



A Textron Company

ALERT SERVICE BULLETIN

407-21-123

6 July 2021

MODEL AFFECTED: 407

SUBJECT: TAILBOOM ASSEMBLY, NEW AIRWORTHINESS LIMITATION SCHEDULE (ALS) INSPECTION REQUIREMENT.

HELICOPTERS AFFECTED: Serial number 53000 through 53900, 53911 through 54166, and 54300 and subsequent.

COMPLIANCE: **PART I:** Within 50 flight hours or 30 days, whichever comes first, following the release date of this bulletin.

PART II: At the next tailboom assembly scheduled inspection, and every 100 flight hours for tailboom assemblies identified in **Table 1** or every 300 flight hours for tailboom assemblies identified in **Table 2**, thereafter.

DESCRIPTION:

Bell has received a field report indicating an in-service crack on a tailboom lower skin. The crack was found on the lower aft corner of the left-hand cutout of the horizontal stabilizer, at Boom Station 120.75. Following analysis, it was determined that the crack was the result of fatigue which originated from the fastener hole for a nut plate.

This Alert Service Bulletin (ASB) is being published to provide initial and recurring inspection requirements of the affected tailboom assemblies, which will be incorporated to Chapter 4 of the 407-MPI Maintenance Planning Information in the Airworthiness Limitations Schedule (DMC-407-A-04-00-00-00A-288A-A).

PART I of this ASB requires identification of the affected tailboom assembly.

PART II of this ASB provides the requirements for a recurring inspection of affected tailboom assemblies.

Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

CONTACT INFO:

For any questions regarding this bulletin, please contact:

Bell Product Support Engineering
Tel: 1-450-437-2862 / 1-800-363-8023 / productsupport@bellflight.com

MANPOWER:

Approximately 0.25 man-hours are required to complete **PART I** of this bulletin.
Approximately 1 man-hour is required to complete **PART II** of this bulletin.
Man-hours are based on hands-on time and may vary with personnel and facilities available.

WARRANTY:

There is no warranty credit applicable for parts or labor associated with this bulletin.

MATERIAL:

Required Material:

None required.

Consumable Material:

The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Qty (Note)</u>	<u>Reference *</u>
2100-00006-00	Cleaning Compound	5 GAL (1)	C-318

* C-XXX numbers refer to the consumables list in the BHT-ALL-SPM, Standard Practices Manual

NOTE 1: Quantity indicated is the format that the product is delivered in. Actual quantity required to accomplish the instructions in this bulletin may be less.

SPECIAL TOOLS:

For **PART II:** 10X Magnifying Glass.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

407-MPI Maintenance Planning Information, Chapter 4.
407-MM Maintenance Manual, Chapter 53.
BHT-ALL-SRM Structural Repair Manual, Chapter 3.

PUBLICATIONS AFFECTED:

407-MPI Maintenance Planning Information, Chapter 4.

ACCOMPLISHMENT INSTRUCTIONS:

PART I: Identification of affected tailboom assemblies

1. Verify the helicopter historical service records to determine the part number of tailboom assembly installed. The tailboom assembly part number can also be confirmed by removing the aft tail rotor driveshaft cover (DMC-407-A-53-04-00-05A-520A-A) and looking at the identification data plate located near Boom Station (BS) 129 (Figure 1).

-NOTE-

If the tailboom assembly has been modified from its original configuration, the part number on the identification data plate may have been re-identified, or the part number of the current configuration may be identified on a modification identification data plate which will be located near Boom Station (BS) 129 (Figure 1).

- a. If the tailboom assembly part number identified in step 1 is listed in **Table 1** of this bulletin, accomplish the inspection of the tailboom assembly as defined in **PART II** of this bulletin at the next tailboom assembly scheduled inspection, and every 100 flight hours thereafter.

Table 1: List of tailboom part number (P/N) that requires PART II of this bulletin accomplished

407-030-801-107	407-530-014-101	407-530-014-103
-----------------	-----------------	-----------------

- b. If the tailboom part number identified in step 1 is listed in **Table 2** of this bulletin, accomplish the inspection of the tailboom assembly as defined in **PART II** of this bulletin at the next tailboom scheduled inspection, and every 300 flight hours thereafter.

Table 2: List of tailboom part number (P/N) that require PART II of this bulletin accomplished

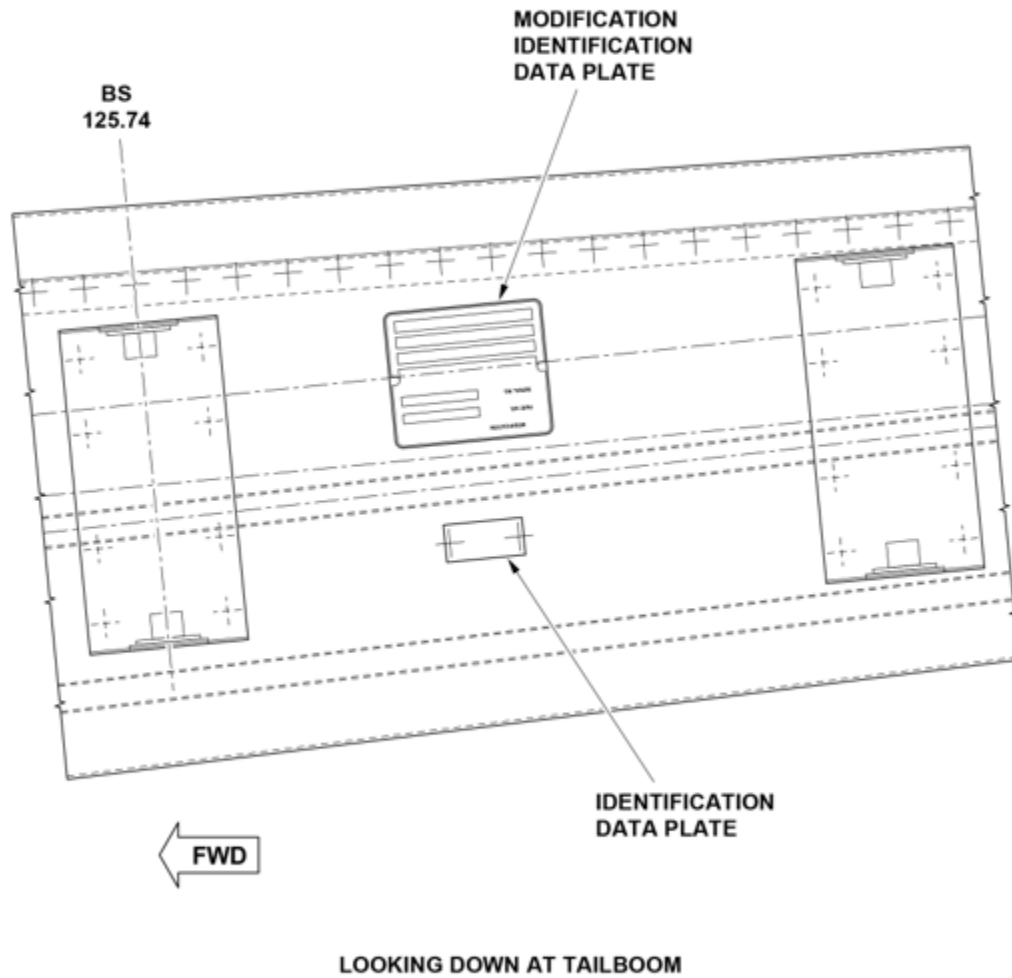
407-030-801-201	407-030-801-203	407-030-801-205
407-030-801-217	407-030-801-219	407-030-801-221
407-030-801-221FM	407-530-013-105	

2. If tail rotor driveshaft cover was removed in step 1, install driveshaft cover (DMC-407-A-53-04-00-05A-720A-A).
3. Make an entry in the helicopter logbook and historical service records indicating compliance with **PART I** of this Alert Service Bulletin.

PART II: Recurring inspection requirement for tailboom assemblies listed in Table 1 and Table 2 of this bulletin

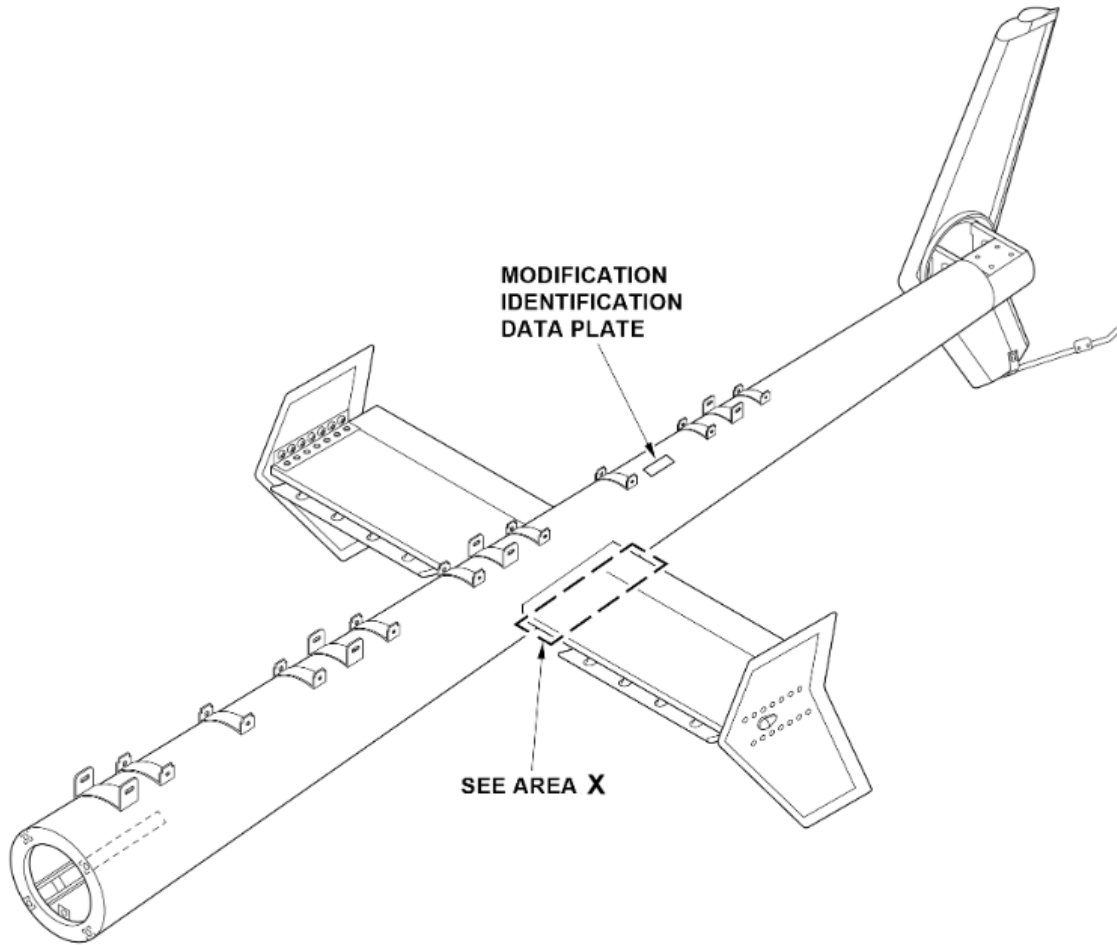
1. Prepare the helicopter for maintenance.
2. Wash the area of the tailboom assembly to inspect (Figure 2) with cleaning compound (C-318) and water prepared in accordance with the manufacturer's recommendations to remove all traces of dirt, stains, exhaust residues and oil. Rinse thoroughly and wipe dry.
3. Perform a detailed visual inspection (DVI) of the left side of the tailboom assembly skins and lower left closure plate of the horizontal stabilizer for signs of cracks and loose fasteners as follows:
 - a. If any fasteners are found loose, remove them per standard practices and inspect edges of holes for cracks using a 10X magnifying glass. If no crack is found, install correct diameter fasteners (BHT-ALL-SRM, Chapter 3, Section 3-3 and Table 3-28). Same type and size as the original fasteners removed shall be installed, oversizing of the hole diameter or rivet substitution is not allowed.
 - (1) If fasteners cannot be replaced per instructions in step 3.a. or a crack is found, contact Bell Product Support Engineering (productsupport@bellflight.com) for recommended actions. Once corrective actions have been provided go to step 3.b.
 - b. Using a 10X magnifying glass and bright light source, carry out a DVI of the tailboom assembly skins for cracks just below the edge of mating horizontal stabilizer lower attachment support (Figure 2, Area X).

- (1) If a crack is found on the tailboom skins, replace the tailboom assembly with a serviceable tailboom assembly that meets the intent of this ASB prior to next flight, and report findings to Bell Product Support Engineering (productsupport@bellflight.com). Go to step 4.
- (2) If no crack is found on the tailboom assembly skins, but a crack is found on the lower left closure plate, do the following:
 - (a) Remove cracked lower left closure plate and discard (DMC-407-A-53-02-00-00A-921A-A). The closure plate is considered unserviceable.
 - (b) Using a 10X magnifying glass and bright light source carry out a DVI of the tailboom assembly skins that are located under the closure plate for any cracks (Figure 2, Area X).
 1. If no cracks are found, install a serviceable lower left closure plate (DMC-407-A-53-02-00-00A-921A-A) and go to step 4.
 2. If a crack is detected, replace the tailboom assembly with a serviceable tailboom assembly that meets the intent of this ASB.
 - (c) Report all findings to Bell Product Support Engineering (productsupport@bellflight.com).
- (3) If no cracks or loose fasteners are found, go to step 4.
4. Make an entry in the helicopter logbook and historical service records indicating compliance with this Alert Service Bulletin.
5. Perform **PART II** of this bulletin every 100 flight hours for affected tailboom assemblies identified in **Table 1** of **PART I** or every 300 flight hours for affected tailboom assemblies identified in **Table 2** of **PART I**.



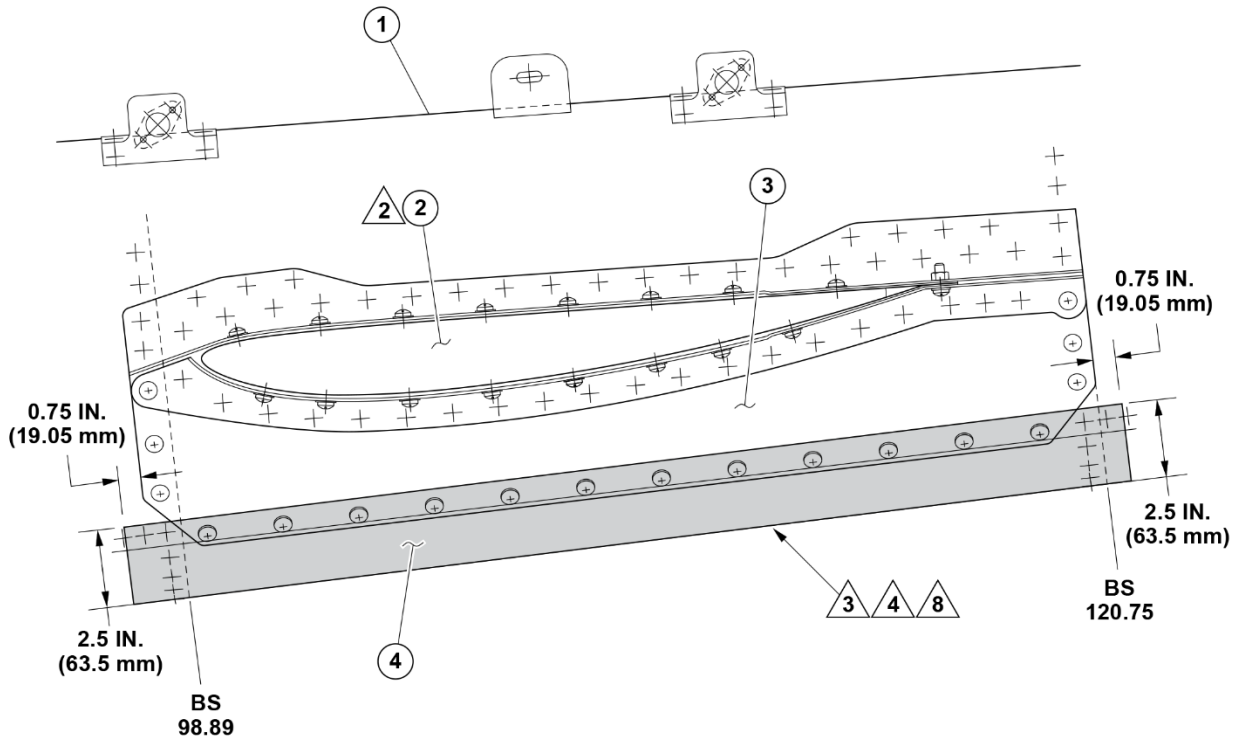
20985_001

Figure 1 – Location of Identification Data Plate and Modification Identification Data Plate, Tailboom Assembly



20985_002a

Figure 2 – Inspection Area on Tailboom Assembly (Sheet 1 of 3)



AREA X
 (HORIZONTAL STABILIZER NOT SHOWN FOR CLARITY)

 CRITICAL INSPECTION AREA (10X MAGNIFYING GLASS)

20985_002b

Figure 2 – Inspection Area on Tailboom Assembly (Sheet 2 of 3)

1. Upper tailboom skin (Ref)
2. Horizontal stabilizer (Ref)
3. Left lower stabilizer attachment support (Ref)
4. Lower tailboom skin (Ref)


NOTES

- 1 On the left side of the tailboom only, do a detailed visual inspection (DVI) of area shown for cracks in the tailboom skin and loose rivets. Do not remove the paint or primer. If a loose rivet is found, remove rivet and inspect hole for cracks using a 10X magnifying glass. If no cracks are found, install correct diameter rivet. Do not exceed maximum diameter prescribed.

2

Do not remove horizontal stabilizer.

3

 Use a 10X magnifying glass to inspect for cracks in tailboom skins and around fastener heads as indicated in area shown as Area X.

4

Pay close attention to skin just below edge of lower support.

- 5 Some tailboom components not shown for clarity.

- 6 If a crack is found on the tailboom skin, replace the tailboom before the next flight and contact Product Support Engineering using the information from the Contact Info section of this bulletin.

- 7 Contact Product Support Engineering for changes or modifications to the structure in areas where a mandatory airworthiness inspection is specified.

8

If left lower stabilizer support (4) is found cracked, remove support and perform inspection for cracks of the tailboom assembly skins located under the support using a 10X magnifying glass.

20985_002c

Figure 2 – Inspection Area on Tailboom Assembly (Sheet 3 of 3)