



A Textron Company

ALERT SERVICE BULLETIN

429-15-16

18 February 2015

Revision A, 27 April 2016

Revision B, 15 June 2016

Revision C, 16 October 2020

MODEL AFFECTED: 429

SUBJECT: TAIL ROTOR PITCH LINK BEARING, INSPECTION AND UPGRADE OF.

HELICOPTERS AFFECTED: Serial numbers 57001 through 57401.

[Serial number 57310 through 57401 are only required to accomplish **Part I** of this bulletin as parts installed at time of delivery are not affected by **Part II**.]

[Serial number 57402 and subsequent are not affected by this bulletin.]

COMPLIANCE: **Part I** – Within 50 flight hours and every 50 flight hours thereafter.

Part II – Within 200 flight hours following completion of **Part I**.

Part III – At customer's option

DESCRIPTION:

Bell Helicopter has received reports of tail rotor pitch link assemblies 429-012-112-101/-103 with bearings 429-312-107-103 worn beyond the published limits and bearing liner failures. Tail rotor pitch link assemblies 429-012-112-101/-103 were required to be modified per Alert Service Bulletin (ASB) 429-15-26 by March 7, 2016.

Revision A of this ASB has been revised in its entirety. It introduces revised inspection instructions as well as a mandatory bearing 429-312-107-103 replacement for bearings

manufactured prior to January 13, 2015 and that have accumulated 250 flight hours or more in service, or if their actual time in service is unknown.

Revision B of this ASB incorporates changes to the **WARRANTY** section, **MANPOWER** section, **MATERIAL** section, and **Part II**.

Revision C of this ASB introduces changes to the **HELICOPTERS AFFECTED**, **MATERIAL** and **MANPOWER** sections as well as adds **Part III** which provides the terminating action for **Part I**. The references to the Maintenance Manual have also been updated.

Part I provides the instructions for the tail rotor pitch link assembly inspection requirements. **Part II** provides the instructions to upgrade the tail rotor pitch link assemblies 429-012-112-101FM/-103FM to address the reported issues and provides component reidentification instructions. If the tail rotor pitch link assembly bearings have exceeded 250 flight hours, or the total flight hours of the bearings is unknown, **Part II** is to be accomplished within 50 flight hours, but not to exceed the next scheduled inspection of **Part I**. Helicopters that have already complied with the recurring inspection requirement of the original release of this ASB may use the same inspection schedule for the recurring inspection of **Part I** of **Revision A** of this ASB. **Part III** provides the instructions to install the tail rotor pitch link assemblies 429-012-212-105/-107 as a terminating action to **Part I** of this bulletin.

Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

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 2.0 man-hours are required to complete **Part I** of this bulletin. Approximately 3.0 man-hours are required for each affected tail rotor pitch link assembly to complete **Part II** of this bulletin. Approximately 1.0 hour is 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:

Owners/operators of Bell helicopters who comply with the instructions in this ASB will be eligible to receive replacement bearings and labor coverage. Should you not have the capability to replace the bearings, pitch links may be returned to Bell Helicopter Piney Flats or a Bell Helicopter approved Customer Service Facility (CSF) for repair and upgrade to 429-012-112-111FM/-113FM. Based on availability, at Bell Helicopter's discretion, upgraded pitch links may be provided, which will require return of the core as an exchange alternative.

Labor entitlement for **Part I step 4.a.ii** and **Part II** bearing replacement per T/R pitch link assembly:

\$300.00 USD per individual pitch link or up to a maximum of \$1200.00 USD for a ship set of four pitch links.

To receive parts, labor, under warranty:

- Comply with the instructions contained in this bulletin no later than 31 December 2017.

NOTE: Owners/operators who fail to comply with the instructions in this bulletin before 31 December 2017, will not be eligible for the special warranty listed above.

MATERIAL:

Required Material:

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Supply Center.

| <u>Part Number</u> | <u>Nomenclature</u> | <u>Qty (Note)</u> |
|--------------------|---------------------|-------------------|
| 429-012-112-111 | Pitch Link Assembly | 2 (1) |
| 429-012-112-113 | Pitch Link Assembly | 2 (1) |
| 429-312-107-103 | Bearing | 8 (2, 3) |
| 429-012-212-105 | Pitch Link Assembly | 2 (4, 5) |
| 429-012-212-107 | Pitch Link Assembly | 2 (4, 5) |

NOTES:

1. New pitch link assemblies may be purchased. Existing pitch link assemblies may be Field Modified (FM) per the instructions in **Part II** of this bulletin, which will then be identified as 429-012-112-111FM and 429-012-112-113FM, as applicable.
2. Only required when pitch link assemblies are Field Modified (FM) per the instructions in **Part II** of this bulletin.
3. Prior to installation, make sure the manufacture date on the external surface of the outer race of the bearing is identified as January 13, 2015 or later.

4. Only required to comply with **Part III** of this bulletin.
5. Pitch links are replaced on an attrition basis.

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.

| <u>Part Number</u> | <u>Nomenclature</u> | <u>Qty (Note)</u> | <u>Reference *</u> |
|--------------------|---|-------------------|--------------------|
| 2010-05988-00 | SEALANT-TY I-2, CL1,GR A - MIL-PRF-81733 | A/R | C-251 |
| N/A | Isopropyl Alcohol | A/R (1) | C-285 |
| 1650-03296-00 | Wire, Safety, CRES, 0.032", AS100028 | A/R | C-405 |
| 2000-00697-00 | Adhesive, Epoxy, Metal Repair & Fairing Compound (DEVCON 2-TON) | A/R (2) | C-298 |
| MS24665-155 | Cotter Pin | A/R | |

* C-XXX numbers refer to the consumables list in the BHT-ALL-SPM, Standard Practices Manual

NOTES:

1. Procurable through local commercial distributors.
2. Dupont IMRON 500S CLEAR may be used as an acceptable alternate. It may be procurable through local commercial distributors or as 2230-05511-00 through your Bell Helicopter Supply Center.

SPECIAL TOOLS:

Refer to the BHT-429-MM-1, Chapter 67 for the cutting, roll staking tool, and workaids.

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

- BHT-429-IPB, Illustrated Parts Breakdown, Chapter 67
- BHT-429-MM-1, Maintenance Manual, Chapter 67
- BHT-ALL-SPM, Standard Practice Manual, Chapters 3 and 4

PUBLICATIONS AFFECTED:

BHT-429-MM-1, Maintenance Manual, Chapters 1 and 67
BHT-429-IPB, Illustrated Parts Breakdown, Chapter 67

ACCOMPLISHMENT INSTRUCTIONS:

Part I - Tail Rotor Pitch Link Assembly Inspection

1. Prepare the helicopter for maintenance.

CAUTION

When removing or installing the lockwire in the tail rotor pitch horns, pay particular attention to prevent damage to the lockwire attachment hole.

-NOTE-

At customer option, the links can be rotated (end for end) during the 50 flight hour inspection intervals of **Part I** in order to extend the serviceability life of the bearings. Note the orientation of the tail rotor pitch link assemblies before removal.

2. Verify the part number of the tail rotor pitch link assemblies to determine if affected by **Part II** of this bulletin.
 - a. If affected, make sure compliance to **Part II** of this bulletin is accomplished within the allowable compliance period.
3. Remove the tail rotor pitch link assemblies from all four locations (DMC-429-A-67-20-00-13A-520A-A).
4. Perform a dimensional check of both axial and radial play (DMC-429-A-67-20-00-11A-310A-A). With a 10X magnifying glass, visually inspect the bearing liner condition for cracks or deterioration of the liner or if the liner extrudes out of the plane (Figure 1).
 - a. Replace any bearing that exceeds the allowable limits and/or if cracks or deterioration of the bearing liner are noted.

- i. Perform **Part II** of this ASB or replace the affected tail rotor pitch link assembly with an acceptable part.
 - ii. If **Part II** has already been accomplished on the affected tail rotor pitch link assembly, replace the bearing per the instructions in the 429 Maintenance Manual (DMC-429-A-67-20-00-11A-600A-A) or replace the tail rotor pitch link assembly with an acceptable part.
5. Inspect the tail rotor pitch link assembly sealant (C-251) for condition.
 - a. Make sure there are no pin holes or voids present in the sealant.
 - b. The thickness of the sealant should not exceed 0.025 inch (0.64 mm), should extend over the roll staked lip by a minimum of 0.030 inch (0.76 mm), and remain clear of the bearing ball.

-NOTE-

Tail rotor pitch link assemblies can be rotated (end for end) during the 50 flight hour inspection intervals of **Part I** in order to extend the serviceability life of the bearings.

6. Reinstall the tail rotor pitch link assemblies (DMC-429-A-67-20-00-13A-720A-A).
7. Make an entry in the helicopter logbook indicating compliance with **Part I** of this Alert Service Bulletin.

Part II - Tail Rotor Pitch Link Assembly Upgrade

-NOTE-

Tail rotor pitch link assembly bearing replacement is mandatory for bearings manufactured prior to January 13, 2015 that reach 250 flight hours in service or if the time in service cannot be determined.

-NOTE-

As an alternate method to the following procedure, affected tail rotor pitch link assemblies may be returned through Bell Helicopter Customer Property Return (CPR), or to a Bell Helicopter approved Customer Service Facility (CSF), to have parts upgraded to the 429-012-112-111FM and 429-012-112-113FM configurations. Refer to the procedures detailed in the General Information Letter (IL) GEN-04-98 Revision E (or subsequent) for the return of the parts.

1. Remove both bearings from the affected tail rotor pitch link assembly (DMC-429-A-67-20-00-11A-600A-A).

-NOTE-

Only tail rotor pitch link assembly bearings manufactured on or after January 13, 2015, as marked on the outer race of the bearing, shall be installed.

2. Prior to installation, note the manufacture date of each bearing 429-312-107-103 for use later in the procedure. The manufacturing date will be stamped on the outer race of the bearing.

-NOTE-

Only bearings manufactured after January 13, 2015 are acceptable to be installed.

3. Install the new bearing 429-312-107-103 (DMC-429-A-67-20-00-11A-600A-A).
4. Clean the affected area with isopropyl alcohol (C-285). Apply corrosion preventative sealant (C-251) to the bearing roll stake lip and the pitch link (Figure 2).
 - a. Make sure there are no pin holes or voids present in the sealant.
 - b. The thickness of the sealant should not exceed 0.025 inch (0.64 mm), should extend over the roll staked lip by a minimum of 0.030 inch (0.76 mm), and remain clear of the bearing ball.
5. Reidentify the tail rotor pitch link assembly with a white permanent fine point marker, or equivalent, as follows:
 - a. Reidentify the pitch link assembly 429-012-112-101FM as 429-012-112-**111FM**.
 - b. Reidentify the pitch link assembly 429-012-112-103FM as 429-012-112-**113FM**.
 - c. Apply a coat of DEVCON 2-TON (C-298) on top of the new part number after the ink dries.

-NOTE-

Tail rotor pitch link assemblies 429-012-112-101FM/-111FM/-111 may be intermixed on helicopter S/N 57001 and subsequent. Tail rotor pitch link assemblies 429-012-112-103FM/-113FM/-113 may be intermixed on helicopter S/N 57001 and subsequent.

-NOTE-

Create a Historical Service Record (HSR) card of your own or download a blank form from the following link <http://www.bellhelicopter.net>.

6. Create a component Historical Service Record (HSR) sheet for the tail rotor pitch link assembly 429-012-112-111FM/-113FM, as applicable.
 - a. Record on the HSR the tail rotor pitch link assembly part number, serial number, and the manufacture date of each of the bearings 429-312-107-103 installed in the assembly as noted in step 2.
7. Install the tail rotor pitch link assembly (BHT-429-MM-1, Chapter 67).
8. Make an entry in the helicopter logbook and the Historical Service Record indicating compliance with **Part II** of this Alert Service Bulletin.

Part III - Terminating Action to the Recurring 50 hour inspection Defined in Part I of this Bulletin.

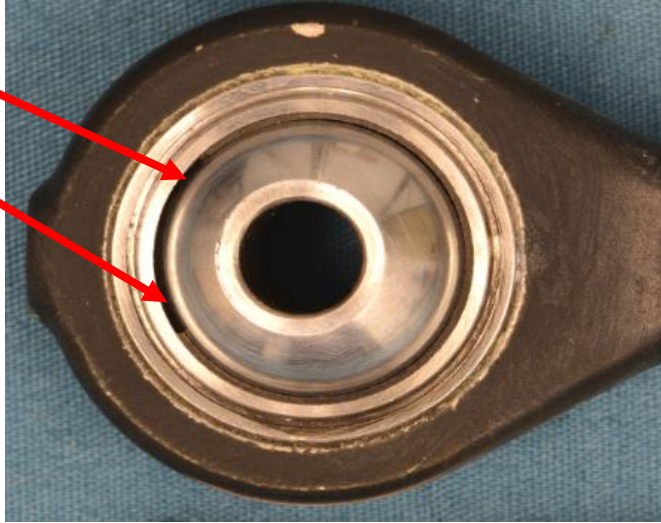
1. Prepare the helicopter for maintenance.

-NOTE-

It is permissible to have a mixed configuration of tail rotor pitch link assemblies 429-012-112-111/-111FM/-113/-113FM and 429-012-212-105/-107. **PART I** of this ASB will still apply to the 429-012-112-111/-113/-111FM/-113FM for any mixed configuration.

2. Remove the existing tail rotor pitch link assemblies 429-012-112-111/-111FM/-113/-113FM (DMC-429-A-67-20-00-13A-520A-A).
3. Install the new tail rotor pitch link assemblies 429-012-212-105/-107 (DMC-429-A-67-20-00-13A-720A-A).
4. Make an entry in the helicopter logbook indicating compliance with **Part III** of this Alert Service Bulletin once all the tail rotor pitch links assemblies have been replaced.

Missing Liner



Bearing Liner Extruding



Note: Sealant (C-251) not shown on pitch link and bearing roll stake lip for clarity.

Figure 1 – Tail Rotor Pitch Link Bearing Liner



Sealant (C-251)

Figure 2 – Example of Sealant (C-251) Installation