greater dihedral angle. Ailerons are then cemented permanently in place. The advantage the Rudder and Elevator mode gives you, is a slightly more stable model and the ability to take off from the ground rather than hand launching. It does, however, limit the maneuvers which can be performed. When model is complete be sure to read Flying Instructions.

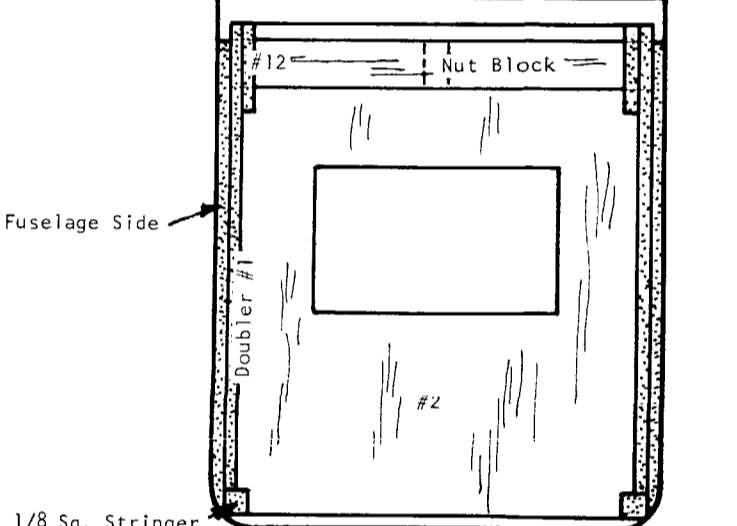
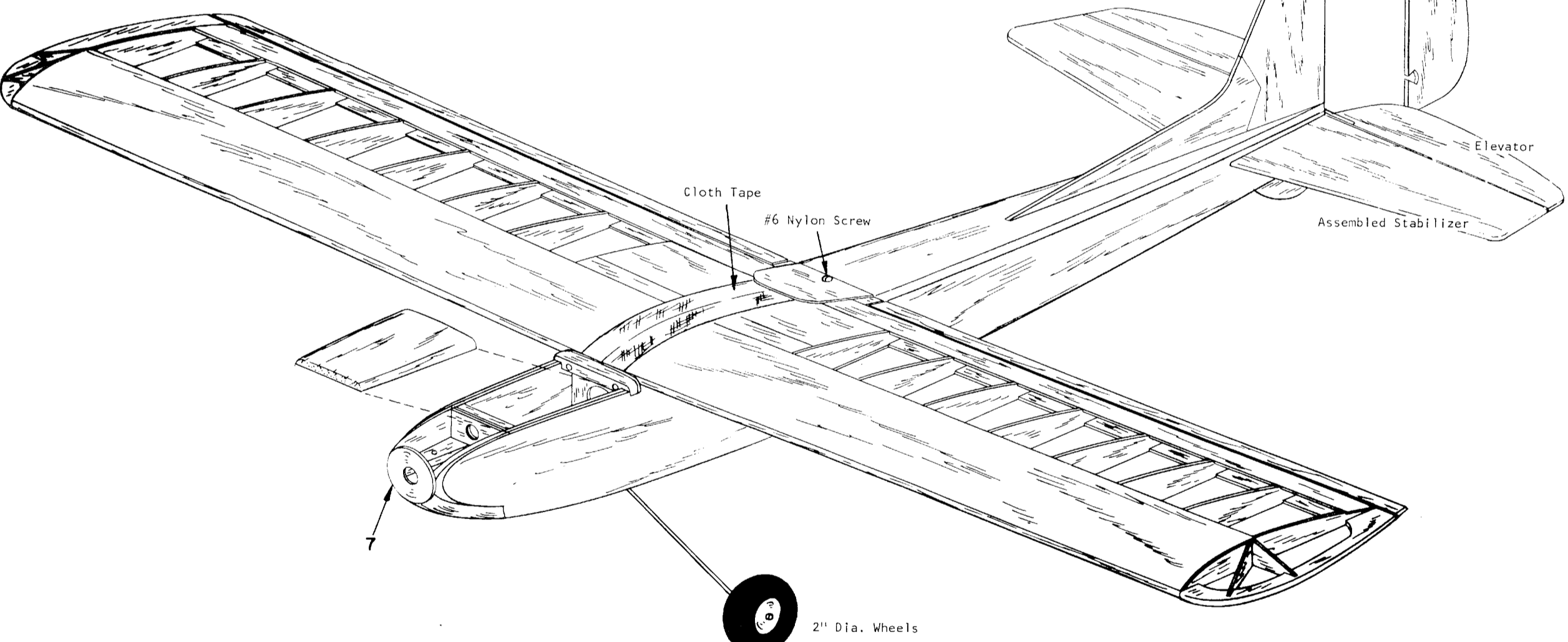


**TOP VIEW**

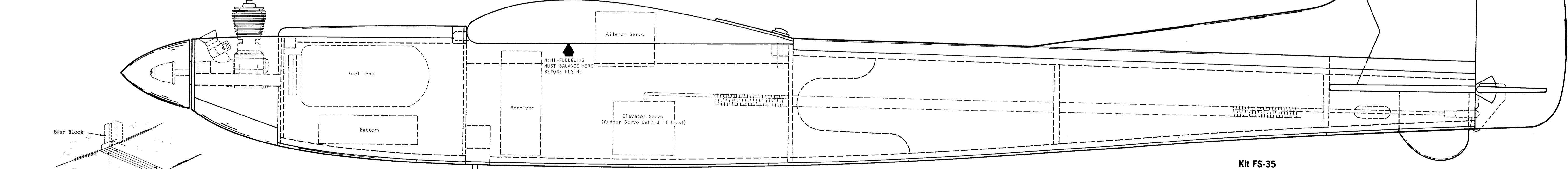
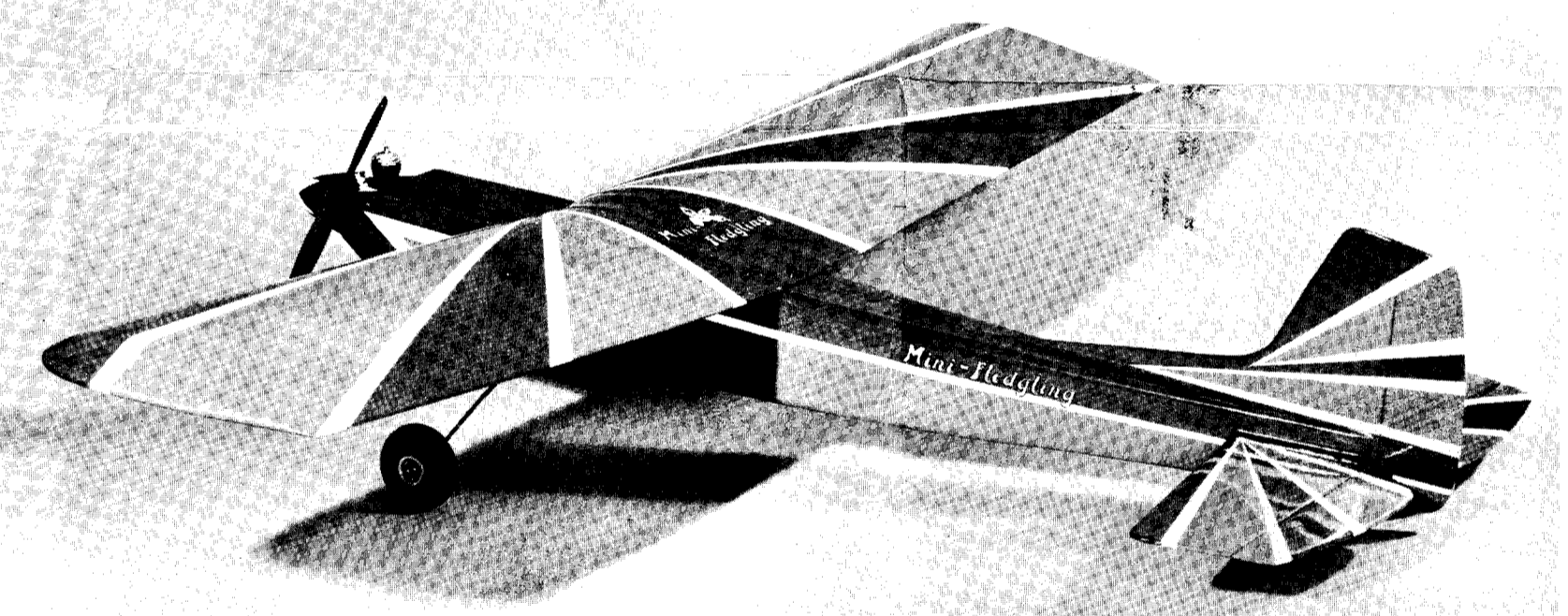
**FINAL ASSEMBLY**

Mount engine on beams then cement #7 to front of Fuselage--centered. Original model used 1-1/2" Dia. Spinner, this may vary to suit model builder, as long as Nose can be trimmed to fit Spinner. Entire Fuselage is now sanded smooth as shown in sketch and typical cross-section. Top of Fuselage should be rounded gracefully into sides, and all corners rounded off to pleasing shape. Nose should flow smoothly into rounded Spinner shape shown. Cement Stab securely into slot in Fuselage. Fin is cemented into slot previously made in top of Fuselage. Rudder #15 (if operable) is sanded to tapered section shown on Side View, then mounted to Pin and Fuselage with Sewn Hinges (see Detail) otherwise Fin is cemented in place. To locate hole in rear of Wing for mounting Bolt, run Nylon Screw into Nut Block. Place wing in position, Dowels resting in front holes. Place carbon paper between Wing and Nylon Bolt and press firmly, thus leaving an impression. Remove Wing and drill a slightly oversized 1/8" hole at mark so Screw passes through freely. Remove Screw, then remount Wing to check hole location. This method of securing Wing to Fuselage is excellent, since Wing cannot shift as does happen if rubber bands are used. Under hard impact, #6 Nylon Screw will shear and pins will pull out of front. It is advisable to keep a few #6 Nylon Screws in your tool box as replacements. Remove Wing, then drill 1/8" hole through Hardwood Block, into rear of Front Cowl--hole location of hole can be seen on full-size Top View. Front Cowl Block which was temporarily tack-glued in place, is now removed and 1/8" Dowel securely cemented into hole drilled in rear. Locate and drill 3/32" hole in front of

Cowl as shown, directly over hole in Hardwood Strip. Cowl is now installed by inserting 1/8" Dowel into hole drilled for it in block. Front is secured with #2 Tap Screw. Model is now covered with material of your choice (not included in kit) and painted to suit individual taste. Full color box wrap shows original color scheme and location of Decals. Install Landing Gear as described in Detail Note. Wheels and radio equipment (not included in kit) are now installed in accordance with manufacturer's instructions. Typical position of radio equipment is shown on Plan, as is the Control Linkage. Linkage (see Detail) uses 3/16 sq. x 1/4 Balsa strips provided for Pushrods with 1/16" Wire Spool cemented to front; and threaded Clevis Shaft for rear so that Ny-Link Clevis can be installed and adjusted. Side View shows location and installation of 2 oz. Pylon brand Fuel Tank. Any similar tank that fits may be used. Battery pack is located under Fuel Tank as shown. Entire compartment is stuffed with foam. IT IS IMPERATIVE THAT MODEL BALANCE AT POINT SHOWN ON SIDE VIEW! Radio components may be shifted forward or aft to achieve balance at that point. IF NECESSARY, ADD WEIGHT TO FRONT OR BACK, SINCE MODEL MUST NOT BE FLOWN UNTIL THIS BALANCE IS ACHIEVED! Main wheels are 2" Dia. Size is optional however. Finished model with engine and R/C equipment (dry gas tank) should weigh between 23 and 28 oz. We welcome your comments on the Mini-Fledgling kit, as well as its flight performance. Address correspondence to Sterling Models, Inc., 3620 View St., Phila., Pa. 19134 U.S.A. Attention: Engineering Department. GOOD LUCK, MUCH FUN AND HAPPY LANDINGS!!!!



**TYPICAL CROSS-SECTION AT BULKHEAD 2**



**SIDE VIEW**

**MAIN GEAR INSTALLATION**

Sketch above shows how Torsion type Landing Gear is installed on hardwood Landing Gear Block in bottom of Fuselage. Drill 3/32" holes through Landing Gear Block and up thru Spur Blocks just inside Fuselage Doublers #1. Horizontal section of both Wire Landing Gear Struts lie side by side in wide slot across Landing Gear Block. Be sure that one hole is at front of slot and other at rear as shown. Struts are secured as shown with metal Plates and #2 sheet metal screws. Drill small holes for screws to prevent splitting Block.

**FLIGHT INSTRUCTIONS**

It is suggested that inexperienced flyers enlist the aid of an experienced R/C pilot in your area to first check over your model and then help you through the initial flights. Be CERTAIN that all balances (nose slightly down) at point shown on side view. You can shift your R/C equipment to achieve this balance or, although less desirable, add weight. Check that all surfaces are free of warps and are in proper alignment with each other. Any deviation may result in erratic flight. If warps have developed, they can be removed by holding area over steam and twisting gently in opposite direction. Remove from steam while still holding, allow to cool, then release. Repeat as necessary. Flight testing is done in calm weather. Experienced modelers may test glide model; however, it is not recommended for beginners. All power testing is done only after Radio equipment has been

checked out as recommended by manufacturer and this should be done with engine running. Start engine and adjust until running smoothly. Lift nose of model vertically during takeoff. If not, open needle valve slightly and repeat until engine continues to run. This will prevent engine from stalling during maneuvers in flight. Launch model into any prevailing wind at normal flying speed by holding Fuselage under wing at about the balance point, running forward with model level (or slightly nose down, and allowing model to almost lift out of your hand. DO NOT throw model like a spear since it will cause erratic flight or a stall with the resultant crash. Model should fly smoothly either level or climb slightly. If model stalls, add 1/16 Balsa skin under rear of wing. If model dives, add

skin to front of wing. In either case, check balance before adding skin. Stalls may also be corrected by tilting front of engine down (down thrust). Once model is in the air, all control movements should be gradual until you become accustomed to flying. Inexperienced flyers may cause model to crash if it hasn't sufficient altitude, and in most cases model will recover its flight path if controls are simply left alone. When engine stops running you will find that it takes slightly more control for turns since you no longer have the same airspeed and prop blast over your control surfaces. When the engine stops, for landing keep the nose down slightly to maintain airspeed and prevent a stall. Experience will enable you to do many maneuvers with your Mini-Fledgling. GOOD LUCK AND GOOD FLYING!!!

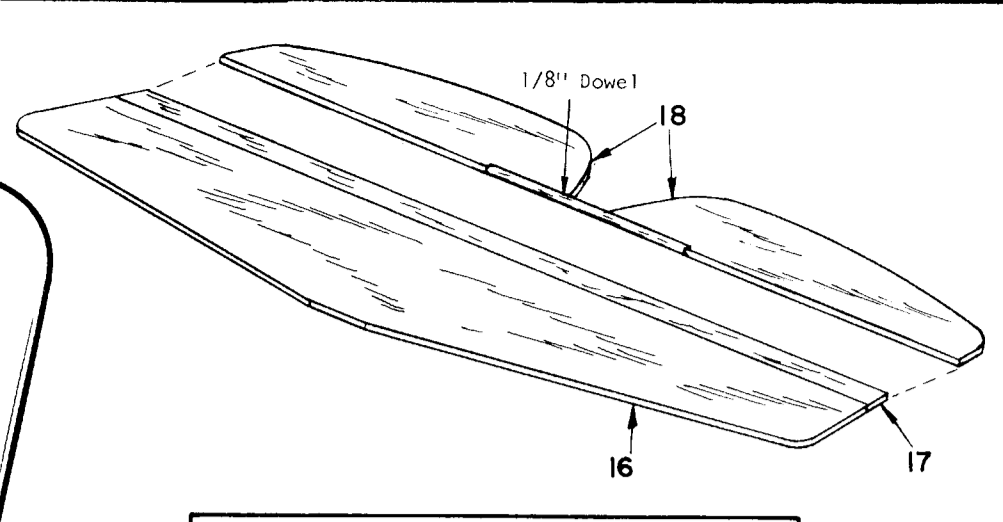
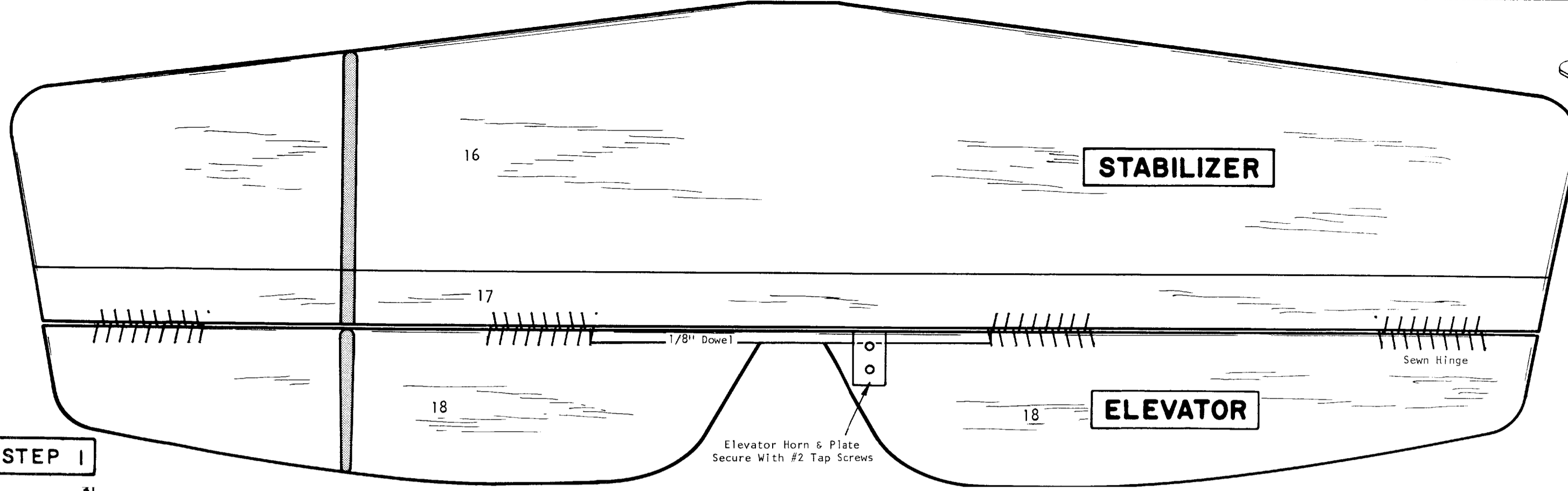
Kit FS-35  
Span 40"

RADIO CONTROL MODEL KIT

**MINI-FLEDGLING**

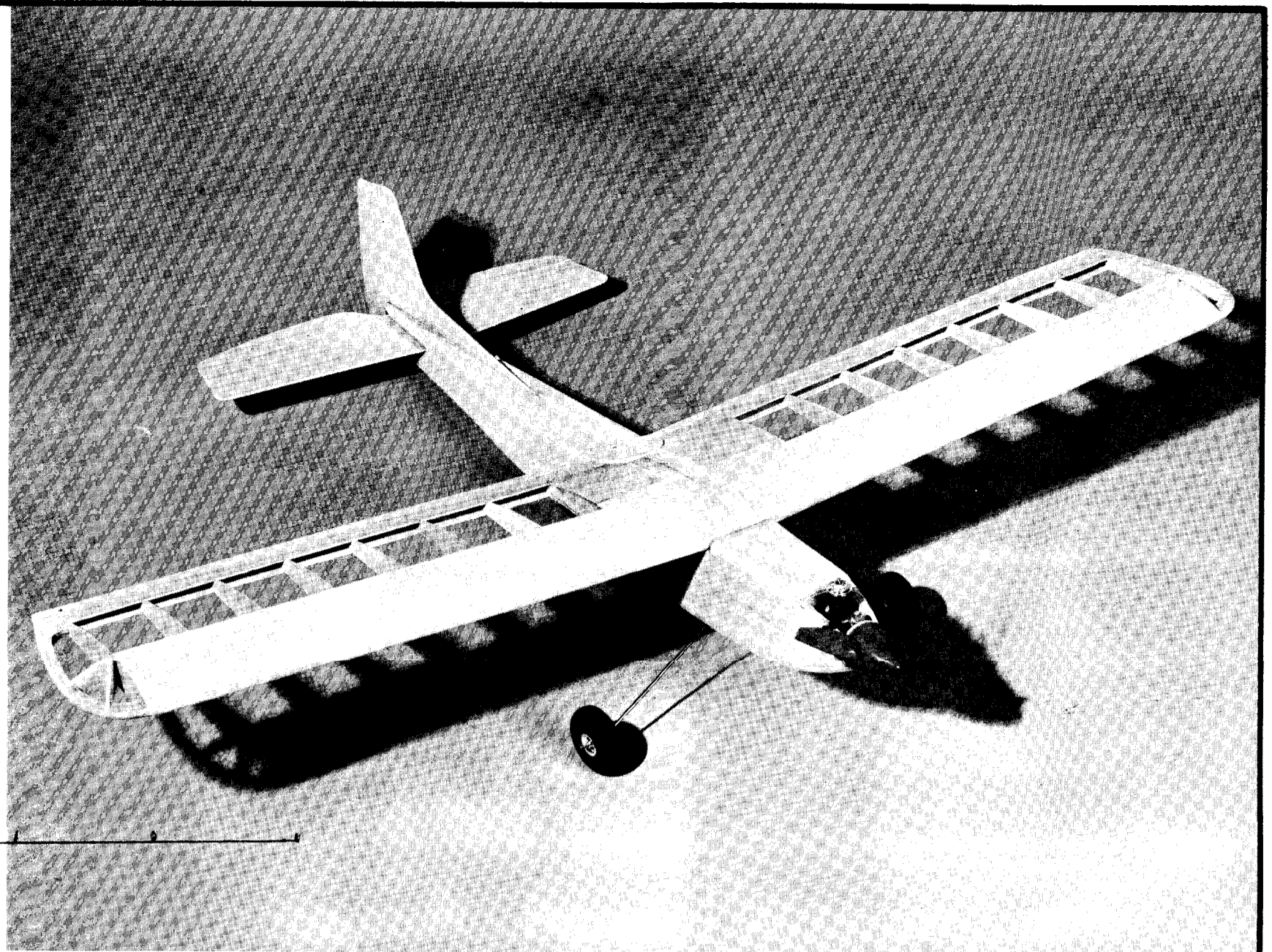


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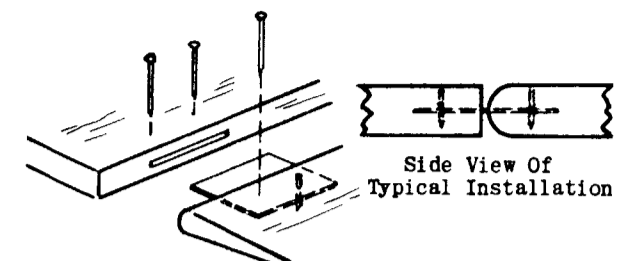
**SEWN HINGE DETAIL**

Sketch shows how thread hinge is made when assembling Elevator to Stabilizer and Rudder (if operable) to fin. Drill tiny holes just large enough for needle to pass through. Sew surfaces together with strong thread (not supplied) using over and under stitch shown. Tie ends and cement securely to prevent unravelling. Keep glue out of hinge area. Check that surfaces swing freely.



**STABILIZER ASSEMBLY**

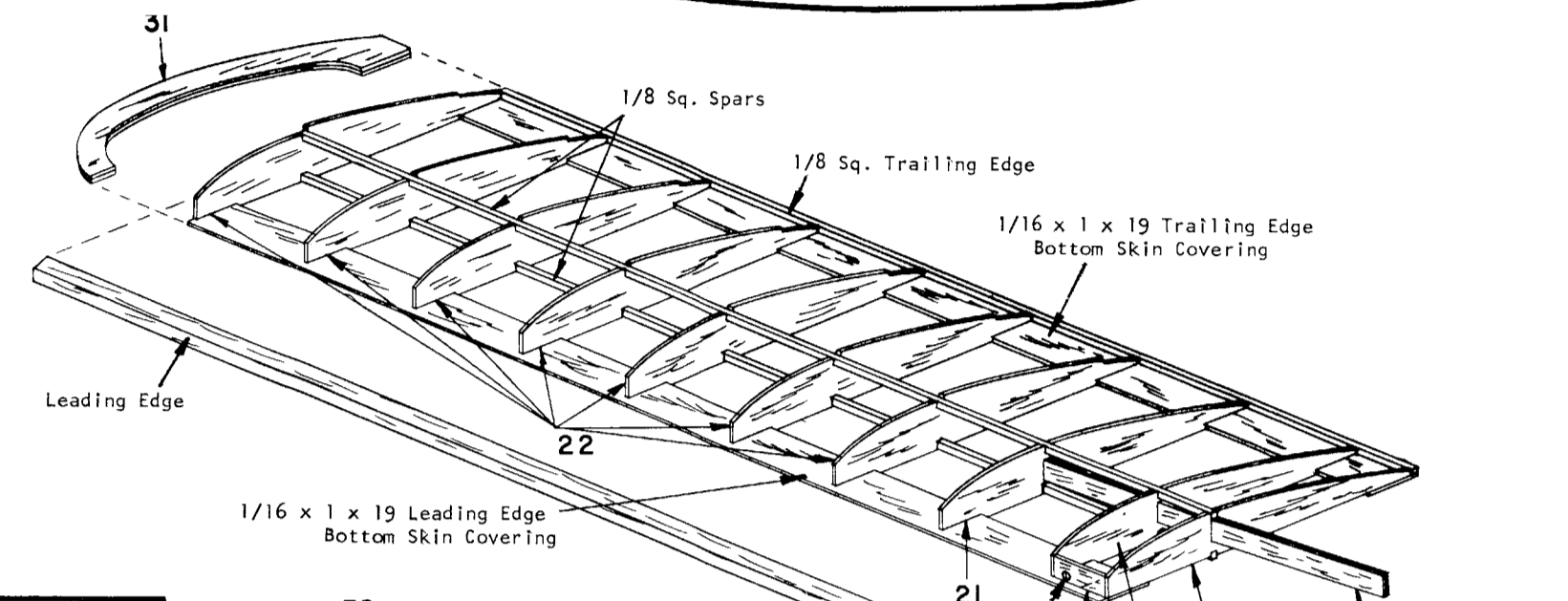
Stabilizer is built directly over Plan, using Parts #16 & #17 as shown in sketch. Allow to dry thoroughly before removing pins. Pin Elevator halves #18's in place and securely cement 1/8" Dowel into notches. Allow to dry thoroughly, then remove and add two additional coats of cement, making certain Elevators stay aligned with each other. Sand Stabilizer & Elevator smooth, rounding edges as shown in cross-section. Then join to Stab with Sewn Hinges (see Detail). Elevator horn shown in full size drawing is in approximate location. This may vary with the installation of your own radio gear.



**POLY HINGE INSTALLATION**

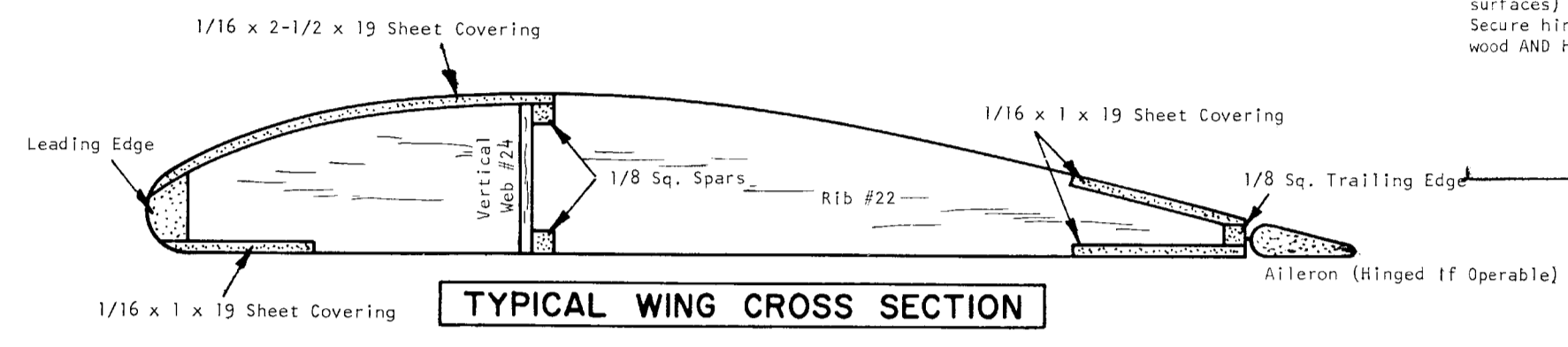
TO INSTALL: Cut strip to desired hinge width (generally about 1"). Slit surfaces to be joined as shown (in center of thickness). Epoxy hinge into slits. (hinge line in center between surfaces) leaving enough space for free movement. Secure hinge by pushing straight pins through wood AND HINGE as shown. Pins are clipped flush.

**STEP 1**



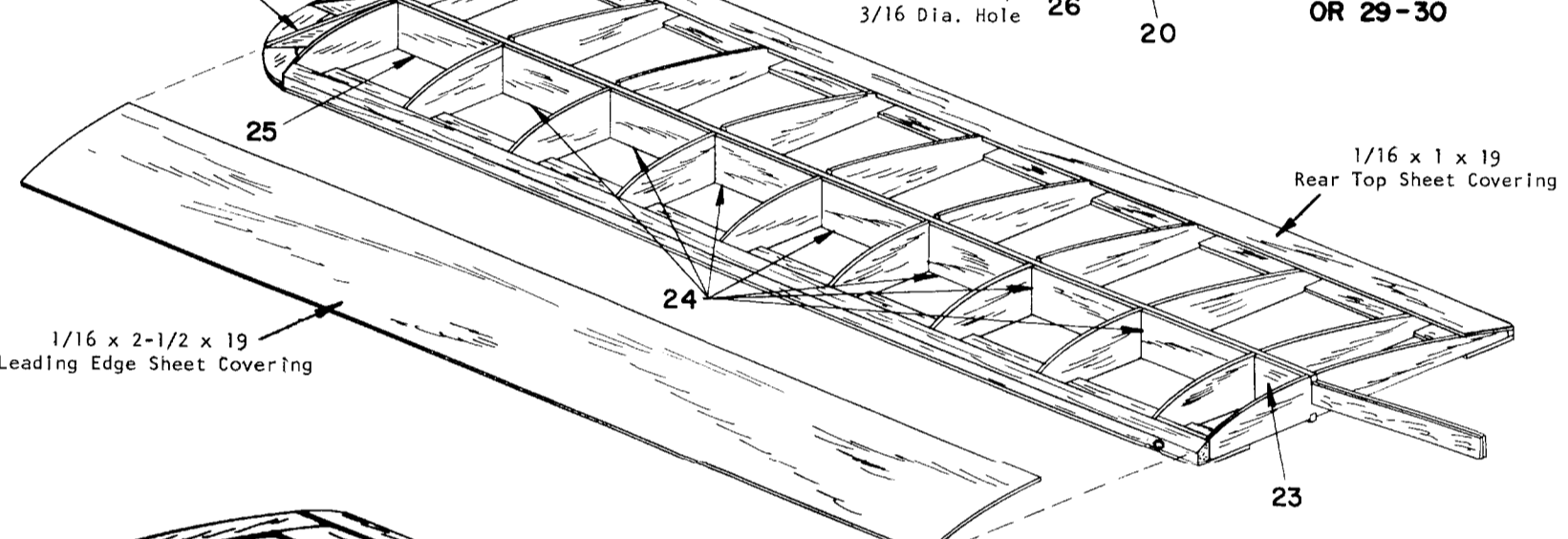
**WING ASSEMBLY**

Be sure to read introductory note before beginning Wing construction! Select a flat building surface, to insure a non-warped Wing. Sketch shows assembly of right Wing Panel. Wing is built directly over Plan. Using a 1/16 x 3 x 19 Balsa sheet, cut lengthwise into three equal 1" wide pieces. Then pin Leading & Trailing Edge bottom skin covering pieces in place over plan. Cement 1/8 sq. Bottom Spar to Leading Edge sheet, flush with rear as shown on full size Wing Plan. Cement all Ribs in place by the number shown, followed by top 1/8 sq. Spar. Rib #19 is angled for dihedral. Angle is set by cementing vertical web #23 in place between #19 & #20. Cement 1/8 sq. Trailing Edge in place to top of sheet covering and rear of Ribs as shown. Leading Edge is cemented in place in same manner with taper on top. Sketch shows assembled Spar #27 & #28 cemented in place. At this time, it must be decided whether you are going to have operable Ailerons or not. If so, slide assembled Spar #27 & #28 through notches in Ribs and securely cement at all connecting joints. If Ailerons are to be cemented in place, use assembled Spar #29 & #30 instead. This will create a greater dihedral angle which is desirable when not using operating Ailerons. Drill a 3/16 hole at punch mark in #26 then cement it between Ribs #19 & #20 against back of Leading Edge. Assembled Wing Tip #31 is cemented in place as shown.



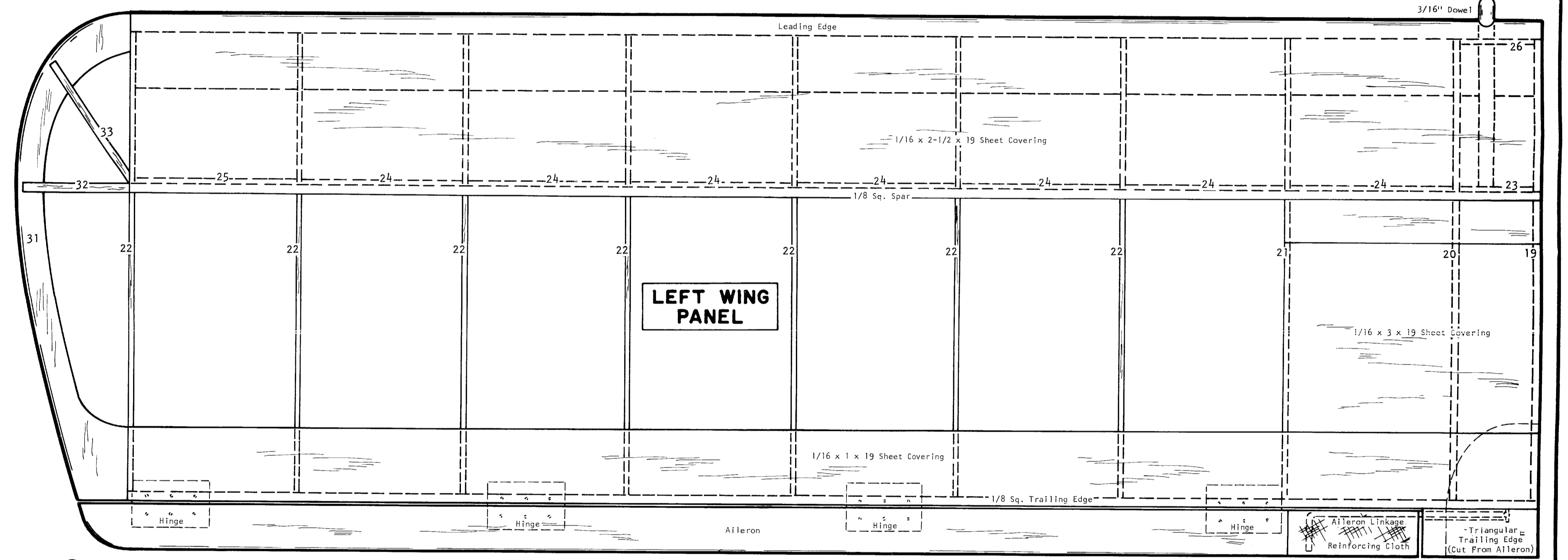
6" SCALE FOR REFERENCE

**STEP 2**

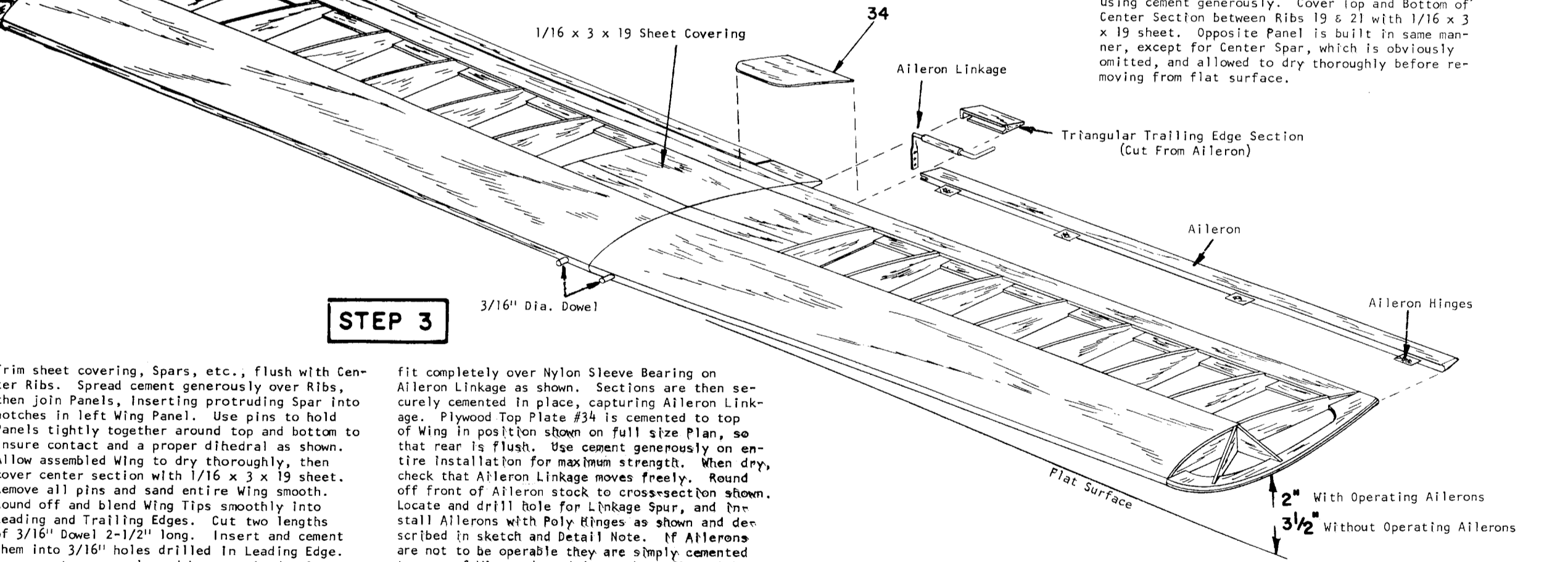


**STEP 2**

Drill 3/16" hole for Wing Dowel Pin in Leading Edge. Hole is in center of Leading Edge and directly in line with hole in #26. Cement 1/16 x 1 x 19 rear top sheet in place. Cement vertical webs #23, #24's & #25 in place against front of top and bottom spars as shown. Cement 1/16 x 2-1/2 x 19 Leading Edge sheet in place. Cement Tip Braces #32 & #33 against Tip Rib #22 as shown, using cement generously. Cover top and bottom of center section between Ribs 19 & 21 with 1/16 x 3 x 19 sheet. Opposite Panel is built in same manner, except for Center Spar, which is obviously omitted, and allowed to dry thoroughly before removing from flat surface.

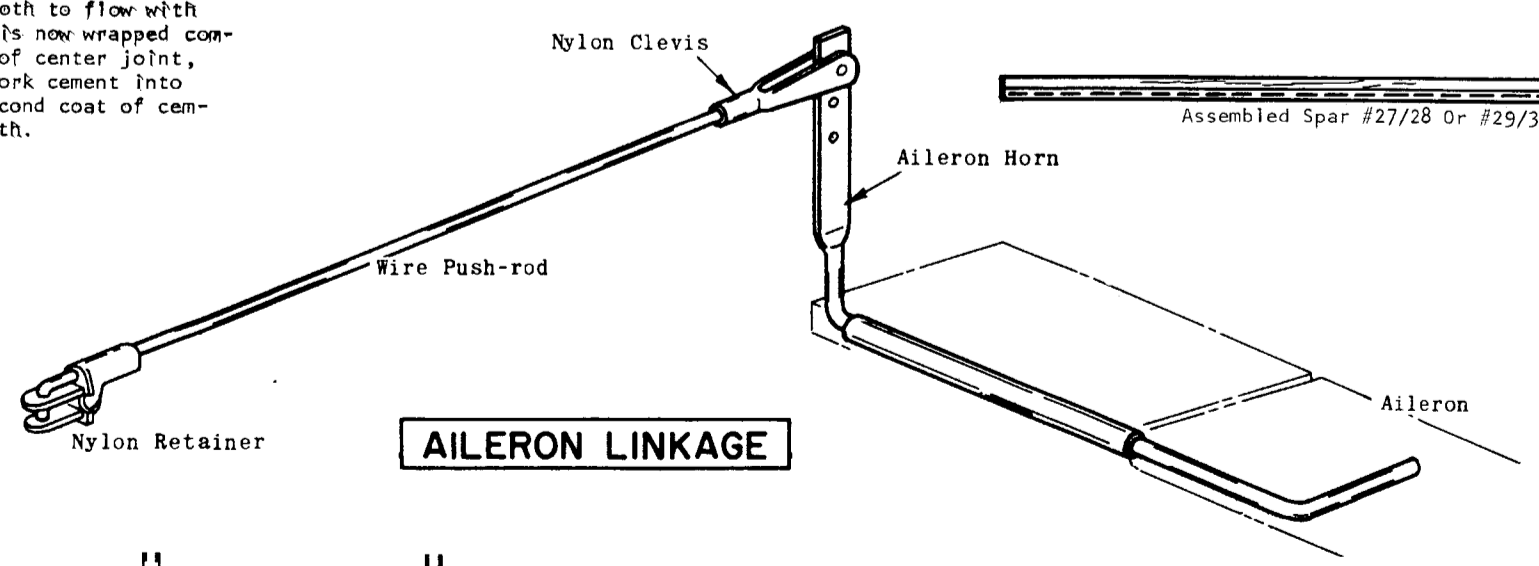
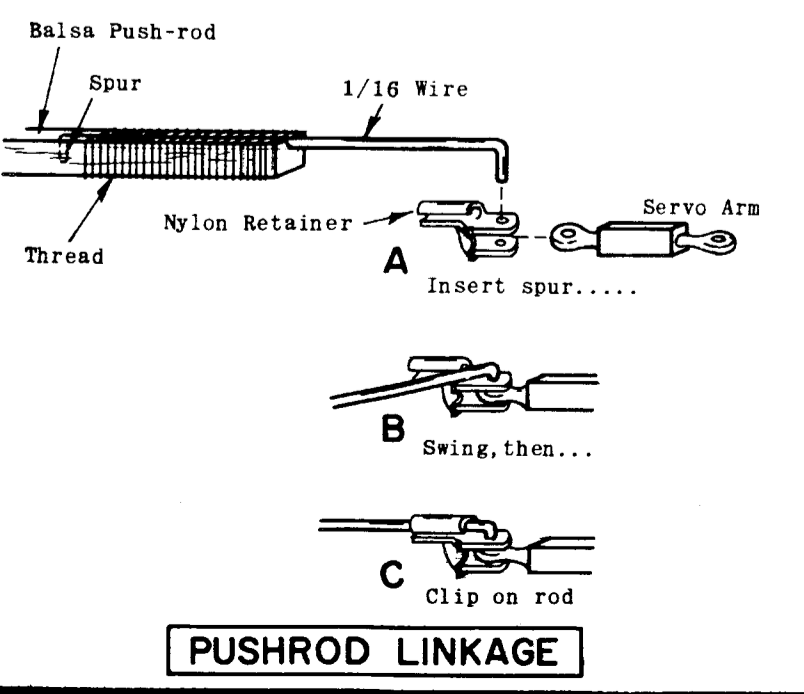


**STEP 3**



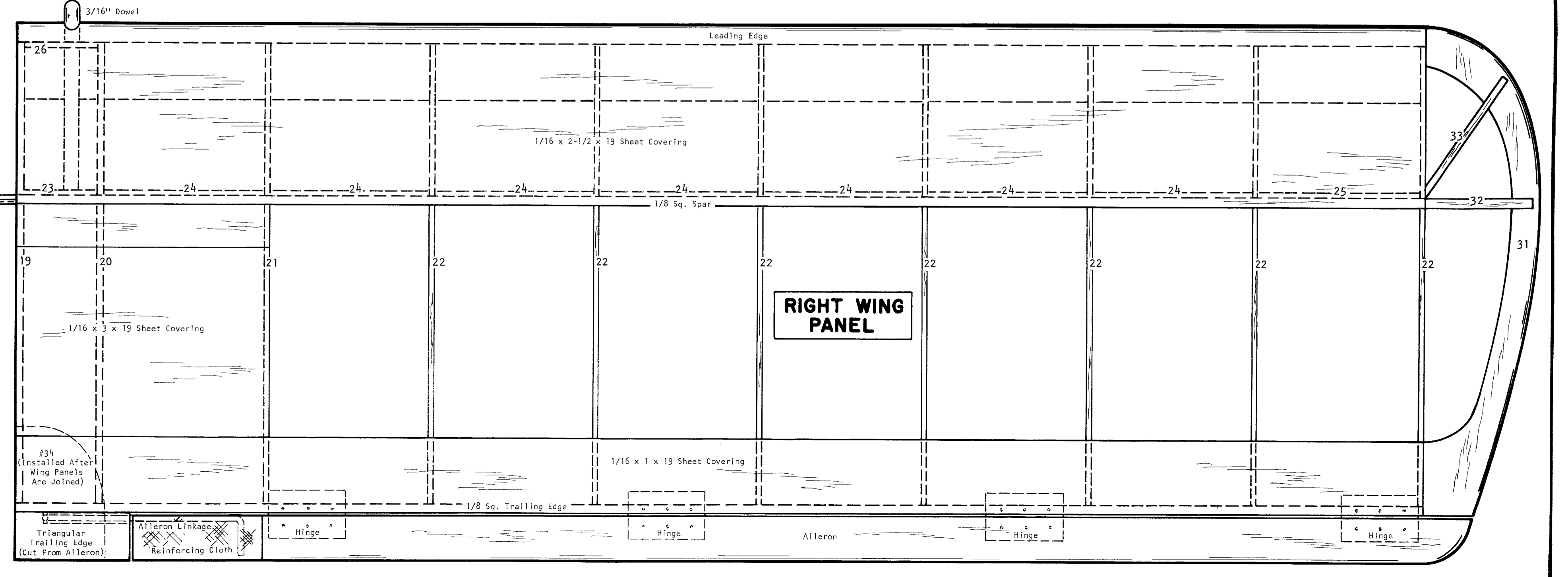
Trim sheet covering, Spars, etc., flush with Center Ribs. Spread cement generously over Ribs, then join Panels, inserting protruding Spar into notches in left Wing Panel. Use pins to hold Panels tightly together around top and bottom to insure contact and a proper dihedral as shown. Allow assembled Wing to dry thoroughly, then cover center section with 1/16 x 3 x 19 sheet. Remove all pins and sand entire Wing smooth. Round off and blend Wing Tips smoothly into Leading and Trailing Edges. Cut two lengths of 3/16" Dowel 2-1/2" long. Insert and cement them into 3/16" holes drilled in Leading Edge. Use cement generously and be certain dowels seat back in place as shown in full size Wing Drawing. Round off front of Doweling as shown. If Ailerons are to be operable cut a 1-1/2" length off EACH piece of tapered Aileron stock, two of which are provided 19-7/8" long. Notch out front of each 1-1/2" length, so that they

fit completely over Nylon Sleeve Bearing on Aileron Linkage as shown. Sections are then securely cemented in place, capturing Aileron Linkage. Plywood Top Plate #34 is cemented to top of Wing in position shown on full size Plan, so that rear is flush. Use cement generously on entire installation for maximum strength. When dry, check that Aileron Linkage moves freely. Round off front of Aileron stock to cross-section shown. Locate and drill hole for Linkage Spar, and install Ailerons with Poly Hinges as shown and described in sketch and Detail Note. If Ailerons are not to be operable they are simply cemented to rear of Wing and sanded smooth to flow with Airfoil and Tips. Cloth Tape is now wrapped completely around top and bottom of center joint, applying cement generously. Work cement into cloth and when dry, apply a second coat of cement, which is then sanded smooth.



**LINKAGE DETAIL**

Sketches show the various typical linkage connections using the special Nylon and Steel R/C fittings provided in Kit. Aileron linkage sketch shows how Push-rod retainer is engaged in servo arm. Opposite end shows Clevis engaged in Aileron horn. Push-rod sketch shows how 90 degree bends are made in 1/16 wire on both ends. One end is pushed into 3/16 sq. Balsa push-rod, where it is bound and cemented. The other end is inserted in Push-rod Retainer as shown in Steps A-B-C. Opposite end of push-rod uses threaded rod provided, which is cut to proper length, unthreaded end bent and bound to Balsa rod, and Clevis screwed on to threaded end which is then ready to be engaged in control horn.



**PUSHROD LINKAGE**

Break off pin and insert thru holes. Push until locking rings snap in place. Screw Clevis on threaded shaft.