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[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-6968; Directorate Identifier 2015-SW-020-AD]

RIN 2120-AA64

Airworthiness Directives; Sikorsky Aircraft Corporation Helicopters (Type Certificate Previously Held by Schweizer Aircraft Corporation)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede airworthiness directive (AD) 93-17-13 for Schweizer Aircraft Corporation and Hughes Helicopters, Inc. (now Sikorsky Aircraft Corporation) (Sikorsky) Model TH55A, 269A, 269A-1, 269B, and 269C helicopters. AD 93-17-13 requires installing tachometer markings and inspecting the driveshaft. This proposed AD would require recurring inspections of the driveshaft and would expand the applicability to include Model 269C-1 helicopters. This proposed AD is prompted by reports of accidents because of driveshaft failures. The actions of this proposed AD are intended to prevent the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments by any of the following methods:

- **Federal eRulemaking Docket:** Go to <http://www.regulations.gov>. Follow the online instructions for sending your comments electronically.

- Fax: 202-493-2251.
- Mail: Send comments to the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590-0001.
- Hand Delivery: Deliver to the “Mail” address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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 proposed AD, the economic evaluation, any comments received, and other information. The street address for the Docket Operations Office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

For service information identified in this proposed AD, contact Sikorsky Aircraft Corporation, Customer Service Engineering, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-Winged-S or 203-416-4299; email wcs_cust_service_eng.gr-sik@lmco.com. You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

FOR FURTHER INFORMATION CONTACT: Blaine Williams, Aerospace Engineer, Boston Aircraft Certification Office, Engine & Propeller Directorate, 1200 District Avenue, Burlington, Massachusetts 01803; telephone (781) 238-7161; email blaine.williams@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

We will file in the docket all comments that we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, we will consider all comments we receive on or before the closing date for comments. We will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. We may change this proposal in light of the comments we receive.

Discussion

On August 31, 1993, we issued AD 93-17-13, Amendment 39-8684 (58 FR 51770, October 5, 1993), for Schweizer Aircraft Corporation and Hughes Helicopters, Inc., Model 269A, 269A-1, 269B, 269C, and TH55A helicopters. AD 93-17-13 requires within 30 days or 100 hours time-in-service (TIS), whichever occurs first, and thereafter every 300 hours TIS, visually inspecting for cracks, machining steps, manufacturing tool marks, surface defects, and lack of cleanup during the production grinding operation. AD 93-17-13 also requires installing engine and rotor tachometer markings and replacing any unairworthy lower coupling driveshaft (driveshaft) before further flight. The actions in AD 93-17-13 are intended to prevent failure of the driveshaft, loss of power to the rotor system, and subsequent loss of helicopter control.

Actions Since AD 93-17-13 Was Issued

Since we issued AD 93-17-13, Sikorsky became the type certificate holder of the Model 269A, 269A-1, 269B, 269C, and TH55A. Sikorsky performed a safety analysis and determined that the initial and recurrent inspection intervals and inspection method were not adequate to detect all corrosion, pits, nicks, scratches, dents, and cracks. Since 1992, 10 accidents, 2 of them fatal, occurred because of driveshaft failures due to static overload or torsional fatigue. Five of the accidents occurred after AD 93-17-13 was issued.

We propose reducing the initial and recurring inspection intervals, changing the type of damage to be detected by the visual inspection, and adding a magnetic particle inspection.

We propose including specific part-numbered driveshafts to the applicability because Sikorsky is developing a new driveshaft that we do not expect to be subject to this AD.

We propose expanding the applicability to include Model 269C-1 helicopters. These helicopters were not manufactured when AD 93-17-13 was issued but have applicable driveshafts installed.

We propose to retain the requirement to install engine and tachometer markings. AD 93-17-13 requires these markings because of reports of driveshaft damage as a result of engine overspeeds during start-up.

Finally, we would require a visual inspection for “corrosion, a pit, a nick, a scratch, a dent, or a crack” instead of “cracks, machining steps, manufacturing tool marks, surface defects and lack of cleanup during the production grinding operation” contained in AD 93-17-13. Since AD 93-17-13 was issued, we have seen no evidence that the driveshaft failures were caused by production errors.

The proposed actions are intended to prevent failure of the driveshaft, loss of power to the rotor system, and subsequent loss of helicopter control.

FAA’s Determination

We are proposing this AD because we evaluated all known relevant information and determined that an unsafe condition exists and is likely to exist or develop on other products of these same type designs.

Related Service Information under 1 CFR part 51

We reviewed Sikorsky 269C Helicopter Alert Service Bulletin B-307, Basic Issue, dated December 18, 2014, and Sikorsky 269C-1 Helicopter Alert Service Bulletin

C1B-043, Basic Issue, dated December 18, 2014 (ASBs). The ASBs call for a one-time visual and magnetic particle inspection of the driveshaft and driveshaft assembly for damage. The ASBs advise that the driveshaft be sent to Sikorsky and replaced if damaged. The inspection is to be accomplished within 25 hours TIS or within 180 days from the ASBs' issue date, whichever comes first. Sikorsky has since revised its maintenance manual to incorporate these inspections every 150 hours TIS.

We also reviewed Schweizer Aircraft Service Bulletin B-257.1, dated May 21, 1993, (ASB B-257.1). ASB B-257.1 calls for a one-time inspection to look for drive-shaft defects; installing declutched limit markings on the engine/rotor tachometer to reinforce operating limits; and prohibiting engine declutched operations above 1600 RPM.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Proposed AD Requirements

This proposed AD would require within 25 hours TIS and thereafter at intervals not to exceed 150 hours TIS, visual inspections of the driveshaft. If there are no cracks, corrosion, or other damage, this proposed AD would require performing a magnetic particle inspection. If there is a crack or other damage, this proposed AD would require replacing the driveshaft before further flight. This proposed AD would also require adding tachometer markings if not previously performed.

Differences between this Proposed AD and the Service Information

The Sikorsky service information calls for the initial inspection to be completed within 180 days or 25 hours time-in-service (TIS). This proposed AD would require the

initial inspection to be completed within 25 hours TIS only. The service information requires contacting Sikorsky if a certain part-numbered driveshaft is installed, emailing information to Sikorsky, and returning damaged parts to Sikorsky; this proposed AD would not.

Interim Action

We consider this proposed AD to be an interim action. The design approval holder is developing a replacement driveshaft that will address the unsafe condition identified in this proposed AD. Once the replacement driveshaft is developed, approved and available, we might consider additional rulemaking.

Costs of Compliance

We estimate that this proposed AD would affect 619 helicopters of U.S. Registry and that labor costs average \$85 per work hour. Based on these estimates, we expect the following costs:

- We estimate that the visual and magnetic particle inspections of the driveshaft would require 11 work hours for a cost of \$935 per helicopter and \$578,765 for the U.S. fleet per inspection cycle.
- Replacing the driveshaft, if needed, would cost about \$4,574 for parts. No additional labor costs would be necessary.
- Installing engine and rotor tachometer markings would require 0.5 work-hour for a labor cost of about \$43. The cost of parts would be minimal.

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

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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, I certify this proposed 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);
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 proposed 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.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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 removing Airworthiness Directive (AD) AD 93-17-13, Amendment 39-8684, (58 FR 51770, October 5, 1993) and adding the following new airworthiness directive (AD):

Sikorsky Aircraft Corporation (Type Certificate Previously Held By Schweizer Aircraft Corporation): Docket No. FAA-2016-6968; Directorate Identifier 2015-SW-020-AD.

(a) Applicability

This AD applies to Model TH55A, 269A, 269A-1, 269B, 269C and 269C-1 helicopters, with a lower coupling driveshaft (driveshaft) part number (P/N) 269-5412, 269A5504, 269A5504-003, 269A5504-005, 269A5559, or 269A5559-003 installed, certificated in any category.

(b) Unsafe Condition

This AD defines the unsafe condition as failure of a driveshaft. This condition could result in loss of power to the rotor system and subsequent loss of helicopter control.

(c) Affected ADs

This AD supersedes AD 93-17-13, Amendment 39-8684, (58 FR 51770, October 5, 1993).

(d) Comments Due Date

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(e) 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.

(f) Required Actions

(1) Within 25 hours time-in-service (TIS), install engine and rotor tachometer markings in accordance with Part II of Schweizer Aircraft Service Bulletin B-257.1, dated May 21, 1993.

(2) Within 25 hours TIS and thereafter at intervals not to exceed 150 hours TIS:

(i) Visually inspect the driveshaft for corrosion, a pit, a nick, a scratch, a dent, and a crack in accordance with the Accomplishment Instructions, paragraph 3.B.(1) through 3.B.(6) of Sikorsky 269C Helicopter Alert Service Bulletin B-307, Basic Issue, dated December 18, 2014 (269C ASB), or Sikorsky 269C-1 Helicopter Alert Service Bulletin C1B-043, Basic Issue, dated December 18, 2014 (269C-1 ASB), whichever is applicable for your model helicopter, except we do not require that you use a Sikorsky

recommended vendor list. If there is any corrosion, a pit, a nick, a scratch, a dent, or a crack, replace the driveshaft before further flight.

(ii) If there is no corrosion and no pits, nicks, scratches, dents, and cracks, magnetic particle inspect the driveshaft for a crack in accordance with paragraph 3.C.(1) of the 269C ASB or 269C-1 ASB, whichever is applicable for your model helicopter. This magnetic particle inspection must be performed by a Level II or higher technician with the National Aerospace Standard 410 or equivalent certification who has performed a magnetic particle inspection within the last 12 months. If there is a crack, replace the driveshaft before further flight.

(g) Credit for Actions Previously Completed

Compliance with paragraph (a)(1) of AD 93-17-13, Amendment 39-8684 (58 FR 51770, October 5, 1993) before the effective date of this AD is considered acceptable for compliance with the actions specified in paragraph (f)(1) of this AD.

(h) Alternative Methods of Compliance (AMOC)

(1) The Manager, Boston Aircraft Certification Office, FAA, may approve AMOCs for this AD. Send your proposal to: Blaine Williams, Aerospace Engineer, Boston Aircraft Certification Office, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, Massachusetts 01803; telephone (781) 238-7161; email blaine.williams@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.

(i) Additional Information

For service information identified in this AD, contact Sikorsky Aircraft Corporation, Customer Service Engineering, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-Winged-S or 203-416-4299; email wcs_cust_service_eng.gr-sik@lmco.com You may review a copy of information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

(j) Subject

Joint Aircraft Service Component (JASC) Code: 6300, Main Rotor Drive System.

Issued in Fort Worth, Texas, on December 21, 2016.

Lance T. Gant,

Manager, Rotorcraft Directorate,
Aircraft Certification Service.

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