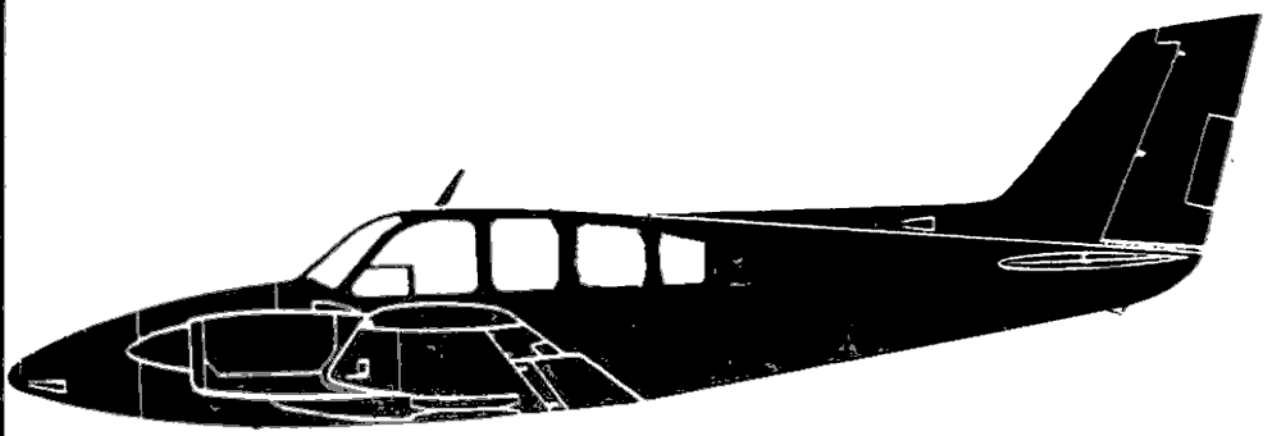
BEECHCRAFT BARON 58P



BUILDING PROCEDURES

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CONGRATULATIONS ON HAVING JUST PURCHASED ONE OF THE FINEST SCALE MODEL KITS AVAILABLE TODAY.

THERE IS A GREAT DEAL OF INDIVIDUAL DETAIL TO BE TAKEN CARE OF PRIOR TO GLUING A TO B SO SIT BACK, RELAX AND CONSIDER THE FOLLOWING PRELIMINARIES.

YOUR CHOICE OF THIS KIT WAS INITIALLY MOTIVATED BY SOME PRIOR EXPERIENCE OR PREFERENCE FOR THIS PARTICULAR MODEL. PERHAPS IT IS A REAL PLANE OF THE SAME DESIGN YOU HAVE FLOWN OR MAYBE OWN NOW. THE POINT IS, RIGHT NOW, ONLY YOU ARE FAMILIAR WITH THAT FEELING. HAVEN'T YOU NOTICED THAT WHEN YOU SPEAK OF THIS BEAUTIFUL SCALE JOB THERE IS THE CASUAL INDIFFERENT LOOK ON YOUR COMPANION'S FACE? WOULD YOU BELIEVE THE SAME INDIFFERENT FEELING COULD BE IN THE JUDGE'S MIND AS HE INSPECTS THIS BEAUTY YOU WILL CREATE? 'TIS POSSIBLE, ISN'T IT?

THE ABSOLUTE FIRST THING YOU MUST DO AT THIS VERY TIME IS DETERMINE WHETHER THIS IS TO BE THE "ULTIMATE SCALE JOB" OR AN "EYEBALL SCALE". IF YOU CHOOSE "EYEBALL SCALE", WHICH IS JUDGED FROM 25 FEET AWAY, THEN YOU MAY AS WELL TURN TO CONSTRUCTION TECHNIQUES AND START BUILDING! HOWEVER, IF YOUR CHOICE IS "ULTIMATE SCALE" , THEN YOUR PROJECT HAS NOT YET BEGUN.

THE NEXT DECISION YOU MUST MAKE IS WHICH PARTICULAR TYPE, MODEL AND SERIES YOU INTEND TO DUPLICATE TO THE NTH DEGREE. THE TYPE (THAT IS BOMBER, FIGHTER, ETC.) HAS ALREADY BEEN DECIDED AS YOU BOUGHT THE KIT. THE MODEL (THAT IS 24-25-26 ETC) MAY NEED TO BE YOUR CHOICE AS FOR INSTANCE, THERE IS NO EASILY RECOGNIZABLE DIFFERENCE BETWEEN A B-44 AND A B-50. THE SERIES VARY WIDELY AND YOU WILL NEED TO MAKE THIS DECISION YOURSELF. FOR INSTANCE THERE IS VERY LITTLE DIFFERENCE BETWEEN A B-52B, B-52C, B-52D AND B-52E TO THE CASUAL OBSERVER, BUT TO THE TRAINED EYE OF A COMPETITION SCALE JUDGE THIS MAKES THE FIRST GREAT DIFFERENCE.

ONCE YOUR CHOICE HAS BEEN MADE AS TO EXACTLY WHICH TYPE, MODEL AND SERIES YOU WILL BUILD, YOUR NEXT TASK WILL BE TO COMPLY WITH THE "SCALE PRESENTATION". BY THIS I MEAN YOU MUST ASSEMBLE AND ARRANGE THE "PROOF" YOU INTEND TO USE, TO THOROUGHLY CONVINCE THE JUDGE THAT YOURS IS THE BEST OF THE BUNCH! KEEP IN MIND THAT YOU CAN'T "TALK" HIM INTO IT SO EXTRA EFFORT SPENT AT THIS STAGE REAPS GREAT BENEFITS LATER.

START WITH AN ACCURATE, AUTHENTIC 3-VIEW DRAWING PREFERABLY FROM THE MANUFACTURER, AND WHICH GIVES DIMENSIONS OF THE REAL PLANE. IF NOT AVAILABLE, THEN SUCH GREAT WORKS AS THE COMMERCIAL SCALE 3-VIEWS BY NIETO, NYE, WYLAM, SUPERSCALE, ETC. ARE ACCEPTABLE. I KNOW THIS BECAUSE I JUST READ IT IN THE CURRENT AMA MODEL AIRCRAFT REGULATIONS BOOK WHICH INCIDENTALLY IS THE BOOK BY WHICH YOUR EFFORT WILL BE RATED. NEEDLESS TO SAY, BEFORE YOU GO ANY FURTHER, GET REAL FAMILIAR WITH THE RULES FOR SCALE.

ONE MORE WORD OF ADVICE ABOUT THE "SCALE PRESENTATION". THE BETTER IT LOOKS, THE BETTER YOUR SCORE WILL BE SO DON'T CUT CORNERS OR GO SECOND CLASS! 'NUFF SAID?

NOW THAT YOU'VE ASSEMBLED THE 3-VIEW, TECH DATA, PICTURES AND REFERENCES AND CONSTRUCTED A WELL ORGANIZED, WELL PLANNED, EYE APPEALING PRESENTATION, YOU MUST STUDY, COMPARE, MEASURE AND CAREFULLY PLAN THE MODEL YOU WILL BUILD.

First, select the scale ratio you will use. This has been approximated in our kits because there are so many variants between each different series of the basic air plane. You may choose the series which is closest to our kit - still you will have to make adjustments, perhaps an inch in wingspan, 1 2 inch in length or so on. The point is--this is the time to plan for these adjustments and they must all be the same ratio for maximum points.

The easiest way to do this is to obtain a pair of "proportional" dividers. This is a tool with a moveable pivot in the middle and when open looks like an "X" with needle points at each tip. With these you may set the "ratio" so that measuring with one end off the 3-view will give the desired measurement at the other end. Carefully adjust the drawings we've provided to exactly match the 3-view you will use.

Next, carefully study the material you've gathered and make note of exactly which details you will include on your model and where and how they will be incorporated. For instance, do you plan on flaps? retractable gear? lights? Thousands of techniques are included in magazines and columns which are devoted to scale construction techniques so I'll leave you to hunt up all that for yourself.

We will now consider the Basic Airplane and then it's construction.

WING CONSTRUCTION

1. Note that the wing center section is flat. All dihedral is outboard of the center section. Draw centerlines on all ribs from LE* to TE* Cut all spars to length.

2. Laminate W-18 to W-3, W-19 to W-4 if you are using retracts. If a fixed gear installation is desired, laminate W-18A to W-1, W-18 to W-3 and W-19A to W-4.

3. Pin lower outboard main spar in place over plans. Add ribs W-1, W-3 and W-5 to W-12. Do not glue. Fit upper spar in place.

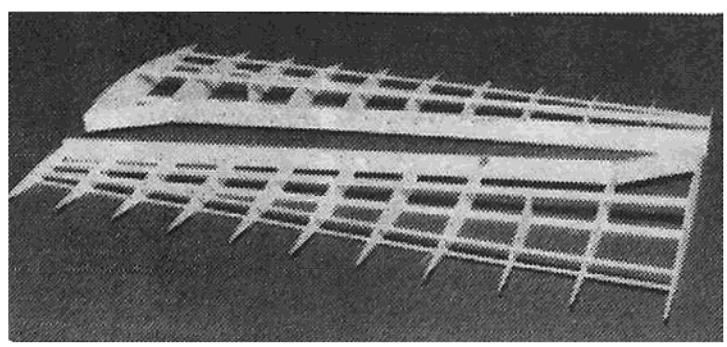
4. Fit W-17A and W-17B plywood spar doublers in place.

5. Draw a center line on the leading edge, W-16 span-wise. Also W-15 and W-14.

6. Line up LE centerline with rib center lines and pin in place. Remember no glue yet.

7. Fit upper rear spar in place. Add W-4A, W-4B and W-4.

8. When satisfied that everything is straight, use a square for the ribs, glue parts in place. When dry, remove from plans.



9. Drill hole in W-22 and attach bellcrank. Glue assembly in place. Drill holes in ribs for aileron pushrod. Do not install pushrod yet.

* LE = Leading Edge; TE = Trailing Edge

10. Glue W-20's in place for retracts, W-21 and W-21A for fixed gear. If retracts, make wheel wells from scrap balsa and put aside for now.

11. Glue lower rear spar in place.

12. Build other wing half in the same manner, by oiling plans so that you can see through them.

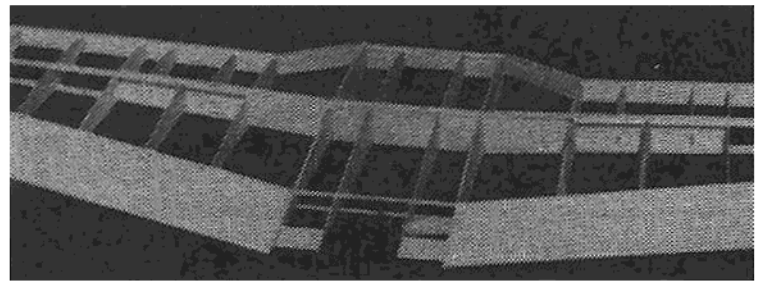
13. Now we have a wing with outer panels but no center section. The dihedral is built in at this point.

14. Pin the center lower spar in place on the plans. It should fit exact between the outer lower spars. Add the center section W-1's and the top center section spar. No glue.

15. Fit wing assembly in place over the center section. Measure tips for proper dihedral. Add W-14 and W-15's. Keep the center lines aligned.

16. Fit W-30's and W-31's in place

17. When everything looks right, glue the parts in place. Keep things straight.



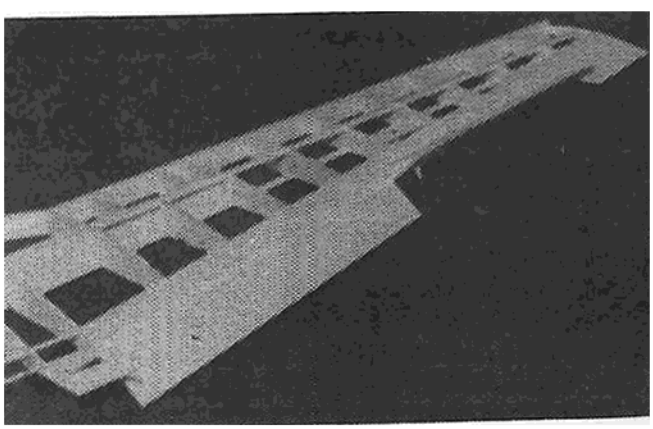
18. Remove assembly when dry and add rear upper and lower spars.

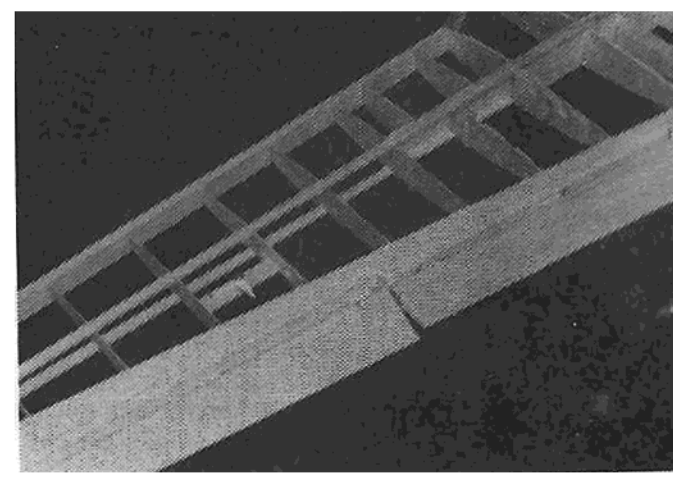
19. Check assembly for warps and ensure that everything is straight.

20. Cut outboard top and bottom TE planking as shown on plans. Pin lower sheeting in place over plans and pin wing assembly down. You will have to do this for each outboard section. When dry, pin and glue upper sheeting in place. Remove and do opposite panel.

21. Drill holes and add throttle cables as per plans.

22. Draw flaps and ailerons on the sheeting and, using a razor saw, cut them out. Add W-24's and W-26's with the scrap balsa, as shown, to the TE of the wing.





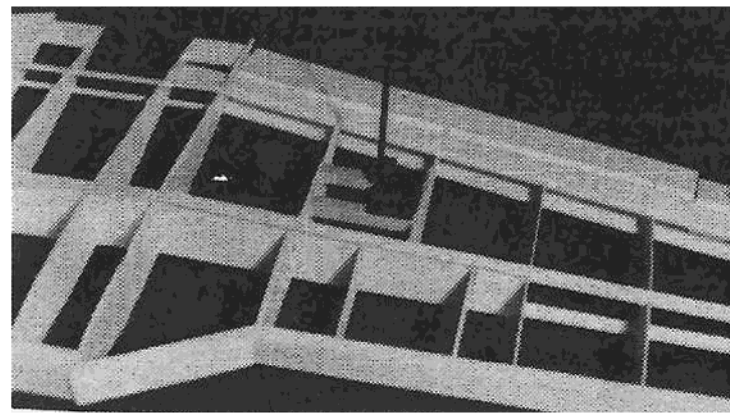
23. Add W-25B and W-29 to the ailerons. Bevel the LE; as shown. Attach horn to W-28 and glue in place. Add W-27. Bevel as shown on side view.

24. On flaps add W-25A, W2A and W-36. Glue W-24 in place. Bevel bottom as shown on flap side view.

25. Notch surfaces for hinges and temporarily install. Check for freedom of movement. Remember flaps should fit flush with upper surface of the wing. Temporarily install aileron pushrods.

26. Drill hole for flap horn in the flap. Notch W-32 as necessary to install. Check flap movement. Sheet rear upper and lower center section.

27. Sheet remainder of the wing, starting with the outboard upper surface. Add retract wheel well liners before sheeting bottom. At this time, fit your retract units in place and drill necessary holes. Hook up the retracts to your actuator, air or mechanical and check operation. You can't get to this after the wing is sheeted. Remove retract units, but leave actuating wires or tubing in place.



28. Glue wing tips, W-23's in place and sand wing to finished shape.

29. Make cut-outs for the servos in the top of the wing as needed.

30. Cut out LE between W-4A and W-4B for the nacelles. These will slip in as a unit.

31. Make cut-outs for landing gear for fixed gear installation.

32. Glue W-33, W-34 and W-35 in place. Add sheeting. Sand, after wing has been mated to the fuselage.

33. Add W-37. Drill holes for dowels and install.

34. Check wing for proper fit to the fuselage. When everything lines up, drill holes for rear hold-down screws.

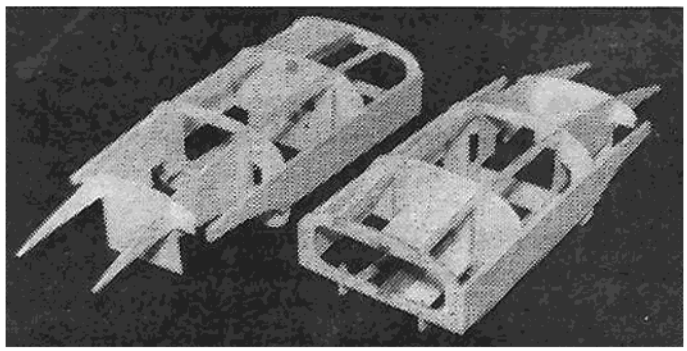
NACELLE CONSTRUCTION

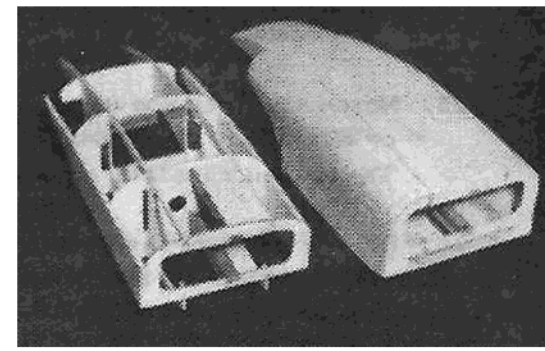
Note: These will be built in the air, so please follow our instructions. Remember, there is a right and left nacelle.

1. Trial fit N-1 to N-7 in place. Add EM-1 and EM-2. Use tape or pins. Draw bulkhead locations on N-11 and N-12. Add these to the assembly, but no glue.

2. Check nacelle to ensure that it is square with no warps or bows. Parts should fit snug, but not so as to misalign anything. Cut and fit as necessary. When everything is square, glue all the parts in place. Wet N-11 and N-12 so that they can be bowed.

3. Double glue everything.





4. Sheet the top with 1/8" balsa from N-1 to N-5. Sheeting extends to N-6 and N-7. Grain is fore and aft.

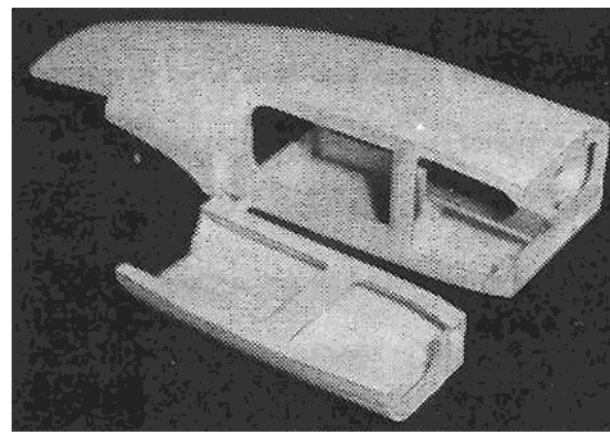
5. Strip plank side of nacelle that will not be the removable cowl. See plans, from N-1 to N-4.

6. With a razor saw, cut N-1, N-2 flush with N-7. Cut N-12 flush with N-3.

7. Fit N-16 in place next to N-7. Add N-17 and N-12 assembly that was cut off prior. Add N-15 and glue parts in place. Don't forget this is the removable cowl.

8. Glue N-15 in place on nacelle and sheet bottom with 1/8" balsa.

9. Finish strip sheeting nacelle assembly and cowl.



10. Add hardwood cowl hold-down blocks and plywood to assembly. Drill holes for bolts and install.

11. Fit engine and tank to nacelle. Make all necessary cut-outs for muffler, exhaust needle valve, glow plug, etc. With engine in place, fit N-8 and N-9. Sand to shape shown with spinner installed.

12. Shape and glue N-20 in place.

13. Fit nacelles to cut-outs in wing, thread engine cables through nacelles. Bolt wing to fuselage and with an incidence meter set wing at A + 2°. Engine thrust line should be - 2.5°, or downthrust. Adjust nacelle as necessary. Check to ensure no side thrust and when satisfactory, glue in place.

14. Fit N-10, N-13 and N-14 in place. Add N-18, N-19, N-20 and glue in place. Sand to final shape.

15. Add fiberglass tape, 2" with either epoxy or resin at the point where the nacelle mates to the wing.

HORIZONTAL STAB AND ELEVATOR

1. Mark rib locations on S-2. Draw a center line on the spar and all of the ribs from leading edge to trailing edge.

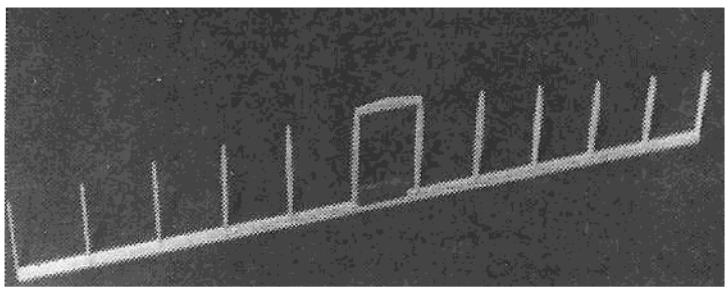
2. Pin trailing edge in place over plans, so that ribs will be vertical to the work bench. Use a T-square and glue ribs in place. Add 3/16" square leading edge and S-9.

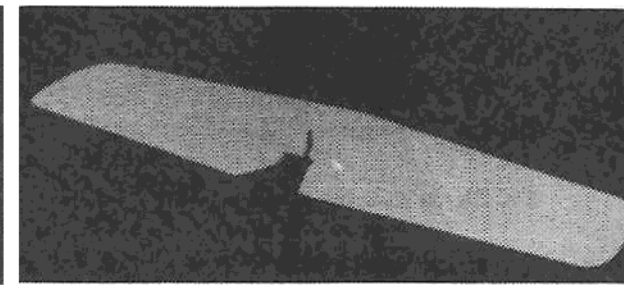
3. When dry, remove and sand to shape as sheeting will go over leading edge and trailing edge.

4. Butt glue sheeting together, as shown on plans.

5. Sheet stab top and bottom. Add S-10's.

6. Notch for hinges and temporarily install.





Elevator

1. Notch and drill holes in S-11's for horn.

2. Slot for hinges. Bevel leading edge as shown.

3. Glue S-12's in place.

4. Temporarily install elevators with hinges (without horn) to horizontal stab.

5. Sand assembly as one unit to shape as per the plans. Cut off leading edge of horizontal stab, as indicated on plans.

VERTICAL FIN AND RUDDER

1. Mark rib locations on R-2 and 3/16" square leading edge. Draw a center line on each.

2. Pin R-3 - R-6 in place over the plans, after marking a center line.

3. Glue leading and trailing edge in place, keeping center lines aligned. Note both leading and trailing edge will be off the work bench slightly to allow for airfoil.

4. When dry, remove and sand as necessary. The sheeting will go over the LE and TE.

5. Butt glue 3/32" sheeting as shown on plans and sheet fin.

6. Add R-7, R-16 and R-15. Sand to shape.

7. Notch for hinges.

Rudder

1. Draw rib locations on R-8. Mark a center line.

2. Pin ribs R-10 - R-13 in place over the plans. Mark a center line on these also.

3. Glue R-8 in place, keeping center lines aligned.

4. Sheet rudder with R-9. Bevel R-8, as shown on top view.

5. Add R-14.

6. Notch for hinges and horn. Temporarily install hinges in both fin and rudder. Leave out the horn for now and finish sand assembly.

FUSELAGE CONSTRUCTION

1. Glue balsa fuselage sides A, B and C together. Check for correct shape on side view of plans.

2. Add plywood doublers to fuse sides, make a left and right. Cut and glue 1/8"x 3/16" strips and 3/8" triangle balsa in place.

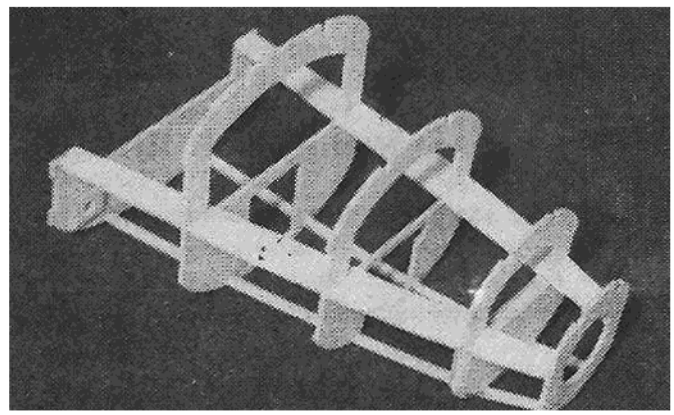
3. Draw all bulkhead locations on fuse sides.

4. If retracts are to be used, laminate F-2 and F-25, F-3 and F-25. For fixed gear, laminate F-2 and F-2A to F-2. Drill holes for nose gear.

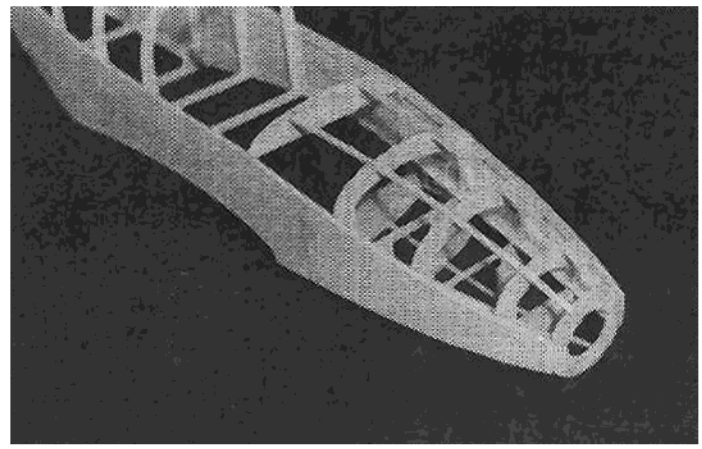
5. Glue F-18's to F-5 and F-11 to F-10.

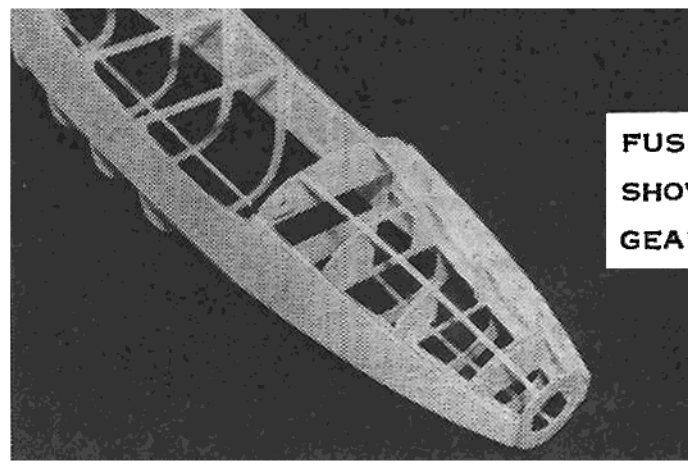
6. Glue F-7 and F-8 in place on fuselage sides. Add F-6 and F-5. Keep things square.

7. Glue F-4, F-3, F-2 and F-1 to F-15 (plywood keel). This will make up the nose assembly. Again keep it square.



8. Wet the fuselage sides from F-6 forward. While still wet, fit fuselage nose assembly in place. Formers will fit right into the ply doubler. Use tape to pull fuselage together. Insure that everything is square and glue in place.





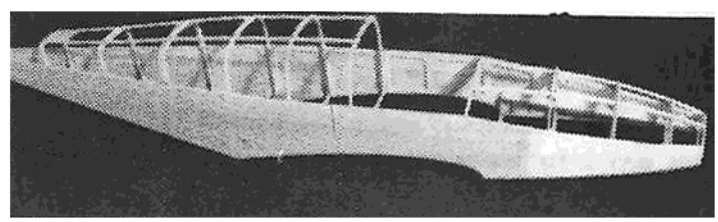
FUSE BOTTOM SHOWN FOR FIXED GEAR INSTALLATION

9. Add forward upper and lower 3/16" stringers.

10. Work backwards and add remaining fuselage formers. Glue top 3/16" stringers in place.

11. Glue hardwood bolt blocks in place. Add F-27.

12. Fit and glue F-20's in place.



13. Sheet fuselage front on the top only. Add retract or fixed nose gear and sheet bottom of fuse front. See plans. Cut out bulkheads as required for retract installation.

14. Fit wing and drill rear bolt holes in wing before you sheet the top of the fuselage.

15. Add F-19 and F-26.

16. Sheet the top of the fuselage.

17. Sheet the bottom of the fuselage. Cut out as shown at the rear for rudder and elevator horn.

18. Add F-16, F-21 and F-23.

19. Sand fuselage to shape. See cross-sections of formers.

20. At this time, add any cockpit detail desired.

21. Make up and fit control pushrods. Add servo rails.

22. Cut and fit canopy and windows, but do not glue these in yet.

23. We suggest covering the fuselage with a light fiberglass cloth and resin.

24. With wing in place at a 2° incidence, glue horizontal and vertical stab in place with F-22. Make sure everything is square and the horizontal stab is at 0° incidence. Don't forget to hook up the elevator pushrod and let the rudder horn extend outside of the fuselage!

FIXED GEAR INSTALLATION

1. Bolt nose gear assembly to F-2 assembly.

2. Locate and drill necessary holes for nose gear steering.

3. Cut nose gear strut to proper length.

4. Hook up & check nose wheel steering for proper operation.

RETRACT NOSE GEAR INSTALLATION

1. See plans for position of F-17's and F-25 for nose gear.

2. Position nose gear assembly and drill necessary holes in F-17's. Use blind nuts for installation. Make cut-outs as needed for steering.

3. Cut away F-3 and F-4 as shown.

4. Make holes for nose gear actuating method which is left to the builder.

5. Temporarily install nose gear and check for proper operation. Nose gear wheel should go all the way into the fuselage.

6. Nose gear doors are left to the builder's own method.

THE FINISH WORK

THE CONSTRUCTION PHASE CONCLUDED WITH THE REMAINING PARTS BEING STUCK ONE TO ANOTHER AND/OR "SHAPE" SANDED. THIS PILE OF PARTS WHICH MAY RESEMBLE AN AIRPLANE DEPENDING ON ARRANGEMENT MUST NOW BE FINISHED TO SATISFY THE GOAL.

ONE OF THE KEYS TO A GOOD FINISH IS SAND, SAND, SAND, DUST IT OFF AND SAND ONCE MORE. REMEMBER THAT, AS IT'S IMPORTANT. THE FIRST SANDING IS DONE WITH ROUGHER OPEN COAT SAND PAPER (I PREFER ALUMINUM OXIDE OR GARNET PAPER) 280-320 RANGE. I GLUE MINE TO 1"X4"X12" BLOCKS WITH SPRAY CONTACT ADHESIVE OR "STICKY BACK" BY SCOTCH. IT'S BEST TO SAND ALL COMPONENTS PRIOR TO FINAL ASSEMBLY AND IS ALSO MUCH EASIER. THE NEXT SAND IS DONE WITH 320-400 GRIT PAPER. AFTER THIS STEP TAKE A GOOD REST, THEN COME BACK AND SAND UNTIL TIRED AGAIN. NOW WIPE THE PLANE DOWN WITH A CLEAN SOFT RAG AND CHECK IT FOR SEAMS, LOW SPOTS, AND SYMMETRY. THEN SAND ONCE MORE WITH THE 400 GRIT.

IF YOU PLAN TO "MONOKOTE" YOUR EYEBALL SCALE, IT IS DONE AT THIS STAGE ON BARE WOOD AND IN ACCORDANCE WITH THE DIRECTIONS FURNISHED WITH THE "MONOKOTE". AFTER IT'S ALL MONOKOTED, GO TO THE FINAL ASSEMBLY STEP.

IF YOU PLAN AN ULTIMATE SCALE JOB FINISH YOU MUST PAINT IT 'CAUSE NO REAL AIRPLANES ARE MONOKOTED. (TOO BAD, THOUGH!) YOU MUST DECIDE WHAT TYPE HINGES YOU WILL USE NOW BECAUSE IT MAKES A DIFFERENCE. IF YOU ARE GOING TO USE HINGES WITH REMOVABLE HINGE PINS, THEN INSTALL ALL HINGES AND CONTROL RODS, LINKAGE, RADIO GEAR, (ACCORDING TO MANUFACTURERS INSTRUCTIONS) ETC., AT THIS TIME. THEN DISMANTLE IT AND COVER IT INDIVIDUALLY. IF YOU ARE TO USE "HIDDEN" HINGES (LIKE THE NO GLUE MOLDED NYLON ONES) THEN COVER ALL THE SEPARATE PIECES AND THEN ASSEMBLE THEM.

TO PREPARE THE MODEL FOR COVERING, YOU DOPE THE BALSA WITH AT LEAST A 50/50 DOPE-THINNER MIXTURE. AFTER EACH COAT SAND LIGHTLY AND CONTINUE UNTIL NO "FUZZ" OCCURS AFTER DOPING. (USUALLY 3 OR 4 COATS). NOW COVER WITH THE MATERIAL OF YOUR CHOICE (FOR INSTANCE, SILK, SILRON, NYLON ETC.) CHECK THE GRAIN (LOOK AT A CORNER OF THE MATERIAL TO DISCOVER THE GRAIN IS PARALLEL TO THE HEAVIEST OR MOST DENSE THREADS WHICHEVER THE CASE). THE GRAIN MUST GO LENGTHWISE ON EACH PIECE.

TO APPLY THE COVERING, CUT IT OVERSIZE, HOLD IN PLACE AND SPRAY WITH A FINE FINE MIST WATER SPRAYER CAREFULLY WORKING OUT ALL THE WRINKLES AND DOPE IT WHILE STILL WET WITH THE BRUSH NEARLY PARALLEL TO THE SURFACE AND LIGHTLY, LIGHTLY STROKING IT. IF DONE WHILE WET, THE DOPE WILL "FLOAT" ON THE DAMP SURFACE AND DRY "WHITE OR CLOUDY" BUT WILL REQUIRE FAR FEWER COATS AND THE CLOUDY LOOK WILL DISAPPEAR AFTER THE 2ND OR 3RD COAT.

CAREFULLY TRIM (WITH A DOUBLE EDGE RAZOR BLADE) AND SAND THE "ROUGH" AREAS BUT BE CAREFUL NOT TO "CUT" OR "SAND" OUT THE FIBERS OVER A "HIGH" PLACE LIKE A RIB.

WHEN SURFACE REMAINS SMOOTH AFTER A COAT OF DOPE (3RD OR 4TH COAT) IT'S TIME TO THIN THE MIXTURE AND ADD TALC OR CORNSTARCH FOR FILLER "BODY". SAND AFTER EACH COAT UNTIL DESIRED SMOOTHNESS IS ACHEIVED. THEN ASSEMBLE THE PARTS AND SPRAY PAINT THE FINAL COLORS TO SUIT. JUST REMEMBER ALOT OF PLANES MODELED ARE GLOSSY WHEN THE PROTOTYPE WAS NOT. THIS MISTAKE COSTS POINTS. AS I MENTIONED EARLIER, I WON'T PRESUME TO ADVISE ON ACHIEVING THE "ULTIMATE SCALE" FINISH, BUT IF IN DOUBT, THERE ARE VOLUMES WRITTEN ON THE SUBJECT. THERE MAY EVEN BE A "SCALE NUT" IN YOUR AREA WHO CAN HELP. DON'T FORGET THE PLASTIC MODELER WHO KNOWS FINISHES. REMEMBER ALSO, THE PLASTIC MODEL IS AN EXCELLENT SOURCE OF SCALE DETAIL AS WELL.