



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-2015-16R3

Effective Date:

14 May 2021

ATA:

64

Type Certificate:

H-107

Subject:

Tail Rotor – Pitch Link Spherical Bearing Accelerated Wear

Revision:

Supersedes AD CF-2015-16R2, issued on 3 April 2017.

Applicability:

Bell Helicopter Textron Canada Limited (Bell) model 429 helicopters, serial numbers 57001 through 57401.

Compliance:

As indicated below, unless already accomplished.

Background:

In-service reports showed that the tail rotor pitch link spherical bearings have experienced early and accelerated wear. On three occasions, bearings have been found worn beyond limits during pre-flight inspection, showing radial and axial play that was easily detectable. In one case, the spherical bearing had separated from the tail rotor pitch link, resulting in damage to the tail rotor blade pitch horn assembly. In another case, the spherical bearing was inspected and found acceptable during a maintenance inspection which occurred 1.2 hours air time before it was found worn beyond limits during pre-flight inspection.

An undetected worn bearing could lead to pitch link failure, resulting in loss of controllability of the helicopter.

AD CF-2015-16 stated that it was applicable to helicopters that have accumulated 50 hours air time or more. There was a possibility that some operators would conclude that no action was required for low time helicopters. Revision 1, CF-2015-16R1, included changes to the Applicability and Corrective Actions to clarify that all model 429 helicopters require recurring inspection.

Revision 2, CF-2015-16R2, specified modified inspection criteria and introduced a requirement to replace the pitch link bearings or the pitch link assembly. Pitch links with new bearings are required to be re-identified to ensure configuration management is possible.

Bell has reported that tail rotor pitch link assemblies can be rotated (end for end) to extend the serviceability life of the bearings. This re-orientation of the pitch links can be conveniently accomplished during the 50-hour interval inspections of Corrective Action 2 of this AD. The re-orientation of the pitch link does not affect the requirement to complete the corrective actions specified in this AD.

This AD revision, CF-2015-16R3, specifies the optional terminating action to the current recurring inspection requirements, through the introduction of a new tail rotor pitch link assembly. With the introduction of the new pitch link assembly, the helicopter applicability has also been revised to account for those new production helicopters that have already incorporated the new pitch link assemblies.

Corrective Actions:

1. Within 10 hours air time from 17 April 2017 (the effective date of AD CF-2015-16R2), or before exceeding 60 hours air time since new, whichever occurs later, perform the following actions in accordance with Part I of the Accomplishment Instructions of Bell Alert Service Bulletin (ASB) 429-15-16 Revision C, dated 16 October 2020, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada. Inspections and part replacements performed in accordance with Revision A or B of the ASB also satisfy the intent of this corrective action.
 - a. Inspect the tail rotor pitch link spherical bearings and sealant. Replace the tail rotor pitch link bearings or the entire assembly, as applicable.
 - b. Verify the part number of the tail rotor pitch link assemblies to determine if they are affected by the Corrective Actions section, paragraph 3 of this AD. The affected part numbers (P/Ns) are pitch link assemblies 429-012-112-101, 429-012-112-103, 429-012-112-101FM and 429-012-112-103FM. These assemblies may contain bearing P/N 429-312-107-103 manufactured prior to 13 January 2015, which must be replaced before they exceed the air time hours specified in paragraph 3.
2. Subsequently, at intervals not exceeding 50 hours air time, repeat the actions specified in the Corrective Actions section, paragraph 1 of this AD.
3. Within 200 hours air time following the completion of paragraph 1 of the Corrective Actions section of this AD, or within 250 hours air time since new of the pitch link assembly, whichever occurs first, perform the following actions. If the total flight hours of the bearings installed in a pitch link assembly are not known or exceed 250 air time hours, complete this action no later than the next inspection required by Corrective Action 2 of this AD:
 - a. Replace the pitch link bearings P/N 429-312-107-103 with new bearings P/N 429-312-107-103 manufactured after 12 January 2015 and re-identify the pitch links as P/Ns 429-012-112-111FM or 429-012-112-113FM, as applicable in accordance with Bell ASB 429-15-16 Revision C, dated 16 October 2020, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada.
 - b. It is also acceptable to replace the pitch link assemblies with new pitch links P/Ns 429-012-112-111 or 429-012-112-113 as applicable. The P/N -111 and -113 pitch links are manufactured with new bearings P/N 429-312-107-103 manufactured after 12 January 2015.
 - c. Bearing replacement in accordance with Bell ASB 429-15-16 Revision A or B also satisfies the intent of this corrective action.
 - d. Subsequently, at intervals not exceeding 50 hours air time, repeat the actions specified in the Corrective Actions section, paragraph 1a of this AD.
4. **Optional Terminating Action:**

The inspections required by paragraph 2 of this AD are no longer required for helicopters that incorporate pitch link assemblies, P/N 429-012-212-105/-107, in accordance with Part III of the Accomplishment Instructions of Bell ASB 429-15-16 Revision C, dated 16 October 2020, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada.
5. Implementation of the corrective actions specified in this AD constitutes terminating action for Corrective Action paragraph 2 of AD CF-2016-01R2.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 30 April 2021

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