MANDATORY SERVICE BULLETIN

EFFECTIVITY: BELL 407 MODEL HELICOPTERS EQUIPPED WITH AIRFILM CAMERA SYSTEMS G1 UTILITY MOUNT

SUBJECT: MANDATORY INSPECTION AND MODIFICATION OF NOSE CONSOLE AT G1 MOUNT FASTENERS

DATE: 10/20/2014

1.0 REASON
Mandatory inspection for cracks on the Nose Console Flange at the forward G1 mount fasteners.

2.0 DESCRIPTION
Instances of cracking have been found on the Bell 407 airframe at the Airfilm G1 Utility Mount forward fasteners location. This bulletin describes the internal airframe inspection and subsequent repair and modification required for continued safe operation of the G1 Mount.

3.0 COMPLIANCE
MANDATORY – Within the next 40 flight hours

4.0 MANPOWER
Inspection: Estimated 3 man-hours
Repair: Estimated 20 man-hours
Modification: Estimated 10 man-hours

5.0 WEIGHT AND BALANCE
N/A

6.0 MATERIALS
Inspection:
½” Socket, Flashlight, Inspection Mirror, 10X Magnifying Lens, Measuring Device (Scale, or Calipers) Capable of 2 Place (X.XX inch) Dimensional Accuracy.

Repair/Modification:
Standard sheet metals tools, standard riveting tool, marking pen, #30 Drill, #4 Clecos, Airfilm modification kit P/N G1-101-1

7.0 REFERENCES
STC No. SR01654LA – G1 Utility Mount, Airfilm Camera Systems
AF-G1-006 – Installation Instructions, G1 Utility Mount.
AF-G1-008 – Instructions for Continued Airworthiness, G1 Utility Bracket
AF-G1-200 - Modification Drawing, Bell 407 Nose Console
AF-G1-100 - Repair Drawings, Bell 407 Nose Console
G1-101-1 – Modification Kit
8.0 ACCOMPLISHMENT INSTRUCTIONS

NOTE
Ensure that standard practices per AC43.13-1B and manufacturer's manuals are complied with.

(1) Remove G1-1 Utility Mount to gain access to the Internal Nose Console (airframe) by removing the 8 AN3 mounting bolts on the outboard upper flanges of the G1 Mount. Reference Install Instruction (AF-G1-006) for detailed description of removal procedures.

NOTE
Washers may be present as shims between G1 mount and airframe. Note the location and quantity of the shims for reinstallation.

Figure 1 G1 Mount Fastener Locations

AN3 mount bolts (8 places). Washers may be present between mount and the airframe.

FWD Nose Mount Fasteners (2X)
(2) Once the G1 Mount is removed, gain access to the internal nose console structure near the forward G1’s forward fasteners location.

(3) Inspect for cracks in the Nose Console area at the G1 mount forward fastener nutplates (RH & LH sides). Figure 3 shows a typical crack near the nutplate at the radius of the formed flange.

Use 10X magnified visual inspection or fluorescent penetrant inspection (per ASTM E1417) to inspect for cracks in the areas noted.
(4) If no cracks are found, proceed to step 5. If cracks are present, repair in accordance with Airfilm Drawing AF-G1-100.

**WARNING**

If any cracks or loose rivets are found during this inspection, the aircraft must be repaired before returning to service.

**CAUTION**

If the damage is outside the maximum damage criteria defined in the repair drawing, contact Airfilm Camera Systems for Engineering Support.

(5) If no cracks are found, Install Airfilm modification kit P/N G1-101-1 in accordance with Airfilm Drawing AF-G1-200.

*Figure 3 View Showing the Repair Fitting Installed (RH Side)*
(6) Before reinstalling the G1 Utility Mount, perform 1000 hr inspection on the G1 Mount Assembly in accordance with AF-G1-008 (ICA) as noted below.

The mount must be removed from the helicopter and disassembled.

FITTING INSPECTIONS

<table>
<thead>
<tr>
<th>Inspect. Interval Hours</th>
<th>Inspection</th>
<th>Maintenance Personnel Initial</th>
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<tbody>
<tr>
<td>1000</td>
<td>Visually inspect bolt holes for damage</td>
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</tr>
<tr>
<td></td>
<td>Visually inspect brackets for cracks, nicks or deep scratches</td>
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</table>

INSPECTION LIMITS

The G1-1 Universal Mount is to be removed from service and returned to Airfilm Camera Systems if the following inspection limits are exceeded.

Cracks: Any indication
Bolt hole elongation: Any Indication
Dents, scratches or nicks: Greater than 0.010 inches

(7) Reinstall the G1 Utility Mount in accordance with Airfilm Camera Systems Installation Instructions AF-G1-006.

9.0 INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

The structural repair/modification and adjacent structure identified in this Bulletin should be visually inspected 100 flight-hours after installation. After the initial inspections, the repair should be inspected in the same interval as the STC’ed Airfilm Nose Mount. The inspection should verify that there are no cracks, or loose rivets in the repair and the adjacent structure. Special attention should be given to the formed radius in the original skin, forward of the repair.

Airfilm Camera Systems Support Contact:

(530) 333-0193
info@airfilm.com
NOTES:

1. REMOVE RIVETS IN REPAIR AREA
2. REMOVE DAMAGED FLANGE BY CUTTING/GRINDING.
3. ALL INTERNAL RAD. .125 MIN.
4. POLISH CUT SURFACES. .03 RHR MAX (MILL FINISH).
5. INSPECT DAMAGE AREA AND ADJACENT RIVET HOLES USING 10X MAGNIFIED VISUAL INSPECTION OR FLUORESCENT PENETRANT (PER ASTM E1417).

REPAIR INSTALLATION:

7. USE REPAIR FITTING TEMPLATE (G1-101-003) TO LAYOUT REPAIR FITTING PROFILE GIVEN EXISTING FEATURES & HOLE LOCATIONS. TRIM REPAIR FITTING AS REQUIRED TO CAPTURE THE REQUIRED NUMBER OF FASTENERS AND MAINTAIN 2D EDGE DISTANCE ON ALL FEATURES.
8. LAYOUT NEW REPAIR FASTENERS APPROX AS SHOWN. MAINTAIN A MINIMUM OF 2D EDGE DISTANCE ON ALL FEATURES. MINIMUM 6 FASTENERS ON EITHER SIDE OF DAMAGE AREA
9. DRY FIT REPAIR FITTING AND SHIM.
10. MATCH DRILL FASTENER HOLES INTO DOUBLER, SHIM, AND SKIN.
11. DEBURR ALL HOLES.
12. TREAT EFFECTED AIRFRAME AND REPAIR COMPONENTS FOR CORROSION PREVENTION IAW BTH-ALL-SPM.
13. INSTALL SHIMS, REPAIR FITTING, AND RIVETS WET WITH CORROSION INHIBITING SEALANT (P/S 890 OR EQUIVALENT).
14. USE MS20426AD4 RIVETS FOR FLUSH INSTALLATION ON THE EXTERIOR AND MS20470AD4 RIVETS IN WEB.

REFERENCES:

G1-101-001 MODIFICATION KIT N/A
2 .001 SHIM .025 2024-T3 CLAD PER AMS-QQ-A-250/5

DAMAGE REMOVAL:

1. REMOVE RIVETS IN REPAIR AREA
2. REMOVE DAMAGED FLANGE BY CUTTING/GRINDING.
3. ALL INTERNAL RAD. 1.25 MIN.
4. POLISH CUT SURFACES. .03 RHR MAX (MILL FINISH).
5. INSPECT DAMAGE AREA AND ADJACENT RIVET HOLES USING 10X MAGNIFIED VISUAL INSPECTION OR FLUORESCENT PENETRANT (PER ASTM E1417).
NOTES:

1. USE FITTING TEMPLATE (G1-101-003) TO LAYOUT FITTING PROFILE GIVEN EXISTING FEATURES & HOLE LOCATIONS. TRIM FITTING AS REQUIRED TO CAPTURE THE REQUIRED NUMBER OF FASTENERS AND MAINTAIN 2D EDGE DISTANCE ON ALL FEATURES.

2. LAYOUT NEW FASTENERS APPROX AS SHOWN. MAINTAIN A MINIMUM OF 2D EDGE DISTANCE ON ALL FEATURES. MINIMUM 6 FASTENERS ON EITHER SIDE OF FORWARD MOUNT FASTENER. DRY FIT FITTING.

3. MATCH DRILL FASTENER HOLES INTO FITTING AND SKIN.

4. DEBUR ALL HOLES.

5. TREAT EFFECTED AIRFRAME AND NEW COMPONENTS FOR CORROSION PREVENTION IAW BTH-ALL-SPM.

6. INSTALL FITTING AND RIVETS WET WITH CORROSION INHIBITING SEALANT (P/S 890 OR EQUIVALENT).

7. USE MS20426AD4 RIVETS FOR FLUSH INSTALLATION ON THE EXTERIOR AND MS20470AD4 (OR CR3213-4) RIVETS IN WEB. DEBUR ALL SHARP EDGES.

8. NOTED ALL TOLERANCES:

   | DIMENSIONS IN | TOLERANCES |
   | INCHES        | "        |
   | X    | ± .010 |
   | X    | ± .03  |
   | ANGULAR | ± 5°   |

9. BREAK ALL SHARP EDGES.

10. PROPRIETARY NOTICE: THIS DRAWING AND SPECIFICATION IS THE PROPERTY OF AIRFILM CAMERA SYSTEMS, INC AND SHALL NOT BE COPIED OR DIVULGED IN WHOLE OR PART AS THE BASIS FOR MANUFACTURING OR SALE OF THE ITEM OR ITEMS DISCLOSED.
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<td>1</td>
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<td>P/S 890 (OR EQUIV.)</td>
<td>SEALANT</td>
<td>P/N PER PPG AEROSPACE</td>
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</table>

NOTES:
1. DEBURR ALL SHARP EDGES.
2. BAG AND TAG ALL PARTS WITH INDIVIDUAL PART NUMBERS.
3. TRIM TEMPLATE TO BE PRINTED IN FULL SCALE FOR USE AS TEMPLATE.