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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2012-0896; Directorate Identifier 2010-SW-070-AD; Amendment 39-17173; AD 2012-17-10]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Various Restricted Category Helicopters**

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

**ACTION:** Final rule; request for comments.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for various restricted category Model HH-1K, TH-1F, TH-1L, UH-1A, UH-1B, UH-1E, UH-1F, UH-1H, UH-1L, and UH-1P helicopters with certain main rotor (M/R) blade assemblies installed, to require inspecting the grip plates, doublers, and upper and lower surfaces of the M/R blades in the area between blade stations 24.5 and 40 for an edge void, corrosion, or a crack. This AD is prompted by several reports of fatigue cracks on M/R blades installed on Bell Helicopter Textron, Inc. (Bell) Model 212 helicopters. These same part-numbered M/R blades may also be installed on certain FAA-approved modified restricted category helicopters. These actions are intended to detect an edge void, corrosion, or a crack on an M/R blade, which could lead to loss of the M/R blade and subsequent loss of control of the helicopter.

**DATES:** This AD becomes effective September 28, 2012.

We must receive comments on this AD by November 13, 2012.

**ADDRESSES:** You may send comments by any of the following methods:

- Federal eRulemaking Docket: Go to <http://www.regulations.gov>. Follow the online instructions for sending your comments electronically.
- Fax: 202-493-2251.
- Mail: Send comments to the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590-0001.
- Hand Delivery: Deliver to the "Mail" address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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 economic evaluation, any comments received, and other information. The street address for the Docket Operations Office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

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.

**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:**

### **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments prior to it becoming effective. However, we invite you to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that resulted from adopting this AD. The most helpful comments reference a specific portion of the AD, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit them only one time. We will file in the docket all comments that we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this rulemaking during the comment period. We will consider all the comments we receive and may conduct additional rulemaking based on those comments.

### **Discussion**

This AD is prompted by several reports of fatigue cracks on M/R blades installed on Bell Model 212 helicopters. The cracks were found in the lower skin, doublers, and box beam at the M/R blade attachment bolt hole, and through the lower grip plate at blade station (BS) 36. Because the fatigue cracks were discovered on M/R blades installed on the Bell Model 212 helicopters, we issued AD No. 2010-03-03, Amendment 39-16186 (75 FR 5681, February 4, 2010) (AD 2010-03-03) for certain Bell Model 205B and 212 helicopters. That AD required visually inspecting the M/R blades for an edge void, corrosion, or a crack. After issuing that AD, we received another report of a fatigue crack on a M/R blade installed on a Model 212 helicopter. Further analysis by the manufacturer revealed that the inspections required by AD 2010-03-03 needed to be expanded and performed at an increased frequency, and on additional part-numbered M/R blades which can also be installed on other Bell model helicopters. We then issued AD No. 2011-23-02 (76 FR 68301, November 4, 2011) (AD 2011-23-02), which superseded AD 2010-03-03. AD 2011-23-02 retained the requirements of the superseded AD, increased the frequency and scope of the inspections required by that AD, and expanded the applicability to include the Model 205A-1 and 210 helicopters, additional M/R blade part numbers, and all helicopter serial numbers for the affected models.

Since the issuance of AD 2011-23-02, we have determined that the same part-numbered M/R blades can also be installed on certain FAA-approved modified restricted category helicopters. Therefore, we are mandating the inspection requirements for the applicable restricted category helicopters. The actions specified in this AD are intended to detect an edge void, corrosion, or a crack

on an M/R blade, which could lead to loss of the M/R blade and subsequent loss of control of the helicopter.

## **FAA's Determination**

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other helicopters of these same type designs.

## **Related Service Information**

Bell has issued Alert Service Bulletin (ASB) No. 205B-08-51 dated January 11, 2011 (ASB 205B-08-51) for Model 205B helicopters, ASB No. 210-08-03 dated January 10, 2011 (ASB 210-08-03) for the Model 210 helicopters, and ASB No. 212-08-130 dated January 11, 2011 (ASB 212-08-130) for Model 212 helicopters, all revision B. The ASBs describe procedures to detect an edge void, corrosion, or a crack in the upper and lower grip plates, doublers, and blade skins of the M/R blade between blade stations 24.5 and 85.

## **AD Requirements**

This AD requires, within 25 hours time-in-service (TIS), and thereafter at intervals not to exceed 25 hours TIS, the following actions:

- Washing the upper and lower M/R blade surfaces using a solution of cleaning compound and water;
- Visually inspecting the upper and lower grip plates, doublers, and remaining surfaces of the M/R blade in an area from blade stations 24.5 to 40, including the entire width of the M/R blade chord width for an edge void, any corrosion, or a crack;
- Wiping each of the bond lines at the edges of both grip plates and each of the layered doublers with an alcohol-soaked cloth for their entire length and chord width and, using a 3x power or higher magnifying glass and a bright light, visually inspecting each of the bond lines on the upper and lower surfaces of the M/R blade for an edge void, any corrosion, or any edge delamination, as indicated by a crack in the paint finish.
- If there is an edge delamination or a crack in the paint finish, removing paint from areas in which an edge delamination along any bond line of a grip plate or doubler or a crack in the M/R blade paint finish is discovered to determine if an edge void or a crack exists in the M/R blade and, if there is not an edge void or a crack, refinishing the sanded area;
- Applying a light coat of preservative oil to all surfaces of the M/R blade;
- Replacing any M/R blade that has an edge void or any corrosion with an airworthy M/R blade or repairing the M/R blade if the damage is within the maximum repair damage limits;
- Replacing any M/R blade that has a crack in any grip plate or doubler with an airworthy M/R blade; and
- Replacing any M/R blade that has a crack in the M/R blade skin with an airworthy M/R blade, or repairing the M/R blade if the damage is within the maximum repair damage limits.

## **Differences Between This AD and the Service Information**

This AD applies to various restricted category Model HH-1K, TH-1F, TH-1L, UH-1A, UH-1B, UH-1E, UH-1F, UH-1H, UH-1L, and UH-1P helicopters; ASB 205B-08-51, ASB 210-08-03, and ASB 212-08-130 apply to Model 205B, 210, and 212 helicopters, respectively.

This AD also differs from the ASBs as follows:

- We do not include the requirement to inspect for a dark line along any of the bond lines after wiping with an alcohol-soaked cloth to detect an edge void or edge delamination as stated in the ASBs. The alcohol is only being used as a cleaning agent for the purposes of this AD.
- This AD requires inspecting for an edge void, a crack, or any corrosion in an area from blade stations 24.5 to 40, including the entire width of the M/R blade chord, while the ASBs require inspecting from blade stations 24.5 to 85. This AD includes the inspections of the bondlines for their entire length and chord width for an edge delamination or for a crack in the paint finish, while the ASB inspections do not.
- The ASBs use the phrase "bond lines between doublers, grip plates, and skin" to describe the bond lines, and we use "bond lines at the edges of both grip plates and each of the layer doublers."
- The ASBs use the phrase "cracks in the bond lines between doublers or grip plates" to describe a separation of the doubler or grip plate along an edge, and we use the term "edge delamination."

### **Costs of Compliance**

We estimate that this AD will affect 25 helicopters of U.S. Registry.

We estimate that operators may incur the following costs in order to comply with this AD. Washing and visually inspecting each M/R blade requires one work hour at an average labor rate of \$85 per hour, for a cost per helicopter of \$85 and a total cost to the U.S. operator fleet of \$2,125 per inspection cycle. If an edge void, corrosion, or a crack is found, replacing an M/R blade with an airworthy M/R blade requires approximately 24 work hours at an average labor rate of \$85 per hour, and required parts cost \$121,875, for a total cost for each M/R blade replacement of \$123,915.

### **FAA's Justification and Determination of the Effective Date**

The short compliance time is required because the previously described critical unsafe condition can adversely affect the structural integrity and controllability of the helicopter. In addition, the various restricted category helicopters are high usage aircraft, and they could reach 100 hours TIS within 60 days. Therefore, the actions described previously are required within 25 hours TIS, a short compliance time, and are to be repeated thereafter at intervals not to exceed 25 hours TIS, and this AD must be issued immediately.

Since an unsafe condition exists that requires the immediate adoption of this AD, we determined that notice and opportunity for public comment before issuing this AD are impracticable and that good cause exists for making this amendment effective in less than 30 days.

### **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**

We determined that 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, 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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**2012-17-10 Various Restricted Category Helicopters:** Amendment 39-17173; Docket No. FAA-2012-0896; Directorate Identifier 2010-SW-070-AD.

**(a) Applicability**

This AD applies to restricted category Model HH-1K, TH-1F, TH-1L, UH-1A, UH-1B, UH-1E, UH-1F, UH-1H, UH-1L, and UH-1P helicopters with a main rotor (M/R) blade, part number (P/N) 204-012-001-023 or -033; 210-015-001-101; 212-015-501-005, -111, -113, -115, -117, -119, or -121, installed, certificated in any category.

**(b) Unsafe Condition**

This AD defines the unsafe condition as an edge void, corrosion, or a crack on an M/R blade. This condition could lead to loss of the M/R blade and subsequent loss of control of the helicopter.

**(c) Effective Date**

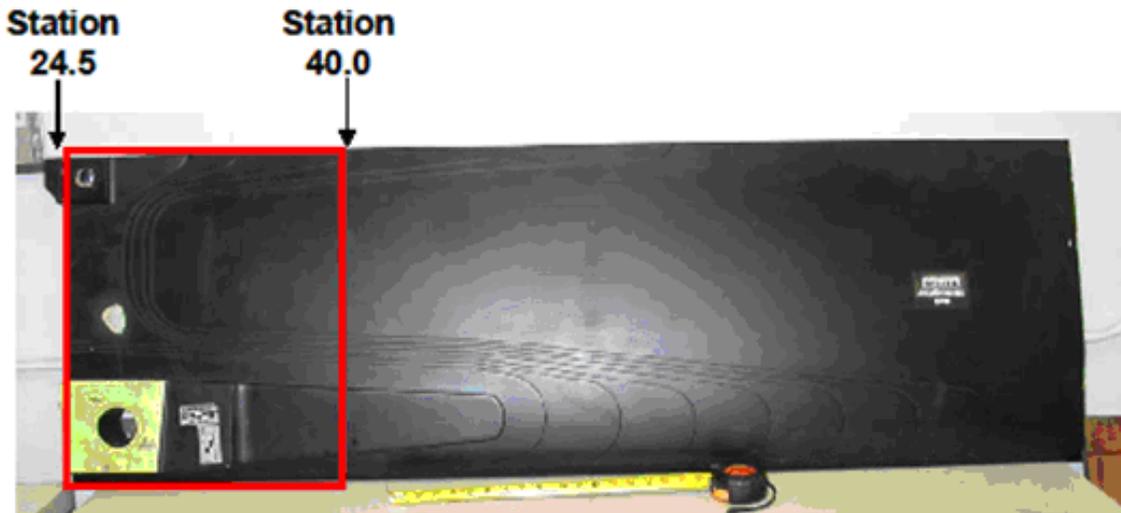
This airworthiness directive (AD) becomes effective September 28, 2012.

**(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**

- (1) Within 25 hours time-in-service (TIS), and thereafter at intervals not to exceed 25 hours TIS:
  - (i) Wash the upper and lower surfaces of each affected M/R blade with a solution of cleaning compound (C-318) and water. Rinse thoroughly and wipe dry.
  - (ii) Using a 3x power or higher magnifying glass and a bright light, on each affected M/R blade, in an area from blade stations 24.5 to 40, including the entire width of the M/R blade chord, as depicted in Figure 1 to Paragraph (e) of this AD:



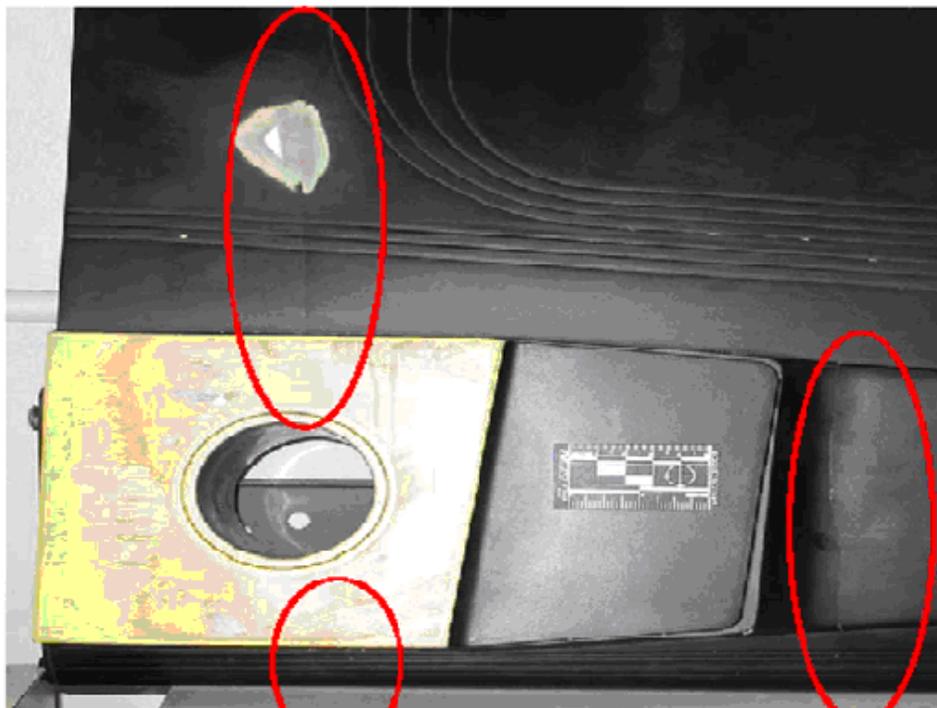
**Figure 1 to paragraph (e)(1)(ii)**

(A) Visually inspect the upper and lower grip plates and doublers of the M/R blade for an edge void, any corrosion, or a crack.

(B) Visually inspect the remaining upper and lower surfaces of the M/R blade for an edge void, any corrosion, or a crack.

Note 1 to paragraphs (e)(1)(ii) and (e)(1)(iv): The inspections required by paragraphs (e)(1)(ii) and (e)(1)(iv) of this AD do not require removal of the M/R blades from the M/R hub and can be accomplished while the M/R blades are installed on the helicopter.

Note 2 to paragraph (e)(1)(ii): Crack indications on an actual M/R blade are shown in Figure 2 to Paragraph (e) of this AD.



**Figure 2 to paragraph (e)(1)(ii)**

(iii) Wipe each of the bond lines at the edges of both grip plates and each of the layered doublers (bond lines) on the upper and lower surfaces of each affected M/R blade with an alcohol-soaked cloth (C-385) for their entire length and chord width. Wipe dry with a clean cloth.

(iv) Using a 3x power or higher magnifying glass and a bright light, visually inspect each of the bond lines on the upper and lower surfaces of the M/R blade for their entire length and chord width for an edge void, any corrosion, or any edge delamination, as indicated by a crack in the paint finish. An edge delamination is defined as a separation of the detail parts along an edge.

Note 3 to paragraph (e)(1)(iv): A crack in the paint finish which follows the outline of a grip plate or doubler may indicate a possible edge void.

(v) If there is any edge delamination along any bond line of a grip plate or doubler, or a crack in the paint finish, before further flight, remove the paint in the affected area by lightly sanding with 180-220 grit paper in a span-wise direction to determine if there is an edge void, or if the grip plate, doubler, or skin is cracked. If any parent material is removed during the sanding operation, replace the M/R blade with an airworthy M/R blade or repair the M/R blade if the amount of parent material removed is within the maximum repair damage limits. If there is no edge void or crack, refinish the sanded area.

Note 4 to paragraphs (e)(1)(v) and (e)(2): The maximum repair damage limits are contained in the applicable Component and Repair Overhaul Manual.

(vi) If there is no edge void, corrosion, or crack, apply a light coat of preservative oil (C-125) to all surfaces of each affected M/R blade.

(2) If an edge void, any corrosion, or a crack is discovered during any inspections in paragraph (e)(1) of this AD, before further flight, accomplish the following:

(i) If there is an edge void, determine the depth and length using a .0015 inch feeler gauge.

(ii) If there is an edge void in a grip plate or doubler near the outboard tip, tap inspect the affected area to determine the size and shape of the void.

(iii) Repair the M/R blade if the edge void is within the maximum repair damage limits or replace the M/R blade with an airworthy M/R blade.

(iv) If there is any corrosion, replace the M/R blade with an airworthy M/R blade or repair the M/R blade if the damage is within the maximum repair damage limits.

(v) If there is a crack in any grip plate or doubler, replace the M/R blade with an airworthy M/R blade.

(vi) If there is a crack in the M/R blade skin, replace the M/R blade with an airworthy M/R blade, or repair the M/R blade if the damage is within the maximum repair damage limits.

## **(f) Special Flight Permits**

Special flight permits will be permitted for flights to an authorized inspection and repair facility provided the one-time ferry flight does not exceed 5 hours TIS and is for the accomplishment of an inspection only.

## **(g) 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.

**(h) Additional Information**

Bell Helicopter Alert Service Bulletin (ASB) No. 205B-08-51 Revision B, dated January 11, 2011, for Model 205B helicopters, ASB No. 210-08-03 Revision B, dated January 10, 2011 for the Model 210 helicopters, and ASB No. 212-08-130 Revision B, dated January 11, 2011, for Model 212 helicopters, 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.

**(i) Subject**

Joint Aircraft Service Component (JASC) Code: 6210: Main Rotor Blades.

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

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