



DATE: March 29, 2024

AD #: 2024-07-51

Emergency Airworthiness Directive (AD) 2024-07-51 is sent to owners and operators of Bell Textron Canada Limited Model 429 helicopters.

Background

This emergency AD was prompted by multiple reports of tail rotor (T/R) blade abrasion strip cracks. Transport Canada, which is the aviation authority for Canada, has issued Transport Canada Emergency AD CF-2024-11, dated March 22, 2024 (Transport Canada AD CF-2024-11), to correct an unsafe condition on certain serial-numbered Bell Textron Canada Limited Model 429 helicopters. Transport Canada states that an investigation revealed a manufacturing defect in certain serial-numbered T/R blades part number 429-016-101-105. Transport Canada further states that a critical step in the fabrication of the abrasion strip was missed, which could result in the presence of stress risers, leading to fatigue cracking. Accordingly, Transport Canada AD CF-2024-11 requires inspecting the T/R blade abrasion strips and, depending on the results, replacing or marking the T/R blade. Thereafter, Transport Canada AD CF-2024-11 requires repetitively checking the T/R blade abrasion strips and, depending on the results, replacing the T/R blade. Lastly, Transport Canada AD CF-2024-11 requires repetitively inspecting the T/R blade abrasion strips and, depending on the results, replacing the T/R blade or reapplying the marking.

This emergency AD is intended to detect a cracked T/R blade abrasion strip. This condition, if not addressed, could result in severe imbalance, T/R blade failure, loss of the T/R gearbox, loss of directional control, and subsequent loss of control of the helicopter.

Related Service Information

The FAA reviewed Bell Alert Service Bulletin 429-24-63, dated March 21, 2024 (ASB 429-24-63). For certain serial-numbered T/R blades part number 429-016-101-105, this service information specifies procedures for cleaning the T/R blade abrasion strip and, using a bright light, visually inspecting each side of the T/R blade abrasion strip for a chordwise crack. If there is a crack, this service information specifies procedures for replacing the T/R blade. If there is not a crack, this service information specifies procedures for marking the T/R blade with a paint marker. Following application of the marking, this service information specifies procedures for visually checking each side of the T/R blade abrasion strip for a chordwise crack before each engine start and a longer-term repetitive visual inspection of the T/R blade abrasion strip for a chordwise crack and if necessary, reapplying the marking. If a crack is found as a result of any check or longer-term visual inspection, this service information specifies procedures for replacing the T/R blade.

FAA's Determination

These helicopters have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in its emergency AD and the service information described above. The FAA is issuing this emergency AD after

determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Emergency AD Requirements

This emergency AD requires accomplishing the actions specified in Transport Canada AD CF-2024-11, except as discussed under “Differences Between this Emergency AD and the Transport Canada Emergency AD.”

This emergency AD requires a check that the owner/operator (pilot) holding at least a private pilot certificate may perform and must enter compliance with the applicable paragraph of the emergency AD into the helicopter maintenance records in accordance with 14 CFR 43.9(a) and 91.417(a)(2)(v). The pilot may perform this check because it only involves using a flashlight and visually checking affected T/R blade abrasion strips for a crack. This action could be performed equally well by a pilot or a mechanic. This is an exception to the FAA’s standard maintenance regulations.

Differences Between this Emergency AD and the Transport Canada Emergency AD

Regarding the initial inspection for a chordwise crack, this emergency AD distinguishes requirements if there is or is not any coating (such as a protective tape or protective coating) over the T/R blade abrasion strip, whereas Transport Canada AD CF-2024-11 does not. This emergency AD requires reporting certain information if any T/R blade abrasion strip has a crack, whereas Transport Canada AD CF-2024-11 does not. Transport Canada AD CF-2024-11 allows the installation of an affected T/R blade so long as it passes the inspection and is marked as required within, whereas this emergency AD prohibits installing an affected T/R blade on any helicopter.

Interim Action

The FAA considers that this emergency AD is an interim action. If final action is later identified, the FAA might consider further rulemaking then.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this emergency AD to all known U.S. owners and operators of these helicopters. The FAA has found that the risk to the flying public justifies foregoing notice and comment prior to adoption of this rule because the affected components are part of an assembly that is critical to the control of a helicopter. Multiple T/R abrasion strip cracks have been reported, and investigation revealed that a manufacturing defect exists in some of the abrasion strips, which may lead to fatigue cracking and catastrophic T/R blade failure, which in turn can cause the destruction of the T/R gear box and loss of directional control. At this time, the growth rate of the fatigue cracking has not been determined. For these reasons, the initial actions required by this emergency AD must be accomplished within three days or prior to the second flight after the effective date of this emergency AD, whichever occurs first. Thereafter, other actions required by this emergency AD must be accomplished before the second and each subsequent

flight. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forego notice and comment.

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to take approximately 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. At an estimated labor rate of \$85 per work-hour, the estimated cost to report information is \$85 per T/R blade. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Presentation of the Actual Emergency Airworthiness Directive

The FAA is issuing this emergency Airworthiness Directive under 49 U.S.C. 106(g), 40113, and 44701 according to the authority delegated to me by the Administrator.

2024-07-51 Bell Textron Canada Limited: Project Identifier MCAI-2024-00205-R.

(a) Effective Date

This emergency Airworthiness Directive (AD) is effective upon receipt.

(b) Affected ADs

None.

(c) Applicability

This emergency AD applies to Bell Textron Canada Limited Model 429 helicopters, serial number 57001 and subsequent, certificated in any category, with a tail rotor (T/R) blade part number 429-016-101-105 having a serial number identified in Table 1 of Bell Alert Service Bulletin 429-24-63, dated March 21, 2024 (ASB 429-24-63), installed.

(d) Subject

Joint Aircraft System Component (JASC) Code: 6410, Tail Rotor Blades.

(e) Unsafe Condition

This emergency AD was prompted by multiple reports of T/R blade abrasion strip cracks. The FAA is issuing this emergency AD to detect a cracked T/R blade abrasion strip. The unsafe condition, if not addressed, could result in severe imbalance, T/R blade failure, loss of the T/R gearbox, loss of directional control, and subsequent loss of control of the helicopter.

(f) Compliance

Comply with this emergency AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For each T/R blade identified in paragraph (c) of this emergency AD, within three days or prior to the second flight after the effective date of this emergency AD, whichever occurs first, accomplish the actions required by paragraph (g)(1)(i) or (ii) of this AD, as applicable.

(i) If there is any coating (such as a protective tape or protective coating) over the T/R blade abrasion strip, accomplish further actions in accordance with a method approved by the International Validation Branch, FAA; or Transport Canada; or Bell Textron Canada Ltd.'s Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

(ii) If there is no coating over the T/R blade abrasion strip, clean the abrasion strip by following the Accomplishment Instructions, part I, paragraph 3, of ASB 429-24-63. Using a flashlight, visually inspect both sides of the T/R blade abrasion strip for a chordwise crack in the area shown in Figure 1 of ASB 429-24-63. Figure 2 of ASB 429-24-63 shows an example of a T/R blade abrasion strip crack.

(A) As a result of the actions required by paragraph (g)(1)(ii) of this emergency AD, if there is any chordwise crack, before further flight, remove the T/R blade from service and replace it with an airworthy T/R blade.

(B) As a result of the actions required by paragraph (g)(1)(ii) of this emergency AD, if there is not a crack, before further flight, mark an "X" on the T/R blade with a paint marker as shown in Figure 1 of ASB 429-24-63, except do not use the color blue, orange, red, or green. The letter "X" must have a minimum height of 3 inches.

(2) For each T/R blade marked with an "X," accomplish the actions required by paragraph (g)(2)(i) and (ii) of this emergency AD.

(i) Before the second flight after accomplishing the actions required by paragraph (g)(1)(ii)(B) of this emergency AD, and thereafter before each subsequent flight, using a flashlight, visually check both sides of each abrasion strip for a chordwise crack. A chordwise crack runs from the direction of the leading edge to the trailing edge. A chordwise crack may be a straight or hairline crack. The

owner/operator (pilot) holding at least a private pilot certificate may perform this check and must enter compliance with this paragraph of the emergency AD into the helicopter maintenance records in accordance with 14 CFR 43.9(a) and 91.417(a)(2)(v). The record must be maintained as required by 14 CFR 91.417, 121.380, or 135.439.

(ii) As a result of the actions required by paragraph (g)(2)(i) of this emergency AD, if there is any chordwise crack, before further flight, remove the T/R blade from service and replace it with an airworthy T/R blade.

(3) For each T/R blade marked with an "X," within 25 hours time-in-service after accomplishing the actions required by paragraph (g)(1)(ii)(B) of this emergency AD and thereafter within intervals not to exceed 25 hours time-in-service, clean each abrasion strip by following the Accomplishment Instructions, part III, paragraph 2, of ASB 429-24-63. Using a flashlight, visually inspect each side of the T/R blade abrasion strip for a chordwise crack in the area shown in Figure 1 of ASB 429-24-63. Figure 2 of ASB 429-24-63 shows an example of a T/R blade abrasion strip crack. The actions required by this paragraph do not terminate the actions required by paragraph (g)(2)(i) of this emergency AD.

(i) As a result of the actions required by the introductory text of paragraph (g)(3) of this emergency AD, if there is any chordwise crack, before further flight, remove the T/R blade from service and replace it with an airworthy T/R blade.

(ii) As a result of the actions required by the introductory text of paragraph (g)(3) of this emergency AD, if there is not a crack and the "X" marking is deteriorated or not clearly visible, before further flight, reapply the "X" marking on the T/R blade with a paint marker as shown in Figure 1 of ASB 429-24-63, except do not use the color blue, orange, red, or green. The letter "X" must have a minimum height of 3 inches.

(4) If there is any chordwise crack as a result of any action required by paragraph (g)(1)(ii), (g)(2)(i), or (g)(3) of this emergency AD, within 7 days after completing the action, report the information in Appendix 1 to this emergency AD by email to OperationalSafety@faa.gov.

(5) As of the effective date of this emergency AD, do not install a T/R blade that is identified in paragraph (c) of this emergency AD on any helicopter.

(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this emergency AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (i)(2) of this emergency AD. If sending information directly to the manager of the International Validation Branch, mail it to the address identified in paragraph (i)(2) of this emergency AD or email to: 9-AVS-AIR-730-AMOC@faa.gov. If mailing information, also submit information by email.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(i) Additional Information

(1) Refer to Transport Canada Emergency AD CF-2024-11, dated March 22, 2024, for related information.

(2) For more information about this emergency AD, contact Dan McCully, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone (404) 474-5548; email william.mccully@faa.gov.

(3) For service information identified in this emergency AD, contact Bell Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J 1R4, Canada; phone 1-450-437-2862 or 1-800-363-8023; fax 1-450-433-0272; email productsupport@bellflight.com; or at bellflight.com/support/contact-support. You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

Appendix 1 to Emergency AD 2024-07-51

Report the following information for each cracked tail rotor blade abrasion strip by email to: OperationalSafety@faa.gov.

In the subject line of the email, include the text “Emergency AD 2024-07-51

- (1) Date of inspection or check that revealed a chordwise crack:
- (2) Total hours time-in-service on the tail rotor blade(s) with a cracked abrasion strip:
- (3) Date of previous inspection or check and total hours time-in-service on the tail rotor blade(s) at the date of previous inspection or check:
- (4) Helicopter serial number:
- (5) Helicopter N-number:
- (6) Tail rotor blade serial number(s):

- (7) Indicate if each chordwise crack is on one or both sides of the tail rotor blade. Provide the following information for each chordwise crack: Measurement of the location of each chordwise crack as measured from the tail rotor blade tip and measurement of the length of each chordwise crack as measured from the tail rotor blade leading edge.

- (8) Describe in detail any information and findings, including any previous maintenance or modification of the cracked area, and, if possible, provide photos.

Issued on March 29, 2024.

Victor Wicklund,
Deputy Director, Compliance & Airworthiness Division,
Aircraft Certification Service.