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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-0490; Directorate Identifier 2010-SW-037-AD; Amendment 39-16514; AD 2010-23-24]

RIN 2120-AA64

Airworthiness Directives; Sikorsky Aircraft Corporation (Sikorsky) Model S-70A and S-70C Helicopters

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD) for the Sikorsky Model S-70A and S-70C helicopters. This AD requires an ultrasonic test (UT) inspection of the tail gearbox output bevel gear (gear) for a crack. If you find a crack, replacing the gear with an airworthy gear is required before further flight. This AD is prompted by three gear cracking incidents, one of which resulted in the tail rotor separating from the helicopter. The actions specified by this AD are intended to detect a crack in the gear to prevent a tail rotor separating, loss of tail rotor control, and subsequent loss of control of the helicopter.

DATES: Effective December 22, 2010.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of December 22, 2010.

ADDRESSES: You may get the service information identified in this AD from Sikorsky Aircraft Corporation, Attn: Manager, Commercial Technical Support, mailstop s581a, 6900 Main Street, Stratford, CT, telephone (203) 383-4866, e-mail address tsslibrary@sikorsky.com, or at <http://www.sikorsky.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: Michael Schwetz, Aviation Safety Engineer, Boston Aircraft Certification Office, 12 New England Executive Park, Burlington, MA 01803, telephone (781) 238-7761, fax (781) 238-7170.

SUPPLEMENTARY INFORMATION: A proposal to amend 14 CFR part 39 to include an AD for the specified model helicopters was published in the Federal Register on May 13, 2010 (75 FR 26888). That action proposed to require a UT inspection of the gear for a crack and replacing any cracked gear before further flight. The proposal was prompted by three gear crack incidents, one of which resulted in the tail rotor separating from the helicopter. The tail gearbox on the helicopter where the tail rotor separated from the helicopter experienced a fracture of the output shaft spline that drives the tail rotor blades. An investigation into the cause of the cracks is ongoing. The unsafe condition described previously, if not corrected, could result in a tail rotor separating, loss of tail rotor control, and subsequent loss of control of the helicopter.

We have reviewed Sikorsky Alert Service Bulletin No. 70-06-28A, Revision A, dated May 21, 2009 (ASB), which refers to procedures for a UT inspection of the gear in accordance with Special Service Instructions (SSI) No. 70-121A or latest revision.

This unsafe condition is likely to exist or develop on other helicopters of the same type design. Therefore, this AD requires a UT inspection of the gear, part number 70358-06620, for a crack. If a crack is found, this AD requires replacing the gear with an airworthy gear before further flight. The actions are required to be done by following the SSI described previously.

We provided the public the opportunity to participate in developing this AD. We received no comments on the proposal or on the determination of the cost to the public. Therefore, we are adopting the action as proposed with only minor non-substantive changes.

We estimate that this AD affects 5 helicopters in the U.S. registry. The actions will take about 4 work hours per helicopter at an average labor rate of \$85 per work hour. Required parts cost about \$20,000 for each gear. Based on these figures, we estimate the total cost impact of this AD on U.S. operators to be \$101,700, assuming the gear is replaced on the entire fleet.

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 AD.

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 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. FAA amends § 39.13 by adding the following new AD:



2010-23-24 Sikorsky Aircraft Corp.: Amendment 39-16514; Docket No. FAA-2010-0490; Directorate Identifier 2010-SW-037-AD.

Applicability: Model S-70A and S-70C helicopters with a tail gearbox output bevel gear (gear), part number 70358-06620, certificated in any category.

Compliance: Required as indicated.

To prevent a tail rotor separating, loss of tail rotor control, and subsequent loss of control of the helicopter, do the following:

(a) Within 500 hours time-in-service (TIS), unless accomplished previously, and thereafter at intervals not to exceed 500 hours TIS, remove the tail rotor servo control and pitch beam shaft, and using a Level II Ultrasonic Testing Technician or equivalent, ultrasonic inspect the gear for a crack. Ultrasonic inspect the gear by following paragraphs A.(5)a. through A.(5)n. of Special Service Instructions No. 70-121A, Revision A, dated May 21, 2009. If you find a crack, before further flight, replace the gear with an airworthy gear.

(b) 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, Boston Aircraft Certification Office, FAA, Attn: Michael Schwetz, Aviation Safety Engineer, Boston Aircraft Certification Office, 12 New England Executive Park, Burlington, MA 01803, telephone (781) 238-7761, fax (781) 238-7170, for information about previously approved alternative methods of compliance.

(c) The Joint Aircraft System/Component (JASC) Code is 6520: Tail rotor gearbox.

(d) The inspections shall be done in accordance with the specified portions of Sikorsky Special Service Instructions No. 70-121A, Revision A, dated May 21, 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 Sikorsky Aircraft Corporation, Attn: Manager, Commercial Technical Support, mailstop s581a, 6900 Main Street, Stratford, CT, telephone (203) 383-4866, e-mail address tsslibrary@sikorsky.com, or at <http://www.sikorsky.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.

(e) This amendment becomes effective on December 22, 2010.

Issued in Fort Worth, Texas, on November 1, 2010.
Kim Smith,
Manager, Rotorcraft Directorate,
Aircraft Certification Service.