

## Pre-Paint>Fuselage>Fit ventral fin and trim horn

### Objectives of this task:

To fit the ventral fin, trim horn and cut the related rear fuselage penetrations. This task is carried out while the fuselage is inverted and supported on trestles.

### Materials required:

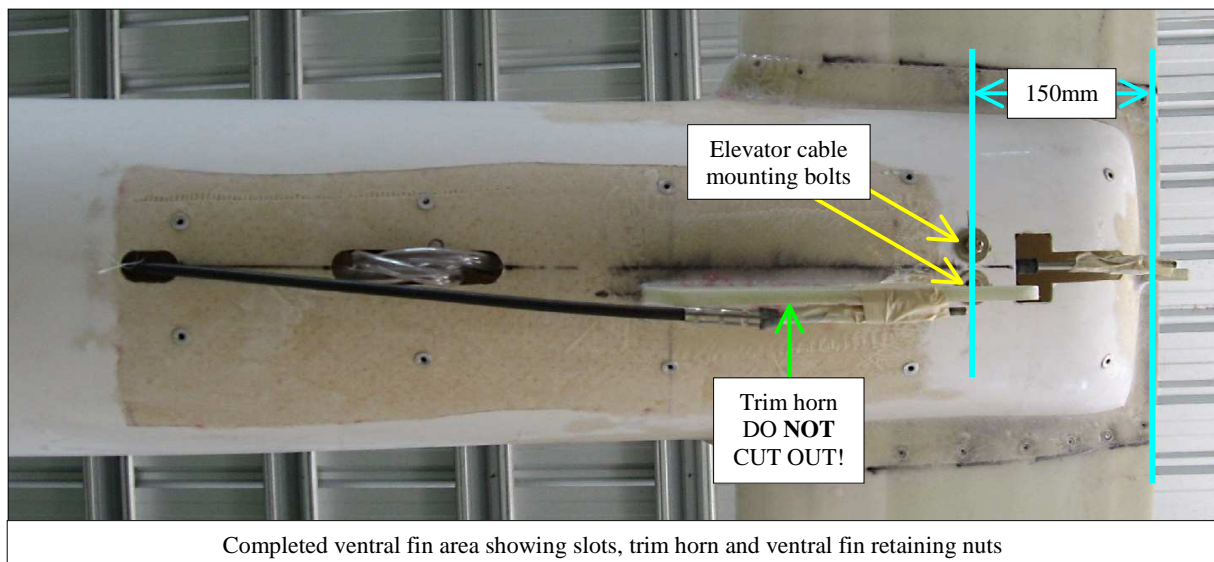
Epoxy resin and flock, 5-minute Araldite

Hardware box #4

### Cut the cable and tube slots

The cable and tube slots are marked on the underside of the fuselage with marker pen.

Cut out the marked slots on the fuselage centreline. Each slot should be drilled at each end to about ½” and then the holes can be joined by cutting along the lines with a jigsaw.



We find that widening the elevator cable slot (the slot at the very rear of the fuselage) as shown in the photo above can provide useful access later in the build.

Do **not** cut out the line marker for the trim horn! The trim horn marking can be transferred through the peel cloth by scribing around the marks with a sharp knife, cutting just deep enough that the cut can be seen once the peel cloth has been removed.

File and sand all cutouts to a good finish. Remove the peel cloth from the ventral fin area (rear underside) of the fuselage.

Check the elevator cable mounting holes: test fit the horizontal stabiliser to the fuselage and push it all the way forward. Hold a set square against the rear of the horizontal stabiliser and along the fuselage and measure *exactly* 150mm forward from the rear of the *stabiliser* (and *not* the fuselage) as shown in **cyan** in the photo above – the 2 holes should be on that line.

If they are not, fill the existing holes with flock and redrill them so that they are exactly 150mm from the rear of the stabiliser. This dimension will become critical later when you adjust the elevator travel so take the opportunity to check it (and adjust it if needed) now.

Remove the horizontal stabiliser and store carefully until required.

## Fit the ventral fin

Use a chalk line to mark the fore and aft centreline of the fuselage.



Lay the ventral fin on the rear of the fuselage and seat it so that it matches the curve of the fuselage, then check that the fin is centred at the front and the rear and tape it in place. Drill 3/16" holes through each of the marked locations in the ventral fin mounting lip and through the fuselage. Remove the ventral fin then enlarge the holes in the fuselage to 13/64" and use a fluted wood drill bit (pictured right) to recess the hole so that the lip of the insert sits flush with the surface and then tap each hole to a 1/4" UNC thread.

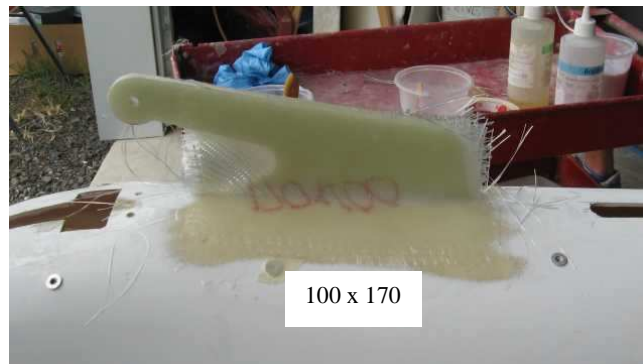
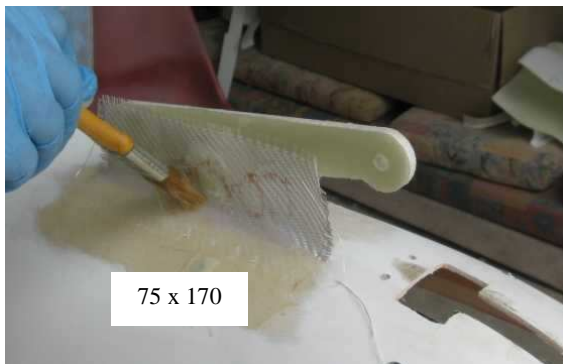
Use a screw and spacer (shown above right) as a tool to place each insert. Before fitting the insert put a single drop of superglue onto the outside thread and then screw it into place.



## Fit the trim horn

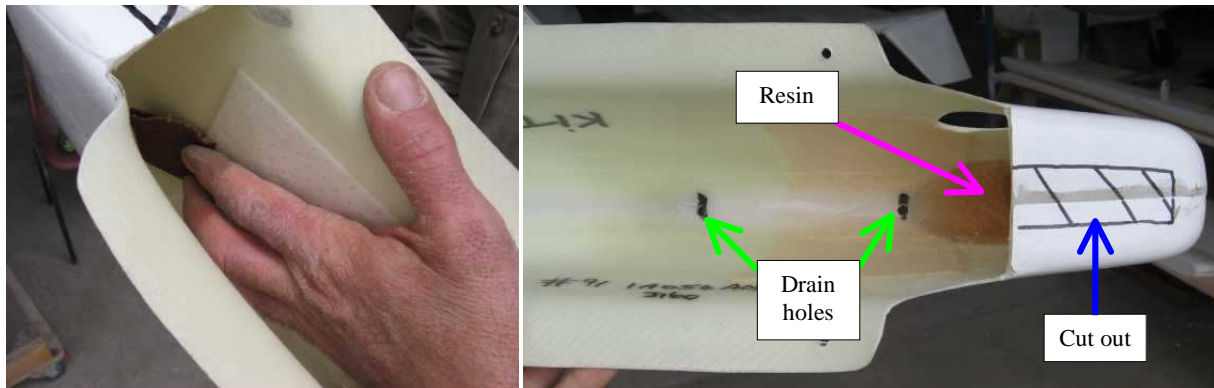
Sand away any remaining gel coat and roughness from around the trim horn mounting area. The trim horn is slightly offset from the fuselage centreline so it will be necessary to sand the foot of the trim horn so that it will sit completely upright when it is mounted. Sand the sides of the trim horn at the same time so that the glass fibre cloth will bond correctly.

Mix up a small batch of 5-minute Araldite and flock and coat the foot of the trim horn, then place it on the marked line and use a length of tape to hold it upright. Put masking tape over the threaded inserts nearest to the trim horn to prevent flock getting into the threads.



When the Araldite/flock mix has cured apply a small amount of resin and flock to make a smooth radius at the foot of the trim horn and then apply 3 layers of AF303 glass fibre cloth to each side of the trim horn. The bag labelled "Trim Horn" contains 2 sizes of glass fibre cloth: the larger pieces (100 x 170) go on the side nearest the fuselage centreline. Leave to cure overnight. The next day any excess cloth can be trimmed away with a sharp knife.

## Finish the ventral fin



Sand the inside bottom rear quarter of the ventral fin. Mix around 200 grams of polyester resin and add a few drops of hardener (take care not to use too much hardener or there may be heat issues as it cures) and pour into the bottom of the ventral fin then prop the fin up at a 45° angle while it cures.

Once the resin has cured drill a 12.5mm hole through at the marked location – this will be your rear tie down point. Drill 2 drain holes, one at the front corner and one at the rear just in front of the resin.

Cut out the marked area at the top rear – this is where the elevator drive arm will travel.

Store the ventral fin for later final fitting and painting.

This completes the *Pre-Paint>Fuselage>Fit ventral fin and trim horn* task.