11. Glue 1/8" end formers onto wing cores. Cut wire harness tunnel (5/8 wide, 3/4 deep, 18" long) and refer back to section 10 for measurements. Cap strip cover 1/8 x 1 x 18" long recessed into foam core 1/8" deep on right and left panels. (This can be done with a #11 X-acto blade)

12. Take wing center section and lay on flat surface. Next take left and right wing panels and epoxy in wing joiners while bolted together with saran wrap in between. (Using the saran wrap, joiners will not epoxy to each other.) After the epoxy cures, take the wing panels apart and re-epoxy joiner areas carefully, making sure that joiners are solidly bonded into the wing cores.

13. Re-assemble wing sections together, resting entire wing on a flat surface. Make a centerline on the center section and measure out 6 11/16" from centerline on each side and make another line. (Total measurement will be 13 1/8") (Note Picture)

14. Now you are ready to cut slots in each side (with a hand saw) to get your dihedral. Make a saw cut at the lines about 3/4 of the way through the core from the top. Clean out loose foam from the slot and prop up at each tip with a 1" block. Make a second cut at the same location; clean out slot and block the tips up an additional amount. Make the cut a third time and measure tip to insure that you have at least 6" of dihedral at each tip.

15. Check that there is 6" dihedral at each tip without applying pressure to the center section. Mix up enough epoxy for both cuts and apply epoxy in cuts. Bring up tips to correct dihedral. Place weights on center section to hold it down flat. A 6" block under each tip will hold the correct dihedral. (Foam will absorb most of first coat of epoxy) (Note Picture)

16. After epoxy is cured, unbolt wing panels from center section. Cap with 1/8 x 2" balsa on trailing edge. Apply sorghum to bottom of center section and 1/16" sheeting and let dry. Apply 1/16" sheeting to center section and sand. Use the same procedure for the top of section. Do not cap leading edge at this time.

17. Take foam core section supplied and epoxy this piece to leading edge. Sheet top and bottom with 1/16" sheeting. Take 1/4" end caps and epoxy to sides. Add 1/4" sq. balsa to trailing edge of center section. Take 1/8" ply plate and clamp to former #2, making it flush at bottom. Next measure out equal distance for 2 - 1/4" dowels to be drilled. Now drill out holes to except 1/4" dowels. Take 1/4" dowels and put a point on them so that they will make impression into foam boot. Now take center section and place it into fuselage flush with 1/8" ply plate. Now dowels with point on them, push through from former #2 into ply plate into foam section. Take 1/4" drill and then drill into foam at marks were pointed dowel made impressions.

    Now you can recess into front of center section. Do not get epoxy into 1/4" holes at this time. Now sheet front of section with 1/16" balsa. Cut out holes where you drilled and epoxy in good 1/4" dowels pushing them into foam about 2"; now sand.

18. Take (2) 1/8" ply squares, counter sink into wing center section and epoxy in place. Bolt down center section to fuselage and hatch area. Add wing ribs to front of section to form boot. Take 1/4 x 1/2" and add to front for leading edge. Sheet boot with 1/16" balsa to blend with wing core.

19. Take wing panels (left and right) and cut out slot for 18" long aileron cord. Repeat same procedure that was used for center section. At end of slot cut out of foam a 3 x 4" hole, about 1¼" deep. Fit aileron servo into wing cavity, making sure it is deep enough. Take 1/8" sheeting and cap entire area. Make a 1/8" plywood floor to mount servo to. Light sand entire wing core and use the same procedure for sheeting as was done on center section. Sheet entire wing core using foam saddle so wing does not warp. Top and bottom is sheeted with 1/16" balsa. Cap trailing edge with 1/8 x 2" as before. Add 1/4 x 1/2" to landing edge. Glue on wing tip (made up from 1/4" balsa and 1/4" balsa ribs. Now sheet and blend to wing core.

20. When all sheeting is on and tip is completed, rough sand entire wing to shape. Bolt wing halves to center section, sand to finish entire wing assembly. Now that this is completed, the builder should decide if he wishes to use flaps on the model. (Flap section is optional in kit.) (See picture for parts and assembly.)

21. From foam cores supplied, cut ailerons to length. Now measure on bottom side of aileron 3/4" and make a line. Now set up on a saw and cut angle. With 1/8 x 2" balsa, cap leading edge and ends of aileron. Now sheet top and bottom with 1/16" balsa and add 1/4sq. balsa to trailing edge. Sand out aileron and sections and hinge to wing. Same procedure for flaps if builder decides to use flaps.

STAB CONSTRUCTION

1. Remove foam cores from cradle and place on flat surface. Inspect pieces before you epoxy halves together making sure leading and trailing edges are straight.

2. Sand entire stab section with fine grit and remove all dust. To really strenghthen stab, you can insert a piece of 1/4 x 1/2 x 36" spruce. (Not supplied)

3. Lay 1/2 of stab cradle section on flat surface before sheeting. Now spread a thin coat of sorghum cement, let dry.

4. Coat all 1/16 sheeting and let dry. Now sheet 1/2 of stab while in cradle so it will not warp. Since stab is so large, weight down.

5. Now that you have sheeted one side of stab, lift out of cradle and sand smooth. Place stab in second 1/2 of cradle and insert plywood for bolt on stab. (If you wish plane to come apart.)

6. Repeat same procedure and epoxy on 1/4 x 1/2 hard balsa to leading and trailing edges. Make sure you have weight on entire stab before you epoxy in place. This will keep stab from bowing on you. (Note Picture)

7. When pieces have cured, scribe a line on leading and trailing edges and install tips at same time. Now sand in entire stab to contour. Make a trial fit to fuse before you are finished.

8. Take (2) 1/2 x 4 x 24" tapered elevator pieces and epoxy together. Scribe center line on elevator and cut 5 slots for hinges. With elevator hinged to stab, finish sand entire assembly.

9. If you choose to use trim tab system, cut out elevator section 1 x 24" at center. Use 5 Robart hinges and epoxy in. System works by coupling trim tab to stab area, connected with short horns and clevis.

RUDDER CONSTRUCTION

1. Remove foam core and sand both sides down with a fine grit. Remove all dust from foam core.

2. Next, lay foam core down on flat surface using 1/2 of the foam core cradle so that core does not warp. Spread a nice thin coat of sorghum and let dry. Apply sorghum with a squeegee or a piece of stiff cardboard.

3. Take 1/16 sheeting and spread a thin coat on the sheets. Let dry for 1/2hr. and apply sheeting to one side.

4. After you have sheeted one side of rudder, sand smooth and repeat same procedure for other side.

5. Now take 1/4 x 1/2" hard balsa and cap leading and trailing edge. Make centerline on both pieces and sand to correct contour. Install rudder tip now.

6. Epoxy in 1/4" plywood section to inside cap of rudder if you wish to have rudder bolted on. Make a centerline on piece for bolt patterns. Drill the 3 holes with #7 drill and 1/4 - 20 tap.

7. Now take tapered rudder part and make 4 hinge slots and hinge assembly. Now finish sand entire assembly. If you wish to use trim tab system, cut 1" x 9" from bottom of rudder up. Now take 4 Robart hinges and epoxy in. Use same procedure as elevator.

FUSELAGE CONSTRUCTION

1. Lay out fuselage sides from 1/4 x 4 x 48" sheet stock. Make splice joints as shown on plan. Epoxy splice joint on flat surface. Next sand both sides smooth on a flat surface. (Note Picture)

2. Lay sides on plan and scribe lines for former locations and wing saddle. (Make sure of left and right side.) Next turn sides over and scribe center line, and stab cut out.

3. With sides on flat surface, glue in triangle stock. Former #1 has 1"triangle in back of #1. #2 former has 1/2" triangle stock to front of former #4, #5, #6 to rear and #7 to front. Glue triangle stock to bottom of sides. 1/2" triangle stock from rear of saddle to tail post. (Note Picture)

4. Epoxy in wing saddle and 1/4 x 1/2 stiffener on top. Do Not cut out wing saddle opening at this point. Place former's 1, 2, 5, 6, 7, on the plan and make a centerline on them.

5. Scribe a line on your building surface from tail post to #1 former. Let line pass these two stations so you can see when fuse sides are in upright positions. Now place fuse sides upright on board and pin to board from #2 to #5 station. Epoxy in #2 former to sides and triangle stock, do the same for #5 former. Pin or rubber band to hold formers in until dry. Look at former to make sure of good glue joint and that formers are square.

6. When dry, make sure of alignment and epoxy in tail post. Sides should pull in easily. Pin tail post and dampen side sheeting at #1, #2 stations. Spray with water so that sides will pull in easily. Now epoxy in #1 former to sides and to #1 triangle stock. Be sure you have a good joint. Keep sides wet so they will bend and not split.

7. Sight down fuse to make sure it is straight. Now epoxy in formers #6. #7 former in same manner. When dry, dampen fuse sides at #4 station and epoxy in former. To help hold sides out so former doesn't break, insert 1/4 x 1" stock across fuse sides at wing saddle. (This will relieve pressure on side.) When former is in and sides are dry, glue that 1/4 x 1" stock piece in. Now you can line up #3 former and epoxy in place. Epoxy in #3A in place to give correct angle for windshield.

8. Next cut our piece on #1 and #2 former to accept 1 x 2" soft balsa blocks. Make correct angle and finish cut out in the blocks before you glue blocks in. (Note Picture)

9. Epoxy in blocks to #1, #2 former. Do not glue entire block to #3. Remove cut outs in blocks and sheet nose section with 1/8" sheeting. (Note Picture)

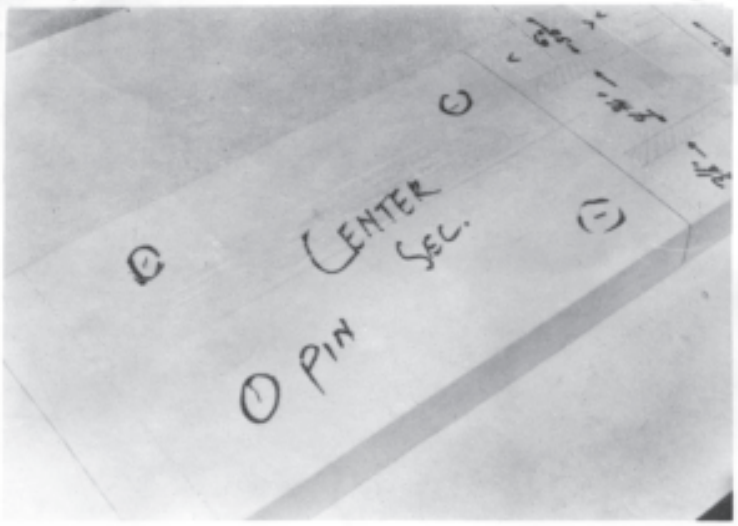
10. Glue lower 1/4" sq. stringers and F-5A in place. 1/4" stringer is angled at former #3. Sheeting can go on now from F-7 to F-5 on both sides. Continue sheeting from F-5 to F-3 covering window area. Do not cut out window area at this time. When sheeting is completed, trim off excess sheeting at 1/4" stringer, sand smooth and then install 1" triangle stock on top of 1/4" stringer. Now install 2nd 1/4" stringer on top of 1" triangle piece. (Note Picture)

11. Now you are ready to install rudder bolt on platform in place. Epoxy platform in and sand smooth to 1" triangle stock. Now install 1" triangle pieces in cabin area, F-5 to F-3 as shown in picture. Trim excess off and sand smooth.

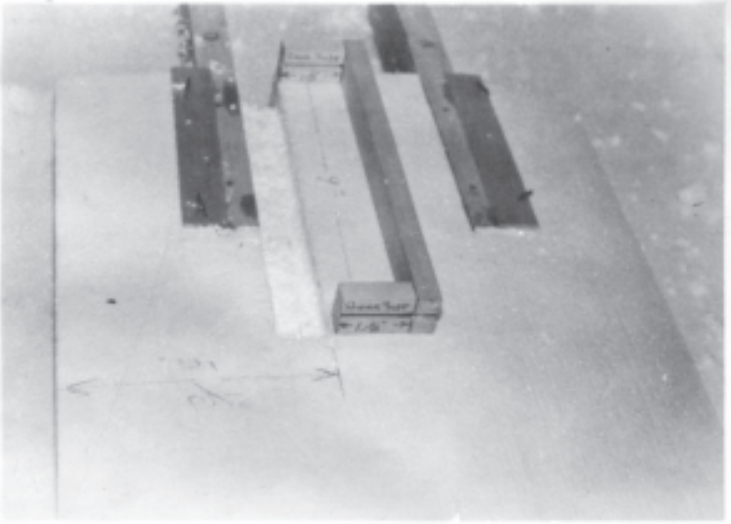
12. Now with 1/8" sheeting again, sheet top of fuselage from F-7 to F-3. Install at locations on plan and epoxy in 3/8" sq. stock in lower half of fuse. Sheeting is from F-5 to access hatch. Epoxy stab bolt on platform in place. Now sheet in access hatch to tail post. Now cut out wing center cavity to fit wing center section.

13. Take sandpaper block and rough sand entire fuselage now. Epoxy on hardwood blocks and mount cowl. Take a medium sandpaper and sand to contour of cowl. Finish sanding when wing center section is installed.

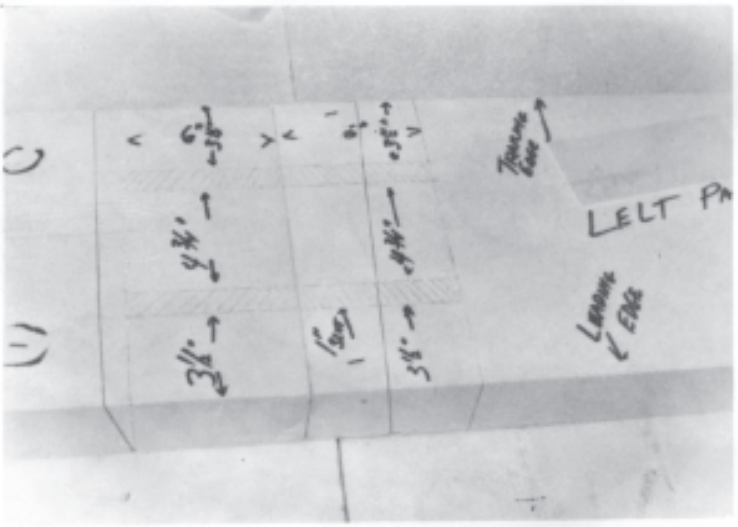
14. Take stab and rudder, bolt in place at bolt on platforms. Measure to make sure horizontal stab is centered. Same procedure for vertical rudder. Now you are ready for the wing assembly.



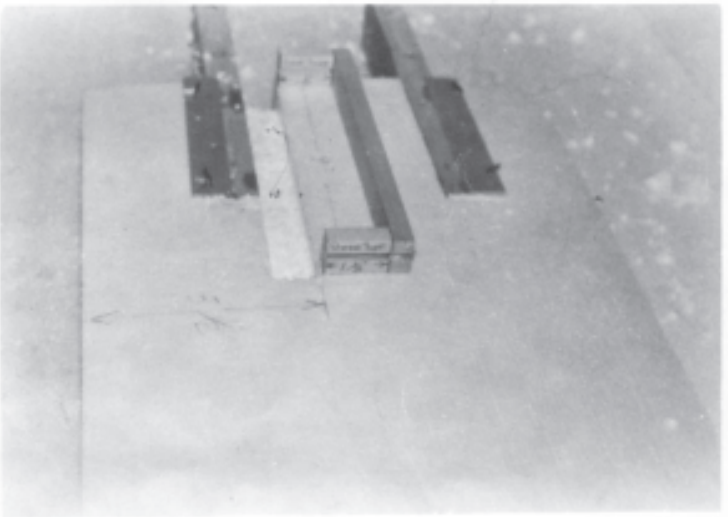
1. Pin cores together



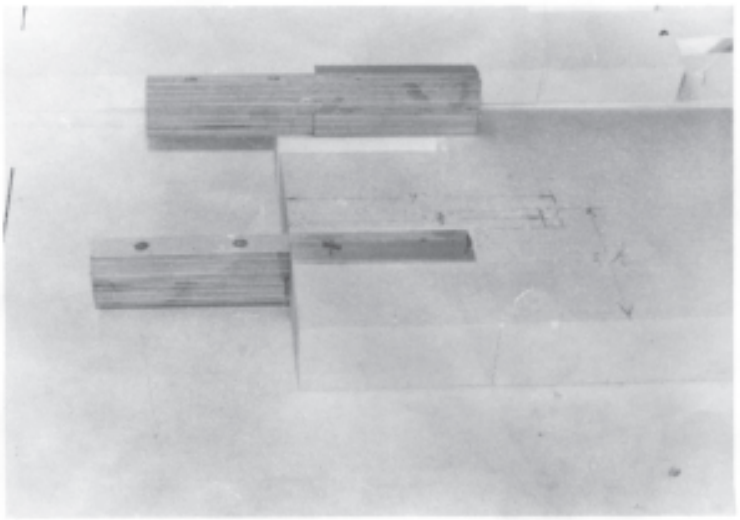
5. Cavity for landing gear



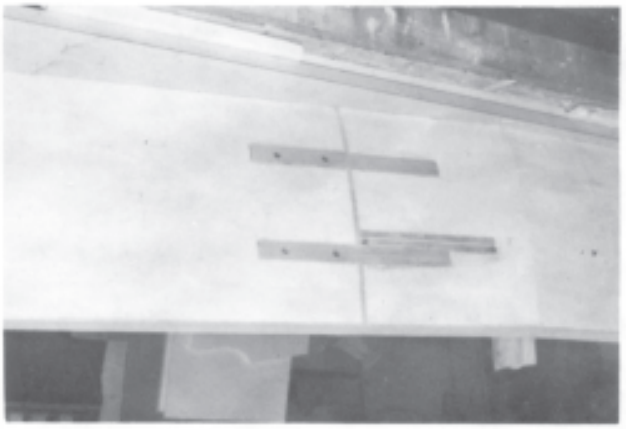
2. Lay out dimensions



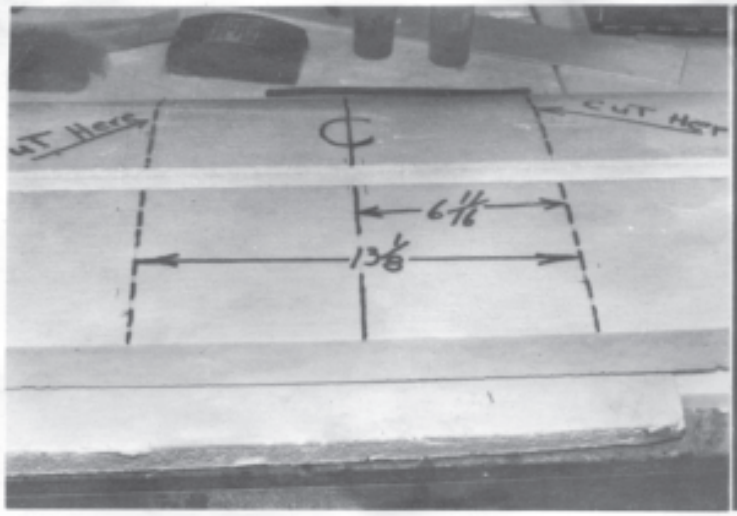
7 & 8. Check depth for fit for gear



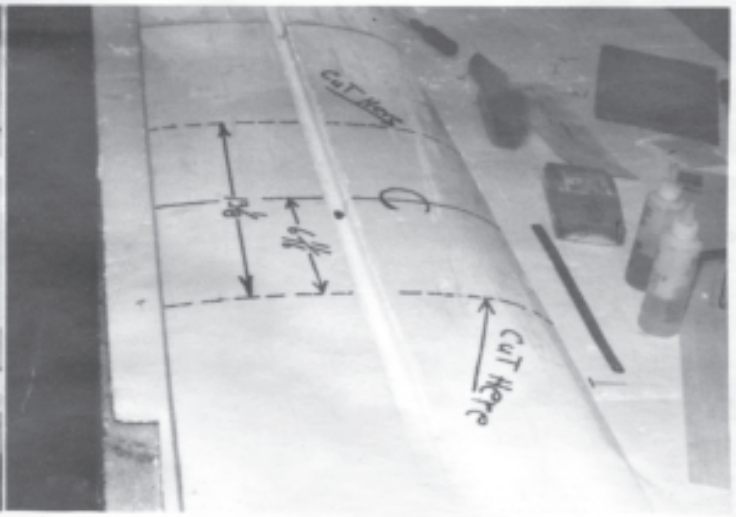
3. Cut out slot for joiner



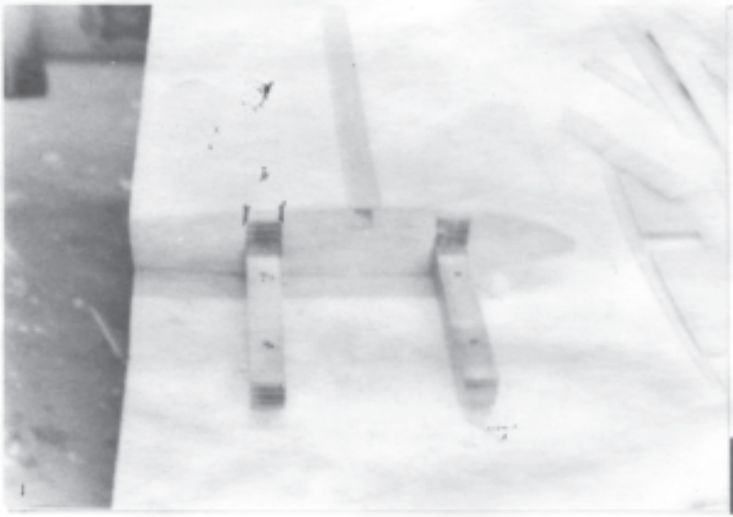
10. Pill in with scrap foam and sand



10. Slot cut outs for ailerons

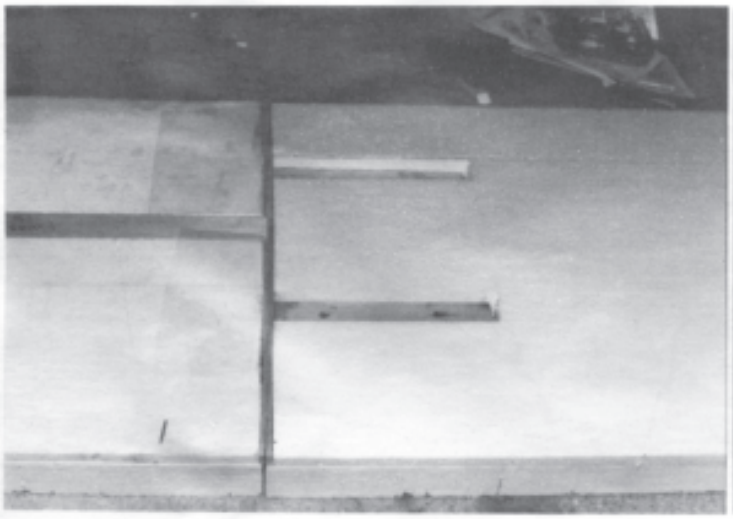


13. Measure out 6 11/16th from center

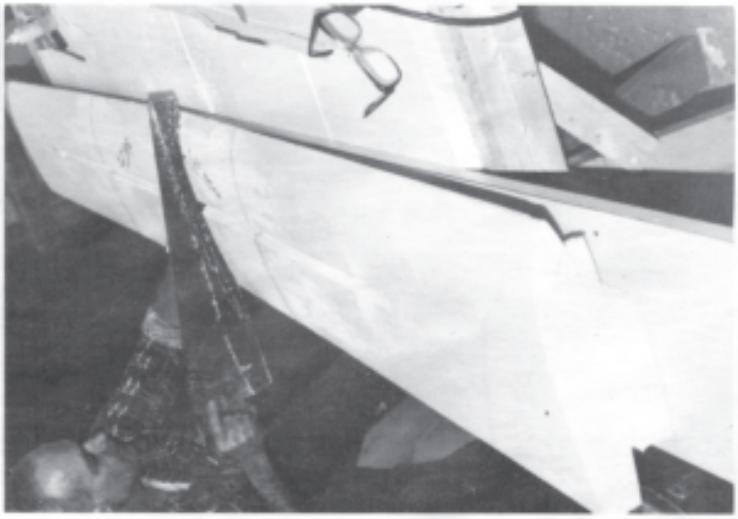


11. Glue 1/8 end caps on

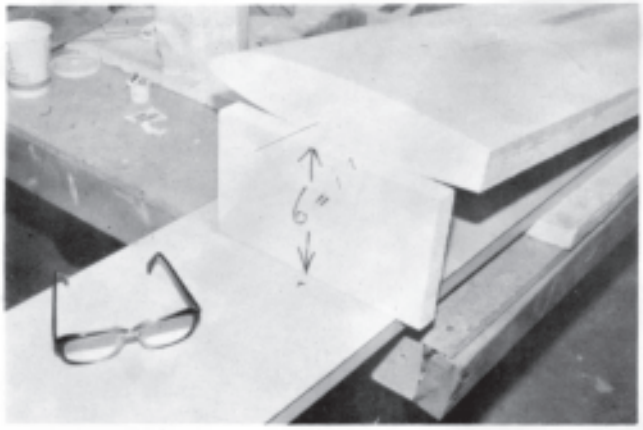
14. Make 1st saw cut in foam



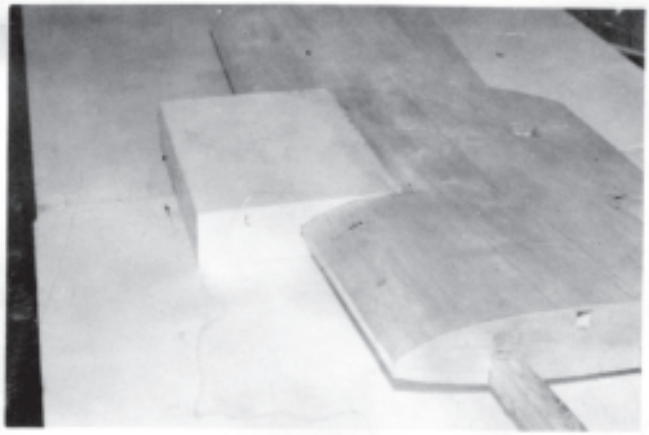
12. Epoxy in joiners using saran wrap



14. Make 2nd and 3rd saw cut

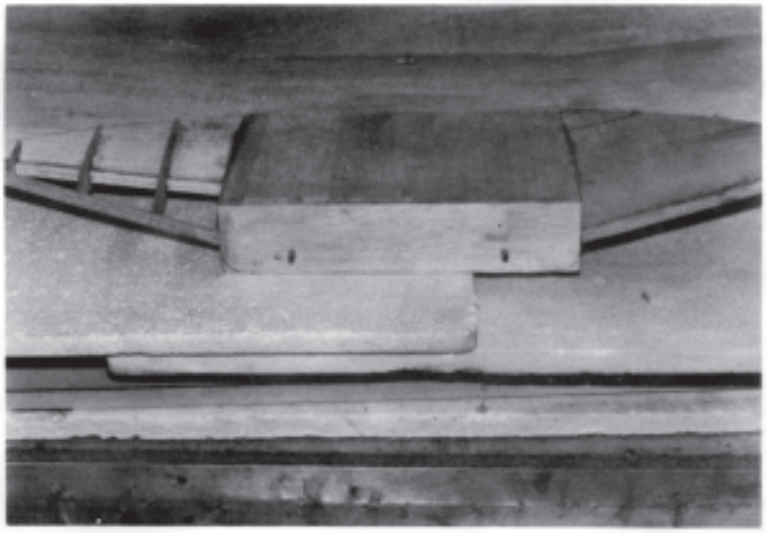


15. 6" block under tip

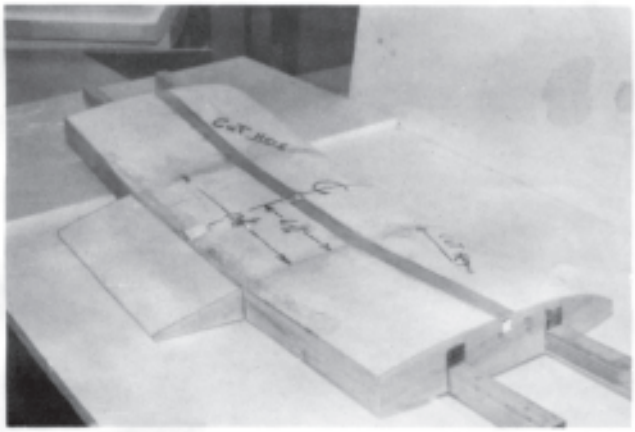


17. Epoxy foam core to center section

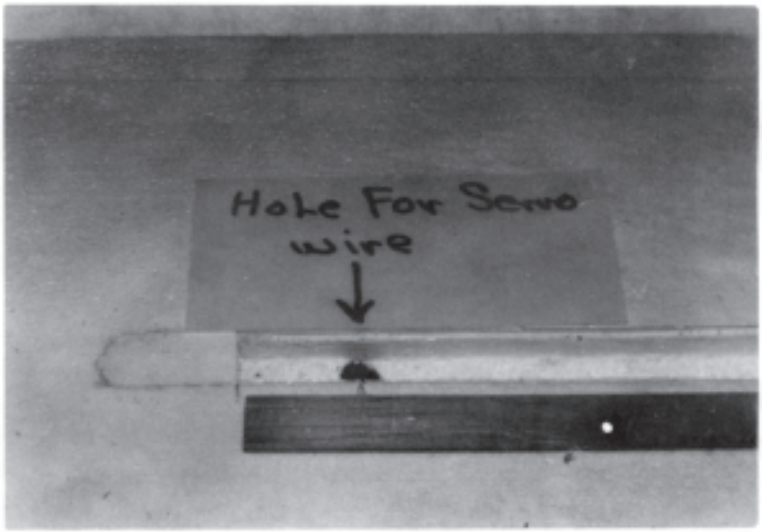
15. Check dihedral for 6"s at tips



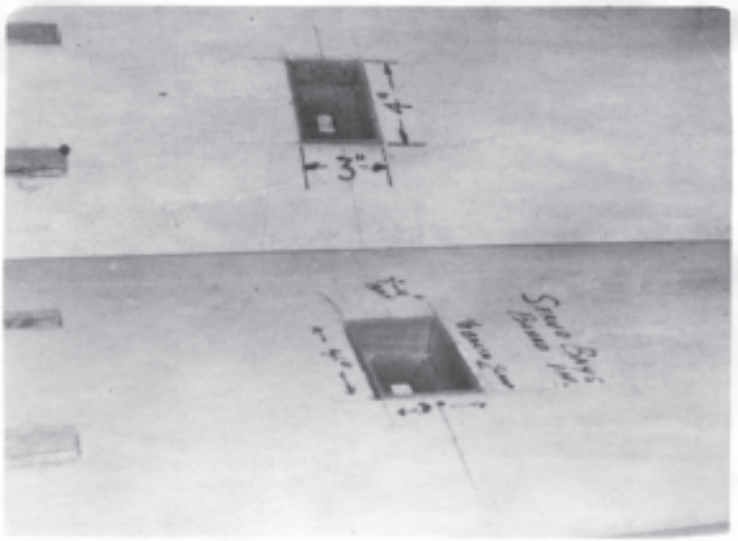
17. Sheet in with 1/16th balsa



16. Cap 1/8 x 2" trailing edge

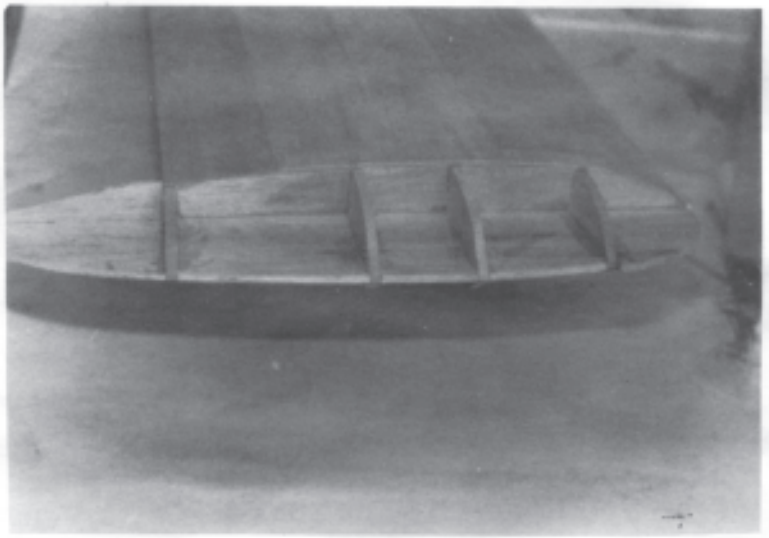


19. Cut 18" slot for ailerons



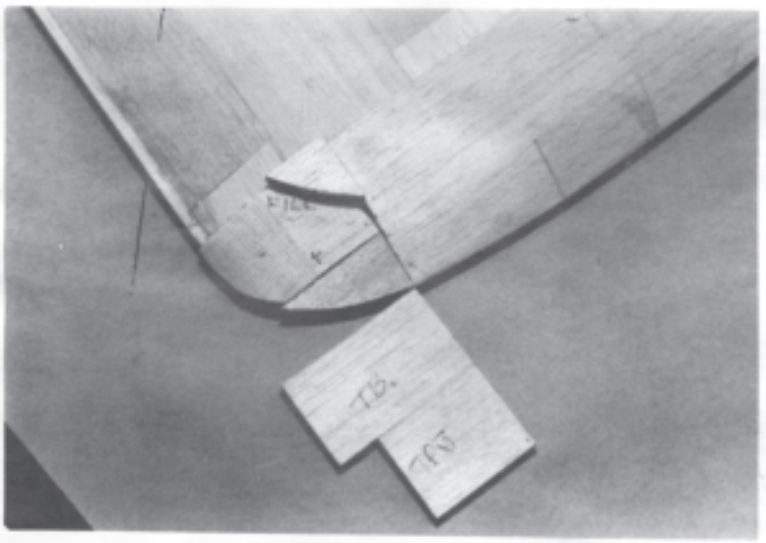
19. Cut out aileron box

20c. Flap cut out shown

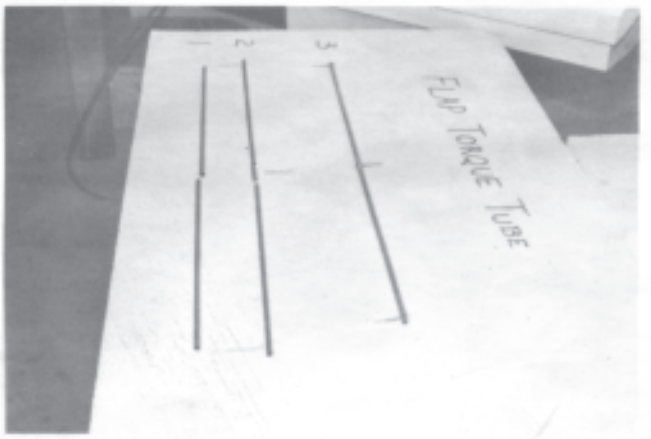


20a. Tip pieces in place

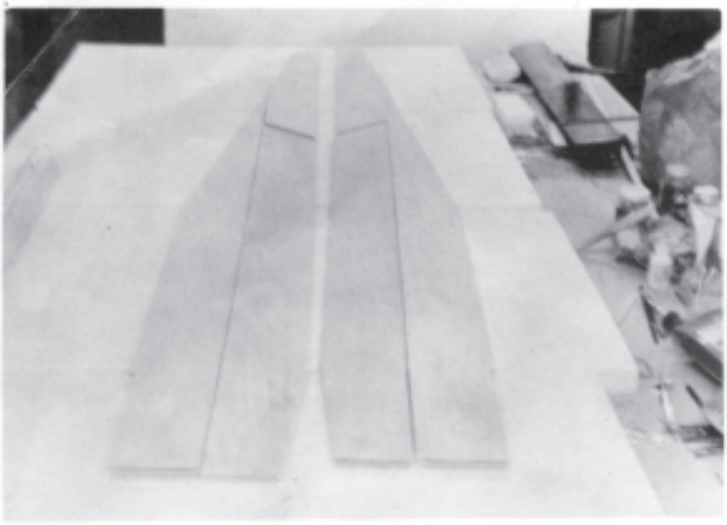
20d. Flap torque tube in place



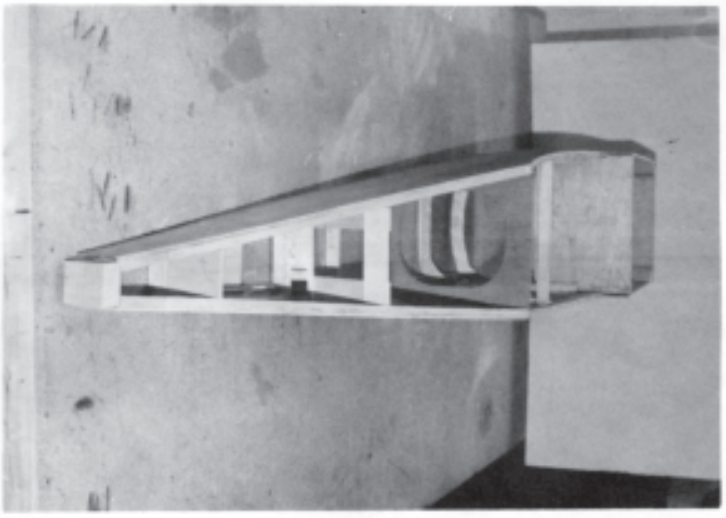
20b. Tip blocks shown and sheeting



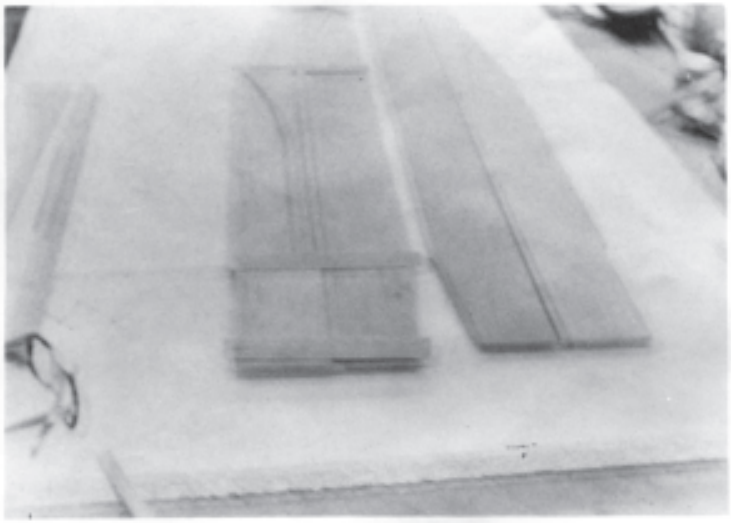
20e. Flap torque tube assembly



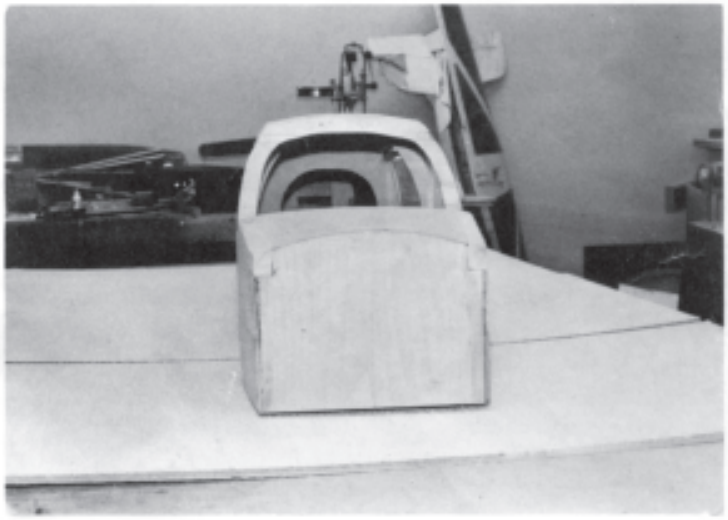
1. -Cut fuselage sides



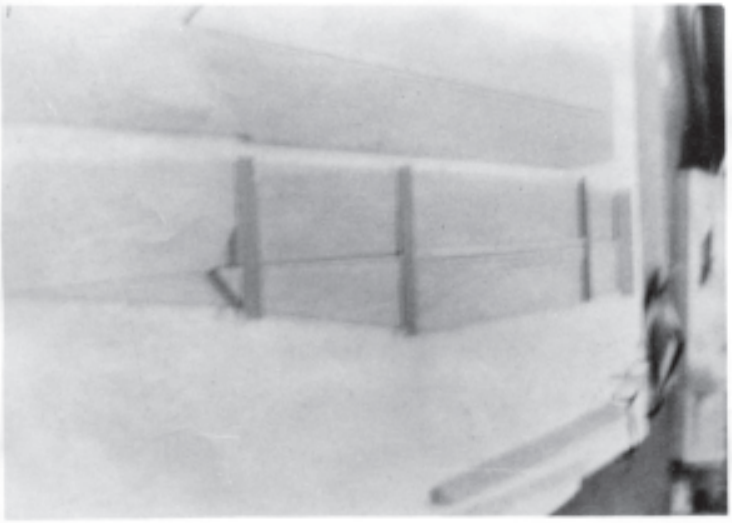
7. Epoxy formers in



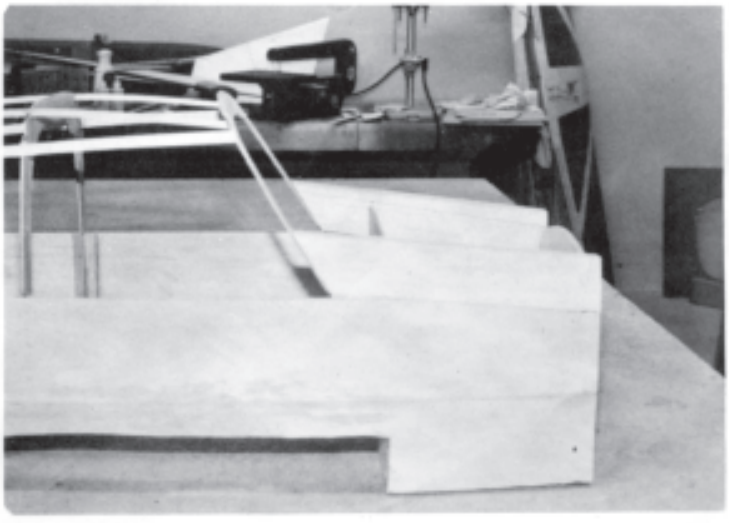
3. Cut triangle stock



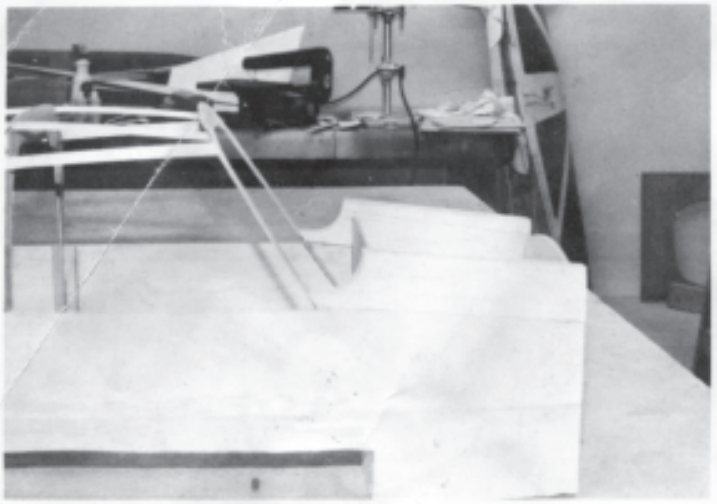
8. Cut out piece on #1 and #2 formers



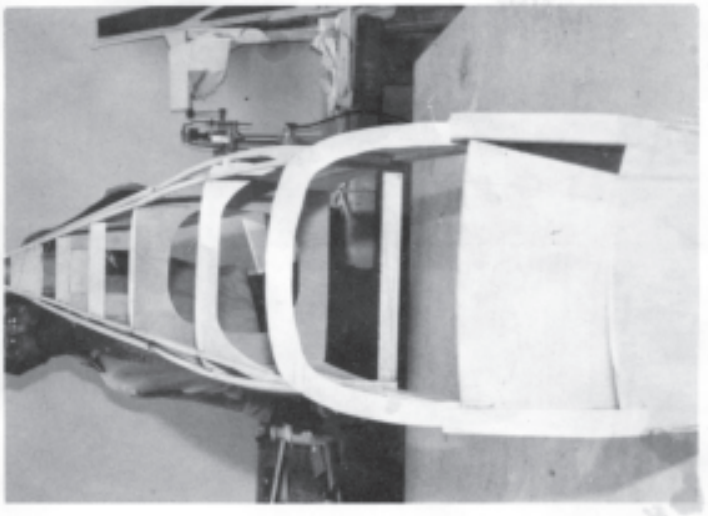
3. Glue triangle stock to sides



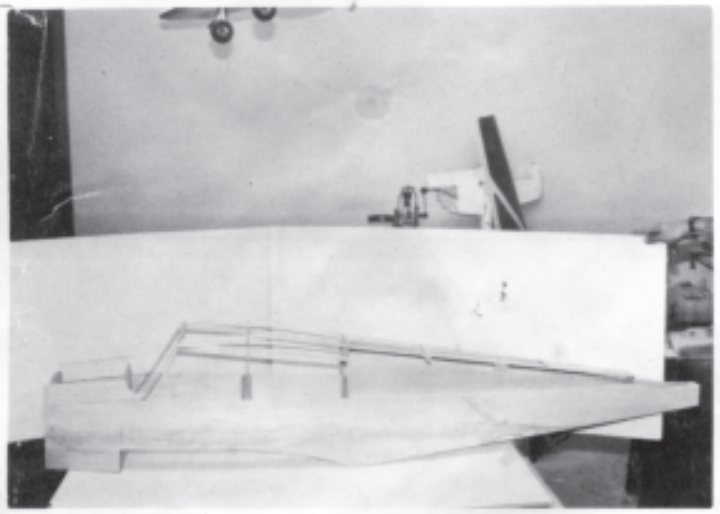
9. Epoxy in blocks



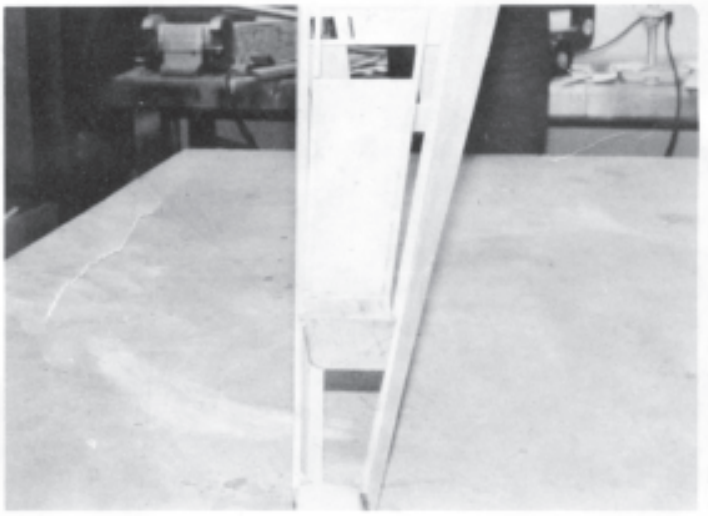
9. Angle cut outs



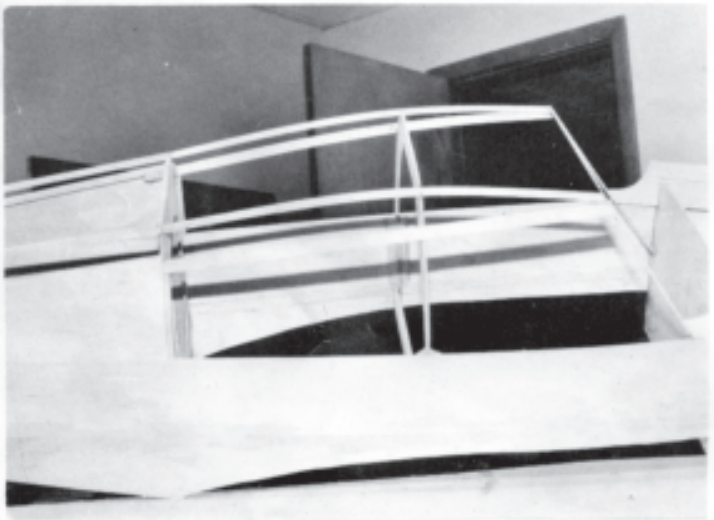
10. Stringer from F-5 to F-7



9. Showing glued joint to #3



11. Platform in place



10. 1/4" stringer in place

11. Install 1" triangle piece