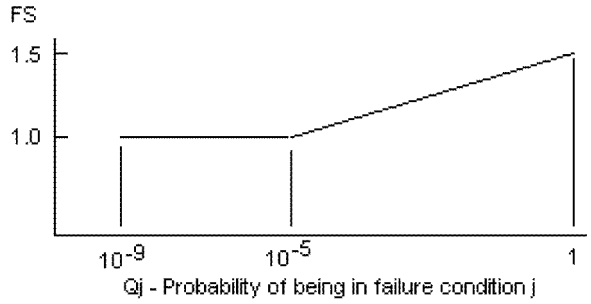

Figure 2: Factor of safety for continuation of flight

$Q_j = (T_j)(P_j)$

Where:

T_j = Average time spent in failure condition j (in hours)

P_j = Probability of occurrence of failure mode j (per hour)

Note: If P_j is greater than 10^{-3} per flight hour, then a 1.5 factor of safety must be applied to all limit load conditions specified in Subpart C.

(iii) For residual strength substantiation, the rotorcraft must be able to withstand two-thirds of the ultimate loads defined in paragraph (c)(2)(ii) of these special conditions.

(iv) If the loads induced by the failure condition have a significant effect on fatigue or damage tolerance, then their effects must be taken into account.

(v) Freedom from flutter and divergence must be shown up to 1.11 V_{NE} (power on and power off).

(vi) Freedom from flutter and divergence must also be shown up to 1.11 V_{NE} (power on and power off) for all probable system failure conditions combined with any damage required or considered under § 29.571(g) or § 29.573(d)(3).

(3) Consideration of certain failure conditions may be required by other sections of 14 CFR part 29 regardless of calculated system reliability. Where the failure analysis shows the probability of these failure conditions to be less than 10^{-9}, criteria other than those specified in this paragraph may be used for structural substantiation to show continued safe flight and landing.

(d) *Failure indications.* For system failure detection and indication, the following apply:

(1) The system must be checked for failure conditions, not extremely improbable, that degrade the structural capability below the level required by 14 CFR part 29 or that significantly reduce the reliability of the remaining operational portion of the system. As far as reasonably practicable, the flight crew must be made aware of these failures before flight. Certain elements of the control system, such as mechanical and hydraulic components, may use special periodic inspections, and electronic components may use daily checks, in lieu of detection and indication systems to achieve the objective of this requirement. These other means of detecting failures before flight will become part of the certification maintenance requirements (CMRs) and must be limited to components that are not readily detectable by normal detection and indication systems, and where service history shows that inspections will provide an adequate level of safety.

(2) The existence of any failure condition, shown to be not extremely improbable, during flight that could significantly affect the structural capability of the rotorcraft and for which the associated reduction in airworthiness can be minimized by suitable flight limitations, must be signaled to the flight crew. For example, failure conditions that result in a factor of safety between the rotorcraft strength and the loads of Subpart C below 1.25, or flutter and divergence margins below 1.11 V_{NE} (power on and power off), must be signaled to the crew during flight.

(e) *Dispatch with known failure conditions.* If the rotorcraft is to be dispatched in a known system failure condition that affects structural performance, or that affects the reliability of the remaining operational portion of the system to maintain structural performance, then the provisions of these special conditions must be met, including the provisions of paragraph (b) for the dispatched condition and paragraph (c) for subsequent failures. Expected operational limitations may be taken into account in establishing P_j as the probability of failure occurrence for determining the safety margin in Figure 1 of these special conditions. Flight limitations and expected operational limitations may be taken into account in establishing Q_j as the combined probability of being in the dispatched failure condition and the subsequent failure condition for the safety margins in Figure 2 of these special conditions. These limitations must be such that the probability of being in this combined failure state and then subsequently encountering limit load conditions is extremely improbable. No reduction in these safety margins is allowed if the subsequent system failure rate is greater than 10^{-3} per hour.

Issued in Fort Worth, Texas, on May 18, 2016.

Jorge Castillo,

Acting Manager, Rotorcraft Directorate, Aircraft Certification Service.

[FR Doc. 2016–12497 Filed 5–26–16; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–0733; Directorate Identifier 2015–SW–040–AD]

RIN 2120–AA64

Airworthiness Directives; Robinson Helicopter Company Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for Robinson Helicopter Company (Robinson) Model R44, R44 II, and R66 helicopters. This proposed AD would require a visual inspection of the main rotor blade (MRB) and either removing or altering it. This proposed AD is prompted by a report that a fatigue crack was found at an MRB's trailing edge and a determination that some MRBs may have reduced blade thickness due to blending out corrosion. The proposed

actions are intended to prevent an MRB fatigue crack, which could lead to MRB failure and subsequent loss of helicopter control.

DATES: We must receive comments on this proposed AD by July 26, 2016.

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* by searching for and locating Docket No. FAA–2016–0733, 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 rule, contact Robinson Helicopter Company, 2901 Airport Drive, Torrance, CA 90505; telephone (310) 539–0508; fax (310) 539–5198; or at *http://www.robinsonheli.com.* You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N–321, Fort Worth, TX 76177.

FOR FURTHER INFORMATION CONTACT: Fred Guerin, Aviation Safety Engineer, Los Angeles Aircraft Certification Office, Transport Airplane Directorate, FAA, 3960 Paramount Blvd., Lakewood, California 90712; telephone (562) 627–5232; email *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

We propose to adopt a new AD for Robinson Model R44 and R44 II helicopters with an MRB part number (P/N) C016–7, Revisions N/C, A through Z, and AA through AE; and Model R66 helicopters with an MRB P/N F016–2, Revisions A through E. The proposed AD would require a one-time inspection of the MRB for a crack, corrosion, dent, nick, or scratch, and either altering the MRB or removing it from service.

On February 23, 2015, we issued Special Airworthiness Information Bulletin (SAIB) SW–15–08 for Robinson Model R44 and R44 II helicopters with part numbered C016–7 MRBs. SAIB SW–15–08 was prompted by a report of an in-flight failure of a MRB on a Robinson Model R44 II helicopter, which resulted in severe MRB vibration that prompted an emergency landing. SAIB SW–15–08 recommended daily pre-flight visual checks of the MRB trailing edge and having a qualified technician examine any damage before further flight. SAIB SW–15–08 also recommended, if unusual rotor system vibration was detected in flight, landing immediately and having a qualified mechanic examine the MRBs.

After we issued SAIB SW–15–08, Robinson published R44 Service Bulletin SB–89, dated March 30, 2015 (SB–89), and R66 Service Bulletin SB–13, dated March 30, 2015 (SB–13), recommending inspecting and modifying the MRB trailing edge. Therefore, on March 31, 2015, we revised the SAIB and issued SAIB SW–15–08R1 to advise that the MRB trailing edge has a corner where the blade chord begins to increase that can result in high stresses. SAIB SW–15–08R1 recommends inspecting and modifying the MRB by following the actions in the service information.

When the SAIBs were issued, we did not consider the reported incident to be an airworthiness concern that would warrant AD action. The FAA subsequently determined that some of the affected blades have been repaired by blending out corrosion in the area of the crack site radius, resulting in a reduced blade thickness. Also, reports to Robinson following the SB–89 and SB–13 inspections revealed corrosion remaining undetected between scheduled maintenance intervals. The presence of corrosion and a reduction in blade thickness could result in the development of a fatigue crack on the trailing edge at the transition radius before the MRB reaches its retirement life. Altering the MRB by smoothing the transition at the chord increase, as specified in SB–89 and SB–13, reduces the stress concentration and corrects this unsafe condition. The proposed actions are intended to prevent a fatigue crack, which could lead to failure of the MRB and subsequent loss of helicopter control.

FAA's Determination

We are proposing this AD because we evaluated all known relevant information and determined that an unsafe condition exists and is likely to exist or develop on other products of these same type designs.

Related Service Information Under 1 CFR Part 51

We reviewed SB–89 for Model R44 and R44 II helicopters and SB–13 for Model R66 helicopters. SB–89 and SB–13 provide a one-time procedure to inspect each MRB for cracks, corrosion, and damage that may indicate a crack. If there is a crack, corrosion, or any damage, SB–89 and SB–13 specify removing the MRB from service and contacting Robinson. Otherwise, SB–89 and SB–13 describe procedures to smooth the transition at the chord increase of each MRB to reduce the stress concentration.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

Proposed AD Requirements

This proposed AD would require within 100 hours time-in-service (TIS) or at the next annual inspection, whichever occurs first, cleaning the MRB and visually inspecting it for a crack, nick, corrosion, scratch, or dent.

If there is any crack, nick, corrosion, scratch or dent, this proposed AD would require repairing it or removing the MRB from service. If the MRB is repaired, or if there are no cracks, nicks, corrosion, scratches, or dents, this proposed AD would require altering the MRB.

Differences Between This Proposed AD and the Service Information

This proposed AD would require compliance within the next 100 hours TIS or at the next annual inspection, whichever occurs first. The service information recommends compliance within 15 hours TIS or by May 31, 2015, whichever occurs first, for the R44 and R44II helicopters and 10 hours TIS or by May 31, 2015, whichever occurs first, for the R66 helicopters.

Costs of Compliance

We estimate that this proposed AD would affect 2,236 helicopters of U.S. Registry and that labor costs average $85 per work hour. Based on these estimates, we expect the following costs:

- The visual inspection would require 1 work hour. No parts would be needed, so the cost per helicopter would total $85. The cost for the U.S. fleet would total $190,060.
- Altering each MRB, if necessary, would require 2 work hours and $65 for parts. We estimate a total cost of $235 per helicopter and $525,460 for the U.S. fleet.
- Replacing a MRB, if necessary, would require 3 work hours. Parts would cost $19,900 for the Model R44 and R44 II and $20,900 for the R66 helicopter for a total cost of $20,155 and $21,155, respectively, per MRB.

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 adding the following new airworthiness directive (AD):

Robinson Helicopter Company: Docket No. FAA–2016–0733; Directorate Identifier 2015–SW–040–AD.

(a) Applicability

This AD applies to Robinson Helicopter Company (Robinson) Model R44 and R44 II helicopters with a main rotor blade (MRB) part number (P/N) C016–7 Revision N/C, A through Z, and AA through AE installed; and Model R66 helicopters with a MRB P/N F016–2 Revision A through E installed; certificated in any category.

(b) Unsafe Condition

This AD defines the unsafe condition as a fatigue crack on an MRB. This condition could result in failure of an MRB and loss of helicopter control.

(c) Comments Due Date

We must receive comments by July 26, 2016.

(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 100 hours time-in-service or at the next annual inspection, whichever occurs first:

(1) Clean each MRB in the area depicted in Figure 1 of Robinson R44 Service Bulletin SB–89, dated March 30, 2015 (SB–89), or Robinson R66 Service Bulletin SB–13, dated March 30, 2015 (SB–13), as applicable to your model helicopter.

(2) Using 10X or higher power magnification and a light, visually inspect the upper and lower MRB surfaces and trailing edge as depicted in Figure 1 of SB–89 or SB–13 for a crack, a nick, a scratch, a dent, or corrosion. If there is a crack, a nick, a scratch, a dent, or any corrosion, repair the MRB to an airworthy configuration if the damage is within the maximum repair damage limits or remove the MRB from service.

(3) Alter the MRB in accordance with Compliance Procedure, paragraphs 4 through 19, of SB–89 or SB–13, as applicable to your model helicopter. Equivalent tubing may be used for R7769–1 and R7769–6 tubes. Power tools may not be used for this procedure.

(f) Alternative Methods of Compliance (AMOC)

(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, California 90712; telephone (562) 627–5232; email *9-ANM-LAACO-AMOC-REQUESTS@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) Subject

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

Issued in Fort Worth, Texas, on May 19, 2016.

Scott A. Horn,

Acting Manager, Rotorcraft Directorate, Aircraft Certification Service.

[FR Doc. 2016–12442 Filed 5–26–16; 8:45 am]

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