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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2019-0663; Product Identifier 2018-SW-057-AD; Amendment 39-21025; AD 2020-02-17]**

**RIN 2120-AA64**

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

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Sikorsky Aircraft Corporation (Sikorsky) Model S-70, S-70A, S-70C, S-70C(M), and S-70C(M1) helicopters. This AD was prompted by four incidents of disbonding between the tail rotor (T/R) blade pitch horn and the torque tube. This AD requires recurring visual and tap inspections of the T/R blade, and depending on the outcome, replacing the T/R blade. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective March 13, 2020.

**ADDRESSES:** For service information related to this final rule, contact your local Sikorsky Field Representative or Sikorsky's Service Engineering Group at Sikorsky Aircraft Corporation, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-Winged-S or 203-416-4299; email wcs\_cust\_service\_eng.gr-sik@lmco.com. Operators may also log on to the Sikorsky 360 website at <https://www.sikorsky360.com>. You may view the related service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

#### **Examining the AD Docket**

You may examine the AD docket on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0663; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations is Docket Operations, U.S. Department of Transportation, Docket Operations, M-30,

West Building Ground Floor, Room W12 140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Kristopher Greer, Aviation Safety Engineer, Boston ACO Branch, Compliance & Airworthiness Division, FAA, 1200 District Avenue, Burlington, MA 01803; telephone 781-238-7799; email kristopher.greer@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to Sikorsky Model S-70, S-70A, S-70C, S-70C(M), and S-70C(M1) helicopters with T/R blade part number 70101-31000 (all dash numbers) and with a serial number up to and including A009-08915. The NPRM published in the Federal Register on September 6, 2019 (84 FR 46903). The NPRM was prompted by four incidents of disbonding between the T/R blade pitch horn and the torque tube on military-operated Model UH-60L and SH-60F helicopters. The disbonding produced minor to severe vibrations due to the mass imbalance. This condition may also occur on Sikorsky Model S-70, S-70A, S-70C, S-70C(M), and S-70C(M1) helicopters due to design similarity.

Disbonding between the T/R blade pitch horn and the torque tube, if not addressed, could result in the T/R blade pitch horn rocking in the torque tube, leading to increased T/R vibrations. These vibrations could lead to crushing of the torque tube and subsequent loss of control of the helicopter. While Sikorsky continues to test T/R blades returned from the field, investigation has revealed blades produced prior to manufacturing improvements implemented between 2006 and 2007 are prone to this disbonding. To address this condition, Sikorsky is assessing design change options to retrofit the affected T/R blades.

The NPRM proposed to require, before the first flight of each day, visually inspecting each T/R blade for any crack, leading edge erosion, and trailing edge skin disbonding and separation, paying particular attention to the area from the midspan to the pitch control horn; and tap inspecting for disbonding in the pitch horn to torque tube bond area. Depending on the outcome of these inspections, the NPRM proposed to require replacing the T/R blade. The FAA is issuing this AD to address the unsafe condition on these products.

### **Comments**

The FAA gave the public the opportunity to participate in developing this AD. The FAA received no comments on the NPRM or on the determination of the cost to the public.

### **FAA's Determination**

The FAA reviewed the relevant data and determined that air safety and the public interest require adopting this AD as proposed.

### **Related Service Information**

The FAA reviewed Sikorsky Aircraft Model S-70 Blackhawk Derivatives Maintenance Manual Temporary Revision No. 72, dated October 12, 2017. This service information specifies replacing a 10-hour/14-day T/R inspection with a before first flight of the day T/R inspection.

The FAA also reviewed section 5-3-13.2 Coin-Tapping Inspection Method of Sikorsky Technical Manual TM 1-70-23-3, Change 12, dated July 1, 2018. This service information specifies procedures for coin-tap inspecting T/R blades. This service information also specifies general repair

limits and includes figures illustrating the different types of materials of the T/R blade skin and core regions.

### **Interim Action**

The FAA considers this AD an interim action. The design approval holder is currently developing a modification that will address the unsafe condition identified in this AD. Once this modification is developed, approved, and available, we might consider additional rulemaking.

### **Costs of Compliance**

The FAA estimates that this AD affects 13 helicopters of U.S. registry. The FAA estimates that operators may incur the following costs in order to comply with this AD. Labor costs are estimated at \$85 per work-hour.

Inspecting the T/R blades takes about 1 work-hour for an estimated cost of \$85 per helicopter and \$1,105 for the U.S. fleet, per inspection cycle.

Replacing a set of two T/R blades takes about 6 work-hours and parts cost about \$192,304 for an estimated replacement cost of \$192,814 per helicopter.

### **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.

The FAA is 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**

The FAA 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 this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, 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.

The FAA 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):



**2020-02-17 Sikorsky Aircraft Corporation:** Amendment 39-21025; Docket No. FAA-2019-0663; Product Identifier 2018-SW-057-AD.

**(a) Effective Date**

This AD is effective March 13, 2020.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Model S-70, S-70A, S-70C, S-70C(M), and S-70C(M1) helicopters, certificated in any category, with a tail rotor (T/R) blade part number 70101-31000 (all dash numbers) with a serial number (S/N) up to and including A009-08915.

Note 1 to paragraph (c) of this AD: Each T/R blade is marked with the S/N.

**(d) Subject**

Joint Aircraft System Component (JASC): 6410, Tail Rotor Blades.

**(e) Unsafe Condition**

This AD was prompted by four incidents of disbonding between the T/R blade pitch horn and the torque tube. The FAA is issuing this AD to detect disbonding. The unsafe condition, if not addressed, could result in increased T/R vibrations, physical failure of the torque tube, and subsequent loss of control of the helicopter.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) T/R Blade Inspection**

Before the first flight of each day:

(1) Visually inspect each T/R blade for a crack, leading edge erosion, and trailing edge skin disbonding and separation, paying particular attention to the area from the midspan to the pitch control horn. If there is a crack, any leading edge erosion, trailing edge disbonding, or trailing edge separation, before further flight, replace the T/R blade with an airworthy part.

(2) Tap test inspect each T/R blade for disbonding in the pitch horn to torque tube bond area. If there is any disbonding, before further flight, replace the T/R blade with an airworthy part.

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

(1) The Manager, Boston ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (i)(1) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(i) Related Information**

(1) For more information about this AD, contact Kristopher Greer, Aviation Safety Engineer, Boston ACO Branch, Compliance & Airworthiness Division, FAA, 1200 District Avenue, Burlington, MA 01803; telephone 781-238-7799; email kristopher.greer@faa.gov.

(2) For service information related to this AD, contact your local Sikorsky Field Representative or Sikorsky's Service Engineering Group at Sikorsky Aircraft Corporation, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-Winged-S or 203-416-4299; email wcs\_cust\_service\_eng.gr-sik@lmco.com. Operators may also log on to the Sikorsky 360 website at <https://www.sikorsky360.com>. You may view the related service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call 817-222-5110.

Issued in Fort Worth, Texas, on January 26, 2020.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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