Service Instruction

Service Instruction Number: HF-S-1

Date: September 23, 2015

To: All Owners/Operators of Helifab Sikorsky S-76 Auxiliary Fuel Tank Installation. (STC SR00763DE)

Subject: Installation of ground straps to assist in obtaining the 1 ohm or less resistance requirement of the installation.

Approval: The engineering aspects of this service instruction are FAA approved.

Compliance Requirements: Optional

Description:

This service instruction (SI) can be used, if during installation of auxiliary tank, the requirement to achieve 1 ohm or less is not met. This SI gives one possible means of achieving the required 1 ohm or less resistance.
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Accomplishment Instructions:

Install -1 through -4 straps in accordance with the instructions provided herein. Figure 1 shows an overview of the strap installation locations.

Notes:

1. Fastener installation shall be in accordance with FAA advisory circular number AC 43.13-1B, chapter 7, paragraph 7-1 thru 7-89.
2. All dimensions are in inches unless otherwise shown.
3. Tolerances on dimensions are as follows: .xxx ± 0.010, .xx ± 0.03 .xx ± 0.1
4. Length of fasteners may be increased if required for proper thread engagement.

Figure 1
Strap Installation Locations
Figure 2
-1 Strap

Figure 3
-2 Strap

Figure 4
-3 Strap

Figure 5
-4 Strap
-1 Strap Installation Instructions (Reference Figures 2 and 6)

1) Fabricate -1 strap from Bell Helicopter part number 120-055-1-16, 120-055-1-14 or 0.020 inch thick copper sheet per ASTM B152 as detailed in figure 2. Deburr all edges and holes, maximum depth of hole deburr to be 0.005 inches.
2) Remove two existing screws in the -1 strap installation location shown.
3) Burnish mating surface of filler neck in strap installation area.
4) Burnish mating surface of splash guard in strap installation area.
5) Clean debris from the burnished areas using a clean cloth and apply Alodine to the bare metallic burnished surfaces and to the mating surfaces of the -1 strap. Use Henkel Alodine 1132 Touch-N-Prep pen or similar.
6) Install strap as shown using existing hardware. Torque #10-32 screws to 20 to 25 in-lb. and ¼-28 screw to 50 to 70 in-lb.
7) Verify that the resistance between the two fasteners attaching the -1 strap is less than 0.5 ohms.
8) Apply primer per MIL-P-23377 over exposed alodined areas.
Figure 7
-2 Strap Installation

Figure 8
-2 Strap Installation
-2 Strap Installation Instructions (Reference figures 3, 7, and 8)

1) Fabricate -2 strap from Bell Helicopter part number 120-055-1-16, 120-055-1-14 or 0.020 inch thick copper sheet per ASTM B152 as detailed in figure 4. Deburr all edges and holes, maximum depth of hole deburr to be 0.005 inches.

2) Drill ø0.205 hole through the splash guard and deburr to maximum depth of 0.005 inches. See figure 7 for hole location.

3) Remove one existing bolt in the -2 strap installation location shown.

4) Burnish mating surface of tank top panel under the existing bolt used for -2 strap attachment

5) Burnish mating surface of splash guard around ø0.205 drilled hole.

6) Clean debris from the burnished areas using a clean cloth and apply Alodine to the bare metallic burnished surfaces and to the mating surfaces of the -2 strap. Use Henkel Alodine 1132 Touch-N-Prep pen or similar.

7) Install strap as shown using existing bolt in the top panel and use one MS27039-1-5 screw, two AN960PD10L washers and one MS21042L3 nut to secure the -2 strap to the splash guard. Torque #10-32 screws to 20 to 25 in-lb.

8) Verify that the resistance between the two fasteners attaching the -2 strap is less than 0.5 ohms.

9) Apply primer per MIL-P-23377 over exposed alodined areas.
-3 Strap Installation Instructions (Reference figures 4 and 9)

1) Fabricate -3 strap from Bell Helicopter part number 120-055-1-16, 120-055-1-14 or 0.020 inch thick copper sheet per ASTM B152 as detailed in figure 3. Deburr all edges and holes, maximum depth of hole deburr to be 0.005 inches.

2) Remove two existing bolts in the -3 strap installation location shown.

3) Burnish mating surface of tank top panel under the existing AN970 washer.

4) Burnish flange of fuel quantity probe in the -3 strap installation area.

5) Clean debris from the burnished areas using a clean cloth and apply Alodine to the bare metallic burnished surfaces and to the mating surfaces of the -3 strap. Use Henkel Alodine 1132 Touch-N-Prep pen or similar.

6) Install strap as shown using existing hardware. Torque #10-32 bolts to 20 to 25 in-lb. and ¼-28 bolts to 50 to 70 in-lb.

7) Verify that the resistance between the two fasteners attaching the -3 strap is less than 0.5 ohms.

8) Apply primer per MIL-P-23377 over exposed alodined areas.
Drill ø0.129" hole through forward face of panel only. Forward face is 0.025 inches thick. DO NOT DRILL DEEPER THAN 0.375 INCHES DEEP.
-4 Strap Installation Instructions (Reference figures 5, 10, and 11)

1) Fabricate -4 strap from Bell Helicopter part number 120-055-1-16, 120-055-1-14 or 0.020 inch thick copper sheet per ASTM B152 as detailed in figure 5. Deburr all edges and holes, maximum depth of hole deburr to be 0.005 inches.

2) Drill ø0.129 hole through forward face of auxiliary tank panel only and deburr to maximum depth of 0.005 inches. See figure 10 for hole location.

   **Note**
   
   The forward face of the auxiliary tank panel is 0.025 inches thick.
   
   **DO NOT DRILL DEEPER THAN 0.375 INCHES.**

3) Remove one existing screw in the -4 strap installation location shown.

4) Burnish mating surface of tank panel around the added ø0.129” hole.

5) Burnish aux fuel shutoff valve adapter in the -4 strap installation area.

6) Clean debris from the burnished areas using a clean cloth and apply Alodine to the bare metallic burnished surfaces and to the mating surfaces of the -4 strap. Use Henkel Alodine 1132 Touch-N-Prep pen or similar.

7) Install strap as shown using existing screw and an added CR3213-4 rivet. Torque #10-32 screws to 20 to 25 in-lb.

8) Verify that the resistance between the two fasteners attaching the -4 strap is less than 0.5 ohms.

9) Apply primer per MIL-P-23377 over exposed alodined areas.