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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2011-1188; Directorate Identifier 2008-SW-46-AD; Amendment 39-17171; AD 2012-17-08]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Bell Helicopter Textron, Inc. (Bell) Helicopters**

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

**ACTION:** Final rule.

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**SUMMARY:** We are superseding four airworthiness directives related to the main rotor yoke (yoke) on the Bell Model 204B, 205A, 205A-1, 205B, and 212 helicopters, to retain certain inspections and certain life limits, to require an increased inspection frequency for certain yokes, and to expand these inspections and retirement lives to other yokes. This airworthiness directive is prompted by past reports of cracks in the yoke, another recent report of a cracked yoke, and the decision that other yokes, approved based on identity, need to be subject to the same inspection requirements and retirement lives. The actions are intended to detect a crack in a yoke to prevent failure of the yoke, and subsequent loss of control of the helicopter.

**DATES:** This AD is effective February 27, 2013.

**ADDRESSES:** For service information identified in this AD, contact Bell Helicopter Textron, Inc., P.O. Box 482, Fort Worth, TX 76101, telephone (817) 280-3391, fax (817) 280-6466, or at <http://www.bellcustomer.com/files/>. You may review a copy of 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, 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:** Michael Kohner, Aviation Safety Engineer, Rotorcraft Certification Office, Rotorcraft Directorate, FAA, 2601 Meacham Blvd., Fort Worth, TX 76137; telephone (817) 222-5170; email 7-avs-asw-170@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

On November 2, 2011, at 76 FR 67628, the Federal Register published our notice of proposed rulemaking (NPRM), which proposed to amend 14 CFR part 39 to include an AD that would apply to Bell Model 204B, 205A, 205A-1, 205B, and 212 helicopters, with a yoke, part number (P/N) AAI-4011-102 (all dash numbers), ASI-4011-102 (all dash numbers), or 204-011-102 (all dash numbers), installed, certificated in any category. That NPRM proposed to supersede four previously-issued ADs for the Bell Model 204, 205, and 212 series helicopters: AD 79-20-05, Amendments 39-3572 (44 FR 55556, September 27, 1979), 39-3626 (44 FR 70123, December 6, 1979), and 39-3662 (45 FR 6922, January 31, 1980); AD 81-19-01, Amendment 39-4207 (46 FR 45595, September 14, 1981); AD 81-19-02, Amendment 39-4208 (46 FR 45595, September 14, 1981); and AD 93-05-01, Amendment 39-8507 (58 FR 13700, March 15, 1993). Those ADs required inspecting certain yokes installed on these helicopters, established retirement life limits for these yokes, and required operators to log additional hours against the retirement life of the yokes for Model 212 helicopters conducting more than four external load lifts per hour.

Since the issuance of those ADs, certain yokes manufactured under a parts manufacturer approval (PMA) were identified as being susceptible to the same cracking as the Bell manufactured yokes. The NPRM proposed retaining the requirements of the existing ADs while expanding the applicability to include yokes produced under a PMA whose design approval was based on identity with the affected Bell yoke. The NPRM also proposed giving operators credit for the accumulated operating time on certain yokes covered by the superseded ADs.

The proposed requirements of this AD were intended to prevent cracking of a yoke, failure of the yoke, and subsequent loss of control of the helicopter.

### **Comments**

We gave the public the opportunity to participate in developing this AD, but we did not receive any comments on the NPRM (76 FR 67628, November 2, 2011).

### **Related Service Information**

Bell issued Alert Service Bulletins (ASBs) Nos. 204-92-36, 205-92-51, and 212-92-80, all dated October 23, 1992. These ASBs specify replacing yoke P/N 204-011-102 (all dash numbers) by December 31, 1993, with yoke P/N 212-011-102-105 or -109, depending on the helicopter configuration. The replacement yokes are made from stainless steel and have improved design characteristics that address the corrosion problems and are not subject to any heavy lift cycle counting required for previous yokes installed on the Model 205B and 212 helicopters.

### **FAA's Determination**

We have reviewed the relevant information and determined that an unsafe condition is likely to exist or develop on other products of these same type designs and that air safety and the public interest require adopting the AD requirements as proposed except for minor editorial changes and a

change to correct one instance of the word "Unfactored" to the word "Factored." In addition, the notes were removed to prevent any misconception that they were mandatory procedures. These minor editorial changes are consistent with the intent of the proposals in the NPRM and will not increase the economic burden on any operator nor increase the scope of the AD.

### **Costs of Compliance**

We estimate that this AD will affect 15 helicopters of U.S. Registry. We estimate that operators may incur the following costs in order to comply with this AD. Reviewing the helicopter records and determining the total factored hours TIS will require about 3 work hours at an average labor rate of \$85 per hour, for a total cost of \$255 per helicopter and a total cost to the U.S. operator fleet of \$3,825. Removing the yoke from the helicopter and performing a visual inspection and MPI will require about 35 work hours at an average labor rate of \$85 per work hour, for a total cost of \$2,975 per helicopter and a total cost to the U.S. operator fleet of \$44,625 per inspection cycle.

To replace a yoke will require about 32 work hours at an average labor rate of \$85 per hour for labor costs of \$2,720 per helicopter, and required parts will cost \$40,157 for a total cost per helicopter of \$42,877 and a total cost to the U.S. operator fleet of \$643,155.

### **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 products 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 removing Amendments 39-8507 (58 FR 13700, March 15, 1993); 39-4208 (46 FR 45595, September 14, 1981); 39-4207 (46 FR 45595, September 14, 1981); 39-3662 (45 FR 6922, January 31, 1980); 39-3626 (44 FR 70123, December 6, 1979); and 39-3572 (44 FR 55556, September 27, 1979); and by adding a new airworthiness directive (AD) to read as follows:



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**2012-17-08 Bell Helicopter Textron, Inc. (Bell):** Amendment 39-17171; Docket No. FAA-2011-1188; Directorate Identifier 2008-SW-46-AD.

**(a) Applicability**

This AD applies to Model 204B, 205A, 205A-1, 205B, and 212 helicopters, with a main rotor yoke (yoke), part number (P/N) AAI-4011-102 (all dash numbers), ASI-4011-102 (all dash numbers), or 204-011-102 (all dash numbers), installed, certificated in any category.

**(b) Unsafe Condition**

This AD defines the unsafe condition as a crack in a yoke. This condition could result in failure of a yoke, and subsequent loss of control of the helicopter.

**(c) Affected ADs**

This AD supersedes AD 93-05-01, Amendment 39-8507 (58 FR 13700, March 15, 1993); AD 81-19-02, Amendment 39-4208 (46 FR 45595, September 14, 1981); AD 81-19-01, Amendment 39-4207 (46 FR 45595, September 14, 1981); and AD 79-20-05, Amendments 39-3662 (45 FR 6922, January 31, 1980), 39-3626 (44 FR 70123, December 6, 1979), and 39-3572 (44 FR 55556, September 27, 1979).

**(d) Effective Date**

This AD becomes effective February 27, 2013.

**(e) 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.

**(f) Required Actions**

(1) For helicopters with yoke, P/N AAI-4011-102 (all dash numbers) and ASI-4011-102 (all dash numbers), installed, within 100 hours time-in-service (TIS):

(i) Create a component history card or equivalent record for each yoke.

(ii) Determine the model for each helicopter on which the yoke has been installed from the time the yoke had zero hours TIS.

(iii) In accordance with the rate per hour categories shown in Table 1 to paragraph (f) of this AD, categorize the accumulated "Factored Hours TIS" on each yoke by determining the types of operation AND the rate per hour of external load lifts for each hour TIS accumulated on each yoke. One external load lift occurs each time the helicopter picks up an external load and drops it off. For determining the proper rate per hour category for external load operations, any external load lift in which the helicopter achieves a vertical altitude difference of greater than 200 feet indicated altitude between the pickup and drop-off point counts as two external load lifts.

**Table 1 to Paragraph (f)–Factored Hours TIS for a Yoke  
[Number of unfactored hours TIS and factored hours TIS are examples for illustration purposes only]**

<b>Helicopter model</b>	<b>Types of operation</b>	<b>Rate per hour of external load lifts and takeoffs</b>	<b>Unfactored hours TIS</b>	<b>Hours TIS factor</b>	<b>Factored hours TIS on yoke (unfactored hours TIS × hours TIS factor)</b>
Yokes installed on any Model 204B, 205A, or 205A–1 helicopter.	All Operations	All	120	1	120
Yokes installed on any Model 205B or 212 helicopter.	External Load Operations	1 to 5	105	1	105
		5.1 to 8		1 .5	
		8.1 to 12		2	
		12.1 to 18		3	
		18.1 to 32	170	5	850
		32.1 to 48		7	
		more than 48		9	
	Unknown	50	7	350	
	Internal Load Operations	All Takeoffs	2,025	1	2,025
<b>Total Factored Hours TIS on Yoke (Summation of the Factored Hours TIS)</b>					<b>3,450</b>

(iv) By reference to Table 1 to paragraph (f) of this AD, enter the "Unfactored Hours TIS" for each category as determined by paragraph (f)(1)(iii) of this AD. Calculate the "Factored Hours TIS" by multiplying the "Unfactored Hours TIS" by the "Hours TIS Factor." Determine the accumulated "Total Factored Hours TIS" on each yoke by adding the factored hours TIS for each type of operation and helicopter model. Tracking the Total Factored Hours TIS is only for establishing a retirement life and not for tracking inspection intervals.

(v) Record the accumulated Total Factored Hours TIS on the component history card or equivalent record for each yoke.

(vi) Continue to factor the hours TIS for each yoke by following paragraph (f)(1)(ii) through (f)(1)(iv) of this AD, and record the additional factored hours TIS on the component history card or equivalent record.

(2) For helicopters with yoke, P/N 204-011-102 (all dash numbers), installed, before further flight:

(i) For hours TIS accumulated before the effective date of this AD, calculate and record the Total Factored Hours TIS as follows:

(A) For the Model 212 helicopters, 1 hour TIS in which passenger or internal cargo was carried equals 1 factored hour TIS; 1 hour TIS where more than 4 external load lifts occurred equals 5 factored hours TIS.

(B) For the Model 204 and 205 series helicopters, 1 hour TIS equals 1 factored hour TIS.

(ii) For hours TIS accumulated after the effective date of this AD, calculate and record the factored hours TIS on the yoke in accordance with the requirements of paragraphs (f)(1)(i) through (f)(1)(vi) of this AD.

(3) Revise the Airworthiness Limitations section of the applicable maintenance manuals or the Instructions for Continued Airworthiness (ICAs) by establishing a new retirement life of 3,600 Total Factored Hours TIS for each yoke, P/N AAI-4011-102 (all dash numbers), ASI-4011-102 (all dash numbers), or 204-011-102 (all dash numbers), by making pen and ink changes or inserting a copy of this AD into the Airworthiness Limitations section of the maintenance manual or ICAs.

(4) Record a life limit of 3,600 Total Factored Hours TIS for each yoke, P/N AAI-4011-102 (all dash numbers), ASI-4011-102 (all dash numbers), or 204-011-102 (all dash numbers), on the component history card or equivalent record.

(5) Within 100 hours TIS or 600 hours TIS since the last magnetic particle inspection (MPI) of the yoke, whichever occurs later, and thereafter at intervals not to exceed 600 hours TIS, for any yoke installed on any Model 205B or 212 helicopter:

(i) Remove the yoke from the main rotor hub assembly (hub). Using a 5-power or higher magnifying glass, visually inspect each pillow block bushing hole, spindle radius, and center section web for any corrosion or mechanical damage.

(ii) Perform an MPI of each yoke for a crack.

(6) Within 100 hours TIS or 2,400 hours TIS since the last MPI of the yoke, whichever occurs later, and thereafter at intervals not to exceed 2,400 hours TIS, for any yoke installed on any Model 204B, 205A, or 205A-1 helicopter:

(i) Remove the yoke from the hub. Using a 5-power or higher magnifying glass, visually inspect each pillow block bushing hole, spindle radius, and center section web for any corrosion or mechanical damage.

(ii) Perform an MPI of each yoke for a crack.

(7) Before further flight, replace each yoke with an airworthy yoke if:

(i) The yoke has 3,600 or more Total Factored Hours TIS; or

(ii) The Total Factored Hours TIS for the yoke is unknown and cannot be determined; or

(iii) The yoke has any corrosion or mechanical damage that exceeds any of the maximum repair damage limits; or

(iv) The yoke has a crack.

### **(g) Special Flight Permits**

Special flight permits may only be issued under 14 CFR 21.197 and 21.199 for the purpose of operating the helicopter to a location where the MPI requirements of paragraphs (f)(5) or (f)(6) of this AD can be performed.

### **(h) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Rotorcraft Certification Office, FAA, may approve AMOCs for this AD. Send your proposal to: Michael Kohner, Aviation Safety Engineer, Rotorcraft Certification Office, Rotorcraft Directorate, FAA, 2601 Meacham Blvd., Fort Worth, TX 76137; telephone (817) 222-5170; email 7-avs-asw-170@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.

**(i) Additional Information**

Bell Alert Service Bulletin Nos. 204-92-36, 205-92-51, and 212-92-80, all dated October 23, 1992, which are not incorporated by reference, contain additional information about the subject of this AD. For service information identified in this AD, contact Bell Helicopter Textron, Inc., P.O. Box 482, Fort Worth, TX 76101, telephone (817) 280-3391, fax (817) 280-6466, or at <http://www.bellcustomer.com/files/>. You may review a copy of this service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

**(j) Subject**

Joint Aircraft Service Component (JASC) Code: 6220: Main Rotor Head.

Issued in Fort Worth, Texas, on December 21, 2012.

Lance T. Gant,  
Acting Directorate Manager, Rotorcraft Directorate,  
Aircraft Certification Service.