



This document is scheduled to be published in the Federal Register on 02/25/2013 and available online at <http://federalregister.gov/a/2013-04217>, and on [FDsys.gov](http://FDsys.gov)

**[4910-13-P]**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2013-0159; Directorate Identifier 2012-SW-010-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Robinson Helicopter Company**

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

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede an existing airworthiness directive (AD) for Robinson Helicopter Company (Robinson) Model R22, R22 Alpha, R22 Beta, R22 Mariner, R44, and R44 II helicopters with certain main rotor blades (blade) installed. The existing AD currently requires inspecting each blade at the skin-to-spar line for debonding, corrosion, a separation, a gap, or a dent and replacing any damaged blade with an airworthy blade. Since we issued that AD, a terminating action for the inspection requirements of that AD has been developed. The proposed actions are intended to detect debonding of the blade skin, which could result in blade failure and subsequent loss of control of the helicopter, and to correct the unsafe condition by replacing the main rotor blades with new blades that do not require the AD inspection.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 60 days AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**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 proposed 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 proposed AD, contact Robinson Helicopter Company, 2901 Airport Drive, Torrance, CA 90505; telephone (310) 539-0508; fax (310) 539-5198; or at <http://www.robinsonheli.com/servelib.htm>. You may review a copy of 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:** Fred Guerin, Aviation Safety Engineer, Los Angeles Aircraft Certification Office, Transport Airplane Directorate,

FAA, 3960 Paramount Blvd., Lakewood, CA 90712; telephone (562) 627-5232; email [fred.guerin@faa.gov](mailto:fred.guerin@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

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 might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, 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 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 proposed rulemaking. Before acting on this proposal, we will consider all comments we receive on or before the closing date for comments. We will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. We may change this proposal in light of the comments we receive.

### **Discussion**

On June 2, 2011, we issued AD 2011-12-10, amendment 39-16717 (76 FR 35330, June 17, 2011) (AD 2011-12-10) for Robinson Model R22, R22A, R22 Beta, and R22 Mariner helicopters, with a blade, part number (P/N) A016-4; and Model R44 and R44 II helicopters, with a blade, P/N C016-2 or C016-5. We corrected a typographical error in

AD 2011-12-10 on March 5, 2012 (77 FR 12991). AD 2011-12-10 requires a pilot check of the blade skin-to-spar joint area for any bare metal before the first flight of each day. That AD also requires, within 10 hours time-in-service (TIS), and thereafter at 100-hour TIS intervals or at each annual inspection, or if any bare metal is found during the pilot check, inspecting each blade for corrosion, separation, a gap, or a dent by following certain procedures in Robinson R22 Service Bulletin SB-103, dated April 30, 2010, for Model R22 series helicopters or Robinson R44 Service Bulletin SB-72, dated April 30, 2010, for Model R44 series helicopters. That AD also requires refinishing any bare metal before further flight and replacing any damaged blade with an airworthy blade.

AD 2011-12-10 superseded AD 2007-26-12, Amendment 39-15314 (73 FR 397, January 3, 2008) (AD 2007-26-12) which requires a one-time visual inspection for skin separation along the leading edge of the blade skin aft of the skin-to-spar bond line on the lower surface of each blade and in the tip cap area. AD 2007-26-12 also requires a “tap test” for detecting a separation or void in both bonded areas, repainting any exposed area of the blades, and replacing any blade if separation or a void occurs. That AD was prompted by 11 reports of blade debond, some occurring in flight and some found during routine maintenance.

#### **Actions Since Existing AD Was Issued**

Since we issued AD 2011-12-10, Robinson has developed replacement blades on both the R22 and R44 helicopters, and we have determined that replacing P/N A016-2 and -4 blades with P/N A016-6 blades for the Model R22 helicopter and P/N C016-2 and -5 blades with P/N C016-7 blades for the Model R44 helicopter will constitute terminating action for all requirements of that AD. We have also determined that it is in

the interest of safety that all blades are replaced within 5 years. The actions of this AD are intended to detect debonding or a void in the blade, which could lead to failure of the blade and subsequent loss of control of the helicopter. These actions will also correct the unsafe condition by replacing the main rotor blades with new blades that do not require the AD inspection.

Also, since issuing AD 2011-12-10, we have received comments from 13 commenters and have given due consideration to each one. We have identified seven unique issues and addressed those issues as follows:

Three commenters stated that making a logbook entry each day showing the AD check for paint is unnecessary and burdensome. The commenters also stated it is the same importance as other pre-flight checks that are not documented. One commenter suggested replacing the daily check and logbook entry with a pre-flight check and no logbook entry. One commenter stated that “we need to trust the pilots and maintenance people to do their jobs and not add to this burden of it looks good on paper world.” We do not agree. FAA policy requires a logbook entry for checks performed pursuant to the directions of an AD.

Four commenters stated it is not necessary to shorten the retirement life of main rotor blades by AD. They stated the cost is high compared to the safety benefit, it could put small operators out of business, and the problem is caused by poor inspection practices. One commenter added that routine inspections are performed before flight and if any defects were discovered that operator would be aware of it and not attempt flight until repairs were made. If operated in an environment where none of the causal factors exist, reliance on continued inspections is an adequate and appropriate long term solution

to blade replacement. We do not agree. AD 2011-12-10 does not decrease the retirement life of the affected blades. While this proposed AD supersedure would require blade life reduction and replacement, we are providing for public comment prior to adoption of the proposed AD.

Three commenters expressed concern that the cost estimates for older R44 Astro model helicopters is inaccurate, as these models must be refitted with hydraulic assisted controls before the new aluminum blades can be operated. They further stated that this modification can only be performed at the Robinson factory and the cost for shipping and overhaul is high. They question who will pay for the loss of income and state that mandating replacement of the -5 blade would have the unintended consequence of immediately grounding and placing an entire class of safe machines beyond economical repair. One of these commenters stated that replacing the blades on his R44 has been “financially devastating” due to both replacement costs and his loss of revenue, and believes Robinson should be responsible for these costs, not owners.

We do not agree. We are aware that the replacement blades for the R44 Astro are not compatible with a helicopter without hydraulic assisted controls, but we disagree that the R44 Astro will be beyond economical repair as many R44 Astros have been refitted with hydraulics, and conversions occur often. AD 2011-12-10 estimated costs for replacing one blade if debonding was present, and did not address any costs to modify the helicopter to accept the new part-numbered blades manufactured by Robinson. The FAA does not concur with the commenter's request that the FAA require the manufacturer to cover the cost of replacing the blades. The FAA recognizes that the general obligation of the operator to maintain aircraft in an airworthy condition is vital, but sometimes

expensive. The FAA considers that, in the interest of maintaining safe aircraft, prudent operators would accomplish the required actions even if they were not required to do so by the AD. However, the manufacturer, not the FAA, determines if the manufacturer will cover the cost of implementing a particular action. Therefore, no change in this regard is necessary.

One commenter requested the immediate adoption of an airworthiness directive requiring replacement of the main rotor blades, and expressed concern that the FAA was giving more consideration to any financial impact on Robinson than to the risk to the flying public. We do not agree that immediately requiring replacement of the blades is necessary, as we have determined that proper inspection is adequate to protect the safety of the fleet for the short term. This proposed AD to terminate the inspections by mandating blade replacement after five years is intended to allow time for blade manufacture, distribution, and installation without causing undue hardship to operations, and to protect the long term safety of the fleet.

One commenter stated that the current method of detecting the debonding issue is acceptable provided the inspection is performed properly and repainted when necessary to prevent the bonding from being exposed to the elements. This commenter disagreed that the problem is not a manufacturing problem and expressed concern that the variance in design of the blades is contributing to the situation. The commenter questioned whether other manufacturers are having similar issues and whether the new -7 replacement blades are produced under a different manufacturing process to ensure the current problem will be eliminated. The FAA disagrees that the cause of the debond is a failure of the manufacturing process. The debonding is being caused by the basic blade

design, which allows erosion of the bond line if left unprotected in an erosive environment. The replacement blades were redesigned using best practices, engineering integrity, and heightened oversight. While we believe the redesigned blades will correct the unsafe condition, the FAA cannot guarantee any design change will not, in the future, develop a problem that requires correction.

One commenter noted that a previous Civil Aviation Safety Authority (CASA) AD required a detailed inspection to determine blade airworthiness should any exposed blade skin aft of the skin-to-spar bond line be found, and that AD 2011-12-10 only requires refinishing the blade should the bond line be found to be exposed, without further inspection. The FAA agrees. Due to a typographical error in the AD, the requirement to skip further inspection prior to refinishing was caused by an incorrect reference to the refinishing paragraph instead of the inspection paragraph. A revision to AD 2011-12-10, Amendment 39-16717 (77 FR 12991, March 5, 2012) was issued on January 3, 2012, so that the AD language now refers to the correct paragraph.

#### **FAA’s Determination**

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

#### **Related Service Information**

We have reviewed the following Robinson service information:

- Letter titled “Additional Information Regarding Main Rotor Blade Skin Debonding,” dated May 25, 2007, discussing blade skin debonding;



- Rotorcraft Flight Manual (RFM) changes to the Normal Procedures Section 4 and Systems Description Section 7, revised April 20, 2007, for each applicable model helicopter containing a “caution” about skin-to-spar bond line erosion;
- One Service Letter with two different Nos.: R22 SL-56B and R44 SL-32B, both revised April 30, 2010, specifying proper inspection and protection (refinishing) of bonded areas; and
- Service Bulletins SB-103 for the Model R22 and SB-72 for the Model R44, both dated April 30, 2010, specifying proper inspection and protection (refinishing) of bonded areas for certain affected blades.
- R44 Service Letter SL-37, dated June 18, 2010, specifying the required modifications for a carbureted R-44 to install P/N C016-7 blades.

### **Proposed AD Requirements**

This proposed AD would retain the pilot check, recurring inspection, and blade refinishing requirements of AD 2011-12-10. The pilot check may be performed by an owner/operator (pilot) holding at least a private pilot certificate and must enter compliance into the aircraft maintenance records in accordance with 14 CFR 43.11 and 91.417(a)(2)(v). This authorization is an exception to our standard maintenance regulations.

This proposed AD would add a requirement, within five years of the effective date, to replace both main rotor blades with the new part-numbered aluminum blades. Replacing the blades with the new part-numbered blades would constitute terminating action of the recurring inspection requirements.

## Costs of Compliance

We estimate that this proposed AD would affect 1,290 Model R22 helicopters and 1,353 Model R44 helicopters, for a total of 2,643 helicopters of U.S. Registry. We estimate that operators may incur the following costs in order to comply with this AD:

- Time to perform the before flight check each day is negligible.
- Inspecting both blades will require about three work hours at an average labor rate of \$85 per hour, for a total cost per helicopter of \$255 and a total cost to the U.S. operator fleet of \$673,965.
- Replacing both blades on a Model R22 helicopter will require about 20 work hours at an average labor rate of \$85 per hour and required parts will cost \$29,808, for a total cost per helicopter of \$31,508 and a total cost to the U.S. R22 operator fleet of \$40,645,320 over a 5-year period.
- Replacing both blades on a Model R44 helicopter with hydraulically boosted flight controls installed (approximately 1053 helicopters) will require about 20 work hours at an average labor rate of \$85 per hour and required parts will cost \$43,783, for a total cost per helicopter of \$45,483 and a total cost to the U.S. R44 operator fleet of \$47,893,599 over a 5-year period.
- Replacing both blades on a Model R44 helicopter without hydraulically boosted flight controls installed (approximately 300 helicopters) will require modifying the aircraft with hydraulic flight controls, which will cost a flat rate (parts and labor) of \$40,000, which includes the P/N C016-7 blades, and installing the required airframe provisions will require about 13 work-hours, at an average labor rate of \$85 per hour, and

required parts will cost \$28,199, for a total cost per helicopter of \$112,247, and a cost to U.S. operators of \$33,674,100 over a 5-year period.

### **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 proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;

2. Is not a “significant rule” under the 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 proposed 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.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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 Amendment 39-16717 (76 FR 35330, June 17, 2011), and adding the following new AD:

**ROBINSON HELICOPTER COMPANY:** Docket No. FAA-2013-0159; Directorate Identifier 2012-SW-010-AD.

**(a) Applicability.**

This AD applies to Model R22, R22 Alpha, R22 Beta, and R22 Mariner helicopters with main rotor blade (blade), part number (P/N) A016-2 or A016-4; and Model R44 and R44 II helicopters with blade, P/N C016-2 or C-016-5, certificated in any category.

**(b) Unsafe Condition.**

This AD defines the unsafe condition as blade skin debonding, which could result in blade failure and subsequent loss of control of the helicopter.

**(c) Affected ADs.**

This AD supersedes AD 2011-12-10, Amendment 39-16717 (76 FR 35330, June 17, 2011).

**(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) Before the first flight of each day, visually check for any exposed (bare metal) skin-to-spar joint area on the lower surface of each blade. The actions required by this paragraph may be performed by the owner/operator (pilot) holding at least a private pilot certificate and must be entered into the aircraft records showing compliance with this AD in accordance with 14 CFR 43.9(a)(1)-(4) and 14 CFR 91.417(a)(2)(v). The record must be maintained as required by 14 CFR 91.417, 121.380, or 135.439.

(2) If there is any bare metal in the area of the skin-to-spar bond line, before further flight, inspect the blade by following the requirements of paragraph (e)(3) of this AD.

(3) Within 10 hours time-in-service (TIS), and at intervals not to exceed 100 hours TIS or at each annual inspection, whichever occurs first, inspect each blade for corrosion, separation, a gap, or a dent by following the Compliance Procedure, paragraphs 1 through 6 and 8, of Robinson R22 Service Bulletin SB-103, dated April 30, 2010 (SB103), or Robinson Service Bulletin SB-72, dated April 30, 2010 (SB72), as appropriate for your model helicopter. Although the Robinson service information limits the magnification to 10 x, a higher magnification is acceptable for this inspection. Also, an appropriate tap test tool which provides similar performance, weight, and consistency of tone may be substituted for the “1965 or later United States Quarter-dollar coin,” which is specified in the Compliance Procedure, paragraph 2, of SB72 and SB103.

(4) Before further flight, refinish any exposed area of a blade by following the Compliance Procedure, paragraphs 2 through 6, of Robinson R22 Service Letter SL-56B or R44 Service Letter SL-32B, both dated April 30, 2010, as appropriate for your model helicopter.

(5) Before further flight, replace any unairworthy blade with an airworthy blade.

(6) Within 5 years of the effective date of this AD:

(i) For Model R22 series helicopters, replace blade P/N A016-2 or A016-4 with a blade, P/N A016-6.

(ii) For Model R44 series helicopters fitted with hydraulically boosted main rotor flight controls, replace blade P/N C016-2 or C016-5 with a blade, P/N C016-7.

(iii) For Model R44 series helicopters without hydraulically boosted main rotor flight controls, replace blade P/N C016-2 or C016-5 with a blade, P/N C016-7. Prior to installing a blade P/N C016-7, verify the helicopter has been modified as required by Robinson R44 Service Letter SL-37, dated June 18, 2010, Compliance Procedures, paragraphs 1. through 10.

(iv) Installing blades, P/N A016-6 or P/N C016-7, is terminating action for the inspection requirements of paragraphs (e)(1) through (e)(4) of this AD.

**(f) Special Flight Permit.**

Special flight permits will not be issued.

**(g) Alternative Methods of Compliance (AMOCs).**

(1) The Manager, Los Angeles Aircraft Certification Office, FAA, may approve AMOCs for this AD. Send your proposal to: Fred Guerin, Aviation Safety Engineer, Los Angeles Aircraft Certification Office, Transport Airplane Directorate, FAA, 3960 Paramount Blvd., Lakewood, CA 90712; telephone (562) 627-5232; email [fred.guerin@faa.gov](mailto:fred.guerin@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.**

The Robinson letter titled “Additional Information Regarding Main Rotor Blade Skin Debonding,” dated May 25, 2007, which is not incorporated by reference, contains

additional information about the subject of this AD. For service information identified in this AD, contact Robinson Helicopter Company, 2901 Airport Drive, Torrance, CA 90505; telephone (310) 539-0508; fax (310) 539-5198; or at <http://www.robinsonheli.com/servlet.htm>. You may review a copy of this 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 February 12, 2013.

Bruce Cain,

Acting Manager, Rotorcraft Directorate,

Aircraft Certification Service.

[FR Doc. 2013-04217 Filed 02/22/2013 at 8:45 am; Publication Date: 02/25/2013]