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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2007-28691; Directorate Identifier 2006-SW-22-AD; Amendment 39-15744; AD 2008-24-04]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Eurocopter France Model AS355E, F, F1, F2, and N Helicopters**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

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**SUMMARY:** This amendment supersedes an existing airworthiness directive (AD) for the specified Eurocopter France (Eurocopter) model helicopters. That AD currently requires certain checks of the magnetic chip detector plug (chip detector) and the main gearbox (MGB) oil-sight glass, certain inspections of the lubrication pump (pump), and replacing the MGB and the pump with an airworthy MGB and pump, if necessary. Also, the AD requires that before a pump or MGB with any hours time-in-service (TIS) can be installed, it must meet the AD requirements. This AD adds all serial-numbered pumps to the applicability and requires using an improved procedure for detecting oil pump wear. This amendment is prompted by additional cases of MGB lubrication pump deterioration and a further investigation that determined that all serial-numbered pumps might be affected and the development of an improved procedure that is more accurate for detecting oil pump wear earlier. The actions specified by this AD are intended to implement improved procedures to detect a failing MGB oil pump, prevent failure of the MGB pump, seizure of the MGB, loss of drive to an engine and main rotor, and subsequent loss of control of the helicopter.

**DATES:** Effective December 30, 2008.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of December 30, 2008.

**ADDRESSES:** 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 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:** Ed Cuevas, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Safety Management Group, Fort Worth, Texas 76193-0111, telephone (817) 222-5355, fax (817) 222-5961.

**SUPPLEMENTARY INFORMATION:** A proposal to amend 14 CFR part 39 by superseding AD 2003-21-09 R1, Docket No. 2003-SW-10-AD, Amendment 39-14621 (71 FR 31070, June 1, 2006), for the specified Eurocopter model helicopters was published in the Federal Register on July 13, 2007 (72 FR 38529). That notice of proposed rulemaking (NPRM) proposed retaining the requirements in AD 2003-21-09 R1 and adding certain part-numbered pumps to the applicability. After we issued the NPRM, the manufacturer developed an improved procedure for monitoring the condition of the MGB lubrication pump. Also, a commenter to the NPRM agreed that the improved procedure is a better way to detect MGB oil pump problems because "sludge on the chip plug can come from sources within the MGB oil system." We agreed with the commenter that the improved procedure is a better way to detect MGB oil pump problems because this process reflects the progressive inefficiency as the oil pump wears as it relates to steady oil temperature and variable outside air temperature (OAT) and issued a supplemental notice of proposed rulemaking (SNPRM) on June 19, 2008 (73 FR 36821, June 30, 2008). In addition to the proposals from the NPRM, the SNPRM proposed implementing the improved procedure for monitoring the condition of the MGB lubrication pump. No additional comments were received on the SNPRM or the FAA's determination of the cost to the public, and we have determined that air safety and the public interest require the adoption of the rule as proposed in the SNPRM.

The European Aviation Safety Agency (EASA), the Technical Agent for the Member States of the European Community, notified the FAA that an unsafe condition may exist on the specified Eurocopter model helicopters. EASA advises that Eurocopter has developed an improved procedure for monitoring the condition of the MGB lubrication pump.

Eurocopter has issued Alert Service Bulletin No. 05.00.51, dated July 9, 2007 (ASB), specifying the improved procedure. EASA has issued EASA Emergency AD No. 2007-0209E, dated August 6, 2007, in response to the ASB. These helicopter models are manufactured in France and are type certificated for operation in the United States under the provisions of 14 CFR 21.29 and the applicable bilateral agreement. Pursuant to the applicable bilateral agreement, EASA has kept the FAA informed of the situation described above. The FAA has examined the findings of EASA, reviewed all available information, and determined that AD action is necessary for products of these type designs that are certificated for operation in the United States.

We estimate that this AD will affect 80 helicopters of U.S. registry, and the actions will take about:

- 15 minutes to perform the procedures to check the condition of the MGB oil and chip detector plug,
- 4 work hours to remove the MGB and pump,
- 1 work hour to inspect the pump under the 10-hour, 25-hour, and 110-hour time-in-service (TIS) procedures,
- 4 work hours to install a serviceable MGB and pump at an average labor rate of \$80 per work hour, and
- \$4,000 for an overhauled pump and up to \$60,000 for an overhauled MGB per helicopter.

Based on these figures, we estimate the total cost impact of the AD on U.S. operators to be \$107,040 per year, assuming (a) One overhauled MGB and pump is replaced on one helicopter per year, (b) all 80 helicopters operate for 10 days undergoing 10 daily checks and 2 10-hour TIS inspections, and (c) each of the 80 helicopters operate for 260 hours per year with 20 helicopters receiving the repetitive 25-hour TIS inspection or 10.4 inspections per helicopter per year (260/25) for a total of 208 inspections (20 \* 10.4) and 60 helicopters receiving the repetitive 110-hour TIS inspection or 2.36 inspections per helicopter per year (260/110) for a total of 142 inspections (60 \* 2.36).

## **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, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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 39-14621 (71 FR 31070, June 1, 2006), and by adding a new airworthiness directive (AD), Amendment 39-15744, to read as follows:



**2008-24-04 Eurocopter France:** Amendment 39-15744. Docket No. FAA-2007-28691; Directorate Identifier 2006-SW-22-AD. Supersedes AD 2003-21-09 R1, Amendment 39-14621, Docket No. 2003-SW-10-AD.

**Applicability:** Model AS355E, F, F1, F2, and N helicopters, with a main gear box (MGB) lubrication pump (pump), part number (P/N) 355A32-0700-01, 355A32-0700-02, or 355A32-0701-00, any serial number (S/N), certificated in any category.

**Compliance:** Required as indicated.

To detect sludge on the chip detector and dark oil in the MGB, to prevent failure of the MGB pump, seizure of the MGB, loss of drive to an engine and main rotor, and subsequent loss of control of the helicopter, do the following:

(a) Before the first flight of each day and at intervals not to exceed 10 hours time-in-service (TIS), check the MGB magnetic chip detector plug (chip detector) for any sludge. Also, check for dark oil in the MGB oil-sight glass. An owner/operator (pilot) holding at least a private pilot certificate may perform this visual check and must enter compliance into the aircraft maintenance records in accordance with 14 CFR 43.11 and 91.417(a)(2)(v). "Sludge" is a deposit on the chip detector that is typically dark in color and in the form of a film or paste, as compared to metal chips or particles normally found on a chip detector. Sludge may have both metallic or nonmetallic properties, may consist of copper (pinion bearing), magnesium (pump case), and steel (pinion) from the oil pump, and a nonmetallic substance from the chemical breakdown of the oil as it interacts with the metal.

(b) Before further flight, if any sludge is found on the chip detector, remove, open, and inspect the pump.

(c) Before further flight, if the oil appears dark in color when it is observed through the MGB oil-sight glass, take an oil sample. If the oil taken in the sample is dark or dark purple, before further flight, remove, open, and inspect the pump.

Note 1: Eurocopter France Alert Service Bulletin No. 05.00.40, Revision 1, dated January 5, 2006, and Emergency ASB No. 05.00.40, Revision 2, dated December 20, 2006, pertain to the subject of this AD.

(d) Within 25 hours TIS, unless accomplished previously, after operating both engines at normal operating revolutions per minute (RPM) for at least 20 minutes to ensure the MGB oil temperature has stabilized, inspect the oil pump for wear by following the Accomplishment Instructions, paragraph 2.B.2., steps 1. through 6., of Eurocopter Alert Service Bulletin No. 05.00.51, dated July 9, 2007 (ASB). This AD does not require you to send the information to the manufacturer.

(1) Record the outside air temperature (OAT) and rotor speed (NR RPM) and plot the point at which they intersect using the graph in Figure 1 or 2 of the ASB.

(2) If the point on the graph at the intersection of the recorded OAT and the NR RPM falls within:

(i) Zone 3—Before further flight, replace the MGB and pump with an airworthy MGB and pump.  
(ii) Zone 2—At intervals not to exceed 25 hours TIS, repeat the inspection procedures by following the Accomplishment Instructions, paragraph 2.B.2, steps 1 through 6, of the ASB. After being classified in "Zone 2," you must obtain two successive inspections separated by at least 24 hours TIS that fall within Zone 1 before you can begin to inspect at intervals not to exceed 110 hours TIS by following paragraph (d)(2)(iii) of this AD for Zone 1.

Note 2: In addition to a worn oil pump, the loss of oil pressure could also be due to a clogged oil filter or cooler, a pinched hose, or an inaccurate pressure switch.

(iii) Zone 1—At intervals not to exceed 110 hours TIS, repeat the inspection procedures by following the Accomplishment Instructions, paragraph 2.B.2., steps 1 through 6, of the ASB.

(3) Compliance with paragraphs (d)(1) and (d)(2) of this AD constitutes terminating action for the checks and inspections required by paragraphs (a), (b), and (c) of this AD.

(e) 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: Ed Cuevas, Aviation Safety Engineer, Rotorcraft Directorate, Fort Worth, Texas 76193-0111, telephone (817) 222-5355, fax (817) 222-5961.

(f) Do the oil pump inspections by following the specified portions of Eurocopter Alert Service Bulletin No. 05.00.51, dated July 9, 2007. 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, TX 75053-4005, telephone (972) 641-3460, fax (972) 641-3527, or at <http://www.eurocopter.com>. 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](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

(g) This amendment becomes effective on December 30, 2008.

Note 3: The subject of this AD is addressed in European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, Emergency AD No. 2006-0378-E, dated December 21, 2006, and AD No. 2007-0209E, dated August 6, 2007.

Issued in Fort Worth, Texas on November 7, 2008.

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