LUFTFARTSVERKET
Luftfartsinspektionen

LUFTVÄRDIGHETSDIREKTIV (LVD)

A Motordrivna Luftfartyg
Bell Helicopter Textron Canada
LVD Nr 2-2876 R1
Upphäver 2-2876

Sektion 2. Utlandstillverkad flygmateriel

TITEL: **Kontroll av stjärtrotorväxel**

GÄLLER: Bell Helicopter Textron Canada Modell 407.

ÅTGÄRD: Utför åtgärder enligt bifogad kopia av Transport Canada AD CF-1998-09R1

TID FÖR ÅTGÄRD: Inom 300 flygtimmar räknat från senast utförda 300 timmars kontroll eller senast 27 december 2002.

UNDERLAG: Bell Helicopter Textron Canada Alert Service Bulletin 407-97-14 Revision C daterad 4 december 2001 eller senare utgåva.

REFERENS: TC CF-98-09R1

BESLUTSDATUM: 6 februari 2002

LFS 2002:25

Åtgärder enligt LVD utgör nödvändig förutsättning för ifrågavarande flygmateriels luftvärdighet. Referens BCL M 1.11.
Anteckning om åtgärd, som vidtagits i enlighet med LVD, skall införas i teknisk journal för berörd flygmateriel med hänvisning till ifrågavarande LVD-nummer. Angivet underlag refererar till senast gällande revision/utgåva. LVD utges i luftfartsverkets författningssamlingar LFS.

Postadress	Gatuadress	Telefonnummer	Faxnummer	Telegram	Telex
601 79 NORRKÖPING	Vikobplan 11	011-19 20 00	011-19 25 75	Civilair Norrköping	62450

No. CF□1998□09R1

Issue Date: 28 January 2002

AIRWORTHINESS DIRECTIVE

The following airworthiness directive (AD) may be applicable to an aircraft which our records indicate is registered in your name. ADs are issued pursuant to **Canadian Aviation Regulation (CAR) 593.** Pursuant to **CAR 605.84** and the further details of **CAR Standard 625, Appendix H**, the continuing airworthiness of a Canadian registered aircraft is contingent upon compliance with all applicable ADs. Failure to comply with the requirements of an AD may invalidate the flight authorization of the aircraft.
Alternative means of compliance shall be applied for in accordance with **CAR 605.84** and the above-referenced **Standard.**

This AD has been issued by the Continuing Airworthiness Division (AARDG), Aircraft Certification Branch, Transport Canada, Ottawa, telephone (613) 952□4357.

Number: **CF□1998□09R1**

Subject: **Bell 407 □ Tail rotor gearbox**

Effective: 1 March 2002

Revision: Supersedes Airworthiness Directive (AD) CF□98□09

Applicability: Bell Helicopter Textron Canada (BHTC) Model 407 Helicopters.

Compliance: As indicated, unless already accomplished.

Background: The nuts that attach the tail rotor gearbox to the tailboom have been found loose upon inspection. It is believed that this occurrence is due to installation issues. BHTC has developed a new procedure for installation of the tail rotor gearbox with a specific torque check requirement after installation. This new installation procedure differs from what was previously mandated.

Corrective Actions: Within 300 hours air time since the last 300 hours inspection but not later than 27 December 2002 remove the tail rotor gearbox from the helicopter and perform a gearbox re□installation as outlined in Part I of BHTC Alert Service Bulletin (ASB) 407□97□14 Revision C dated 4 December 2001, or later revision approved by Chief Continuing Airworthiness, Transport Canada.

Authorization: For Minister of Transport

B. Goyaniuk
Chief, Continuing Airworthiness

Contact: Mr. Bogdan Gajewski, Continuing Airworthiness, Ottawa, telephone (613) 952□4450, facsimile (613) 996□9178 or e□mail gajewsb@tc.gc.ca or any Transport Canada Centre.

Pursuant to **CAR 202.51** the registered owner of a Canadian aircraft shall, within seven days, notify the Minister In writing of any change of his or her name or address. To request a change of address, contact the Civil Aviation Communications Centre (AARA) at Place de Ville, Ottawa, Ontario K1A ON8 or 1□800□305□2059, or http://www.tc.gc.ca/aviation/pubs/Index.htm

ALERT SERVICE BULLETIN

REVISION NOTICE

Bell Helicopter TEXTRON

A Subsidiary of Textron Inc.

DATE 12-04-01

TO: **All Bell 407 Helicopters Owners/Operators**

SUBJECT: **REVISION "C" TO ALERT SERVICE BULLETIN 407-97-14, TAIL ROTOR GEARBOX P/N 406-040-400-ALL, TORQUE CHECK AND INSTALLATION PROCEDURES, MODIFICATION OF.**

Alert Service Bulletin 407-97-14 Rev. B was revised for the following reasons:

- Change the tail rotor gearbox installation primer application.
- Oversize the tail rotor gearbox pin holes in the tail boom support.
- Increase the torque on the nuts attaching the tail rotor gearbox to the Tailboom to 140 to 160 in-lbs.

7851 60046 REV 1198

AN APPROPRIATE ENTRY SHOULD BE MADE IN THE AIRCRAFT LOG BOOK UPON ACCOMPLISHMENT

IF OWNERSHIP OF AIRCRAFT HAS CHANGED PLEASE FORWARD TO NEW OWNER

ALERT SERVICE BULLETIN

Bell Helicopter TEXTRON
A Subsidiary of Textron Inc.

NO. 407-97-14
DATE 12-10-97
PAGE 1 of 9

DATE 12-04-01
REV "C"

MODEL AFFECTED: 407

SUBJECT: TAIL ROTOR GEARBOX PN 406-040-400-ALL TORQUE CHECK AND INSTALLATION PROCEDURES, MODIFICATION OF

HELICOPTERS AFFECTED:

PART I: Helicopter Serial Number 53505 and subsequent will have the intent of Part I of this bulletin completed before delivery. C

PART II: Helicopter Serial Numbers 53000 and subsequent are affected by Part II of this bulletin.

COMPLIANCE:

PART I: Do PART I of this bulletin at the next tail rotor gearbox schedule torque check inspection if one or more of the nuts move.

If the nuts do not move do PART I of this bulletin whenever the tail rotor gearbox is removed or at the next annual inspection. C

PART II: Do a torque check of the tail rotor gearbox 10 to 25 flight hours after installation. Do the torque check again each 10 to 25 hours of operation until torque becomes stable. Repeat torque check every 300 hours thereafter.

DESCRIPTION:

Bell Helicopter has received reports that the four (4) nuts which attach the tail rotor gearbox to the tailboom loosened after initial installation. This bulletin describes a new procedure to install the tail rotor gearbox and outlines a torque check procedure for the tail rotor gearbox attachment nuts.

APPROVAL:

The engineering design aspects of this Alert Service Bulletin are Transport Canada approved.

7851 55192 REV 1198

AN APPROPRIATE ENTRY SHOULD BE MADE IN THE AIRCRAFT LOG BOOK UPON ACCOMPLISHMENT
IF OWNERSHIP OF AIRCRAFT HAS CHANGED PLEASE FORWARD TO NEW OWNER

Accomplishment of the tail rotor gearbox hardware torque check as per PART II of Bell Alert Service Bulletin Number 407-97-14, Revision C, dated 4 December 2001, is approved by the manager, Regulations Group, Rotorcraft Directorate, FAA, by letter dated 21 November 2001, as an Alternate Means Of Compliance (AMOC). It is considered terminating action of the tail rotor AD 97-24-17 Step (e) (Tail Rotor Gearbox Attachment Inspection) for US registered Bell Model 407 helicopters. C

MANPOWER:

Approximately 3.0 man-hours are necessary to complete Part I of this bulletin. Approximately 0.25 man-hour is necessary to complete Part II of this bulletin. Man-hours are based on hands on time and can change because of the personnel and facilities available.

MATERIAL:

Consumable Material:

The following material is required to accomplish this Alert Service Bulletin; however, this material is consumable (bench stock) material and does not require ordering depending on the operators consumable material stock levels. This material can be obtained through your Bell Helicopter Textron Supply Center.

PART NUMBER	NOMENCLATURE	REFERENCE NO
MILS81733TY II-2 4OZ	SEALANT (NOTE)	C-392
MIL-P-85582,TY1,CL2	PRIMER	C-204
TT-N-95TYII 1GAL	ALIPHATIC NAPHTA	C-305
MIL-C-81706 1 QT	CHEMICAL FILM TREATMENT	C-100 C

-NOTE-

MILS81733TY II-2 is a two part sealant which must be used within two hours after being mixed. (MILS81733TY II-1/2 must be used within ½ hour after mixing).

-NOTE-

The "C"REFERENCE NO(s) above are a cross-reference to the consumable list found in the Standard Practice Manual.

SPECIAL TOOLS:

Not applicable.

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-407-MM-7, Rev. 2-1, June 1996.

Chapter 65, Tail Rotor Drive System.

BHT-ALL-SPM, Reissue, 11 October 1996.

Chapter 4, Painting.

Chapter 13, Consumable Materials.

BHT-407-CR&O, 6 June 1997.

Chapter 20, Standard Practices.

PUBLICATIONS AFFECTED:

BHT-407-MM-7, Rev. 5-18, 18 July 1997.

Chapter 5, Special Inspection.

BHT-407-MM-7, Rev. 2-1, June 1996.

Chapter 65, Tail Rotor Drive System.

ACCOMPLISHMENT INSTRUCTIONS:

Part I

-NOTE-

It is not necessary to remove the tail rotor hub and blade assembly and the pitch change mechanism.

1. Remove the tail rotor gearbox. Refer to BHT-407-MM-7, Chapter 65.

2. Examine the studs, the dowel pins, the tail rotor gearbox housing, and the tailboom support for condition and security.

3. Remove and discard the four (4) pieces of barrier tape used between the mating faces of the tail rotor gearbox and the tailboom support. It is not necessary to use barrier tape.

4. Enlarge the two dowel pin holes of tailboom support as follows (Figure 2):

C a. Remove the primer from the areas (Figure 1, View B) with paint remover. Refer to the BHT-ALL-SPM, Chapter 4. As an alternative procedure, you can use Plastic Media Blasting to remove the paint. Refer to BHT-ALL-SPM, Chapter 3.

   b. Use a machinist square, Snap On PMF122 or equivalent, to maintain reamer perpendicular to the dowel pin holes as shown in Figure 2.

   c. Ream the dowel pin holes between 0.257 to 0.259 inch diameter.

   d. Inspect the area with a 10 magnifying glass for cracks.

   e. Apply Chemical Film Treatment (C-100) to the dowel pin holes.

   f. Re-identify the tailboom support as follows:

      407-030-833~~-101~~-103

5. Remove the paint and the primer from the areas (Figure 1, View A) with paint remover. Refer to the BHT-ALL-SPM, Chapter 4. As an alternative procedure, you can use Plastic Media Blasting to remove the paint. Refer to BHT-ALL-SPM, Chapter 3.

6. Apply Chemical Film Treatment to areas as per Figure 1, View A. Refer to BHT-ALL-SPM, Chapter 3, under bolded title **Magnesium Touchup Treatment Solution**.

7. Make sure that the four (4) stud holes and the two (2) dowel pin holes do not have primer in them.

8. Install the tail rotor gearbox as follows:

   a. Clean with solvent (C-305) the surface of the tailboom support where you install the tail rotor gearbox (View A).

   b. Apply primer (C-204) to the two (2) dowel pins and the shank of the four (4) studs shown in Figure 1, View C. The tail rotor gearbox must be installed on the tailboom support while the primer is wet.

   c. Apply sealant (C-392) to the areas shown in Figure 1, View A.

   -NOTE-

   Do not use barrier tape between the mating faces of the tail rotor gearbox and the tailboom support. C

   d. In less than 15 minutes after you apply the sealant, apply torque of 140 to 160 inch-pounds (15.8 to 18.0 Nm) to the four (4) nuts that attach the tail rotor gearbox. Use the tail rotor gearbox work aid, Figure 3, to install the aft left hand nut.

   e. Complete the installation of the tail rotor gearbox. Refer to BHT-407-MM-7, Chapter 65.

   f. One hour after you torque, apply torque of 140 to 160 inch-pounds (15.8 to 18.0 Nm) again to adjust for the movement of the sealant .

9. Make an entry in the helicopter historical records to show that you have completed Part I of this Alert Service Bulletin.

10. Make an entry in the Alert Service Bulletin section of the Maintenance Manual to show that Part I of this Alert Service Bulletin has been accomplished.

Part II

1. Perform the following torque check 10 to 25 flight hours after the installation of the tail rotor gearbox as follows:

C

   a. Apply a torque of 147 inch-pounds (minimum torque 140 inch-pounds + tare torque 7 inch-pounds) to the gearbox attachment nuts. If the nuts do not move, the test is complete.

   b. If one or more of the nuts move, apply a torque of 160 inch-pounds + the specific tare torque to the nut(s) that moved and do the torque check procedure again each 10 to 25 flight hours until the torque is stable.

2. After the torque has stabilized, repeat the torque check every 300 hours thereafter.

3. Make an entry in the helicopter historical records to show that you have completed Part II of this Alert Service Bulletin.

4. Make an entry in the Alert Service Bulletin portion of the Maintenance Manual to show that Part II of this Alert Service Bulletin is completed.

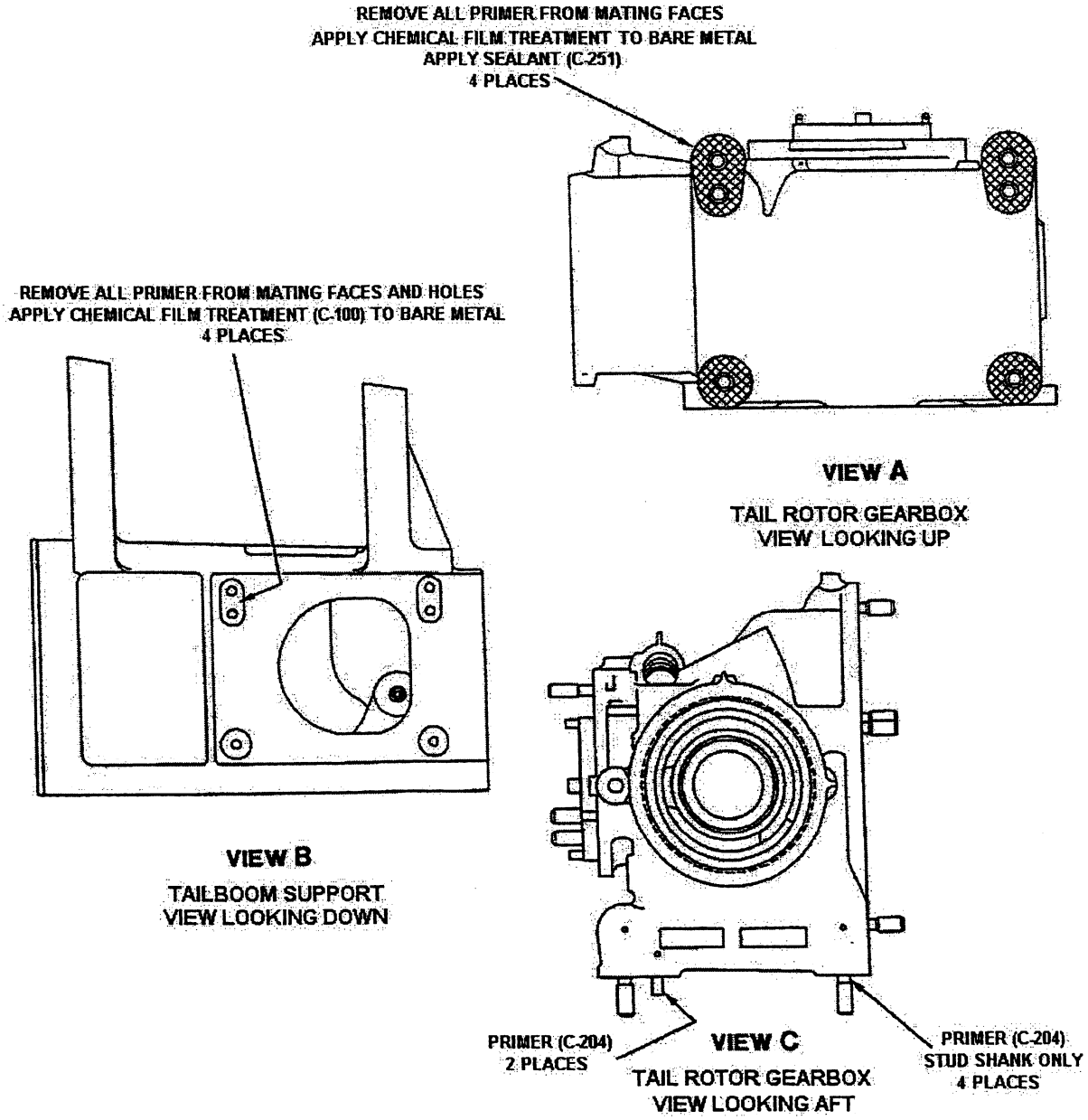

Figure 1. Paint – Removal.

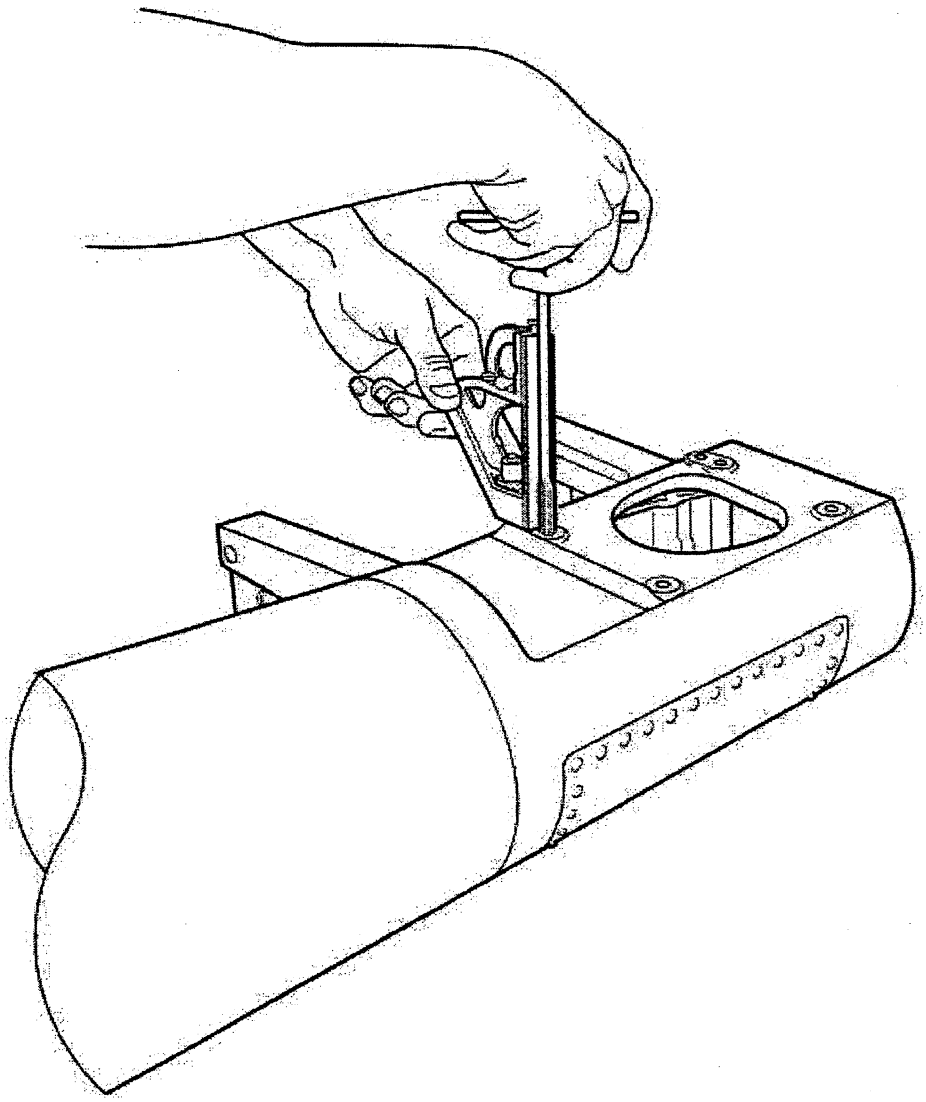

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Figure 2. Tailboom – Modification.

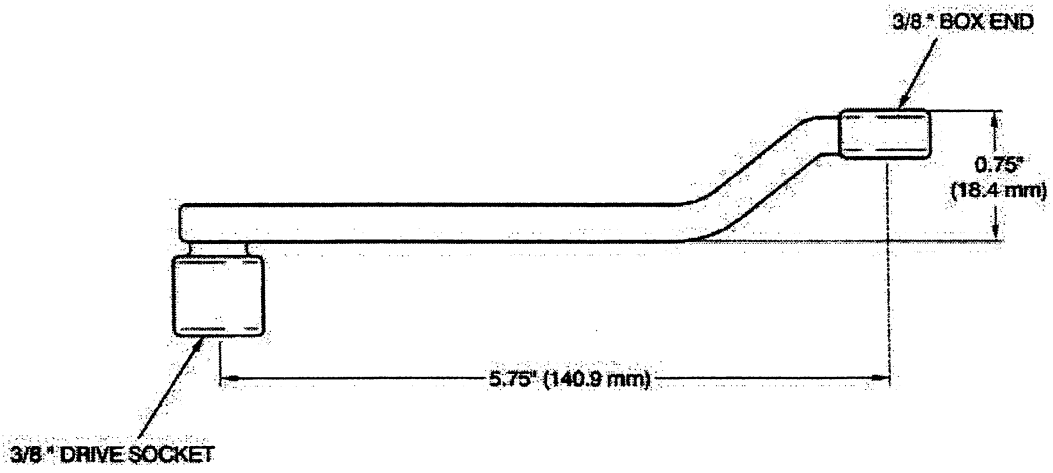

Figure 3. Work aid – Field fabricated.