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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2010-0517; Directorate Identifier 2009-SW-73-AD; Amendment 39-17137; AD 2012-15-08]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Sikorsky Aircraft Corporation Helicopters**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for Sikorsky Aircraft Corporation (Sikorsky) Model S-76A helicopters to require modifying the electric rotor brake (ERB) and inserting changes into the "Normal Procedures" and "Emergency Procedures" sections of the Rotorcraft Flight Manual (RFM). This AD was prompted by a fire in the main gearbox area as a result of a hot electric rotor brake (ERB). The actions are intended to prevent overheating of the ERB, ignition of the ERB hydraulic fluid, a fire in the main gearbox area, and subsequent loss of control of the helicopter.

**DATES:** This AD is effective September 21, 2012.

The Director of the Federal Register approved the incorporation by reference of certain documents listed in this AD as of September 21, 2012.

**ADDRESSES:** For service information identified in this AD, contact Sikorsky Aircraft Corporation, Attn: Manager, Commercial Technical Support, mailstop s581a, 6900 Main Street, Stratford, CT 06614; telephone (800) 562-4409; email [tsslibrary@sikorsky.com](mailto:tsslibrary@sikorsky.com); or at <http://www.sikorsky.com>. 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:** Caspar Wang, Aviation Safety Engineer, Boston Aircraft Certification Office, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; telephone (781) 238-7799; email caspar.wang@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

A number of service documents and ADs have been issued relating to the ERB on this and similar model helicopters. AD 82-17-03, issued July 30, 1982 (47 FR 35469, August 16, 1982), requires a puck-to-disc inspection of rotor brake, P/N 76363-09101-101, and modification of the ERB system including, among other modifications, installation of a warning relay by following Sikorsky Customer Service Bulletin No. 76-66-10B, Revision 2, dated November 25, 1981 (pages 1 and 9 through 13 of the service bulletin are dated November 25, 1981 and pages 2 through 8 are dated July 30, 1981). AD 2003-04-15, issued February 14, 2003 (68 FR 8994, February 27, 2003), requires inspecting certain rotor brake discs for cracks that resulted from improper heat treating of the disc.

On October 26, 2011, at 76 FR 66205, 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 Sikorsky Model S-76A helicopters with a different part-numbered ERB, part number (P/N) 76363-09100-012, installed. That NPRM proposed to require, within 120 days, modifying the ERB by installing and operationally testing the parts contained in an ERB warning relay kit (P/N 76070-55023-011), an ERB circuit modification kit (P/N 76070-55033-012), and an ERB modification kit (P/N 76070-55207-011). That NPRM was prompted by a reported incident of a fire occurring in an ERB installed on a Model S-76A helicopter in Brazil. The proposed requirements were intended to prevent overheating of the ERB assembly, ignition of the ERB hydraulic fluid, fire in the main gearbox area, and subsequent loss of control of the helicopter.

### **Related Service Information**

We have reviewed the following documents from Sikorsky:

- Customer Service Bulletin No. 76-66-10B, Revision 2, dated November 25, 1981 (pages 1 and 9 through 13 of the service bulletin are dated November 25, 1981 and pages 2 through 8 are dated July 30, 1981), which specifies installing an ERB warning relay kit;
- Customer Service Notice No. 76-113, dated June 1, 1983, which specifies installing an ERB circuit breaker and modification kit;
- Alert Service Bulletin No. 76-66-48B, Revision B, dated July 8, 2009, which specifies a one-time installation of an ERB modification kit containing two other kits and several modifications; and
- RFM Supplement No. 41, Part 1, approved September 6, 2005, which revises the information in the basic RFM normal and emergency procedures sections when the ERB system is modified.

### **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**

We have reviewed the relevant information and determined that an unsafe condition exists and is likely to exist or develop on other products of the same type design and that air safety and the public interest require adopting the AD requirements as proposed, except for editorial changes. These

editorial changes are consistent with the intent of the proposals and will not increase the economic burden on any operator nor increase the scope of the AD.

## **Costs of Compliance**

We estimate that this AD will affect 180 helicopters of U.S. Registry. We estimate that operators may incur the following costs in order to comply with this AD. It will take about 38 work-hours per helicopter to perform the modifications and operational tests at an average labor rate of \$85 per work-hour. Required parts will cost \$13,300 per helicopter. Based on these figures, we estimate the total cost impact of the AD on U.S. operators to be \$2,975,400 for the fleet.

## **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**

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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**2012-15-08 Sikorsky Aircraft Corporation (Sikorsky):** Amendment 39-17137; Docket No. FAA-2010-0517; Directorate Identifier 2009-SW-73-AD.

**(a) Applicability**

This AD applies to Model S-76A helicopters, with an electric rotor brake (ERB), part number (P/N) 76363-09100-012, installed, certificated in any category.

**(b) Unsafe Condition**

This AD defines the unsafe condition as an overheated ERB. This condition could result in ignition of hydraulic fluid, fire in the main gearbox area, and subsequent loss of control of the helicopter.

**(c) Effective Date**

This AD becomes effective September 21, 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) Within 120 days, modify the ERB by installing:

(i) Warning relay system parts contained in modification kit, P/N 76070-55023-011, and operationally testing the ERB system in accordance with paragraphs 2.A. through 2.F., of Sikorsky Customer Service Bulletin No. 76-66-10B, Revision 2, dated November 25, 1981 (pages 1 and 9 through 13 of the service bulletin are dated November 25, 1981 and pages 2 through 8 are dated July 30, 1981);

(ii) Circuit breaker and diodes contained in ERB circuit modification kit, P/N 76070-55033-012, and operationally testing the ERB system in accordance with paragraph B. through F. of Sikorsky Customer Service Notice 76-113, dated June 1, 1983; and

(iii) Manifold, relay box, junction box, right-hand relay panel, and wiring harness parts contained in ERB modification kit, P/N 76070-55207-011, and operationally testing the ERB system in accordance with paragraphs 3.B. through 3.I. of the Accomplishment Instructions of Sikorsky Alert Service Bulletin No. 76-66-48B, Revision B, dated July 8, 2009.

(2) After accomplishing paragraph (e)(1) of this AD, insert into the Sikorsky Rotorcraft Flight Manual (RFM) the changes to the "Normal Procedures (Part 1, Section II)" and "Emergency Procedures (Part 1, Section III)" contained in Sikorsky RFM, Supplement No. 41, approved September 6, 2005.

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

(1) The Manager, Boston Aircraft Certification Office, FAA, may approve AMOCs for this AD. Send your proposal to: Caspar Wang, Aviation Safety Engineer, Boston Aircraft Certification Office, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; telephone (781) 238-7799; email [caspar.wang@faa.gov](mailto:caspar.wang@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: 6321, Main Rotor Brake.

**(h) Material Incorporated by Reference**

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

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Sikorsky Customer Service Bulletin No. 76-66-10B, Revision 2, dated November 25, 1981 (pages 1 and 9 through 13 of the service bulletin are dated November 25, 1981 and pages 2 through 8 are dated July 30, 1981);

(ii) Sikorsky Customer Service Notice No. 76-113, dated June 1, 1983;

(iii) Sikorsky Alert Service Bulletin No. 76-66-48B, Revision B, dated July 8, 2009; and

(iv) Sikorsky Rotorcraft Flight Manual Supplement No. 41, Part 1, approved September 6, 2005.

(3) For Sikorsky service information identified in this AD, contact Sikorsky Aircraft Corporation, Attn: Manager, Commercial Technical Support, mailstop s581a, 6900 Main Street, Stratford, CT 06614; telephone (800) 562-4409; email [tsslibrary@sikorsky.com](mailto:tsslibrary@sikorsky.com); or at <http://www.sikorsky.com>.

(4) You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

(5) You may also view this service information 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).

Issued in Fort Worth, Texas, on July 20, 2012.

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