

EMERGENCY AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

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DATE: November 13, 2002

AD #: 2002-23-51

Send to all U.S. owners and operators of Bell Helicopter Textron Canada (Bell) Model 407 helicopters.

This Emergency Airworthiness Directive (AD) is prompted by two reported failures of the stud from a swashplate drive link assembly, part number (P/N) 406-010-426-101. One or both swashplate drive link cup washers (cup washer), P/N 406-010-412-101, may have been installed incorrectly. This condition, if not detected, could limit the travel of the swashplate outer ring and lead to stud failure, failure of both swashplate drive link studs, and loss of control of the helicopter.

The FAA has reviewed Bell Helicopter Textron Alert Service Bulletin (ASB) No. 407-02-55, dated October 29, 2002, which describes procedures for a one-time visual check of both cup washers to ensure that they are correctly installed. The check must be accomplished before further flight.

Transport Canada, the airworthiness authority for Canada, notified the FAA that an unsafe condition may exist on this helicopter model. Transport Canada advises that if the cup washers are installed upside down, they can contact the swashplate outer ring, P/N 406-010-411-117, resulting in stud failure and loss of control of the helicopter. Transport Canada classified the ASB as mandatory and issued AD No. CF-2002-46, dated November 6, 2002, to ensure the continued airworthiness of these helicopters.

This helicopter model is manufactured in Canada and is type certificated for operation in the United States under the provisions of 14 CFR 21.29 and the applicable bilateral agreement. Pursuant to the applicable bilateral agreement, Transport Canada has kept the FAA informed of the situation described above. The FAA has examined the findings of Transport Canada, reviewed all available information, and determined that AD action is necessary for products of this type design that are certificated for operation in the United States.

The visual check required by this AD may be performed by an owner/operator (pilot), and must be entered into the aircraft records showing compliance with paragraph (a)(1) of this AD in accordance with sections 43.11 and 91.417(a)(2)(v) of the Federal Aviation Regulations (14 CFR sections 43.11 and 91.417(a)(2)(v)). This AD allows a pilot to perform this check because it involves only a visual check to ensure that cup washers are correctly installed.

The unsafe condition described previously is likely to exist on other helicopters of the same type design. Therefore, this AD requires, before further flight, a visual check to ensure the two cup washers are installed correctly. If the cup washers are not installed correctly, replace the swashplate

outer ring, each cup washer that was installed incorrectly, and the bearing, liner, and drive link of the incorrectly installed cup washer. The actions are required to be accomplished in accordance with the ASB described previously.

This rule is issued under 49 U.S.C. Section 44701 pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this emergency AD.

2002-23-51 BELL HELICOPTER TEXTRON CANADA: Docket No. 2002-SW-51-AD.

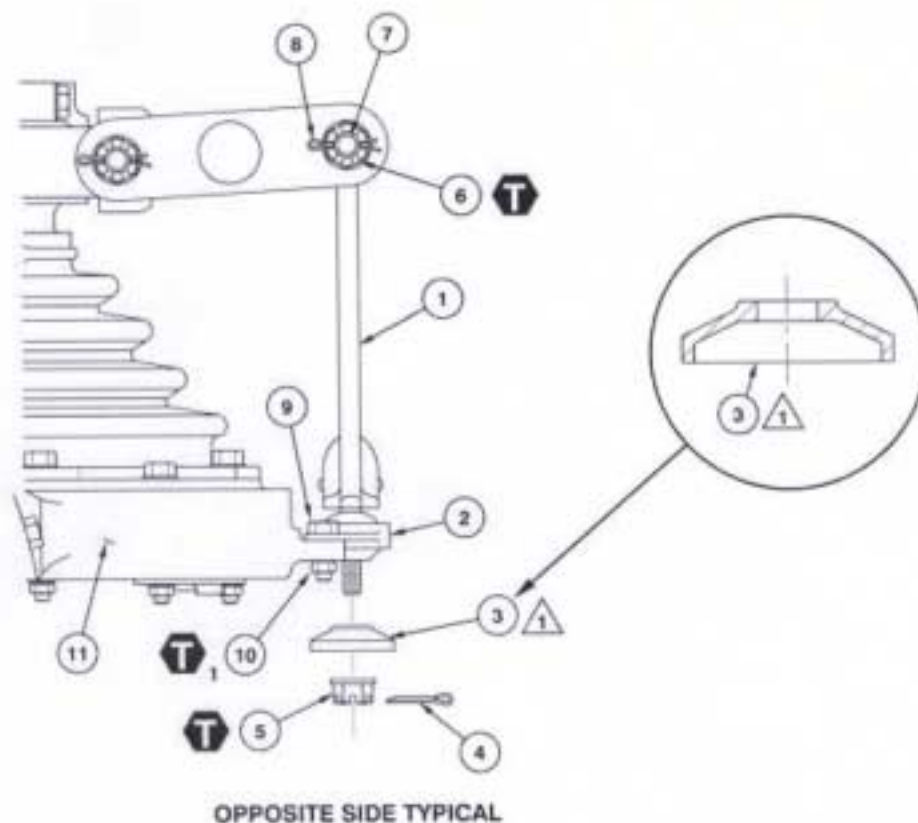
Applicability: Model 407 helicopters, serial numbers 53000 through 53538, certificated in any category.

Note 1: This AD applies to each helicopter identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For helicopters that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (c) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required before further flight, unless accomplished previously.

To detect an incorrect installation of swashplate drive link cup washers (cup washer), which could limit the travel of the swashplate outer ring and lead to stud failure, failure of both swashplate drive link studs, and loss of control of the helicopter, accomplish the following:

(a) Visually check both cup washers, part number (P/N) 406-010-412-101, for correct installation in accordance with Figure 1 of this AD as follows:



LEGEND

1. Drive link (406-010-426-101)
2. Bearing and liner (406-010-417-101)
3. Cup washer (406-010-412-101)
4. Cotter pin (MS24655-155)
5. Nut (MS14144L5)
6. Nut (MS14144L5)
7. Bolt (NAS6605D61)
8. Cotter pin (MS24655-155)
9. Bolt (NAS6204-7)
10. Nut (MS21042L4)
11. Swashplate outer ring (406-010-411-117)

T 120 TO 160 IN-LB
(13.6 TO 18.1 N-m)

T₁ 75 TO 95 IN-LB
(8.47 TO 10.7 N-m)

NOTES

- 1** Washer shown is correctly installed.
2. Washers under bolt head (9) and nut (10) are not shown for clarity.

Figure 1. Correct cup washer direction, installation of

(1) If both cup washers are correctly installed, no further action is required.

(2) If one or both cup washers are installed incorrectly, remove and replace the swashplate outer ring, each cup washer that was installed incorrectly, and the bearing, liner, and drive link where the cup washer was installed incorrectly. Accomplish the replacements in accordance with Part II of the Accomplishment Instructions in Bell Helicopter Textron Alert Service Bulletin No. 407-02-55, dated October 29, 2002.

(b) The visual check required by paragraph (a)(1) may be performed by an owner/operator (pilot) holding at least a private pilot certificate, and must be entered into the aircraft records showing compliance with paragraph (a)(1) of this AD in accordance with sections 43.11 and 91.417(a)(2)(v) of the Federal Aviation Regulations (14 CFR sections 43.11 and 91.417(a)(2)(v)).

(c) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Regulations Group, Rotorcraft Directorate, FAA. Operators shall submit their requests through an FAA Principal Maintenance Inspector, who may concur or comment and then send it to the Manager, Regulations Group.

Note 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Regulations Group.

(d) Special flight permits will not be issued.

(e) Copies of the applicable service information may be obtained from Bell Helicopter Textron Canada, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J1R4, telephone (450) 437-2862 or (800) 363-8023, fax (450) 433-0272.

(f) **Emergency AD 2002-23-51, issued November 13, 2002, becomes effective upon receipt.**

Note 3: The subject of this AD is addressed in Transport Canada (Canada) AD No. CF-2002-46, dated November 6, 2002.

FOR FURTHER INFORMATION, CONTACT: Sharon Miles, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Regulations Group, Fort Worth, Texas 76193-0111, telephone (817) 222-5122, fax (817) 222-5961.

Issued in Fort Worth, Texas, on November 13, 2002.

David A. Downey,
Manager, Rotorcraft Directorate,
Aircraft Certification Service.