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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2013-0490; Directorate Identifier 2008-SW-004-AD; Amendment 39-17611; AD 2013-20-05]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Bell Helicopter Textron Canada Limited (Bell) Helicopters**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Bell Model 407 helicopters. This AD requires installing a placard beneath the NR/NP dual tachometer and revising the limitations section of the rotorcraft flight manual (RFM). This AD was prompted by several incidents of third stage engine turbine wheel failures, which were caused by excessive vibrations at certain engine speeds during steady-state operations. These actions are intended to alert pilots to avoid certain engine speeds during steady-state operations, prevent failure of the third stage engine turbine, engine power loss, and subsequent loss of control of the helicopter.

**DATES:** This AD is effective December 5, 2013.

The Director of the Federal Register approved the incorporation by reference of a certain document listed in this AD as of December 5, 2013.

**ADDRESSES:** For service information identified in this AD, contact Bell Helicopter Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J1R4; telephone (450) 437-2862 or (800) 363-8023; fax (450) 433-0272; or at <http://www.bellcustomer.com/files/>. You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the foreign authority's AD, any incorporated-by-reference service information, the economic evaluation, any comments received, and other information. The street address for the Docket Operations Office (phone: 800-647-5527) is U.S. Department of Transportation, Docket Operations Office, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Chinh Vuong, Aviation Safety Engineer, Safety Management Group, Rotorcraft Directorate, FAA, 2601 Meacham Blvd., Fort Worth, Texas 76137; telephone (817) 222-5110; email [chinh.vuong@faa.gov](mailto:chinh.vuong@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

On June 7, 2013, at 78 FR 34286, the Federal Register published our notice of proposed rulemaking (NPRM), which proposed to amend 14 CFR part 39 by adding an AD that would apply to Bell Model 407 helicopters, serial numbers 53000 through 53644. The NPRM proposed to require installing a placard on the instrument panel below the NR/NP dual tachometer and revising the Operating Limitations section of the Model 407 RFM to limit steady-state operation between speeds of 68.4% to 87.1%. The proposed requirements were intended to alert pilots to avoid certain engine speeds during steady-state operations, prevent failure of the third stage engine turbine, engine power loss, and subsequent loss of control of the helicopter.

The NPRM was prompted by AD No. CF-2004-09R1, dated July 4, 2005, issued by Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada. TCCA issued AD No. CF-2004-09R1 to correct an unsafe condition for Model 407 helicopters. TCCA advises that several failures of third stage turbine wheels used in Rolls Royce 250-C30S and 250-C47B engines, and three of these failures have occurred to the 250-C47B engine used by Bell on the Model 407. According to TCCA, Rolls Royce has determined that detrimental vibrations can occur within a particular range of turbine speeds, and may be a contributing factor to these failures. Bell has revised the operating limitations of the RFM and provided a corresponding decal on the instrument panel to inform pilots to avoid steady-state operations between 68.4% and 87.1% turbine speeds.

The TCCA AD requires amending the RFM, advising pilots of the change, and installing a decal as described in Bell Alert Service Bulletin (ASB) No. 407-05-67, dated June 8, 2005 (ASB 407-05-67).

### **Comments**

After our NPRM (78 FR 34286, June 7, 2013) was published, we received comments from one commenter.

### **Request**

Rolls-Royce Corporation requested that in addition to requiring the placard on the instrument panel, we allow operators the option to temporarily mark the Nr/Np gauge with colored tape, to provide a more visual aide to the pilot for the speed avoidance zone.

We disagree. Marking the glass surface of the gauge can create parallax issues when viewing the avoidance ranges on the gauge, resulting in erroneous readings.

### **FAA's Determination**

These helicopters have been approved by the aviation authority of Canada and are approved for operation in the United States. Pursuant to our bilateral agreement with Canada, TCCA, its technical representative, has notified us of the unsafe condition described in the TCCA AD. We are issuing this AD because we evaluated all information provided by TCCA, reviewed the relevant information, considered the comment received, and determined the unsafe condition exists and is likely to exist or develop on other helicopters of the same type design and that air safety and the public interest require adopting the AD requirements as proposed.

### **Differences Between This AD and the TCCA AD**

The TCCA AD requires compliance within 10 calendar days, while this AD requires compliance within 30 days.

## **Related Service Information**

Bell has issued ASB 407-05-67, which contains procedures for installing a placard on the instrument panel below the main rotor RPM (Nr)/power turbine RPM (Np) dual tachometer and for inserting the RFM changes into the flight manual.

## **Costs of Compliance**

We estimate that this AD will affect 472 helicopters of U.S. Registry. Based on an average labor rate of \$85 per hour, we estimate that operators may incur the following costs in order to comply with this AD. Amending the RFM will require about 0.5 work-hour, for a cost per helicopter of about \$43 and a cost to U.S. operators of \$20,296. Installing the decal will require about 0.2 work-hour and required parts cost \$20, for a cost per helicopter of \$37 and a cost to U.S. operators of \$17,464. Based on these estimates, the total cost of this AD will be \$80 per helicopter and \$37,760 for the U.S. operator fleet.

## **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on helicopters identified in this rulemaking action.

## **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction; and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared an economic evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):



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**2013-20-05 Bell Helicopter Textron Canada Limited (Bell):** Amendment 39-17611; Docket No. FAA-2013-0490; Directorate Identifier 2008-SW-004-AD.

**(a) Applicability**

This AD applies to Bell Model 407 helicopters, serial numbers 53000 through 53644, certificated in any category.

**(b) Unsafe Condition**

This AD defines the unsafe condition as a third stage turbine vibration, which could result in turbine failure, engine power loss, and subsequent loss of control of the helicopter.

**(c) Effective Date**

This AD becomes effective December 5, 2013.

**(d) Compliance**

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

**(e) Required Actions**

Within 30 days:

- (1) Revise the Operating Limitations section of the Model 407 Rotorcraft Flight Manual by inserting Section 1, Limitations, pages 1-6 and 1-14, of Bell BHT-407-FM-1, revision 3, dated April 26, 2005.
- (2) Remove placard part number (P/N) 230-075-213-105, if installed.
- (3) Install placard P/N 230-075-213-111, or equivalent, directly below the NR/NP dual tachometer.

**(f) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Safety Management Group, FAA, may approve AMOCs for this AD. Send your proposal to: Chinh Vuong, Aviation Safety Engineer, Safety Management Group, Rotorcraft Directorate, FAA, 2601 Meacham Blvd., Fort Worth, Texas 76137; telephone (817) 222-5110; email [chinh.vuong@faa.gov](mailto:chinh.vuong@faa.gov).

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office, before operating any aircraft complying with this AD through an AMOC.

**(g) Additional Information**

(1) Bell Alert Service Bulletin No. 407-05-67, dated June 8, 2005, which is not incorporated by reference, contains additional information about the subject of this AD. For service information identified in this AD, contact Bell Helicopter Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J1R4; telephone (450) 437-2862 or (800) 363-8023; fax (450) 433-0272; or at <http://www.bellcustomer.com/files/>. You may review a copy of the service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

(2) The subject of this AD is addressed in Transport Canada Civil Aviation (TCCA) AD No. CF-2004-09R1, dated July 4, 2005. You may view the TCCA AD on the internet in the AD Docket at <http://www.regulations.gov>.

**(h) Subject**

Joint Aircraft Service Component (JASC) Code: 7250: Turbine Section.

**(i) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Pages 1-6 and 1-14 of Section 1, Limitations, of Bell Rotorcraft Flight Manual BHT-407-FM-1, Revision 3, dated April 26, 2005.

(ii) Reserved.

(3) For Bell service information identified in this AD, contact Bell Helicopter Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J1R4; telephone (450) 437-2862 or (800) 363-8023; fax (450) 433-0272; or at <http://www.bellcustomer.com/files/>.

(4) You may view this service information at FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Fort Worth, Texas, on September 20, 2013.

Scott A. Horn,  
Acting Directorate Manager, Rotorcraft Directorate,  
Aircraft Certification Service.