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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-0610; Directorate Identifier 2009-SW-47-AD; Amendment 39-16455; AD 2010-20-20]

RIN 2120-AA64

Airworthiness Directives; Eurocopter France Model SA-365N, SA-365N1, AS-365N2, AS-365N3, SA-366G1, EC 155B, EC155B1, SA-365C, SA-365C1, SA-365C2, SA-360C Helicopters

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD) for the specified Eurocopter France (Eurocopter) helicopters. That AD requires repetitively inspecting the main gearbox (MGB) planet gear carrier for a crack and replacing any MGB that has a cracked planet gear carrier before further flight. This action requires the same inspections required by the existing AD, but shortens the initial inspection interval. This AD is prompted by the discovery of another crack in a MGB planet gear carrier and additional analysis that indicates that the initial inspection interval must be shortened. The actions specified by this AD are intended to detect a crack in the web of the planet gear carrier, which could lead to a MGB seizure and subsequent loss of control of the helicopter.

DATES: Effective November 12, 2010.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of November 12, 2010.

ADDRESSES: You may examine the docket that contains this AD, any comments, and other information on the Internet at <http://www.regulations.gov>, or at the Docket Operations office, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC.

You may get the service information identified in this AD from American Eurocopter Corporation, 2701 Forum Drive, Grand Prairie, Texas 75053-4005, telephone (972) 641-3460, fax (972) 641-3527.

Examining the Docket: You may examine the docket that contains this AD, any comments, and other information on the Internet at <http://www.regulations.gov>, or at the Docket Operations office, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC.

FOR FURTHER INFORMATION CONTACT: Gary Roach, Aerospace Engineer, FAA, Regulations and Policy Group, 2601 Meacham Blvd., ASW-111, Fort Worth, Texas 76137; telephone: (817) 222-5130; fax: 817-222-5961.

SUPPLEMENTARY INFORMATION: A proposal to amend 14 CFR part 39 by superseding AD 2005-03-09, Amendment 39-13965 (70 FR 7382, February 14, 2005), for the specified Eurocopter France (Eurocopter) model helicopters was published in the Federal Register on June 28, 2010 (75 FR 36581). The action proposed to require shortening the initial inspection required by AD 2005-03-09 from 265 hours time-in-service (TIS) to 35 hours TIS and retaining the 50-hour TIS recurring inspections. That proposal was prompted by the finding of an additional crack in the MGB planet gear carrier of a Eurocopter Model EC 155 helicopter. That crack was caused by a progressive fatigue failure caused by scoring in the blend radius between the pin and the web. An additional analysis indicates that the initial inspection must be shortened. Therefore, this AD shortens the initial inspection from 265 hours time-in-service (TIS) to 35 hours TIS. The recurring 50 hour-TIS inspections would remain the same.

The European Aviation Safety Agency (EASA), which is the Technical Agent for France, has issued EASA Emergency Airworthiness Directive No. 2007-0288-E, dated November 15, 2007. EASA states that cracks were discovered in the web of the MGB planet gear carrier. "The two affected MGB units had been removed for overhaul/repair, subsequent to the detection of metal chips at the magnetic plugs." Investigation of the first case showed a failure of the head of a screw that secures the sun gear bearing. The screw head was caught by the planet gear/fixed ring gear/sun gear drive train. The second case was discovered by the manufacturer and did not seem to be associated with any other failure. You may obtain further information by examining the MCAI and any related service information in the AD docket.

Related Service Information

Eurocopter France has issued the following Emergency Alert Service Bulletins:

- No. 05A007, Revision 2, for the Model EC155 helicopters;
- No. 05.00.48, Revision 3, for the Model AS365 helicopters;
- No. 05.26, Revision 2, for the Model SA360 and SA365 helicopters; and
- No. 05.33, Revision 2, for the SA366 helicopters.

Each Emergency Alert Service Bulletin (EASB) at the stated revision level is dated November 16, 2009 and describes the discovery of a progressive fatigue failure of the planet gear carrier. The EASBs specify inspecting the MGB planet gear carrier for a crack and removing the MGB and contacting the manufacturer before the next flight if a crack is found.

FAA's Evaluation and Unsafe Condition Determination

These products have been approved by the aviation authority of France and are approved for operation in the United States. Pursuant to our bilateral agreement with France, EASA, their technical representative, has notified us of the unsafe condition described in the MCAI AD. We are proposing 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 products of these same type designs. This AD requires inspecting the MGB planet gear carrier for a crack and replacing the MGB before further flight if a crack is found. The actions must be accomplished by following the specified portions of the EASBs described previously.

Differences Between This Proposed AD and the MCAI AD

The MCAI AD references the service information rather than stating compliance times as we have done in this AD. Unlike the MCAI AD, we have structured our compliance times based on a 250-hour TIS threshold. Also, this AD does not require you to report cracks in the planet gear carrier to the manufacturer.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were received on the proposal or the FAA's determination of the cost to the public. The FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

Costs of Compliance

We estimate that this AD will affect 145 helicopters of U.S. registry. We also estimate that it will take about 1 work-hour per helicopter for each borescope inspection and 12 work-hours for each visual inspection. Replacing the MGB, if necessary, will take about 16 work-hours. The average labor rate is \$85 per work-hour. Required parts will cost about \$66,780 per MGB. Based on these figures, we estimate the cost of this AD on U.S. operators is \$3,486,760, assuming that a borescope inspection is done on the entire fleet 12 times a year, that no visual inspections are done, and that 49 MGBs are replaced.

Regulatory Findings

We have 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 above, I certify that the 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); 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. See the AD docket to examine the economic evaluation.

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.

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. Section 39.13 is amended by removing Amendment 39-13965 (70 FR 7382, February 14, 2005), and by adding a new airworthiness directive (AD), Amendment 39-16455, to read as follows:



2010-20-20 Eurocopter France: Amendment 39-16455; Docket No. FAA-2010-0610; Directorate Identifier 2009-SW-47-AD. Supersedes AD 2005-03-09; Amendment 39-13965; Docket No. FAA-2005-20294; Directorate Identifier 2004-SW-39-AD.

Applicability: Model EC 155B, EC155B1, SA-360C, SA-365C, SA-365C1, SA-365C2, SA-365N, SA-365N1, AS-365N2, AS 365 N3, and SA-366G1 helicopters, certificated in any category.

Compliance: Required as indicated.

For a main gearbox (MGB) that has:	Inspect:
(1) Less than 250 hours time-in-service (TIS) since new or last overhaul.	On or before the MGB reaches 35 hours TIS, unless accomplished previously, and thereafter at intervals not to exceed 50 hours TIS.
(2) 250 or more hours TIS since new or last overhaul.	Within 15 hours TIS, unless accomplished previously, and thereafter at intervals not to exceed 50 hours TIS.

To detect a crack in the web of the planet gear carrier, which could lead to a MGB seizure and subsequent loss of control of the helicopter, accomplish the following:

(a) Either borescope inspect the web of the MGB planet gear carrier for a crack in accordance with the Operational Procedure, paragraphs 2.B.2. through 2.B.2.a.1, of Eurocopter Emergency Alert Service Bulletin (EASB) No. 05A007, Revision 2; No. 05.00.48, Revision 3; No. 05.26, Revision 2; or No. 05.33, Revision 2; as applicable to your model helicopter, or visually inspect the MGB planet gear carrier in accordance with the Operational Procedure, paragraphs 2.B.3. through paragraph 2.B.3.a.1, of the EASB applicable to your model helicopter. Each EASB at the stated revision level is dated November 16, 2009.

(b) If a crack is found in the planet gear carrier, replace the MGB with an airworthy MGB before further flight.

(c) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Contact the Manager, Safety Management Group, FAA, Attn: Gary Roach, Aviation Safety Engineer, Rotorcraft Directorate, FAA, 2601 Meacham Blvd., Fort Worth, Texas 76137, telephone (817) 222-5130, fax (817) 222-5961, for information about previously approved alternative methods of compliance.

(d) The Joint Aircraft System/Component (JASC) Code is 6320: Main Rotor Gearbox.

(e) The inspections shall be done in accordance with the specified portions of Eurocopter Emergency Alert Service Bulletin No. 05A007, Revision 2, No. 05.00.48, Revision 3, No. 05.26, Revision 2, or No. 05.33, Revision 2. Each service bulletin at the stated revision level is dated November 16, 2009. The Director of the Federal Register approved this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from American

Eurocopter Corporation, 2701 Forum Drive, Grand Prairie, Texas 75053-4005, telephone (972) 641-3460, fax (972) 641-3527. Copies may be inspected 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/code_of_federal_regulations/ibr_locations.html.

(f) This amendment becomes effective on November 12, 2010.

Note: The subject of this AD is addressed in European Aviation Safety Agency AD No. 2007-0288-E, dated November 15, 2007.

Issued in Fort Worth, Texas, on September 22, 2010.

Mark R. Schilling,
Acting Manager, Rotorcraft Directorate,
Aircraft Certification Service.