

**Sikorsky**

A United Technologies Company



DRB 2007-SA-92-019

Repair of Worn Sliding Fairing Tracks

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DESIGN RECORD BOOK

Record NO: 2892

Prepared by: G. Berka

DRB No: 2007-SA-92-019

Title: Repair of Worn Sliding Fairing Tracks

Start Date: 6/8/2007

Detail Dwg: 92209-04277-101

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Related Documents:

(1)

(3)

(2)

(4)

Model: S-92A

Keyword: (1) nacelle

(2) miscellaneous

Hours:

(3) Sliding Fairing

Model Effectivity: S-92A

Supersedes:

FEM Analysis: None

Analysis Type: Repair

Charge No: RA949-003

Reason for Analysis: Customer Support

Superseded By:

Description:

In-flight vibrations of the Main Rotor Sliding Fairing have been found to wear indentations into the sliding fairing tracks on numerous occasions. The indentations occur under the rollers, in the areas where the rollers rest on the tracks. DRB's have been issued in the past to install stainless steel strips at these locations to reduce the wear, but repair of the actual worn areas has not been addressed.

Results:

The purpose of this DRB is to provide a repair procedure for the worn tracks. Any indentations under the rollers which exceed 10 percent of the track thickness, up to 40 percent of the track thickness, can be filled with a mixture of epoxy resin and floc (chopped fiberglass fibers). After the indentation is filled and the mixture cures, an .032 gauge, 301 1/4 hard stainless steel wear strip is bonded over the area. If the wear exceeds 40 percent of the track thickness, Sikorsky Aircraft should be contacted for additional instructions. If the wear is less than 10 percent of the track thickness, it can be blended smooth (using a 10 - to - 1 taper), and a wear strip can be installed over it; it does not have to be filled with epoxy resin and floc.

Assigned: J. Terceno

Approval: *J. Terceno*

Approve Date: 6/8/2007

PREPARED BY G. Berka

CHECKED BY J. Terceno

DATE Jun 8, 2007

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Repair of Worn Sliding Fairing Tracks

Background:

In-flight vibrations of the Main Rotor Sliding Fairing have been found to wear indentations into the sliding fairing tracks on numerous occasions. The indentations occur under the rollers, in the areas where the rollers rest on the tracks. DRB's have been issued in the past to install stainless steel strips at these locations to reduce the wear, but repair of the actual worn areas has not been addressed. The purpose of this DRB is to provide a repair procedure for the worn tracks. Any indentations under the rollers which exceed 10 percent of the track thickness, up to 40 percent of the track thickness, can be filled with a mixture of epoxy resin and flox (chopped fiberglass fibers). After the indentation is filled and the mixture cures, an .032 gauge, 301 ¼ hard stainless steel wear strip is bonded over the area. If the wear exceeds 40 percent of the track thickness, Sikorsky Aircraft should be contacted for additional instructions. If the wear is less than 10 percent of the track thickness, it can be blended smooth (using a 10 – to – 1 taper), and a wear strip can be installed over it; it does not have to be filled with epoxy resin and flox.

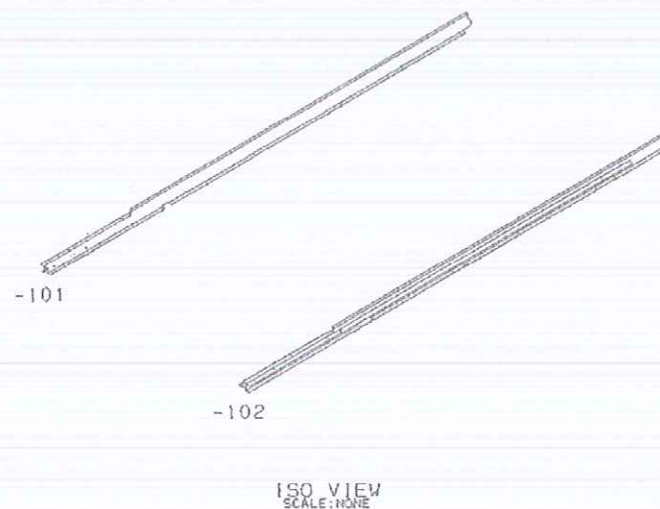


Figure 1. Main Rotor Pylon Sliding Fairing Tracks

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Repair of Worn Sliding Fairing Tracks

Repair Procedure:

1. Prepare the ship for ground maintenance.
2. Slide the fairing out of the way to gain access to the worn area.
3. Degrease the worn area by wiping with a low-lint cleaning cloth (conforming to A-A-59323, Type II) using acetone (conforming to ASTM D329) or ethyl alcohol (conforming to A-A-51693). Wash with clean water to a water-break free condition.
4. Measure the depth of the worn area. If the depth is less than 10 percent of the flange thickness, blend out the indentation using a smooth (10:1) taper, and proceed to Step 8. If the depth of the indentation is greater than 10 percent but less than 40 percent of the flange thickness, blend smooth using a 10:1 taper as described above, and proceed to Step 5 below. If the depth of the indentation is greater than 40 percent of the flange thickness, contact Sikorsky for additional instructions.
5. Mix HySol EA 934 resin in a cup and add chopped fibers of 7781 fiberglass cloth. Add sufficient fibers to thicken the mixture so it has no tendency to "run".
6. Work the mixture into the indentation with a wooden stick. Scrape off any excess mixture to achieve a flush surface and allow to cure.
7. Sand the mixture flush with the track surface after it has cured.
8. Abrade the repair area within about 1 inch to either side of the indentation down to the clean aluminum substrate underneath as shown in Figure 2, and remove any corrosion. Use a scotch-brite abrasive mat, MIL-A-9962. Vacuum the area to remove any loose particles.
9. Degrease the repair area by wiping with a low-lint cleaning cloth (conforming to A-A-59323, Type II) using acetone (conforming to ASTM D329) or ethyl alcohol (conforming to A-A-51693). Wash with clean water to a water-break free condition.
10. Preferred: Brush anodize (chromic or phosphoric acid anodize, ref. MIL-A-8625) the repair area. If brush anodize is not available, use alodine 1200S (MIL-C-81309, Class 1A). Again degrease by wiping areas using acetone or ethyl alcohol to a water-break free condition. Wash with clean water.
11. Fabricate a wear strip from .032 gauge, 301 1/4 hard stainless steel sheet approximately as shown in Figure 2. Extend the strip about 1 inch beyond the indentation on each side as shown in Figure 2. Make the strip as wide as the track in the area. Chamfer the front and aft edges of the strip to allow for the roller to ride up on it more easily. De-burr the edges of the strip. Vacuum the area to remove any loose particles.
12. Degrease the wear strip by wiping with a low-lint cleaning cloth (conforming to A-A-59323, Type II) using acetone (conforming to ASTM D329) or ethyl alcohol (conforming to A-A-51693). Wash with clean water to a water-break free condition.
13. Brush cadmium plate the wear strip per MIL-STD-865.
14. Bond the wear strip into place with Hy-Sol EA9309.3NA or EA9359.3 adhesive and allow to cure. Use clamps and / or weights to positively hold the wear strips to the track during cure.
15. Apply one coat of MIL-P-23377 epoxy primer to the wear strip and the repair area, and allow to cure.
16. Repeat Steps 3 thru 15 for the remaining indentations. Note: Steps 3 thru 15 may be performed concurrently for all the indentations.
17. "Test-slide" the fairing to ensure freedom of movement and no binding.

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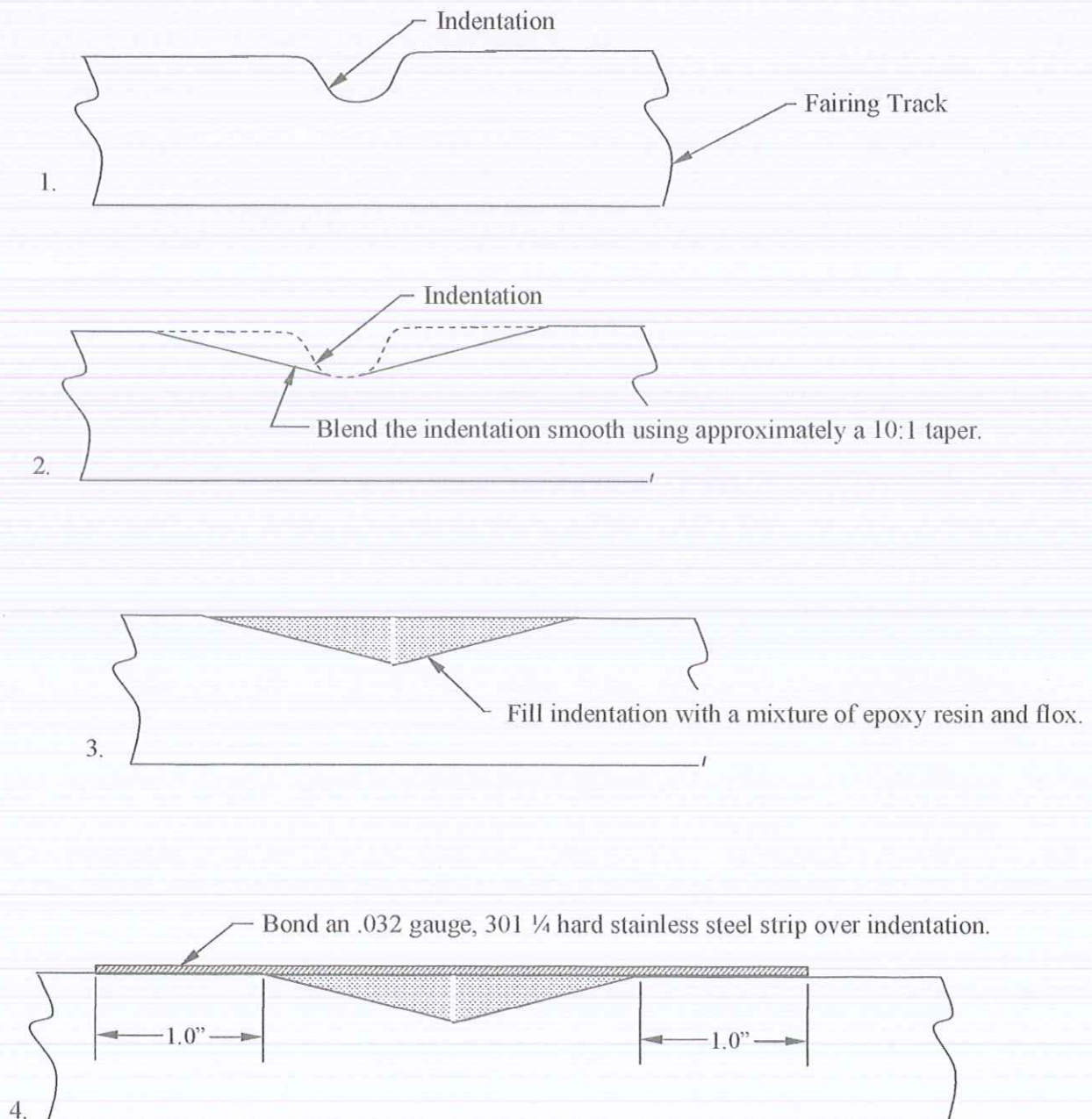


Figure 2. Repair Procedure.

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