



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-2017-23

Effective Date:

21 July 2017

ATA:

25

Type Certificate:

H-88, H-107

Subject:

Furnishings/Equipment – Hoist Overload Clutch Slippage or Cable Rupture

Revision:

Supersedes the portion of Federal Aviation Administration (FAA) AD 2013-06-51, issued 13 June 2013, related to Bell Helicopter Textron Canada Limited (BHTC) models 429 and 430 helicopters. FAA AD 2013-06-51 continues to apply to other Bell Helicopter Textron, MD Helicopters Inc. and Sikorsky Aircraft Corporation helicopter models listed in the Applicability section of the FAA AD.

Applicability:

BHTC helicopters:

Model 429, serial number 57001 and subsequent with Goodrich 44316 Series Hoist System installed.

Model 430, serial number 49001 and subsequent with Goodrich 42325 Series Hoist System installed.

Compliance:

As indicated below, unless already accomplished.

Background:

There have been two in-flight occurrences involving Goodrich hoists where test loads experienced uncontrolled release. The affected hoists contain an overload clutch that is designed to slip a limited amount of cable in an overload situation. Failure investigation by Goodrich implicated the clutch in both occurrences, but was not able to clearly identify a root cause.

In response to those occurrences, Goodrich issued service bulletins (SBs) and other civil aviation authorities issued ADs. Those SBs and ADs required certain actions including testing of in-service hoists to determine the clutch slip load. Failure analysis of the two loss-of-load occurrences and evaluation of service data has identified a number of factors impacting hoist system performance.

Damage to the hoist clutch or cable, or excessive loads due to maneuvering or exceeding the clutch capacity may result in loss of control of the load on the hoist, possibly resulting in injury to persons on the ground or persons being hoisted.

This AD is considered an interim action and further AD action may follow.

Corrective Actions:

- A. Within 10 days from the effective date of this AD, accomplish a record check of any previous hoist load check performed using the Goodrich Field Load Check Tool (FLCT) in accordance with Part I of BHTC Alert Service Bulletin (ASB) 429-14-15 Revision C dated 22 February 2017 or ASB 430-15-54 Revision C dated 22 February 2017, as applicable, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada. Remove from service before the next hoist operation, hoists with test values below the acceptable lower load limit as defined in the BHTC ASBs. Remove from service before the next hoist operation or before the next hoist load test, as applicable, hoist cables that meet the criteria defined in the BHTC ASBs.

- B. Accomplish hoist load testing as listed in Table 1 in accordance with Section 3.C. of Goodrich ASB 44301-10-18 Revision 6 or later revisions. Load tests previously performed in accordance with Goodrich ASB 44301-10-18 at any revision level satisfy the requirements of this corrective action provided the compliance times/lift cycle limits in Table 1 are met. Factory acceptance tests performed after October 2015 by Goodrich or a Goodrich-approved facility also satisfy the requirements of this corrective action provided the compliance times/lift cycle limits of Table 1 are met. Remove from service before the next hoist operation hoists with test values below the acceptable lower limit as defined in the Goodrich ASB.

Table 1 - Load Testing Requirements

1. Initial load test within 30 days from the effective date of this AD
2. Load test after installation of a hoist and before first use.
3. Repeat the load test within 6 months or 400 hoist lifts(*), whichever occurs first, since the completion of the last test and then every 6 months or 400 hoist lifts(*) thereafter, whichever occurs first

(*) For the definition of "hoist lift", refer to the Model 429 / Model 430 Airworthiness Limitations Schedule in the Maintenance Manual.

- C. Within 30 days from the effective date of this AD, replace the existing placard 31-043-182DFH with a new placard and carry out any corresponding actions required in accordance with Part II of BHTC ASB 429-14-15 Revision C or 430-15-54 Revision C, as applicable, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada. The placard prescribes reduced hoist load limits that decrease with ambient temperature.
- D. Within 30 days from the effective date of this AD, revise the Rotorcraft Flight Manual Supplement for the 600-Pound External Hoist by incorporating BHT-429-FMS-4 Revision 5 or BHT-430-FMS-31 Revision 2, as applicable, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada. The revisions permit air taxi with load on hoist cable, provided the load is carried above the landing gear, and warns the pilots and hoist operators that maneuvering with an extended cable and load on the hook can lead to clutch slippage.
- E. No later than the times specified in paragraphs E.1 and E.2. of this AD, whichever occurs last, modify the helicopter by replacing the affected hoist with a hoist containing a new overload clutch assembly Part Number (P/N) or a hoist with a P/N not impacted by this AD in accordance with the applicable helicopter maintenance manual.

Note: Upon installation of a new P/N clutch, hoists that are equipped with a new overload clutch assembly P/N are (re)identified by the manufacturer or their approved repair facilities with a "4" as first digit of the serial number (e.g. 00304 becomes 40304).

1. Before exceeding 36 months air time since new/overhaul, 1600 hoist lifts or 55 hoist operating hours, whichever occurs first.
 2. Within 12 months from the effective date of this AD
- F. At intervals not to exceed 60 months, 1666 hoist lifts or 55 hoist operating hours since new/ overhaul whichever occurs first, replace the hoist with a serviceable hoist in accordance with Part III of BHTC ASB 429-14-15 Revision C dated 22 February 2017 or ASB 430-15-54 Revision C dated 22 February 2017, as applicable, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada. A serviceable hoist is one which has a new overload clutch assembly P/N installed as noted in corrective action E, above, or a hoist with a P/N not impacted by this AD.
- G. From the effective date of this AD, before the next hoist operation after any of the conditions described in Section 1.B.(2) of Goodrich ASB 44301-10-18 Revision 6 or later revisions, perform the actions specified in that section of the ASB.

Note: The condition described in Section 1.B.(2)(d) of the Goodrich ASB is "Flight Maneuvers on the Rescue Hoist System". This section of the ASB does not describe a condition which requires an action after it occurs, and is exempt from corrective action G of this AD. Risks associated with maneuvering with a load on an extended cable are dealt with by corrective action D of this AD.

- H. Within 10 days from the effective date of this AD, before installing a previously-used hoist cable with P/N 42325-298 or other P/Ns applicable to the model 429 or 430 rescue hoist, perform a record check of any previous hoist load check performed on that cable using the Goodrich Field Load Check Tool (FLCT) in accordance with Part I of BHTC ASB 429-14-15 Revision C dated 22 February 2017 or ASB 430-15-54 Revision C dated 22 February 2017, as applicable, or later revisions approved by the Chief, Continuing Airworthiness, Transport Canada. It is not permitted to install a previously-used cable that was tested to more than 1500 pounds (680 kg).

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Philip Tang
Acting Chief, Continuing Airworthiness
Issued on 7 July 2017

Contact:

Ross McGowan, Continuing Airworthiness, Ottawa, telephone 1-888-663-3639, facsimile 613-996-9178 or e-mail AD-CN@tc.gc.ca or any Transport Canada Centre.