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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2016-9537; Directorate Identifier 2016-SW-075-AD; Amendment 39-18759; AD 2016-24-51]**

**RIN 2120-AA64**

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

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

**ACTION:** Final rule; request for comments.

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**SUMMARY:** We are publishing a new airworthiness directive (AD) for Sikorsky Aircraft Corporation (Sikorsky) Model S-92A helicopters, which was sent previously to all known U.S. owners and operators of these helicopters. This AD requires inspecting certain bearings. This AD is prompted by a report of a failed bearing. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective January 12, 2017 to all persons except those persons to whom it was made immediately effective by Emergency AD 2016-24-51, issued on November 16, 2016, which contains the requirements of this AD.

We must receive comments on this AD by February 27, 2017.

**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> by searching for and locating Docket No. FAA-2016-9537; 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, 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 final rule, 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](mailto: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](mailto:blaine.williams@faa.gov).

## **SUPPLEMENTARY INFORMATION: Comments Invited**

This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments prior to it becoming effective. However, 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 resulted from adopting this AD. The most helpful comments reference a specific portion of the AD, 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 them 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 rulemaking during the comment period. We will consider all the comments we receive and may conduct additional rulemaking based on those comments.

## **Discussion**

On November 16, 2016, we issued Emergency AD 2016-24-51 to correct an unsafe condition on Sikorsky Model S-92A helicopters with a TR pitch change shaft (TRPCS) assembly part number (P/N) 92358-06303-041 or P/N 92358-06303-042. Emergency AD 2016-24-51 was sent previously to all known U.S. owners and operators of these helicopters. Emergency AD 2016-24-51 requires removing TRPCS assemblies with less than 5 hours time-in-service (TIS) since new or overhaul from service. Emergency AD 2016-24-51 also requires, for TRPCS assemblies with between 5 and 80 hours TIS since new or overhaul, borescope inspecting the TRPCS bearings and inspecting the angular contact bearing to determine whether there is free rotation, purged grease with metal particles, nicks or dents, or a cut, tear, or distortion on the bearing seal. If the bearings do not pass these inspections, Emergency AD 2016-24-51 requires replacing the TRPCS assembly.

Emergency AD 2016-24-51 was prompted by a report of an operator losing TR control while in a hover. A preliminary investigation determined that binding in the TRPCS assembly double row angular contact bearing (bearing) resulted in reduced TR control. The investigation also found signs of excessive heat, which is an indicator of a binding bearing. Because binding will result in bearing failure rapidly, we limited Emergency AD 2016-24-51 to TRPCS assemblies with less than 80 hours

time-in-service (TIS). The actions in Emergency AD 2016-24-51 are intended to detect a binding bearing and prevent loss of TR control and possible loss of control of the helicopter.

## **FAA's Determination**

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

## **Related Service Information**

We reviewed Sikorsky Alert Service Bulletin 92-64-009, Basic Issue, dated November 2, 2016 (ASB 92-64-009). ASB 92-64-009 describes procedures for inspecting the TRPCS and bearing assemblies for damaged bearings and seals, purged grease with any metallic particles from the bearings, radial play in the bearings, and correct installation of the white Teflon seals, snap rings, and cotter pin.

## **AD Requirements**

For helicopters with a TRPCS assembly P/N 92358-06303-041 or P/N 92358-06303-042 with less than 80 hours TIS installed, this AD requires:

- Removing from service TRPCS assemblies with less than 5 hours TIS since new or overhaul;
- For TRPCS assemblies with 5 or more hours TIS since new or overhaul, borescope inspecting the TRPCS bearing for damaged, incorrectly installed, or missing seals and inspecting the angular contact bearing for free rotation, purged grease with metallic particles, and damaged seals. If the TRPCS assembly has less than 10 hours TIS, performing a ground operation until the TRPCS assembly accumulates 10 hours TIS before performing the inspection on the angular contact bearing; and
- Replacing the TRPCS assembly if there is a missing, damaged, or incorrectly installed seal, snap ring, or cotter pin or if the bearing does not rotate freely, or if there is any purged grease with metallic particles.

This AD does not apply to helicopters with a TRPCS assembly manufactured or overhauled on or after November 3, 2016.

## **Differences Between This AD and the Service Information**

ASB 92-64-009 requires operators to contact Sikorsky if there are any discrepancies, and this AD does not. ASB 92-64-009 allows 20 hours TIS to perform the visual bearing inspection if the borescope inspection has already been performed, while this AD allows 20 hours TIS for TRPCS assemblies with 15 or more hours TIS.

## **Costs of Compliance**

We estimate that this AD will affect 80 helicopters of U.S. Registry.

We estimate that operators may incur the following costs in order to comply with this AD. At an average labor rate of \$85 per hour, borescope and visually inspecting the TRPCS assembly will require 16 work-hours, for a cost per helicopter of \$1,360 and a cost of \$108,800 for the U.S. fleet. If required, replacing a TRPCS assembly will require 16 work-hours and required parts will cost \$4,000, for a cost per helicopter of \$5,360.

According to Sikorsky's service information, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage by Sikorsky. Accordingly, we have included all costs in our cost estimate.

### **FAA's Justification and Determination of the Effective Date**

Providing an opportunity for public comments prior to adopting these AD requirements would delay implementing the safety actions needed to correct this known unsafe condition. Therefore, we found and continue to find that the risk to the flying public justifies waiving notice and comment prior to the adoption of this rule because the previously described unsafe condition can result in loss of TR control and certain actions must be accomplished before further flight or within 20 hours TIS, a very short interval for these helicopters.

Since it was found that immediate corrective action was required, notice and opportunity for prior public comments before issuing this AD were impracticable and contrary to public interest and good cause existed to make the AD effective immediately by Emergency AD 2016-24-51, issued on November 16, 2016, to all known U.S. owners and operators of these helicopters. These conditions still exist and the AD is hereby published in the Federal Register as an amendment to section 39.13 of the Federal Aviation Regulations (14 CFR 39.13) to make it effective to all persons.

### **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 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, 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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**2016-24-51 Sikorsky Aircraft Corporation:** Amendment 39-18759; Docket No. FAA-2016-9537; Directorate Identifier 2016-SW-075-AD.

**(a) Applicability**

This AD applies to Sikorsky Aircraft Corporation (Sikorsky) Model S-92A helicopters, certificated in any category, with a tail rotor pitch change shaft (TRPCS) assembly part number (P/N) 92358-06303-041 or P/N 92358-06303-042 with less than 80 hours time-in-service (TIS) installed, except those TRPCS assemblies manufactured or overhauled on or after November 3, 2016.

**(b) Unsafe Condition**

This Emergency AD defines the unsafe condition as a binding TRPCS bearing. This condition could result in loss of tail rotor (TR) control and possible loss of control of the helicopter.

**(c) Effective Date**

This AD is effective January 12, 2017 to all persons except those persons to whom it was made immediately effective by Emergency AD 2016-24-51, issued on November 16, 2016, which contains the requirements of this AD.

**(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) For TRPCS assemblies with less than 5 hours TIS since new or overhaul, before further flight, remove the TRPCS assembly from service.

(2) For TRPCS assemblies with between 5 and 15 hours TIS since new or overhaul, before further flight, and for TRPCS assemblies with more than 15 hours TIS, within 20 hours TIS or before reaching 80 hours TIS, whichever occurs first:

(i) Borescope inspect the TRPCS assembly as follows, unless done within the previous 15 hours TIS.

(A) On the TR side of the TRPCS bearing, remove the plug from the end of the TRPCS, insert the borescope into the TRPCS, and determine whether the white Teflon seal and snap ring are installed. If the white Teflon seal or snap ring is missing, or if there is a rip, tear, or heat damage on the seal or if there is no gap in the snap ring, before further flight replace the TRPCS assembly.

(B) On the TR servo side of the TRPCS bearing, insert the borescope through the oil filler cap hole and determine whether the white Teflon seal, snap ring, and cotter pin are installed. If the white Teflon seal, snap ring, or cotter pin is missing, if there is a rip, tear, or heat damage on the seal, or if there is no gap in the snap ring, before further flight replace the TRPCS assembly.

(ii) If the TRPCS assembly has less than 10 hours TIS, perform ground operation with the rotor turning at 105% (Nr) until the TRPCS assembly has accumulated 10 hours TIS, cycling the TR control pedals at least 10 times per hour.

(iii) Remove the TRPCS and inspect the SB2310 angular contact bearing for free rotation, purged grease with metal particles, a nick or a dent, and any cut, tear, or distortion on the bearing seal. If the bearing does not rotate freely; the bearing sounds rough or chatters; there is any purged grease with metal particles; a nick or dent; or if there is a cut, tear, or distortion in the bearing seal, before further flight, replace the TRPCS assembly.

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

(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, 1200 District Avenue, Burlington, Massachusetts 01803; telephone (781) 238-7161; email [blaine.williams@faa.gov](mailto: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.

**(g) Additional Information**

Sikorsky Alert Service Bulletin 92-64-009, Basic Issue, dated November 2, 2016, which is not incorporated by reference, contains additional information about the subject of this final rule. For service information identified in this final rule, 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](mailto:wcs_cust_service_eng.gr-sik@lmco.com). You may review this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

**(h) Subject**

Joint Aircraft Service Component (JASC) Code: 6720 Tail Rotor Control System.

Issued in Fort Worth, Texas, on December 9, 2016.

Scott A. Horn,  
Acting Manager, Rotorcraft Directorate,  
Aircraft Certification Service.