Service Bulletin no. 8

Port wing closure panel - mispositioned stiffener

Classification: Mandatory

Applicability: Europa XS (Port wing)

Compliance: Before closing wing

Introduction

There has been a number of port wing closing panels produced with the span-wise stiffener located incorrectly. As the wing ribs are recessed to accept the stiffener, these panels will not fit without some rectification work. To check your port wing refer to the attached drawing - figure 1.

Background

The stiffener is included on the wing panel to delay the onset of skin buckling when the wing is subjected to high bending loads.

It was found during testing that, without this stiffener, the skin would start to buckle at a load equivalent to approx 5‘g’ at gross weight. The requirement for a sandwich panel is that buckling must not commence before 5.7‘g’. With the stiffener, the start of buckling was raised to over 7‘g’.

Action

1. Using the dimensions in the diagram, mark the outline of where the stiffener should be. See figure 1.

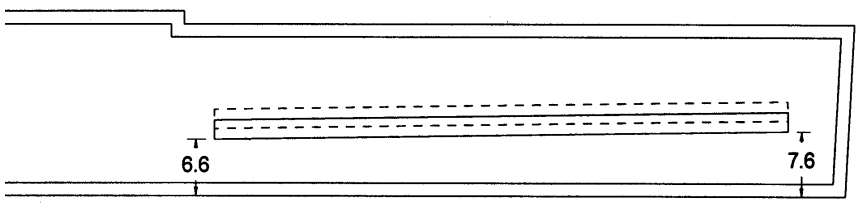

Fig 1. Position of stiffener.

Mark also where the three ribs will cross the stiffener - see figure 2.

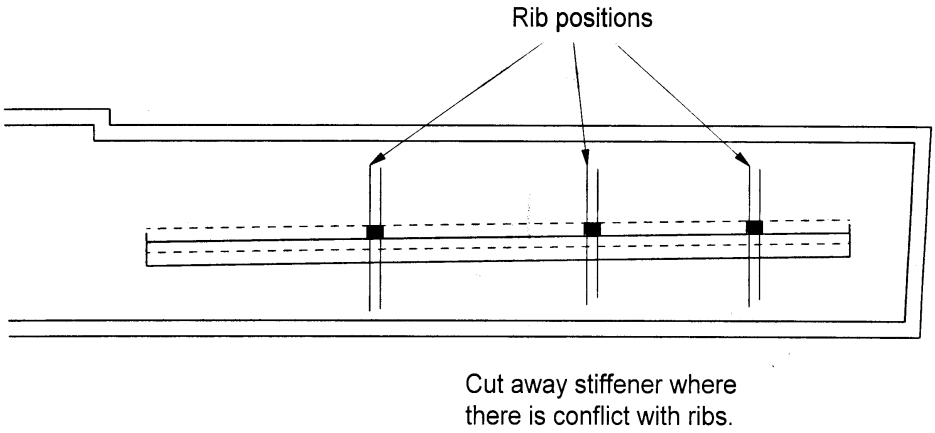

Figure 2. Stiffener cut outs in way of ribs.

2. Where there is conflict between the rib and existing mispositioned stiffener, cut away the skin of the stiffener and the foam underneath, taking care not to cut into the main skin. The ribs have 25mm (1") wide flanges, so make your cut-aways about 6mm (1/4") wider than this. Carry out a trial fit to ensure that the cut-outs are correctly positioned. Chamfer the edges in readiness for a 2-ply layup - see figure 3.

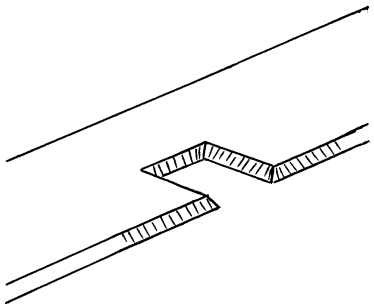

Fig 3. Chamfered edges.

3. Cut the supplied 5mm thick foam strip to fit between the existing stiffener and your marked line, chamfering the edges both to fit the stiffener and to allow the layup to run down easily onto the skin - see figures 4 and 5.

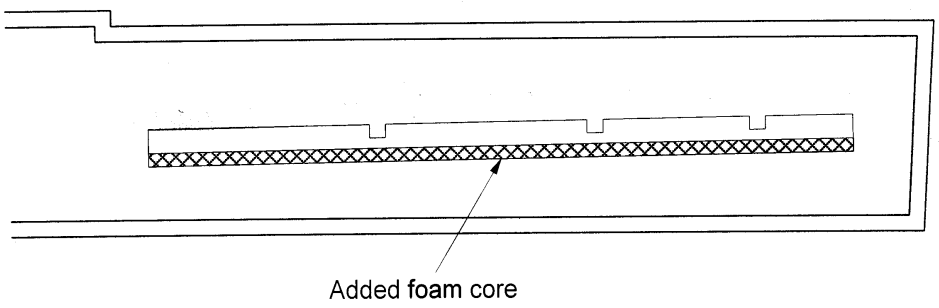

Fig 4. Added foam - plan view.

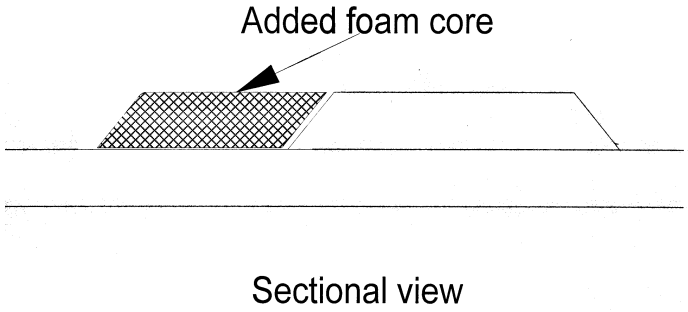

Fig 5. Added foam - sectional view.

4. Scuff sand the area of the panel where the new foam will be, and also about 25mm (1") beyond this area all round, which includes the top of the existing stiffener. Scuff sand also around the rib cutaways.

5. Cut three strips of 'bid' cloth at ±45°, the full width of the roll, wide enough to cover the foam core and lap onto the glassfibre at least 12mm (½") each side - see figure 6. (Only 2 plies will be laid up, but one and a half lengths will need to be cut for each ply).

6. Bond the foam strip in place using micro filled epoxy (a reasonably dry mix) and weight down if necessary.

7. If the foam stays in position without weights you can proceed with laying up the 'bid' straight away. Apply micro slurry all over the foam but wipe away any that gets onto the glassfibre.

8. Paint over the area with epoxy, then layup your 2 plies of 'bid' over the new core, lapping onto the surrounding glass fibre at least 12mm (½"). Overlap any joints by at least 12mm (½") and try to avoid the joints of the 2nd ply being in the same place as the first.

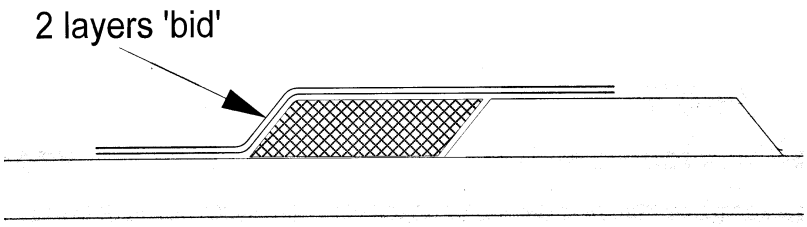

Fig 6. 'Bid' layup.

Layup 2 plies of 'bid' also over the rib cut-aways, lapping onto the surounding glass fibre by at least 12mm (1/2"). Apply peel ply if you wish and allow to cure.

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