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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-0482; Directorate Identifier 2008-SW-54-AD; Amendment 39-15920; AD 2009-11-10]

RIN 2120-AA64

Airworthiness Directives; Eurocopter Deutschland GmbH Model EC135 Helicopters

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

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for Eurocopter Deutschland GmbH (Eurocopter) Model EC135 helicopters. This AD results from a report of abnormal main rotor blade vibrations on a Eurocopter Model EC135 helicopter. This AD also results from mandatory continuing airworthiness information (MCAI) issued by the European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community. The MCAI states that an operator reported unusual vibrations during the start phase of the main rotor blade on one helicopter. The vibrations stopped after the application of torque. Subsequent maintenance personnel found that six of the eight attachment screws of the lower hub-shaft bearing support were loose. This condition was discovered in two additional helicopters. Loose screws in the bearing support, if not detected and corrected, could result in abnormal main rotor blade vibrations and subsequent damage to the main transmission.

DATES: This AD becomes effective on June 12, 2009.

The incorporation by reference of certain publications is approved by the Director of the Federal Register as of June 12, 2009.

We must receive comments on this AD by July 27, 2009.

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

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting your comments electronically.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

You may get the service information identified in this AD from American Eurocopter Corporation, 2701 Forum Drive, Grand Prairie, TX 75053-4005, telephone (972) 641-3460, fax (972) 641-3527, or at <http://www.eurocopter.com>.

Examining the 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 stated in the ADDRESSES section of this AD. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Chinh Vuong, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Safety Management Group, Fort Worth, Texas 76193-0111, telephone (817) 222-5116, fax (817) 222-5961.

SUPPLEMENTARY INFORMATION:

Discussion

We recently received a report of abnormal main rotor blade vibration on a Eurocopter Model EC135 helicopter. This main rotor blade vibration occurred after initial aircraft start, while operating at flat pitch, between 8.5 and 25 percent torque and 98.6 percent NR/N2 speed, and dissipated once the FADEC switches were advanced to FLIGHT. The main rotor transmission chip light also illuminated with minimal debris found on the chip detectors. During troubleshooting, six of the eight main transmission lower hub-shaft bearing support bolts were found lying in the bottom of the main transmission case, atop of the lower transmission access panel. Only two of the eight bolts remained installed, loose in their positions, and the outer race of the roller bearing was rotated out of position (cocked). Approximately three weeks after that first incident, we received a report that loose bolts were discovered on two additional newer helicopters that had not been inspected at the time the loose bolts were discovered on the first helicopter. Subsequent investigations revealed that screws were not properly torqued and vibrations had caused the screws to back-out. Loosened screws in the bearing support, if not detected and corrected, could result in abnormal main rotor blade vibrations and subsequent damage to the main transmission.

EASA has issued EASA Emergency AD 2008-0175-E, dated September 16, 2008, to correct an unsafe condition for the Eurocopter Model EC135 helicopters. The MCAI explains that "The lower hub-shaft bearing consists of a ball bearing and a roller bearing. The outer race of the roller bearing is fixed to the housing with screws. Should all attachment screws become loose, the outer race of the roller bearing might separate, which would constitute an unsafe condition. In such case, however, the axial guidance of the rotor hub-shaft would still be ensured." The MCAI requires inspecting the main transmission attachment hardware and installing locking washers. You may obtain further information by examining the MCAI and any related service information in the AD docket.

Related Service Information

Eurocopter has issued Alert Service Bulletin EC135-63A-013, Revision 2, dated September 12, 2008 (ASB). The ASB specifies checking the screws at the lower hub-shaft bearing for correct attachment and securing attachment hardware by means of locking washers. The actions described in the MCAI are intended to correct the same unsafe condition as that identified in the service information.

FAA's Evaluation and Unsafe Condition Determination

This product has been approved by the aviation authority of Germany, and is approved for operation in the United States. Pursuant to our bilateral agreement with Germany, EASA, their Technical Agent, has notified us of the unsafe condition described in the MCAI. We are issuing this AD because we evaluated all information provided by EASA and determined the unsafe condition exists and is likely to exist or develop on other helicopters of the same type design.

Differences Between This AD and the MCAI AD

This AD does not require sending the main transmission to the manufacturer and does not refer to the transmission part numbers. Also, this AD uses the term "hours time-in-service", the MCAI AD uses the term "flight cycles".

Costs of Compliance

We estimate that this AD will affect about 189 helicopters of U.S. registry. We also estimate that it will take about 8 work-hours to inspect and install lock washers, at an average labor rate of \$80 per work-hour. Required parts will cost about \$574 per helicopter (\$86 for the lock washers and \$488 for the required oil). Based on these figures, we estimate the cost of this AD on U.S. operators will be \$229,446 (\$1,214 per helicopter).

FAA's Determination of the Effective Date

An unsafe condition exists that requires the immediate adoption of this AD. We find that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because loosened screws in the bearing support, if not detected and corrected quickly, could result in abnormal main rotor blade vibrations and subsequent damage to the main transmission. Therefore, we have 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 fewer than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and opportunity for public comment. However, we invite you to send us any written data, views, or arguments concerning this AD. Send your comments to an address listed under the ADDRESSES section of this AD. Include "Docket No. FAA-2009-0482; Directorate Identifier 2008-SW-54-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov> including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

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 product(s) 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.

Therefore, I certify this AD:

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); 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.

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 AD:



2009-11-10 Eurocopter Deutschland GmbH: Amendment 39-15920. Docket No. FAA-2009-0482; Directorate Identifier 2008-SW-54-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective on June 12, 2009.

Other Affected ADs

- (b) None.

Applicability

(c) This AD applies to Eurocopter Deutschland GmbH (Eurocopter) Model EC135 helicopters with a main transmission with a serial number of 0001 through 1420 and 1500 through 1749 installed, certificated in any category.

Reason

(d) The mandatory continuing airworthiness information (MCAI) states that an operator reported unusual vibrations during the start phase of the main rotor blade on one helicopter. The vibrations stopped after the application of torque. Subsequently, maintenance personnel found that six of the eight attachment screws of the lower hub-shaft bearing support were loose. This condition was discovered in two additional helicopters. Loose screws in the bearing support, if not detected and corrected, could result in abnormal main rotor blade vibrations and subsequent damage to the main transmission.

Actions and Compliance

(e) Within 3 hours time-in-service (TIS) if unusual vibrations are detected during the start phase or the shutdown phase when the main rotors are not at full operation RPM, or within 50 hours TIS after the effective date of this AD, whichever occurs first, do the following:

- (1) Remove the lower transmission cover.

Note 1: You may drain the oil into a clean container so that it can be reused.

(2) Measure the clearance between the outer race and the transmission housing at four positions offset by 90° using a feeler gauge as depicted in Figure 1 of Eurocopter Alert Service Bulletin EC135-63A-013, Revision 02, dated September 12, 2008 (ASB). If the measured maximum clearance is:

- (i) Less than or equal to 0.1 mm—install locking washers, tighten all screws, and re-measure the clearance by following paragraphs 3.B.(3) through 3.B.(7) of the ASB.

- (ii) More than 0.1 mm—determine the difference between the smallest and the largest clearance and:

- (A) If the difference is less than 0.4 mm—install locking washers, tighten all screws, and re-measure the clearance by following paragraphs 3.B.(2) through 3.B.(7) of the ASB.

(B) If the difference is equal to or more than 0.4 mm—replace the transmission before further flight with an airworthy transmission that has been modified in accordance with paragraph 3.B. of the ASB.

(iii) If the re-measured clearances obtained in accordance with paragraphs (e)(2)(i) or (e)(2)(ii)(A) of this AD are not less than or equal to 0.05 mm, replace the transmission with an airworthy transmission that has been modified in accordance with paragraph 3.B. of the ASB.

(3) Reinstall the lower transmission cover and replenish the transmission oil.

Note 2: If the transmission oil was drained into a clean container, it can be reused. Also, if the O-ring on the lower transmission cover is not damaged, it can be reused once.

(f) After the effective date of this AD, install only main transmissions that have been modified in accordance with paragraph 3.B.(3) of the ASB.

Differences Between This AD and the MCAI AD

(g) This AD does not require sending the main transmission to the manufacturer and does not refer to the transmission part numbers. Also, this AD uses the term "hours time-in-service", the MCAI AD uses the term "flight cycles".

Other Information

(h) The Manager, Safety Management Group, FAA, ATTN: Chinh Vuong, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Safety Management Group, Fort Worth, Texas 76193-0111, telephone (817) 222-5116, fax (817) 222-5961 has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

Related Information

(i) European Aviation Safety Agency (EASA) MCAI Emergency AD No. 2008-0175-E, dated September 16, 2008, contains related information.

Air Transport Association of America (ATA) Tracking Code

(j) ATA Code 63: Main rotor drive.

Material Incorporated by Reference

(k) You must use the specified portions of Eurocopter Alert Service Bulletin EC135-63A-013, Revision 02, dated September 12, 2008, to do the actions required.

(1) The Director of the Federal Register approved the incorporation by reference of this service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For service information identified in this AD, contact American Eurocopter Corporation, 2701 Forum Drive, Grand Prairie, TX 75053-4005, telephone (972) 641-3460, fax (972) 641-3527, or at <http://www.eurocopter.com>.

(3) You may review copies at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Fort Worth, Texas on May 19, 2009.
Mark R. Schilling,
Acting Manager, Rotorcraft Directorate,
Aircraft Certification Service.