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SERVICE INFORMATION LETTER

DATE: January 23, 2014

1. SUBJECT: Inspection and Repair of Minor Cabin Roof Bubbles

2. MODEL: 480B

3. EFFECTIVITY: S/N 5099-5166; excluding S/N 5156 and 5163

4. BACKGROUND:

There have been several cases of bubbles in the top cabin skin. These bubbles are a result of voids in the bond between the cabin shell (roof) and the internal stiffener. The stiffener is designed to prevent cosmetic wrinkling of the cabin roof. The stiffener is non-structural, so any voids between it and the cabin skin do not compromise the structure. These bubbles are only cosmetic.

This SIL (Service Information Letter) defines the process to repair the bubble in the top skin. Because these voids and the resulting bubbles are non-structural, the repair is at the owner's option; it is not mandatory.

5. COMPLIANCE:

Compliance with the content of this SIL is optional.

6. PROCEDURE:

6.1 Inspection:

6.1.1 Inspect the cabin roof for voids, that is, areas where the stiffener is not properly bonded to the cabin shell. These will be evident by looking for large bubbles in the top skin. They can also be detected by the "coin tap" method. The inspector will notice a difference in stiffness of the void area compared to the skin next to it. The voids may or may not be visually obvious.

Note: Perform all maintenance in accordance with the TH-28/480 Series Maintenance Manual.

Note: Do not confuse minor "wrinkling" or "oil canning" with a bubble from a void.

6.2 Repair:

6.2.1 Mark the outline of the void using a fine line pen or equivalent marker (Figure 1).

6.2.2 Use a die grinder, Dremel tool or equivalent to cut out the area that is separated from the internal skin or foam insert (Figure 2).

6.2.3 Scarf back the edges of the hole approximately 1.5 inches (at least 1/2 inch per layer) (Figure 3).

6.2.4 Use a mixture of resin and glass micro-balloons to fill voids and to create a smooth contour on the foam underlay (Figure 4).

6.2.5 Lay up three plies of 6 oz. weight fiberglass fabric over the repair area. Each layer should be approximately ½ inch larger than the one preceding it (Figure 5). The final layer must be at least as large as the outside edge of the scarfed hole.

6.2.6 After the repair area has cured, sand with 180 grit sandpaper or finer. Remove sanding residue with dry compressed air followed by solvent wiping.

6.2.7 Repaint the repaired area (Figure 6).

7. PARTS: N/A

8. CONSUMABLE MATERIALS LIST:

3733 6 oz. plain weave fiber glass fabric (Hexcel)
Dion FR 7704-00 polyester resin (Reichhold)
Glass micro-balloons, such as Feather Fill (Evercoat)
180 grit sandpaper or finer
Solvent
Exterior paint

9. SPECIAL TOOLS: N/A

10. MAN-HOURS: N/A

11. WARRANTY: N/A

12. WEIGHT CHANGE: N/A

13. LOG BOOK ENTRY:

Record repair actions in detail as required for maintenance actions.

14. REPETITIVE INSPECTIONS:

As required in Section 4 of the maintenance manual.

Figure 1. Repair area outline marked

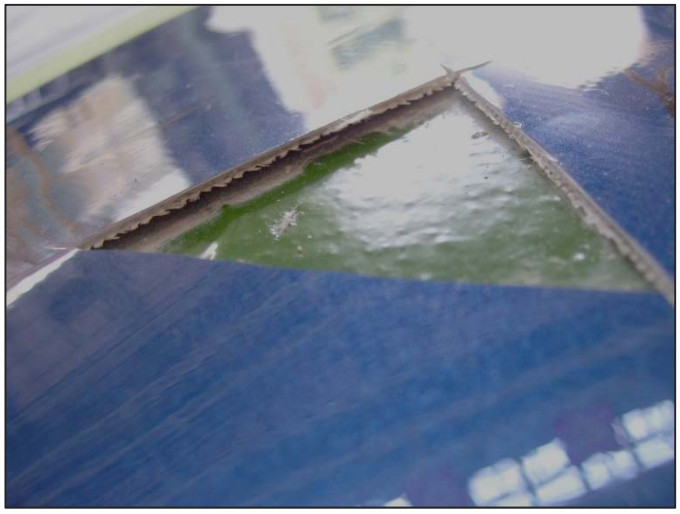

Figure 2. Initial cut out

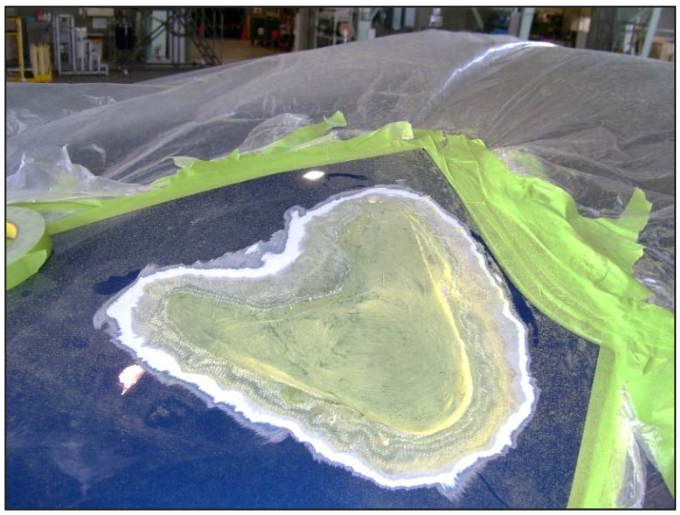

Figure 3. Edges scarfed back 1.5 inches

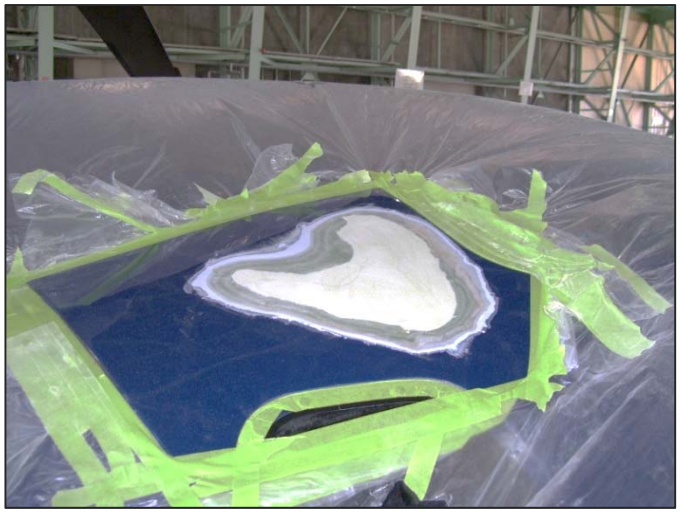

Figure 4. Resin/micro-balloon mixture

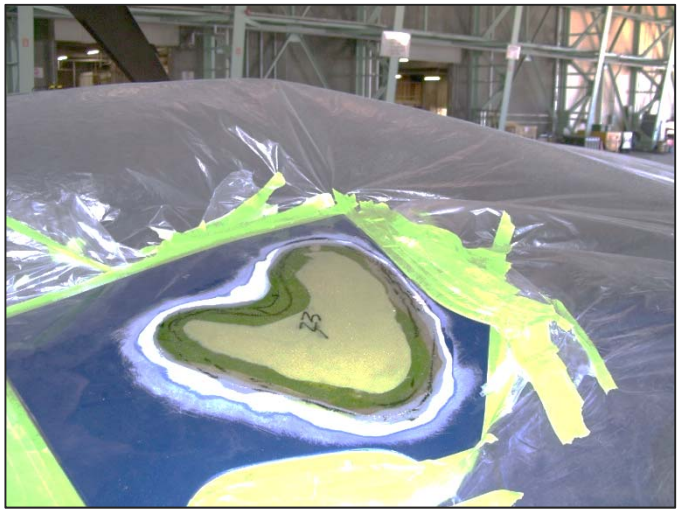

Figure 5. Three ply layup

Figure 6. Repair area repainted