



**[4910-13-P]**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2017-0947; Product Identifier 2017-SW-059-AD; Amendment 39-19902; AD 2020-08-10]**

**RIN 2120-AA64**

**Airworthiness Directives; Robinson Helicopter Company Helicopters**

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

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for Robinson Helicopter Company (Robinson) Model R44 and R44 II helicopters. This AD was prompted by reports of cracking in certain tail rotor blades. This AD requires visually checking each tail rotor blade for a crack. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact Robinson Helicopter Company, 2901 Airport Drive, Torrance, CA 90505; telephone 310-539-0508; fax 310-539-5198; or at <https://robinsonheli.com/technical-support/>. You may view a copy of the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0947; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M 30, West Building Ground Floor, Room W12 140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** James Guo, Aerospace Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Blvd., Lakewood, California 90712; telephone 562-627-5357; email [james.guo@faa.gov](mailto:james.guo@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to Robinson Model R44 and R44 II helicopters with a tail rotor blade part number (P/N) C029-1 or P/N C029-2 installed. The NPRM published in the *Federal Register* on May 23, 2018 (83 FR 23829). The NPRM was prompted by reports of P/N C029-1 and P/N C029-2 tail rotor blades with fatigue cracks at the leading edge. The cracks were caused by high fatigue stresses due to resonance when the blades were at high pitch angles from large left pedal inputs. The NPRM proposed to require visually checking each tail rotor blade for a crack. The proposed requirements were intended to detect a cracked tail rotor blade and prevent loss of the blade and subsequent loss of directional control. The FAA is issuing this AD to address

the unsafe condition on these products.

Since the FAA issued the NPRM, the website address for Robinson changed. This AD updates that website address.

### **Comments**

The FAA gave the public the opportunity to comment on the NPRM. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request: Robinson requested the FAA change the wording in the Discussion section that states the cracks in tail rotor blades were caused by "stresses due to resonance when the blades were at high pitch angles from large left pedal inputs" to "stresses during maneuvers with large left pedal inputs."

FAA Response: The FAA disagrees. The wording in the NPRM provides greater detail with regard to the mechanics of the cause of the cracking.

Request: Robinson requested the FAA change the wording in the Discussion section that describes the proposed actions' intentions by adding the word "possible", which would read as follows: "prevent possible loss of the blade." Robinson states that even with a crack, loss of the blade is possible, but not certain.

FAA Response: The FAA disagrees. The unsafe condition described in this AD is a crack in the tail rotor blade. The current wording does not state the helicopter will lose a tail rotor blade but rather loss of a blade could occur. The description of the unsafe condition states that the condition "could result in the loss of the tail rotor."

Request: Robinson requested the FAA correct the two instances of the wording "tail leading edge" by deleting the word "tail." The first instance is in the Proposed AD

Requirements section and the second instance is in the Required Actions paragraph.

FAA Response: The FAA agrees and has made these corrections.

Request: Robinson requested that the FAA change the Applicability paragraph by adding the following: “Tail rotor blade part number is visible on data plate located between bearings in blade root.”

FAA Response: The FAA disagrees because the addition is unnecessary. Parties may refer to the data plate or the aircraft’s records to determine which part-numbered tail rotor blades are installed. If they are uncertain about the location of the data plate, they can refer to service information documents that interested parties have access to through their normal course of business.

Request: Robinson requested that the FAA change the wording in the Unsafe Condition paragraph to state, “This AD defines the unsafe condition as a possible crack in the tail rotor blade” because not all blades have a crack.

FAA Response: The FAA disagrees. The unsafe condition that is being addressed is a crack in a blade.

Request: Robinson requested that the FAA change the wording in the Required Actions section from the checks of the tail rotor blades may be conducted “by the owner/operator” to “by an owner/operator.”

FAA Response: The FAA disagrees. The language requested by the commenter would unacceptably broaden the AD requirement. The FAA intended to allow the owner or operator of the aircraft, who holds at least a private pilot certificate, to perform the check when maintenance personnel are not present. The requested change in language may be interpreted to allow a pilot to perform the check on any aircraft, including aircraft that the

pilot does not own or operate.

Request: Robinson requested the FAA change the wording in the Required Actions paragraph from: “If there is a crack, before further flight, replace the tail rotor blade” to “If a crack is detected, replace tail rotor blade before further flight.”

FAA Response: The FAA disagrees. The wording in the NPRM sufficiently explains that if there is a crack, the tail rotor blade must be replaced.

### **FAA’s Determination**

The FAA has reviewed the relevant information, considered the comments received, and determined that an unsafe condition exists and is likely to exist or develop on other products of the same type design and that air safety and the public interest require adopting the AD requirements as proposed with the changes described previously. These changes are consistent with the intent proposed in the NPRM for correcting the unsafe condition and will not increase the economic burden on any operator nor increase the scope of the AD.

### **Related Service Information**

The FAA has reviewed Robinson SB-83, dated May 30, 2012 (SB-83), which specifies, within 10 flight hours or by June 30, 2012, whichever occurs first, inserting a caution page into the Pilot’s Operating Handbook. The caution page specifies inspecting the leading edges of each tail rotor blade for a crack before each flight. The caution page also advises that to reduce fatigue stress damage to the tail rotor blades, pilots should avoid maneuvers that require large left pedal inputs. SB-83 specifies that the caution page may be removed when the tail rotor blades are replaced with tail rotor blade P/N C029-3.

## **Costs of Compliance**

The FAA estimates that this AD affects 1,631 helicopters of U.S. Registry. The FAA estimates that operators may incur the following costs in order to comply with this AD. Labor costs are estimated at \$85 per work-hour.

Visually checking the tail rotor blades for a crack takes about 0.2 work-hour for an estimated cost of \$17 per helicopter and \$27,727 for the U.S. fleet per check cycle.

Replacing a tail rotor blade takes about 2 work-hours and parts cost about \$3,080 for an estimated replacement cost of \$3,250 per blade.

## **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.

The FAA is 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**

The FAA 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) Will not affect intrastate aviation in Alaska, and

(3) 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.

#### **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):

**2020-08-10 Robinson Helicopter Company:** Amendment 39-19902; Docket

No. FAA-2017-0947; Product Identifier 2017-SW-059-AD.

#### **(a) Applicability**

This AD applies to Robinson Helicopter Company (Robinson) Model R44 and

R44 II helicopters, certificated in any category, with a tail rotor blade part number (P/N) C029-1 or P/N C029-2 installed.

**(b) Unsafe Condition**

This AD defines the unsafe condition as a crack in a tail rotor blade. This condition could result in the loss of the tail rotor and subsequent loss of control of the helicopter.

**(c) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(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 50 hours time-in-service after the effective date of this AD and thereafter before each flight:

(1) Visually check each tail rotor blade for a crack in the leading edge, paying particular attention to the area in the most inboard white paint stripe. Wipe the blades clean, if necessary, to ensure any potential crack is visible. 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) through (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 a crack, before further flight, replace the tail rotor blade.

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

(1) The Manager, Los Angeles ACO Branch, FAA, may approve AMOCs for this AD. Send your proposal to: James Guo, Aerospace Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Blvd., Lakewood, California 90712; telephone 562-627-5357; email james.guo@faa.gov.

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, the FAA suggests 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) Related Information**

Robinson Helicopter Company R44 Service Bulletin SB-83, dated May 30, 2012, 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 <https://robinsonheli.com/technical-support/>. You may view a copy of information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177.

**(h) Subject**

Joint Aircraft Service Component (JASC) Code: 6410, Tail Rotor Blades.

Issued on April 13, 2020.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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