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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2012-0354; Directorate Identifier 2010-SW-104-AD; Amendment 39-17165; AD 2012-17-02]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Eurocopter France Helicopters**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for all Eurocopter France (EC) Model SA-365N, SA-365N1, SA-366G1, AS-365N2, AS 365 N3, EC 155B, and EC155B1 helicopters. This AD was prompted by the discovery of a cracked main rotor mast nut. This condition, if not corrected, could lead to complete failure of the mast nut, resulting in failure of the rotor mast and loss of control of the helicopter. This AD will require replacing the main rotor mast nut with an airworthy main rotor mast nut to prevent this scenario.

**DATES:** This AD is effective October 10, 2012.

**ADDRESSES:** For service information identified in this AD, contact American Eurocopter Corporation, 2701 N. Forum Drive, Grand Prairie, TX 75052, telephone (972) 641-0000 or (800) 232-0323, fax (972) 641-3775, or at <http://www.eurocopter.com/techpub>. You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

#### **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 AD, any incorporated-by-reference service information, the economic evaluation, any comments received, and other information. The street address for the Docket Operations Office (phone: 800-647-5527) is U.S. Department of Transportation, Docket Operations Office, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Gary Roach, Aviation Safety Engineer, Regulations and Policy Group, Rotorcraft Directorate, FAA, 2601 Meacham Blvd., Fort Worth, TX 76137; telephone (817) 222-5110; email gary.b.roach@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

On April 4, 2012, at 77 FR 20319, the Federal Register published our notice of proposed rulemaking (NPRM), which proposed to amend 14 CFR part 39 to include an AD that would apply to all Eurocopter France (EC) Model SA-365N, SA-365N1, SA-366G1, AS-365N2, AS 365 N3, EC 155B, and EC155B1 helicopters. That NPRM proposed to require replacing the main rotor mast nut with an airworthy main rotor mast nut to prevent failure of the main rotor mast and subsequent loss of control of the helicopter.

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA AD No.: 2006-0368R1, dated December 2, 2010, and corrected December 8, 2010 (AD 2006-0368R1), to correct an unsafe condition for the EC Model SA 365 N, SA 365 N1, AS 365 N2, AS 365 N3, SA 366 G1, EC 155 B, and EC 155 B1 helicopters.

EASA advises that a cracked (partially failed) main rotor mast nut was discovered during a complete overhaul of a main rotor mast. The start of the crack was related to circular scoring found in the nut threads. EASA states that this condition, if not corrected, "could lead to complete failure of the mast nut, possibly resulting in failure of the rotor mast and consequent loss of control of the helicopter." To address this unsafe condition, EASA issued Emergency AD 2006-0368-E, dated December 6, 2006 (AD 2006-0368-E), to require repetitive inspections of the mast nut, and replacement of the nut if cracked. Since issuance of AD 2006-0368-E, EC has developed modification (MOD) 0762C42 to improve the strength of the mast nut by changing its material. Replacing mast nut part number (P/N) 360A31-1020-20 with mast nut P/N 365A31-2060-20 or 365A31-2060-21 (as applicable to helicopter type) "constitutes an optional terminating action" for the repetitive inspection requirements. For this reason, EASA issued AD 2006-0368R1 "to inform which helicopters remain subject to inspections and replacement requirements" of the AD.

### **Comments**

We gave the public the opportunity to participate in developing this AD, but we did not receive any comments on the NPRM.

### **FAA's Determination**

These helicopters 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, its technical representative, has notified us of the unsafe condition described in the EASA AD. 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 these same type designs and that air safety and the public interest require adopting the AD requirements as proposed.

### **Differences Between This AD and the EASA AD**

The EASA AD allows for either inspecting the mast nut at regular intervals or replacing the mast nut, while this AD requires replacing the mast nut. The EASA AD uses flight hours of the main rotor mast assembly, while this AD uses TIS of the helicopter.

## **Related Service Information**

We reviewed EC Alert Service Bulletin (ASB) No. 62.00.23, Revision 1, for Model SA-365N, SA-365N1, AS-365N2, and AS 365 N3 helicopters; EC ASB 62.12, Revision 1, for Model SA-366G1 helicopters; and EC ASB 62A014, Revision 1, for Model EC 155B and EC155B1 helicopters, all dated October 27, 2010. The ASBs contain procedures for repetitively inspecting the mast nut for a crack or failure. The ASBs remove any helicopter with MOD 0762C42 incorporated from the applicability of the ASB. EASA classified this ASB as mandatory and issued AD 2006-0368R1 to ensure the continued airworthiness of these helicopters.

## **Costs of Compliance**

We estimate that this AD affects 30 helicopters of U.S. registry. We estimate that replacing the mast nut with an airworthy mast nut will require 32 work-hours, at an average labor cost of \$85 per work-hour. Parts will cost about \$3,100. Based on these costs, we estimate a total cost per helicopter of \$5,820, and a total cost for the U.S. operator fleet of \$174,600.

## **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 helicopters identified in this rulemaking action.

## **Regulatory Findings**

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 this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under 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 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 airworthiness directive (AD):



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**2012-17-02 Eurocopter France Helicopters:** Amendment 39-17165; Docket No. FAA-2012-0354; Directorate Identifier 2010-SW-104-AD.

**(a) Applicability**

This AD applies to Eurocopter France (EC) Model SA-365N, SA-365N1, SA-366G1, AS-365N2, AS 365 N3, EC 155B, and EC155B1 helicopters with a mast nut, part number (P/N) 360A31-1020-20, installed, certificated in any category.

**(b) Unsafe Condition**

This AD describes the unsafe condition as a cracked main rotor mast nut. This condition could result in failure of the rotor mast and subsequent loss of control of the helicopter.

**(c) Effective Date**

This AD becomes effective October 10, 2012.

**(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) For EC Models SA-365N, SA-365N1, AS-365N2, and AS 365 N3, prior to accumulating 1,650 hours time-in-service (TIS) or within the next 50 hours TIS, whichever occurs later, remove mast nut P/N 360A31-1020-20 and replace with an airworthy mast nut that has a P/N other than P/N 360A31-1020-20.

(2) For EC Model SA-366G1, prior to accumulating 990 hours TIS or within the next 30 hours TIS, whichever occurs later, remove mast nut P/N 360A31-1020-20 and replace with an airworthy mast nut that has a P/N other than P/N 360A31-1020-20.

(3) For EC Models EC 155B and EC155B1, prior to accumulating 660 hours TIS or within the next 50 hours TIS, whichever occurs later, remove mast nut P/N 360A31-1020-20 and replace with an airworthy mast nut that has a P/N other than P/N 360A31-1020-20.

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

(1) The Manager, Safety Management Group, FAA, may approve AMOCs for this AD. Send your proposal to: Gary Roach, Aviation Safety Engineer, Regulations and Policy Group, Rotorcraft Directorate, FAA, 2601 Meacham Blvd., Fort Worth, TX 76137; telephone (817) 222-5110; email [gary.b.roach@faa.gov](mailto:gary.b.roach@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) Additional Information**

(1) Eurocopter Alert Service Bulletin No. 62.00.23, No. 62.12, and No. 62A014, which are not incorporated by reference, contain additional information about the subject of this AD. All of the service bulletins are Revision 1 and all are dated October 27, 2010. For service information identified in this AD, contact American Eurocopter Corporation, 2701 N. Forum Drive, Grand Prairie, TX 75052, telephone (972) 641-0000 or (800) 232-0323, fax (972) 641-3775, or at <http://www.eurocopter.com/techpub>. You may review a copy of the service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

(2) The subject of this AD is addressed in in European Aviation Safety Agency AD No.: 2006-0368R1, dated December 2, 2010, and corrected December 8, 2010.

**(h) Subject**

Joint Aircraft Service Component (JASC) Code: 6300, main rotor drive system.

Issued in Fort Worth, Texas, on August 16, 2012.

Kim Smith,  
Manager, Rotorcraft Directorate,  
Aircraft Certification Service.