

Pre-Paint>Fuselage>Empennage>Fit horizontal stabiliser

Objectives of this task:

To fit the horizontal stabiliser to the fuselage and glass it in place. Note that the elevator hinges were fitted in the previous task [Pre-Paint>Fuselage>Empennage>Fit elevator](#).

Materials required:

Epoxy resin and flock

Glass fibre cloth and peel cloth in the bag labelled: "*Horizontal Stabiliser*"

Steps

1. Level the aircraft
2. Fit the stabiliser
3. Glass the stabiliser



Level the aircraft

The aircraft should be fixed in a "wings level" attitude prior to fitting. Place a 3" block on the top of each front wing mounting lug and place a spirit level across the top of the cabin so that it rests on both blocks. Pack the main wheels as required to level the aircraft.



Clamp a straightedge (a 2 or 3 metre length of aluminium angle works well) across the back of the door frames at the height of the fuselage join line: ensure that the straightedge is level. This will be your main reference for aligning the horizontal stabiliser.

Fit the stabiliser

Prepare the stabiliser by taping up the inboard elevator hinges to prevent any resin getting into the hinge pins. From the previous task you will have a marked centreline on the stabiliser: test fit the stabiliser to the rear of the fuselage using the stabiliser centreline as a lateral location guide against the fuselage centreline.



Push the stabiliser fully forward into the rear of the fuselage and check that each end of the stabiliser is an equal distance back from the straightedge – use 2 tape measures as shown circled above, one each side, and carefully move the stabiliser until the measurements are exactly the same. (The photos above show a 200 series fuselage but the principle is the same.) Sight along the fuselage from the rear and confirm that the stabiliser is level and lined up with the straightedge. Make any adjustments necessary.

When the stabiliser is aligned correctly, secure the stabiliser to the fuselage with self-tapping screws, using 10 screws per side. These screws will be removed after the stabiliser has been finally fitted. Run a pencil line around the stabiliser along the fuselage join.

Remove the stabiliser from the fuselage and remove the peel cloth from the rear of the fuselage, then lightly sand all the surfaces to be joined – the pencil line on the stabiliser will act as a guide for where to sand and where to coat with resin.



Mix a batch of resin and divide into 2 parts. Coat all the surfaces to be joined. Add flock to one part of the resin and apply a layer to the rear of the fuselage then slide the stabiliser in to place, pushing it fully forward. Open the joint and use a mixing stick to force flock into the sides and rear of the joint, then smooth the flock along the outside. Fix the stabiliser in place with the self-tapping screws, do a final check of the alignment and leave overnight to cure.

Next day, remove the self-tapping screws that were used to temporarily fix the stabiliser in place. If they are difficult to remove heating each screw with a soldering iron will help.

Glass the stabiliser

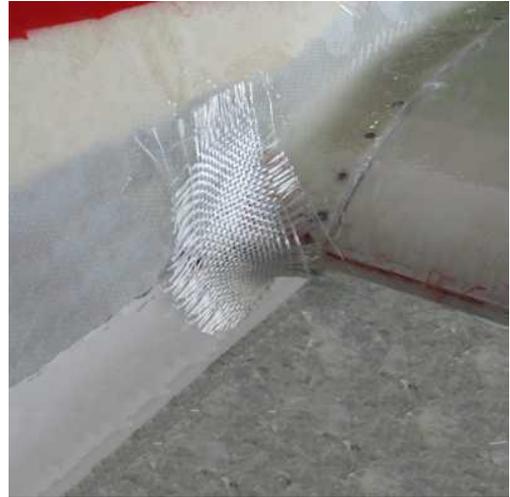
In this step the hole at the fuselage join at the front of the stabiliser will be glassed over with 3 layers of AF303 glass fibre cloth.

Start by lightly sanding all surfaces, then mix a batch of resin and coat the surfaces where the glass fibre cloth will be placed.

Cut 6 squares of AF303 glass fibre cloth (3 per side) to cover the root of the join as shown at right and brush each layer into place.

Brush a layer of peel cloth over the join and leave overnight to cure.

Next day remove the peel cloth and trim away excess glass fibre ends with a sharp knife.



This completes the *Pre-Paint>Fuselage>Empennage>Fit horizontal stabiliser* task.