A Textron Company

# ALERT SERVICE BULLETIN 407-24-134

12 February 2024

**MODEL AFFECTED:** **407**

**SUBJECT:** **Tailboom Attachment Hardware and Fittings, Inspection of**

**HELICOPTERS AFFECTED:** **Serial numbers 53000 through 53900, 53911 through 53999, 54000 through 54166, 54300 through 54752, 54805 through 54999 and 56300 and subsequent.**

**COMPLIANCE:**

**PART I**: Within 50 flight hours or 30 days whichever occur first, following the release of this bulletin or if TB 407-17-125 is completed thereafter.

**PART II**: Within 50 flight hours or 30 days whichever occur first and every 300 flight hours thereafter following the release of this bulletin.

**PART III**: Within 50 flight hours or 30 days whichever occur first and every 50 flight hours thereafter following the release of this bulletin.

## DESCRIPTION:

Bell has recently received a report of a fractured upper left tailboom attachment bolt. The fractured bolt was found during a scheduled 300-hour inspection. After investigation and review of the aircraft technical records, it was confirmed that the aft fuselage upper left longeron assembly 206-031-314-237B had been replaced on the aircraft in accordance with Technical Bulletin (TB) 407-12-96 which might have been a contributing factor to the event.

**PART I** of this bulletin requires to determine whether the upper left longeron was replaced in accordance with TB 407-12-96 or TB 407-17-125 or if it is the original longeron installed on the production line.

**PART II** of this bulletin mandates a recurring detailed inspection of the tailboom attachment structure and the replacement of the upper left-hand bolt and nut. The affected helicopters are those that had the upper left longeron assemblies 206-031-314-237B/-237S or 407-030-067-105 installed in accordance with TB 407-12-96 or TB 407-17-125 respectively.

**PART III** of this bulletin mandates a recurring detailed inspection of the tailboom attachment structure and a torque check of the tailboom attachment hardware. The affected helicopters are those that still have their original upper left longeron assembly installed on the production line. Helicopters serial number 54807, 54808, 54872 and subsequent were fitted with the 2-piece upper left longeron assembly in production and are not affected by **PART III** of this ASB.

This is a temporary measure to address a safety of flight concern. The terminating actions to the recurring inspections of **PART II** and **PART III** of this bulletin will be provided in a future revision of the ASB.

Applicability of this bulletin to any spare part shall be determined prior to its installation.

**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 0.5 man-hour is required to complete PART I of this bulletin.
Approximately 2.5 man-hours are required to complete PART II of this bulletin.
Approximately 2.0 man-hours are required to complete PART III of this bulletin.
This estimate is 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:**
The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Supply Center.

| Part Number | Nomenclature | Qty | NOTES |
|---|---|---|---|
| NAS626-26 | BOLT | 2 | 2 |
| NAS627-30 | BOLT | 2 | 1, 2 |
| 42FLW-624 | NUT | 2 | 2 |
| 42FLW-720 | NUT | 2 | 1, 2 |
| 140-007-29S25E6 | COUNTERSUNK WASHER | 2 | 2, 3 |
| 140-007-25S22E6 | COUNTERSUNK WASHER | 2 | 2, 3 |
| NAS1149G0732P | FLAT WASHER | 9 | 2, 3, 4 |
| NAS1149G0663P | FLAT WASHER | 10 | 2, 3, 5 |

**NOTES:**

1. A minimum of one bolt NAS627-30 and one nut 42FLW-720 are required to accomplish PART II of this bulletin.
2. Required quantity may vary depending on the result of the tailboom attachment hardware torque check performed in accordance with PART II or PART III.
3. Required quantity may vary depending on the inspection results.
4. Quantity indicated is the maximum allowable. A maximum quantity of four (4) flat washers can be used in the upper left position. A maximum quantity of five (5) flat washers can be used in the upper right position.
5. Quantity indicated is the maximum allowable. A maximum quantity of five (5) flat washers can be used in the lower left and right positions.

**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.

| Part Number | Nomenclature | Qty (Note) | Reference * |
|---|---|---|---|
| 2010-05901-00 | Corrosion Preventive Compound | 6 OZ (1) | C-586 |

* 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 than what has been delivered.

**SPECIAL TOOLS:**

407-230-001-101 Socket (or equivalent)

**WEIGHT AND BALANCE:**

Not affected.

**ELECTRICAL LOAD DATA:**

Not affected.

**REFERENCES:**

407-MM Maintenance Manual
407-IPB Illustrated Part Breakdown
BHT-ALL-SPM Standard Practices Manual
Alert Service Bulletin 407-10-93 (Tailboom Attachment Hardware, Replacement Of)
Technical Bulletin 407-12-96
Technical Bulletin 407-17-125
GEN-22-154 General Information Letter, Procedure for Requesting Bell-Approved Structural Repairs.

**PUBLICATIONS AFFECTED:**

None affected.

**ACCOMPLISHMENT INSTRUCTIONS:**

**PART I: Verification of the upper left longeron assembly installation**

-NOTE-

407 S/N: 53001 through 54061 did not have the 206-031-314-237 longeron assembly installed from factory with the ‘’Caution Cold Expanded Holes’’ decal as shown in Figure 2. If the decal “Caution Cold Expanded Holes” is present on upper left longeron as shown in Figure 2 (Analog 407 prior to S/N: 54062), the longeron assembly was field replaced per the above Technical Bulletins.

-NOTE-

For all other aircraft serial numbers, there are no visual signs that can confirm if a longeron assembly was field replaced. The technical records must be reviewed. In case of doubt, accomplish **PART II** of this bulletin.

1. Prepare the helicopter for maintenance.

2. Review the helicopter technical records to determine if the upper left longeron assembly was replaced in the field in accordance with TB 407-12-96 or TB 407-17-125 or if it is still the original that was installed in production.

3. If in doubt, accomplish **PART II** of this bulletin.

4. If the upper left longeron assembly was replaced in the field as per TB 407-12-96 or TB 407-17-125 proceed with **PART II**.

5. If the upper left longeron assembly was installed in production, proceed with **PART III**.

6. All spare longeron assemblies part numbers 206-031-314-237B and 206-031-314-237S shall not be installed and must be sent back to Bell using the New Part Return process.

7. Make an entry in the helicopter logbook and historical service records indicating compliance with **PART I** of this Alert Service Bulletin.

**PART II: Inspection of the tailboom attachment structure and replacement of the upper left bolt and nut:**

-NOTE-

Tailboom removal is not required to accomplish this check.

1. From the left side of the fuselage, using a strong light source and a feeler gauge, inspect for a gap at the upper left attachment interface between the aft fuselage and the tailboom. The entire tailboom forward bulkhead machined / hot bonded shim surface must be in contact with the aft fuselage bulkhead. Figure 3 shows the inspection area for possible gap between the machined / hot bonded shim and the

aft fuselage bulkhead. If a 0.003 inch (0.076 mm) feeler gauge or thicker can be inserted in the joint up to the bolt shank, contact Product Support Engineering for further instructions.

2. Remove tailboom access cover (1, Figure 1). Retain hardware for subsequent installation in later step.

-NOTE-

If the existing sealant application meets the intent of the Aft Fuselage Attachment Fittings - Sealant Removal and Application procedure specified in DMC-407-A-53-00-00-01A-280B-A, sealant removal is not required. If the sealant application does not meet the intent, remove the sealant to allow inspection of the fitting(s).

-NOTE-

Any one or more of the following visible signs is an indication of loose fasteners and underlying damage that will require further inspection. These include chipped or cracked paint at the edges of parts or around rivet heads, cracked sealant and gaps at the edges of the faying surfaces of skins, bonded panels, and structure joints, and traces of black oxide around rivets and fasteners.

3. Using a strong light source and a mirror, examine the following:

   a. Inspect the tailboom intercostals, the tailboom forward bulkhead, and aft fuselage bulkhead for cracks, dents, loose fasteners, security of attachment, deformation, corrosion, and general condition.

   b. Inspect the aft fuselage upper and lower longerons for cracks, loose fasteners, security of attachment, deformation, corrosion, and general condition. Pay particular attention to the upper left longeron fitting.

-NOTE-

Minor cadmium plating damage on the attachment bolt is not cause for further investigation.

c. Remove and inspect the upper left tailboom attachment bolt for signs of cracking, fretting, wear, and corrosion. If abnormal signs of deterioration are found, send pictures to Product Support Engineering (PSE).

d. Install a new replacement bolt and nuts at the upper left tailboom attachment location. Refer to the 407-MM; (DMC-407-A-53-01-00-00A-720A-A) for hardware installation procedures.

-NOTE-

The torque values of the upper and lower nuts (2 and 7, Figure 4) are different. Refer to Figure 4 for the specified torque values.

-NOTE-

For torque check purposes, the assembly torque to be applied is the minimum specified torque, plus the minimum acceptable tare torque of 14 inch-pounds (1.58 Nm) for the upper nuts and 9.5 inch-pounds (1.07 Nm) for the lower nuts (BHT-ALL-SPM, Chapter 2, Standard Practices Manual).

e. Do a torque check of the 3 remaining tailboom to the aft fuselage attachment nuts (2 and 7, Figure 4) (DMC-407-A-53-01-00-00A-720A-A).

(1) If a nut fails the torque check, replace the affected bolt(s) and nut(s) with new bolt(s), nut(s), and washer(s) as applicable. Retain removed hardware for further investigation by Product Support Engineering.

(a) Refer to (DMC-407-A-53-01-00-00A-720A-A) for hardware installation procedures.

f. After final torque is applied, apply corrosion preventive compound (C-586) to the head of the bolt, washers, nut, and the exposed threads.

g. After 1 to 5 flight hours, perform the Tailboom Attachment Hardware Torque Check special inspection at every location where new hardware was installed

(DMC-407-A-05-40-00-00A-283A-A). Repeat torque check every 1 to 5 flight hours until the torque has stabilized.

4. Install the tailboom access cover (1, Figure 1).

5. Make an entry in the helicopter logbook and historical service records indicating compliance with **PART II** of this Alert Service Bulletin. Carry out the inspection and hardware replacement as described in **PART II** of this bulletin every 300 flight hours.

**PART III: Inspection of tailboom attachment structure and torque check of the tailboom attachment hardware.**

-NOTE-

Helicopters serial number 54807, 54808, 54872 and subsequent were fitted with the 2-piece upper left longeron assembly in production and are not affected by **PART III** of this ASB.

-NOTE-

To allow flexibility, it is possible to either comply with PART III of this bulletin every 50 flight hours which consist in complying with the inspection requirements without part replacement or alternatively comply with PART II every 300 flight hours which consist in replacing the upper left longeron hardware and complying with the inspection requirements.

-NOTE-

Tailboom removal is not required to accomplish this check.

1. Prepare the helicopter for maintenance.

2. From the left side of the fuselage, using a strong light source and a feeler gauge, inspect for a gap at the upper left attachment interface between the aft fuselage and the tailboom. The entire tailboom forward bulkhead machined / hot bonded shim surface must be in contact with the aft fuselage bulkhead. Figure 3 shows the inspection area for possible gap between the machined / hot bonded shim and the aft fuselage bulkhead. If a 0.003 inch (0.076 mm) feeler gauge or thicker can be inserted in the joint up to the bolt shank, contact Product Support Engineering for further instructions.

3. Remove tailboom access cover (1, Figure 1). Retain hardware for subsequent installation in later step.

-NOTE-

If the existing sealant application meets the intent of the Aft Fuselage Attachment Fittings - Sealant Removal and Application procedure specified in DMC-407-A-53-00-00-01A-280B-A, sealant removal is not required. If the sealant application does not meet the intent, remove the sealant to allow inspection of the fitting(s).

-NOTE-

Any one or more of the following visible signs is an indication of loose fasteners and underlying damage that will require further inspection. These include chipped or cracked paint at the edges of parts or around rivet heads, cracked sealant and gaps at the edges of the faying surfaces of skins, bonded panels, and structure joints, and traces of black oxide around rivets and fasteners.

4. Using a strong light source and a mirror, examine the following:

   a. Inspect the tailboom intercostals, the tailboom forward bulkhead, and the aft fuselage bulkhead for cracks, dents, loose fasteners, security of attachment, deformation, corrosion, and general condition.

   b. Inspect the aft fuselage upper and lower longerons for cracks, loose fasteners, security of attachment, deformation, corrosion, and general condition. Pay particular attention to the upper left longeron fitting.

-NOTE-

The torque values of the upper and lower nuts (2 and 7, Figure 4) are different. Refer to Figure 4 for the specified torque values.

-NOTE-

For torque check purposes, the assembly torque to be applied is the minimum specified torque, plus the minimum acceptable tare torque of 14 inch-pounds (1.58 Nm) for the upper nuts and 9.5 inch-pounds (1.07 Nm) for the lower nuts (BHT-ALL-SPM, Chapter 2, Standard Practices Manual).

5. Do a torque check of the tailboom to the aft fuselage attachment nuts (2 and 7, Figure 4) (DMC-407-A-53-01-00-00A-720A-A).

   a. If a nut fails the torque check, replace the affected bolt(s) and nut(s) with new bolt(s), nut(s), and washer(s) as applicable. Retain removed hardware for further investigation by Product Support Engineering.

      (1) Refer to (DMC-407-A-53-01-00-00A-720A-A) for hardware installation procedures.

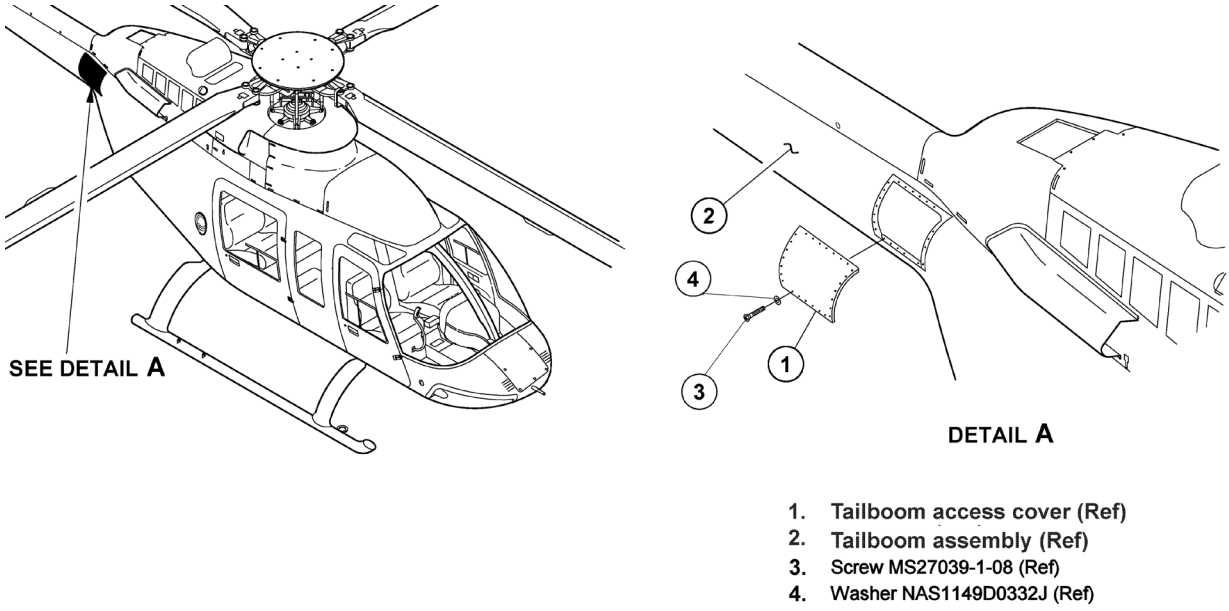
   b. Apply corrosion preventive compound (C-586) to the heads of the bolts, washers, nuts, and the exposed thread after final torque is applied.

   c. If hardware replacement is required, after 1 to 5 flight hours perform the Tailboom Attachment Hardware Torque Check Special Inspection at every location where new hardware was installed (DMC-407-A-05-40-00-00A-283A-A). Repeat torque check every 1 to 5 flight hours until the torque has stabilized.

6. Install the tailboom access cover (1, Figure 1).

7. Make an entry in the helicopter logbook and historical service records indicating compliance with PART III of this Alert Service Bulletin.

8. Repeat the inspection of the tailboom attachment as described in **PART III** of this bulletin every 50 flight hours. Alternatively, **PART II** Inspection and hardware replacement of the upper left longeron can be accomplished and repeated every 300 flight hours.




1. Tailboom access cover (Ref)
2. Tailboom assembly (Ref)
3. Screw MS27039-1-08 (Ref)
4. Washer NAS1149D0332J (Ref)

**Figure 1 - Tailboom Access Cover Removal/Installation**

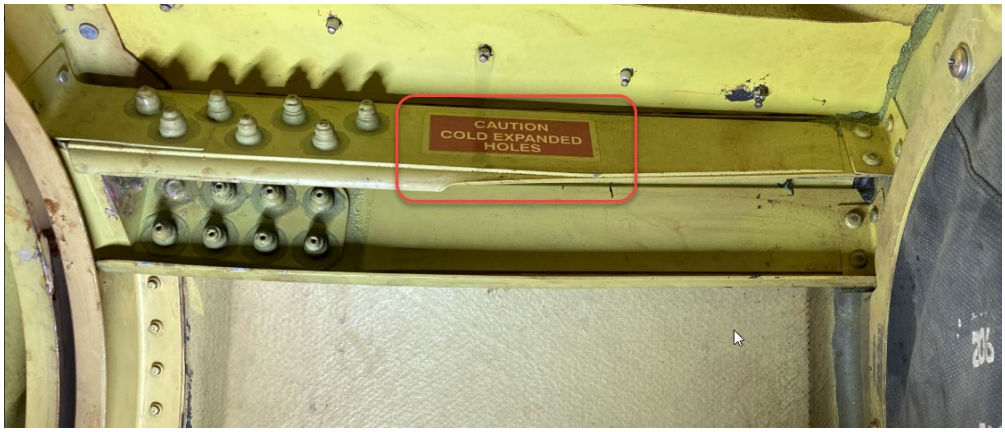
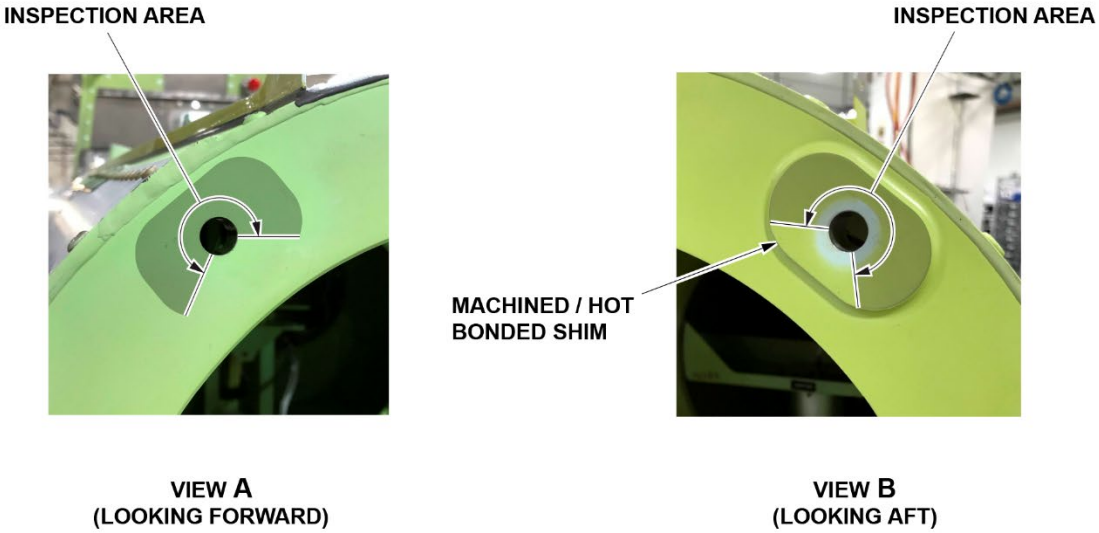



**Figure 2 – Upper Left Longeron 206-031-314-237**
**‘’CAUTION COLD EXPANDED HOLE’’ decal**


**NOTE**

1. **View A and B show the inspection area for possible gap.**

23551_001

**Figure 3 - Gap check at the upper left tailboom attachment interface with tailboom and hardware installed.**

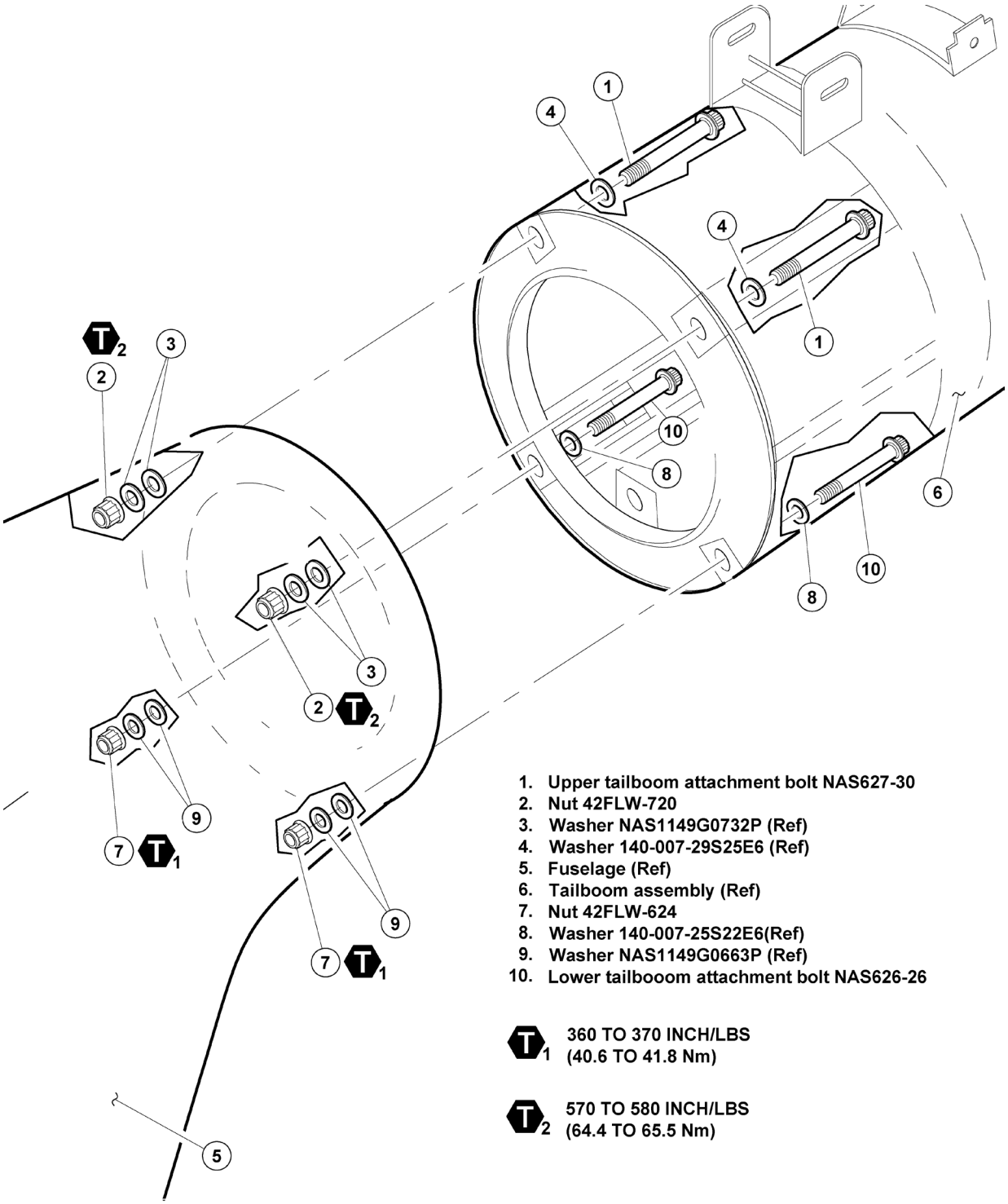



**Figure 4 Tailboom Attachment Hardware**