

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2007-28241; Directorate Identifier 2007-SW-07-AD; Amendment 39-15062; AD 2007-11-05]

RIN 2120-AA64

Airworthiness Directives; Sikorsky Aircraft Corporation Model S-76A, B, and C Helicopters

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) for Sikorsky Aircraft Corporation (Sikorsky) Model S-76A, B, and C helicopters. This action requires a one-time ultrasonic inspection of the main rotor shaft assembly (M/R shaft) for cracking. This amendment is prompted by the discovery of cracking that occurred during the manufacturing of certain M/R shafts. The actions specified in this AD are intended to detect cracking in the M/R shaft, which could result in separation of the main rotor and subsequent loss of control of the helicopter.

DATES: Effective June 15, 2007.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 15, 2007.

Comments for inclusion in the Rules Docket must be received on or before July 30, 2007.

ADDRESSES: Use one of the following addresses to submit comments on this AD:

- DOT Docket Web site: Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically;
- Government-wide rulemaking Web site: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically;
- Mail: Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, Room PL-401, Washington, DC 20590;
- Fax: (202) 493-2251; or
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.



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, Connecticut, phone (203) 383-4866, e-mail address tsslibrary@sikorsky.com.

Examining the Docket: You may examine the docket that contains the AD, any comments, and other information on the Internet at <http://dms.dot.gov>, or in person at the Docket Management System (DMS) Docket Offices between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone (800) 647-5227) is located on the plaza level of the Department of Transportation Nassif Building at the street address stated in the ADDRESSES section. Comments will be available in the AD docket shortly after the DMS receives them.

FOR FURTHER INFORMATION CONTACT: Kirk Gustafson, Aviation Safety Engineer, Boston Aircraft Certification Office, Engine and Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803, telephone (781) 238-7190, fax (781) 238-7170.

SUPPLEMENTARY INFORMATION: This amendment adopts an AD for Sikorsky Model S-76A, B, and C helicopters. This action requires, within 75 hours time-in-service (TIS), a one-time ultrasonic inspection of the M/R shaft for cracking. This amendment is prompted by the manufacturer's discovery of cracking that occurred during the manufacturing of certain M/R shafts. During a heat-treatment process of these M/R shafts, inadequate time was allowed for the M/R shafts to cool to a proper temperature between the heat-treatment cycles, which reduced the M/R shaft's ductility (capability of the M/R shaft being fashioned into a new form), and increased the potential for cracking to occur during subsequent cold-work forming of the M/R shaft. The actions specified in this AD are intended to detect cracking in the M/R shaft, which could result in separation of the main rotor and subsequent loss of control of the helicopter.

We have reviewed the following alert service bulletins:

- Sikorsky Alert Service Bulletin (ASB) No. 76-66-45A, Revision A, which is applicable to all S-76 model helicopters, with a M/R shaft, P/N 76351-09630-041, with certain serial numbers, installed; and
- Sikorsky ASB No. 76-66-46, which is applicable to all Model S-76A helicopters, with a M/R shaft, P/N 76351-09030-all dash numbers, with certain serial numbers, installed. Both ASBs are dated February 7, 2007, and both describe a one-time ultrasonic inspection of the M/R shaft for cracking, for main gear box (MGB) assemblies installed on helicopters, for MGB assemblies not installed on a helicopter, and for M/R shafts not installed on MGBs.

This unsafe condition is likely to exist or develop on other helicopters of the same type design. Therefore, this AD is being issued to detect cracking in the M/R shaft, which could result in separation of the main rotor and subsequent loss of control of the helicopter. This AD requires a one-time ultrasonic inspection of the M/R shaft for cracking, instructions for reassembly of the lower bearing housing assembly installation of the MGB and performance of a ground run leak test. Accomplish the inspection by following specified portions of the ASBs described previously. The ultrasonic inspection of the M/R shaft must be performed by a Level II or Level III inspector, qualified under the guidelines established by MIL-STD-410E, ATA Specification 105, AIA-NAS-410, or an FAA-accepted equivalent for qualification standards of Nondestructive Testing inspection/evaluation personnel. Recurrent training and examinations are part of the qualification requirements.

The short compliance time involved is required because the previously described critical unsafe condition can adversely affect the controllability or structural integrity of the helicopter. The Model S-76 helicopter fleet is comprised of a large number of aircraft operating in an off-shore logistics support role for the petroleum industry. As such, many aircraft operate at high utilization rates approaching 200 hours TIS per month and this rate could translate to a higher potential for cracks that may have formed during manufacturing to propagate, leading to failure of the M/R shaft.

Therefore, performing a one-time ultrasonic inspection of the M/R shaft for cracking within 75 hours TIS, which may equate to less than 2 weeks time-in-service, along with replacing any cracked M/R shaft with an airworthy M/R shaft before further flight, justify issuance of this AD immediately.

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

We estimate that this AD will affect 41 M/R shafts—20 M/R shafts to be removed from helicopters, 16 M/R shafts to be inspected before they are assembled into the MGB for installation on a helicopter, 5 M/R shafts that must be removed from a MGB for inspection before installation on a helicopter. We estimate that, at a labor rate of \$80 per work hour, it will take approximately:

- 100 work hours for the entire fleet of operators to determine whether they have an affected M/R shaft;
- For the 20 M/R shafts installed in helicopters—80 work hours to remove the MGB and M/R shaft for inspection; 80 work hours to reinstall the M/R shaft and MGB; and 12 work hours to return the aircraft to service;
- For the 5 M/R shafts installed in a MGB, but not installed in a helicopter—2 work hours to remove the M/R shaft from the MGB; and
- 4 work hours to ultrasonic inspect each of the 41 M/R shafts.

Also, we estimate that for the 25 M/R shafts that must be removed from a MGB for inspection, reassembly will require \$100 in consumable parts for each MGB. Based on these figures, we estimate that the total cost impact of the AD on U.S. operators will be \$299,620, assuming that operators do not find a M/R shaft with a crack.

Comments Invited

This AD is a final rule that involves requirements that affect flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to submit any written data, views, or arguments regarding this AD. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2007-28241; Directorate Identifier 2007-SW-07-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the AD. We will consider all comments received by the closing date and may amend the AD in light of those comments.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this AD. Using the search function of our docket Web site, you can find and read the comments to any of our dockets, including the name of the individual who sent the comment. You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78), or you may visit <http://dms.dot.gov>.

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 DMS 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 adding a new airworthiness directive to read as follows:



2007-11-05 Sikorsky Aircraft Corporation: Amendment 39-15062. Docket No. FAA-2007-28241; Directorate Identifier 2007-SW-07-AD.

Applicability: Model S-76A, B and C helicopters with a main rotor shaft assembly (M/R shaft) listed in the following table installed, certificated in any category.

M/R Shaft Part Number	Serial Number
76351-09030-all dash numbers	B015-00782 through B015-00791; B015-00811 through B015-00816; E015-00844 through E015-00865; and E015-00908 through E015-00918.
76351-09630-041	C213-00436 through C213-00454; D213-00537 through D213-00545; and D213-00575 through D213-00585.

Compliance: Required within 75 hours time-in-service, unless accomplished previously.

To detect cracking in the M/R shaft, which could result in separation of the main rotor and subsequent loss of control of the helicopter, accomplish the following:

(a) Perform a one-time ultrasonic inspection of the M/R shaft for cracking in accordance with Nondestructive Testing/Inspection Technique, Ultrasonic Technique (UT) Number 5043, latest version. The ultrasonic inspection of the M/R shaft must be performed by a Level II or Level III inspector, qualified under the guidelines established by MIL-STD-410E, ATA Specification 105, AIA-NAS-410, or an FAA-accepted equivalent for qualification standards of Nondestructive Testing inspection/evaluation personnel. Recurrent training and examinations are part of the qualification requirements.

(1) For Model S-76A, B and C helicopters with a M/R shaft, P/N 76351-09630-041, installed, remove and inspect the M/R shaft in accordance with the Accomplishment Instructions, paragraphs 3.B.(1)(a) through 3.B.(1)(d)5 of Sikorsky Alert Service Bulletin (ASB) No. 76-66-45A, Revision A, dated February 7, 2007.

(2) For Model S-76A helicopters with a M/R shaft, P/N 76351-09030—all dash numbers, installed, remove and inspect the M/R shaft in accordance with the Accomplishment Instructions, paragraphs 3.B.(1)(a) through 3.B.(1)(d)5 of Sikorsky ASB No. 76-66-46, dated February 7, 2007.

(3) If a crack is found, replace the M/R shaft with an airworthy M/R shaft that has been ultrasonically inspected in accordance with paragraph (a) of this AD before further flight.

(4) Reassemble the lower bearing housing assembly, install the main gear box, and perform the ground run leak test in accordance with the Accomplishment Instructions, paragraphs 3.B.(1)(f) through 3.B.(1)(l) of either ASB No. 76-66-45A, Revision A or ASB No. 76-66-46, both dated February 7, 2007, as appropriate for your part-numbered M/R shaft.

(b) Before installing an affected M/R shaft, ultrasonically inspect the M/R shaft and reassemble the lower bearing housing assembly, install the main gear box, and perform the ground run leak test in accordance with the requirements of paragraph (a) of this AD.

(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, Boston Aircraft Certification Office, FAA, ATTN: Kirk Gustafson, Aviation Safety Engineer, 12 New England Executive Park, Burlington, MA 01803, telephone (781) 238-7190, fax (781) 238-7170, for information about previously approved alternative methods of compliance.

(d) The ultrasonic inspection shall be done in accordance with the specified portions of Sikorsky Alert Service Bulletin (ASB) No. 76-66-45A, Revision A, and Sikorsky ASB No. 76-66-46, both dated February 7, 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 Sikorsky Aircraft Corporation, Attn: Manager, Commercial Technical Support, mailstop s581a, 6900 Main Street, Stratford, Connecticut, phone (203) 383-4866, e-mail address tsslibrary@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 June 15, 2007.

Issued in Fort Worth, Texas, on May 16, 2007.

David A. Downey,

Manager, Rotorcraft Directorate, Aircraft Certification Service.

[FR Doc. E7-10126 Filed 5-30-07; 8:45 am]