

Fuselage assembly instructions

1. Glue top rear spine parts S3 and S4 together over the plan.
2. Glue horizontal crutch parts S6 together over the plan.
3. Fit upper formers F5A-F13A to crutch.
4. Fit top spine assembly S3 and S4 to formers. Make sure the formers are vertical.
5. It is advisable to ensure a straight fuselage that sheeting SH1 parts be applied between F6A and F12A whilst the crutch is still pinned to the board. This sheeting should finish 1/16" up from the building board (use scrap 1/16" packing) to allow space on the crutch for lower sheeting, and will probably need soaking to bend correctly. Some permitting and trimming is advisable to make a good job. Any minor gaps should be filled with scrap slivers of balsa inserted in the cracks and glued in place, ready for later sanding flush.
6. Whilst the rear upper crutch assembly is drying, begin assembly of the front fuselage sections by taking the ply crutch F18 and threading it through former F3, and gluing securely. Epoxy or PVA is recommended.
7. Add formers F1, F2 and F4 using epoxy or PVA and lock in position by adding lower balsa parts S2 and upper parts S3. Check alignment carefully before glues sets. **Do not add the 1/8" ply keel F19 at this stage. That should be added after the sheeting is sanded smooth to make that job easier.**
8. Remove rear crutch assembly from board and add lower formers F5B to F15B to it, and the lower spine part S5.

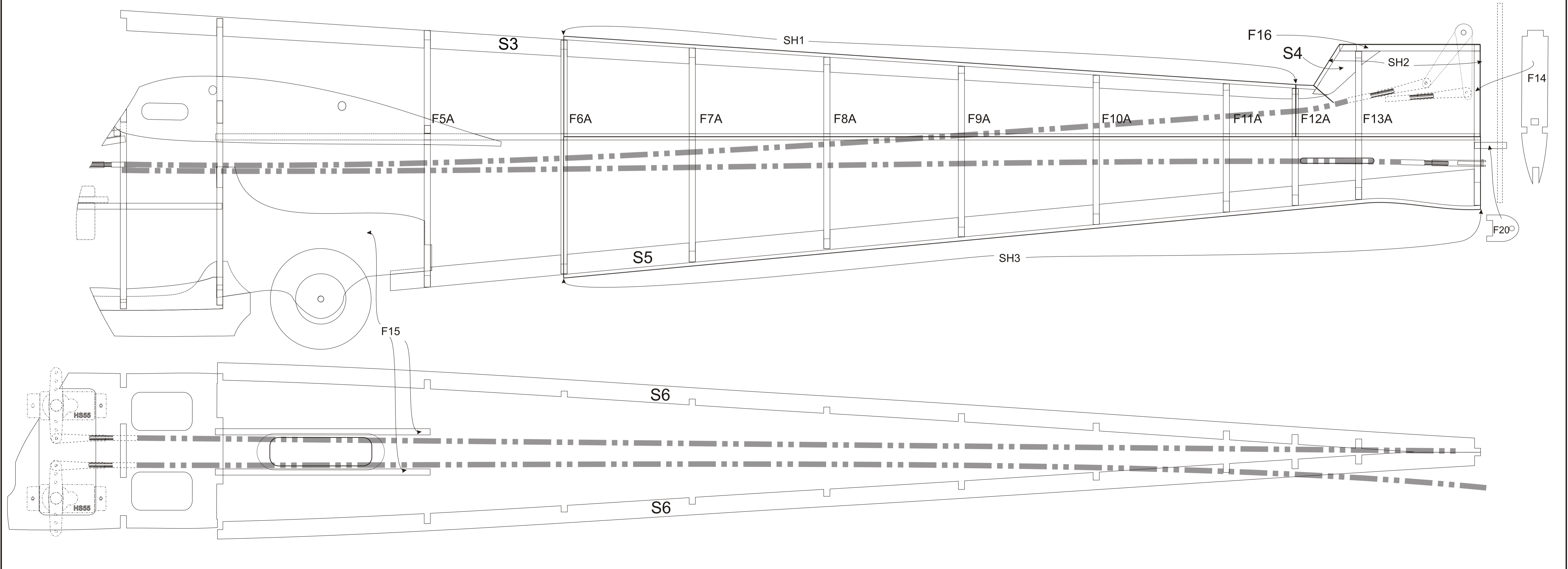
9. Add ply sternpost F14 and ply tailplane mounting plate F16.
10. Carefully join front and rear fuselage sections and add U/C mounting plates F15 to lock assembly.
11. Install snake outers between F4 and F12 at this point. Leave the rudder snake over length to just beyond F13.
12. Install elevator snake inner and leave poking out of F16 top!
13. Sand rear frame to take and add top rear sheeting parts SH2, followed by lower sheeting parts SH3, the part with the slot goes on the left hand side.
14. Add top sheeting SH4, and trim flush with the front of F3.
15. Sand frame and complete sheeting with SH6-SH11.
16. Sand sheeting flush with F1 and add nose pieces C1 to C4
17. Add wing mounting plates F17, and infill with scrap between them and the sheeting..
18. Construct hatch by taking the base H2 and gluing H3 to it, followed by the spine piece H6, then H1 and H5, and H4 in that order.
19. Add gusset pieces D1 & D2, and sand hatch frame.
20. Trial fit the hatch frame to the fuselage, and sand to relieve any high spots. or build up any gaps with 1/16" scrap. Sand to shape and fit sheeting SH12 & SH13, sanding flush with H1.
22. Fit carbon hatch locating peg to hatch, fit hatch and sand whole fuselage to a smooth contour.
22. Add keel F19 and rudder hinge F20, and sand.

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Sheet 1, Issue 1, April 2008
 Fuselage assembly

Final assembly instructions

1. Build wings and tailplane as per separate instructions.
2. To fit the tailplane, crimp a snake end on the elevator snake inner and screw a clevis on as far as possible. Connect the clevis carefully to the elevator horn and pulling the snake inner from the servo end, trial fit the tailplane to the fuselage.
3. When satisfied glue the tailplane firmly to the fuselage top. Make absolutely sure it is parallel, if necessary using wing mounting rods through the fuselage as a visual guide
4. Cover the model completely.
5. Attach the rudder horn to the rudder and insert a snake inner with crimped on rod end and clevis and attach the rudder using 2.5mm carbon rod, held in place with a spot of glue at the fin base..
6. Install servos and radio gear. use as much movement on the elevator servo as possible, but check for the horn binding - only about 20 degrees movement is possible mechanically.
7. Cover the wings and install the joining rods epoxying the front one to the front of F4 using some glass cloth to reinforce. This is important as it takes the whole of the weight transfer to the wings.
8. Set up the ailerons if possible for as much differential (short control rods) as possible, if you have a computer transmitter and are using split channels, set up for about 2:1 differential on them. 15 degrees down and 30 degrees up is about right to start with.
8. Balance the model using ballast in the front lower compartments and test glide. A forward CG will merely make the model hard to flare.. a rearward CG will make it uncontrollable, so err on the nose heavy side if anywhere.



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Sheet 2, Issue 1, April 2008
Wing assembly

Aileron & final assembly instructions

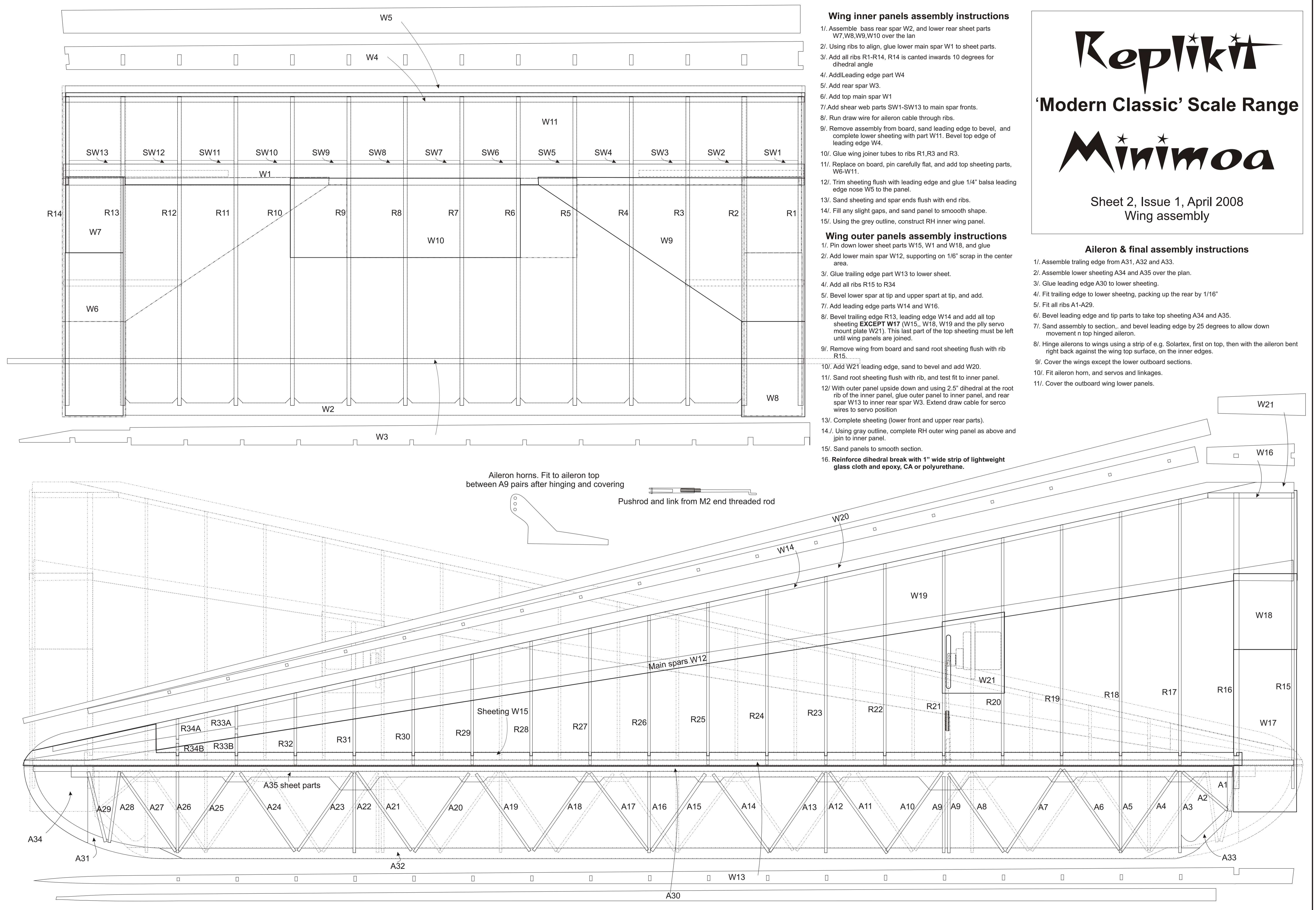
- 1/ Assemble trailing edge from A31, A32 and A33.
- 2/ Assemble lower sheeting A34 and A35 over the plan.
- 3/ Glue leading edge A30 to lower sheeting.
- 4/ Fit trailing edge to lower sheeting, packing up the rear by 1/16"
- 5/ Fit all ribs A1-A29.
- 6/ Bevel leading edge and tip parts to take top sheeting A34 and A35.
- 7/ Sand assembly to section, and bevel leading edge by 25 degrees to allow down movement in top hinged aileron.
- 8/ Hinge ailerons to wings using a strip of e.g. Solartex, first on top, then with the aileron bent right back against the wing top surface, on the inner edges.
- 9/ Cover the wings except the lower outboard sections.
- 10/ Fit aileron horn, and servos and linkages.
- 11/ Cover the outboard wing lower panels.

Wing inner panels assembly instructions

- 1/ Assemble bass rear spar W2, and lower rear sheet parts W7, W8, W9, W10 over the lan
- 2/ Using ribs to align, glue lower main spar W1 to sheet parts.
- 3/ Add all ribs R1-R14, R14 is canted inwards 10 degrees for dihedral angle
- 4/ Add leading edge part W4
- 5/ Add rear spar W3.
- 6/ Add top main spar W1
- 7/ Add shear web parts SW1-SW13 to main spar fronts.
- 8/ Run draw wire for aileron cable through ribs.
- 9/ Remove assembly from board, sand leading edge to bevel, and complete lower sheeting with part W11. Bevel top edge of leading edge W4.
- 10/ Glue wing joiner tubes to ribs R1, R3 and R3.
- 11/ Replace on board, pin carefully flat, and add top sheeting parts, W6-W11.
- 12/ Trim sheeting flush with leading edge and glue 1/4" balsa leading edge nose W5 to the panel.
- 13/ Sand sheeting and spar ends flush with end ribs.
- 14/ Fill any slight gaps, and sand panel to smooth shape.
- 15/ Using the grey outline, construct RH inner wing panel.

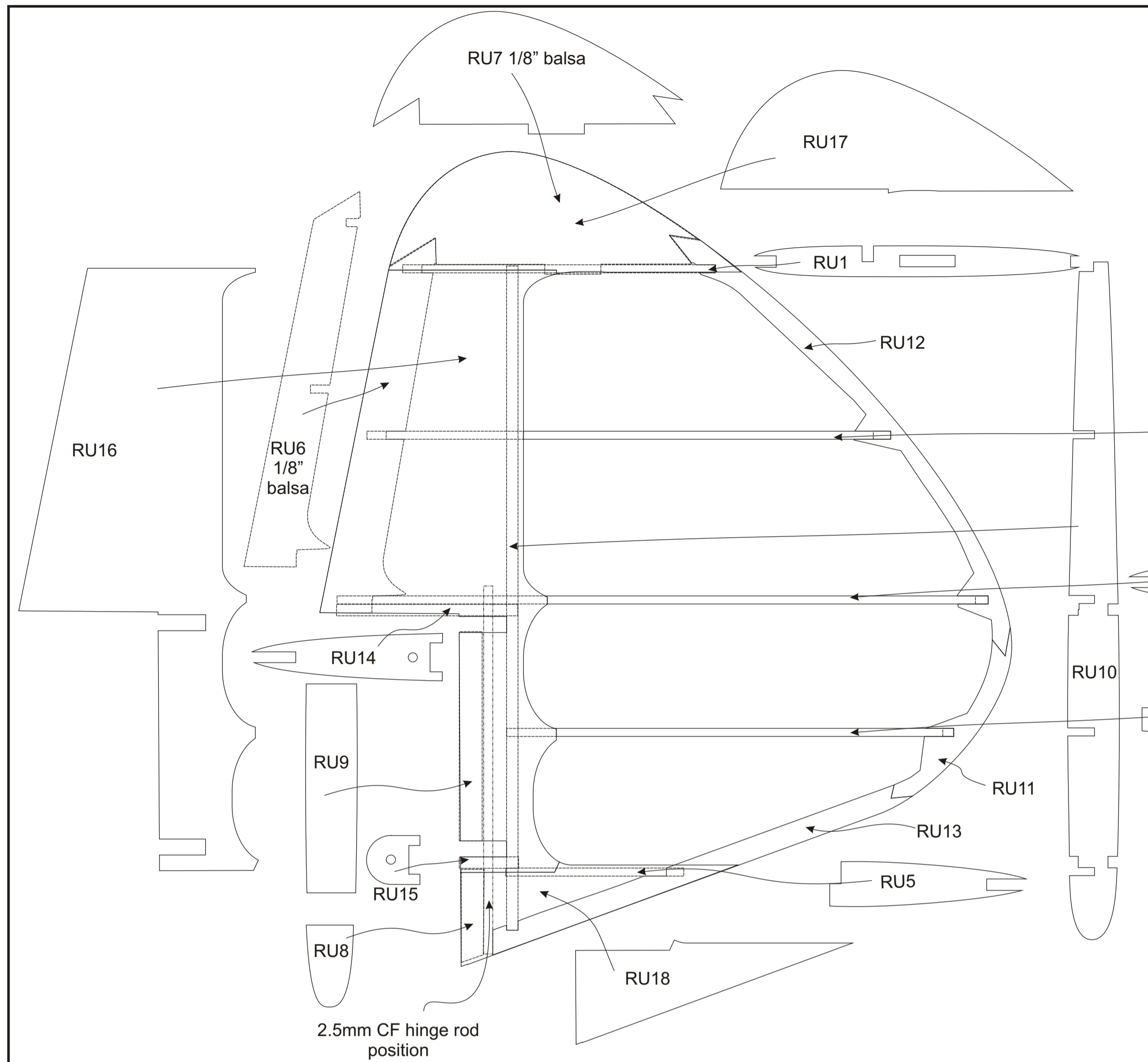
Wing outer panels assembly instructions

- 1/ Pin down lower sheet parts W15, W1 and W18, and glue
- 2/ Add lower main spar W12, supporting on 1/6" scrap in the center area.
- 3/ Glue trailing edge part W13 to lower sheet.
- 4/ Add all ribs R15 to R34
- 5/ Bevel lower spar at tip and upper spar at tip, and add.
- 7/ Add leading edge parts W14 and W16.
- 8/ Bevel trailing edge R13, leading edge W14 and add all top sheeting EXCEPT W17 (W15, W18, W19 and the ply servo mount plate W21). This last part of the top sheeting must be left until wing panels are joined.
- 9/ Remove wing from board and sand root sheeting flush with rib R15.
- 10/ Add W21 leading edge, sand to bevel and add W20.
- 11/ Sand root sheeting flush with rib, and test fit to inner panel.
- 12/ With outer panel upside down and using 2.5" dihedral at the root rib of the inner panel, glue outer panel to inner panel, and rear spar W13 to inner rear spar W3. Extend draw cable for servo wires to servo position
- 13/ Complete sheeting (lower front and upper rear parts).
- 14/ Using gray outline, complete RH outer wing panel as above and join to inner panel.
- 15/ Sand panels to smooth section.
- 16/ Reinforce dihedral break with 1" wide strip of lightweight glass cloth and epoxy, CA or polyurethane.



Aileron horns. Fit to aileron top between A9 pairs after hinging and covering

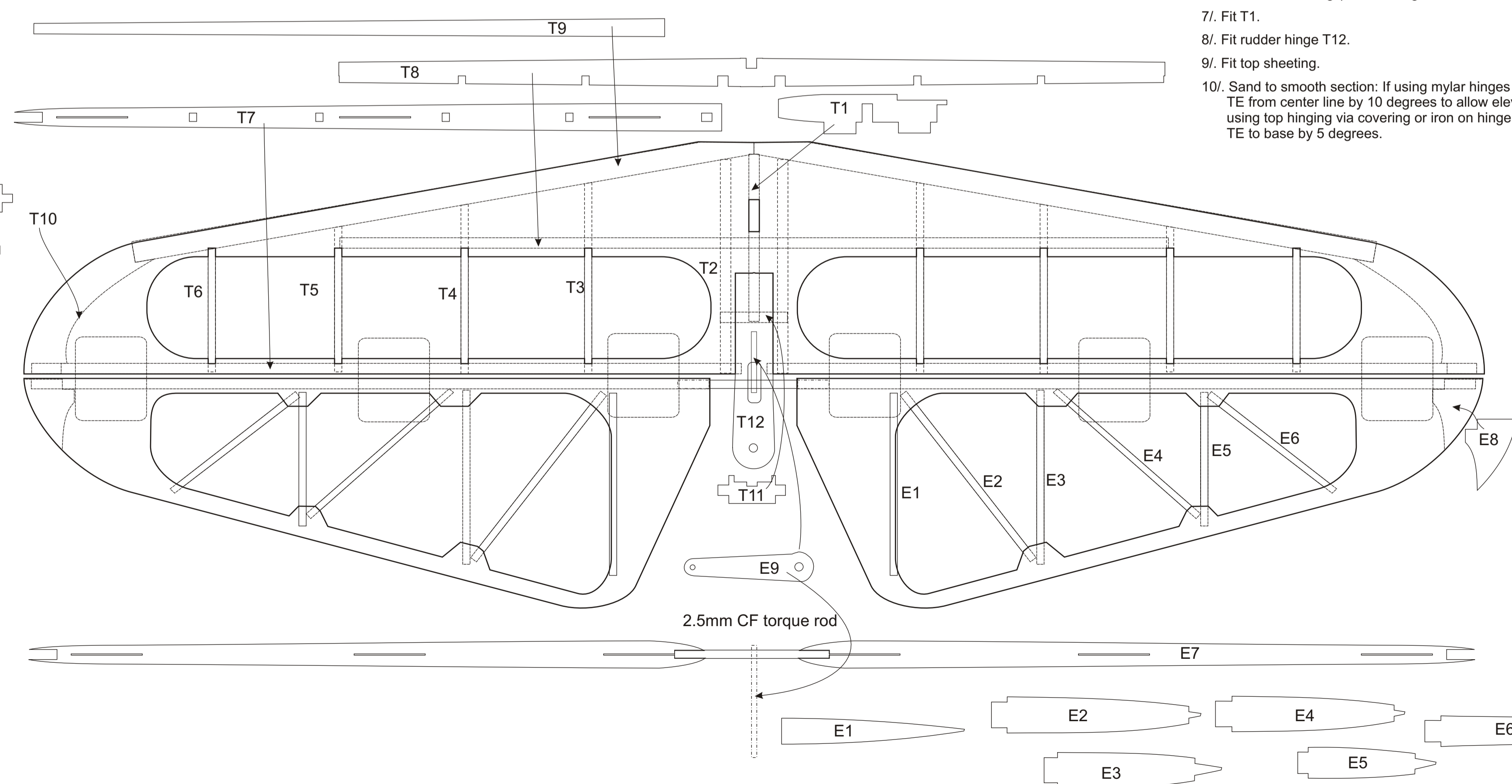
Pushrod and link from M2 end threaded rod



- ### Rudder Assembly Instructions
1. Assemble the bass parts RU11, RU12 and RU13 over the plan and leave to dry
 2. Pin ribs RU1-RU5 over the plan and fit rudder post RU10.
 3. Fit L.E. RU6 and tip part RU7.
 4. Add bass trailing edge parts.
 5. Fit hinge bearings RU14 and RU15.
 6. Sand edges of rudder where sheeting will fit, and add one side of the sheeting - parts RU16, RU17 and RU18.
 7. Fit RU8 and RU9 to the sheeting flush with leading edge
 8. Add the other sheeting parts.
 9. Sand to smooth shape.


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 Sheet 3, Issue 1, April 2008
 Tailplane and rudder assembly



- ### Tailplane Assembly Instructions
1. Make up edge parts T9 and T10 and leave to set.
 2. Pin down center ribs T2, using /16" scrap to raise off board, and fit T11.
 3. Pin down ribs T3-T6, and fit trailing edge T7 and spar T8.
 4. Fit edge part assembly (T9 and T10) to ribs and trailing edge.
 5. Remove from board and bevel T9 and T10 to take sheeting.
 6. Fit lower sheeting (the sheeting with the two slots in the center).
 7. Fit T1.
 8. Fit rudder hinge T12.
 9. Fit top sheeting.
 10. Sand to smooth section: If using mylar hinges as shown, bevel TE from center line by 10 degrees to allow elevator movement. If using top hinging via covering or iron on hinge, bevel from top of TE to base by 5 degrees.

- ### Elevator Assembly Instructions
1. Lay down two sheet parts over the plan,
 2. Add LE parts E7.
 3. Add ribs E1-E6, and tip part E8.
 4. Bevel E7/E8 to take top sheeting, and add that.
 5. Sand the elevators to smooth section.
 6. Cut CF rod to size for torque rod, and slide the elevator horn E9 over it, but do not glue yet.
 7. Join elevators to torque rod using epoxy.
 8. With elevators upside down epoxy the horn to the torque rod, raking it forward 20 degrees.
 9. Bevel LE of elevators by 10 degrees, either from the centre for mylar hinges, or from the top for top hinging.