



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) to ADs.

Number:

CF-2016-01R2

Effective Date:

26 April 017

ATA:

64

Type Certificate:

H-107

Subject:

Tail Rotor – Pitch Link Corrosion

Revision:

Supersedes AD CF-2016-01R1 issued 10 February 2016.

Applicability:

Bell Helicopter Textron Canada Limited (BHTC) model 429 helicopters, serial numbers 57001 and subsequent.

Compliance:

As indicated below, unless already accomplished.

Background:

A model 429 helicopter experienced an in-flight failure of a tail rotor pitch link, resulting in noticeable vibration and difficulty controlling the helicopter. A safe landing was completed with no injuries; however there was collateral damage to the tail rotor system in addition to the failed pitch link.

Investigation revealed that the pitch link had fractured. A crack had initiated at a corrosion pit located between the roll staked lip of the part number (P/N) 429-312-107-103 bearing and the beveled edge of the P/N 429-012-112-103 tail rotor pitch link. Further investigation revealed deficiencies in the application of corrosion resistant finishes to the pitch link during the manufacturing process. These deficiencies allowed the corrosion pit to develop.

Investigation revealed that pitch link assemblies, P/N 429-012-112-101 and 429-012-112-103, are potentially affected by this condition. This AD and the BHTC Alert Service Bulletin (ASB) 429-15-26 apply to both part numbers. Spare parts are also potentially affected by this condition.

ASB 429-15-26 provides instructions to clean and inspect the pitch links for corrosion. It also provides instructions to modify pitch links that are free of corrosion by applying corrosion preventative sealant and re-identifying them as P/N 429-012-112-101FM or 429-012-112-103FM.

Undetected corrosion of the pitch link could lead to pitch link failure, resulting in loss of controllability of the helicopter.

Revision 1 of this AD provided clarification of the affected part numbers and the action required for the installation of spare parts. An additional corrective action was added to verify that pitch links that were installed to replace corroded pitch links have been inspected and modified.

Revision 2 of this AD adds the Revision section, which was omitted from the previous version of the AD. It also adds a terminating action in the Corrective Actions section.

The tail rotor pitch links of the model 429 helicopter have failed in-service due to two separate conditions. Lack of effective corrosion protection is addressed by this AD. Wear of the pitch link spherical bearing is addressed by Transport Canada AD CF-2015-16R2. The corrective actions required by AD CF-2015-16R2 are sufficient to mitigate safety risks associated with corrosion of the tail rotor pitch links and with wear of the pitch link spherical bearing.

Corrective Actions:

1. Within 10 hours air time from the effective date of Revision 1 of this AD (24 February 2016):
 - a. Remove and inspect the tail rotor pitch link assemblies P/N 429-012-112-101 and 429-012-112-103 in accordance with Part I of BHTC ASB 429-15-26, dated 7 December 2015, or later revision approved by the Chief, Continuing Airworthiness, Transport Canada. Pitch links that have previously been inspected / modified in accordance with ASB 429-15-26 or the original issue of this AD are exempted from this requirement.
 - b. Before re-installing a pitch link that was found to be free of corrosion during corrective action 1.a. above, modify the pitch link in accordance with Part I of the ASB noted above.
 - c. Replace any pitch links found corroded during the inspection with modified pitch link P/N 429-012-112-101FM or 429-012-112-103FM as applicable.
 - d. Verify that any pitch links installed since 7 December 2015 (the issue date of ASB 429-15-26) are modified pitch links P/N 429-012-112-101FM or 429-012-112-103FM. If an unmodified pitch link was installed, it shall be inspected and modified or replaced in accordance with corrective actions 1.a., 1.b. and 1.c. of this Directive before further flight.
2. Subsequently, at intervals not exceeding 50 hours air time, inspect the tail rotor pitch links for the condition of applied sealant in accordance with Part II of the ASB noted above. This inspection may be performed with the pitch links installed on the helicopter. If the sealant is found missing or damaged, remove, inspect, modify / replace the pitch link in accordance with Part I of the ASB noted above, before further flight.
3. As of the effective date of this AD, it is prohibited for anyone to allow installation of an unmodified pitch link P/N 429-012-112-101 or 429-012-112-103.
4. Implementation of the corrective actions specified in AD CF-2015-16R2 or later revisions are considered as terminating action for Corrective Action paragraph 2 of this AD.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 12 April 2017

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