AIRWORTHINESS DIRECTIVE

This Airworthiness Directive (AD) is issued pursuant to Canadian Aviation Regulation (CAR) 521.427. No person shall conduct a take-off or permit a take-off to be conducted in an aircraft that is in their legal custody and control, unless the requirements of CAR 605.84 pertaining to ADs are met. Standard 625 - Aircraft Equipment and Maintenance Standards Appendix H provides information concerning alternative means of compliance (AMOC) with ADs.

Number:

CF-2025-59

Effective Date:

3 December 2025

ATA:

53

Type Certificate:

H-92

Subject:

Fuselage – Tailboom – Tailboom Attachment Hardware Fracture

Replacement:

Supersedes AD CF-2022-68, issued 15 December 2022.

Applicability:

Bell Textron Canada Limited (Bell) model 407 helicopters, all serial numbers.

Compliance:

As indicated below, unless already accomplished.

Background:

A Bell model 407 helicopter accident occurred on 8 June 2022 near Kalea, Hawaii. The helicopter experienced an inflight separation of its tailboom during cruise flight resulting in loss of control of the helicopter and serious injuries to the occupants on board. The National Transportation Safety Board discovered that the tailboom attachment hardware was missing at one of the four locations and the examination revealed that the tailboom separated from the fuselage at the tailboom attachment point.

As a precaution, Bell issued Alert Service Bulletin (ASB) 407-22-128 to carry out a one-time torque check of the tailboom attachment hardware and inspection of the tailboom attachment fittings and longerons for damage, corrosion or cracks, and security of attachment. The ASB also required the replacement of bolts and the associated nuts if they failed the torque check. Low torque values on tailboom attachment hardware may result in fretting or fatigue damage of the attachment bolts or tailboom fittings, which could lead to their failure and consequent separation of the tailboom from the fuselage and loss of control of the helicopter.

To address the unsafe condition, AD CF-2022-68 mandated compliance with the above-mentioned ASB, including the collection of data required to assess if additional corrective actions were required. AD CF-2022-68 was considered an interim action.

Since AD CF-2022-68 was issued, Transport Canada has been made aware of two additional reports of broken upper-left tailboom attachment bolts. Bell has concluded that there are two possible root causes: improper manufacturing or improper installation of the upper left longeron assembly. Both cases may also result in fretting or fatigue damage of the attachment bolts or aft fuselage longeron fittings, which could lead to their failure and consequent separation of the tailboom from the fuselage and loss of control of the helicopter.

Bell has published ASB 407-24-134 to determine the longeron configuration, to require repetitive inspections of the tailboom attachment structure, combined with hardware replacement or torque check, and to include a detailed inspection of the tailboom attachment structure as a terminating action to the repetitive inspection requirements. Bell has also revised Chapter 4, Airworthiness Limitations Schedule

(ALS) of the Bell 407 Maintenance Planning Information, BHT-407-MPI, to introduce a new airworthiness life limit on the tailboom attachment bolts.

This AD mandates compliance with ASB 407-24-134 and the new airworthiness life limit of the ALS.

Corrective Actions:

For the purpose of this AD, the following definitions apply:

Affected part: an upper left longeron assembly 206-031-314-237B or 206-031-314-237S.

Applicable ALS: Bell 407 Maintenance Planning Information, Chapter 4, ALS, Issue 011, dated 17 June 2025, or later revision of the ALS approved by Transport Canada.

Bell ASB: Bell ASB 407-24-134, Revision A, dated 17 March 2025, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada.

Field-replaced upper left longeron assembly: an upper left longeron assembly 206-031-314-237B or 206-031-314-237S installed in accordance with Bell Technical Bulletin (TB) 407-12-96 (all revisions) or an upper left longeron assembly 407-030-067-105 installed in accordance with Bell TB 407-17-125, Basic Issue, dated 21 August 2020.

Production line longeron: an upper left longeron assembly that is not a field-replaced upper left longeron assembly.

Group 1 helicopters: model 407 helicopters on which the installation of a field-replaced upper left longeron assembly has been determined in accordance with Part I of the Accomplishment Instructions of the Bell ASB.

Group 2 helicopters: model 407 helicopters having serial numbers 53000 through 53900, 53911 through 53999, 54000 through 54166, 54300 through 54752, 54805, 54806, 54809 through 54824, and 54826 through 54871 on which the installation of a production line upper left longeron assembly has been determined in accordance with Part I of the Accomplishment Instructions of the Bell ASB.

Group 3 helicopters: model 407 helicopters having serial numbers 54807, 54808, 54872 through 54999, 56300 and 56301 on which the installation of a production line upper left longeron assembly has been determined in accordance with Part I of the Accomplishment Instructions of the Bell ASB.

Group 4 helicopters: model 407 helicopters having serial numbers 54825, 56302 and subsequent on which the installation of a production line upper left longeron assembly has been determined in accordance with Part I of the Accomplishment Instructions of the Bell ASB and model 407 helicopters, all serial numbers, on which the replacement of the upper left longeron assembly was performed in accordance with TB 407-17-125 Revision A, dated 4 April 2024, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada.

Part I – Parts Installation Prohibition – Applicable to Group 1, Group 2, Group 3 and Group 4 Helicopters

As of the effective date of this AD, an affected part is not eligible for installation as a replacement part on Group 1, Group 2, Group 3 and Group 4 helicopters.

Part II – Initial and Repetitive Inspection of the Tailboom Attachment Structure and Hardware Replacement – Applicable to Group 1 Helicopters

Within 50 hours air time or 30 days, whichever occurs first, from the effective date of this AD, and thereafter at intervals not to exceed 300 hours air time, perform the following actions in accordance with Part II of the Accomplishment Instructions of the Bell ASB:

A. Perform a detailed inspection of the upper left attachment interface between the aft fuselage and the tailboom for gaps. If a gap of 0.003 inch (0.076mm) or greater is found, contact Bell Product Support Engineering (PSE) for a disposition and rectify before further flight.
B. Perform a detailed inspection of 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. If any defect (crack, dent, loose fastener, unsecure attachment, deformation or corrosion) is found, contact Bell PSE for instructions to rectify the defect and rectify the defect before further flight.
C. Perform a detailed inspection of the aft fuselage upper and lower longerons for cracks, loose fasteners, security of attachment, deformation, corrosion and general condition, paying special attention to the upper left longeron fitting. If any defect (crack, loose fastener, unsecure attachment, deformation or corrosion) is found, contact Bell PSE for instructions to rectify the defect and rectify the defect before further flight.

D. Remove and replace the upper left tailboom attachment hardware with a new replacement bolt and nut.
E. Perform a torque check of the three remaining tailboom attachment nuts. If the nut at any location fails the torque check, replace the affected bolt and nut with new parts before further flight and perform the repetitive torque check of the tailboom attachment nuts at every location where new hardware was installed after accumulating 1 hour air time, but not exceeding 5 hours air time, until the torque has stabilized.

Part III – Initial and Repetitive Inspection of the Tailboom Attachment Structure and Torque Check of the Tailboom Attachment Hardware – Applicable to Group 2 Helicopters

Within 50 hours air time or 30 days, whichever occurs first, from the effective date of this AD, and thereafter at intervals not to exceed 50 hours air time, perform the following actions in accordance with Part III of the Accomplishment Instructions of the Bell ASB:

A. Perform a detailed inspection of the upper left attachment interface between the aft fuselage and the tailboom for gaps. If a gap of 0.003 inch (0.076mm) or greater is found, contact Bell Product Support Engineering (PSE) for a disposition and rectify before further flight.
B. Perform a detailed inspection of 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. If any defect (crack, dent, loose fastener, unsecure attachment, deformation or corrosion) is found, contact Bell PSE for instructions to rectify the defect and rectify the defect before further flight.
C. Perform a detailed inspection of the aft fuselage upper and lower longerons for cracks, loose fasteners, security of attachment, deformation, corrosion and general condition, paying special attention to the upper left longeron fitting. If any defect (crack, loose fastener, unsecure attachment, deformation or corrosion) is found, contact Bell PSE for instructions to rectify the defect and rectify the defect before further flight.
D. Perform a torque check of the tailboom attachment nuts. If the nut at any location fails the torque check, replace the affected bolt and nut with new parts before further flight and perform the repetitive torque check of the tailboom attachment nuts at every location where new hardware was installed after accumulating 1 hour air time, but not exceeding 5 hours air time until the torque has stabilized.

Accomplishment of Part II of this AD for the helicopters identified in Group 2, also satisfies the intent of Part III of this AD

Part IV – Detailed Inspection of the Tailboom Attachment Structure – Applicable to Group 1, Group 2 and Group 3 Helicopters

Within 600 hours air time or 12 months, whichever occurs first, from the effective date of this AD, perform the following actions in accordance with Part IV of the Accomplishment Instructions of the Bell ASB:

A. Measure the gap between the upper left longeron aft fitting face and the aft fuselage bulkhead using a 0.003 inch (0.076 mm) feeler gauge.
B. Remove the tailboom assembly and perform a detailed inspection of aft fuselage upper longerons, aft fuselage lower longerons and the aft fuselage bulkhead for cracks, dents, loose fasteners, security of attachment, deformation, corrosion and general condition. If any defect (crack, dent, loose fastener, unsecure attachment, deformation or corrosion) is found, contact Bell PSE for instructions to rectify the defect and rectify the defect before further flight.
C. If the measurement required by Part IV.A of this AD exceeds the limits specified in the Bell ASB, remove the aft fuselage bulkhead, perform a detailed inspection of the aft fuselage bulkhead for signs of deformation, corrosion and general condition and verify the coplanarity of the four longeron fittings.
    1. If any defect (deformation or corrosion) is found on the aft fuselage bulkhead, contact Bell PSE for instructions to rectify the defect and rectify the defect before further flight.
    2. If the four longeron fittings are not in-plane within the tolerance defined in the Bell ASB:
        i. Replace the aft fuselage bulkhead in accordance with TB 407-07-78 Revision B, dated 9 April 2024 or later revision approved by the Chief, Continuing Airworthiness, Transport Canada.
        ii. If only the upper-left longeron fitting is found to be out-of-plane, replace it in accordance with TB 407-17-125 Revision A, dated 4 April 2024, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada,
        iii. If another longeron fitting is found to be out-of-plane, contact Bell PSE for instructions to rectify the defect and rectify the defect before further flight.
D. Perform a detailed inspection of the tailboom intercostals and the tailboom forward bulkhead for cracks, dents, loose fasteners, security of attachment, deformation, corrosion and general

condition. If any defect (crack, dent, loose fastener, unsecure attachment, deformation or corrosion) is found, contact Bell PSE for instructions to rectify the defect and rectify the defect before further flight.

E. Install the tailboom assembly with new bolts and nuts.
F. Following completion of Part IV.E of this AD, before further flight, repeat the measurement required by Part IV.A of this AD. If the value exceeds the limits specified in the Bell ASB, repeat the aft fuselage bulkhead removal and inspection required by Part IV.C of this AD.
G. Perform a torque check of the tailboom attachment nuts. Repeat the torque check of the tailboom attachment nuts after accumulating 1 hour air time, but not exceeding 5 hours air time until the torque has stabilized.

Accomplishment of Part IV of this AD constitutes a terminating action to the initial and repetitive inspection requirements of Part II and Part III of this AD.

Part V – Introduction of New Airworthiness Life Limit – Applicable to Group 1, Group 2, Group 3 and Group 4 Helicopters

Within 50 hours air time or 30 days, whichever occurs first, from the effective date of this AD, complete the new limitations contained in Table 1 of the applicable ALS.

Accomplishment of Part II and Part III of this AD in accordance with Bell ASB 407-24-134, Basic Issue, dated 12 February 2024, prior to the effective date of this AD, also meets the intent of Part II and Part III of this AD.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Jenny Young
Chief, Continuing Airworthiness
Issued on 19 November 2025

Contact:

Nafi Dicko-Raynauld, Continuing Airworthiness, Ottawa, telephone 888-663-3639 or e-mail TC.AirworthinessDirectives-Consignesdenavigabilite.TC@tc.gc.ca or any Transport Canada Centre.