



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2020-0792; Project Identifier 2018-SW-049-AD; Amendment 39-21368; AD 2020-26-13]

RIN 2120-AA64

#### Airworthiness Directives; Sikorsky Aircraft Corporation Helicopters

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

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for Sikorsky Aircraft Corporation (Sikorsky) Model S-92A helicopters. This AD was prompted by seven incidents of fatigue cracks in the horizontal stabilizer root fitting FWD (forward root fitting). This AD requires establishing the life limit of certain part-numbered forward root fittings, establishing the life limit of certain part-numbered stabilizer strut fittings, repetitively inspecting certain parts, and depending on the inspection results, removing parts from service. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in 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 1-800-946-4337

(1-800-Winged-S); email [wcs\\_cust\\_service\\_eng.gr-sik@lmco.com](mailto: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 this 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. It is also available on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0792.

### **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-2020-0792; 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 final rule, any comments received, and other information. The address for Docket Operations is 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:** Dorie Resnik, Aerospace Engineer, Boston ACO Branch, 1200 District Avenue, Burlington, Massachusetts 01803; telephone 781-238-7693; email [dorie.resnik@faa.gov](mailto:dorie.resnik@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-92A helicopters with certain part-numbered horizontal stabilizer assemblies (stabilizer assembly), certain part-numbered forward root fittings, or certain part-numbered stabilizer strut fittings installed. The NPRM published in the *Federal Register* on September 17, 2020 (85 FR 58007). The NPRM was prompted by seven incidents of fatigue cracks in forward root fittings. Fatigue cracking in a forward root fitting degrades the load path and increases the load on other assembly parts, particularly at the aft horizontal stabilizer attachment points.

The NPRM proposed to require establishing the life limit of certain part-numbered forward root fittings and certain part-numbered stabilizer strut fittings. The NPRM also proposed to require repetitively inspecting each stabilizer assembly attachment bolt and barrel nut set, each forward root fitting, each attachment fitting including the bolt holes and fastener holes, condition of the fasteners, and each attachment fitting mating surface. Depending on the inspection results, the NPRM proposed to require removing parts from service. Finally, the NPRM proposed to prohibit installing certain stabilizer assemblies on any helicopter. 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 final rule, but the FAA did not receive any comments on the NPRM or on the determination of the cost to the public.

### **Conclusion**

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

## **Related Service Information under 1 CFR part 51**

The FAA reviewed S-92 Maintenance Manual, SA S92A-AMM-000, Temporary Revision (TR) 55-33, dated March 24, 2020 (TR 55-33), which adds additional part numbers (P/Ns) to the Horizontal Stabilizer – Maintenance Practices and specifies procedures for inspecting each forward root fitting and aft root fitting bolt holes and fasteners, each forward and aft root fitting mating surface for wear of the abrasion-resistant Teflon coating, procedures for chemically stripping the abrasion-resistant Teflon coating from the entire mounting pad, applying alodine, and applying an abrasion-resistant Teflon coating. This service information also describes procedures for removing and installing a stabilizer (Tasks 55-11-01-900-001 and 55-11-01-900-002), checking the torque stabilization (Task 55-11-01-280-001), and inspecting the stabilizer and attaching hardware (Task 55-11-01-210-004). This service information also provides assembly diagrams and lists interchangeable stabilizer P/Ns and compatible strut P/Ns.

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.

## **Other Related Service Information**

The FAA also reviewed S-92 Maintenance Manual SA S92A-AWL-000, TR No. 4-58, dated October 2, 2017 (TR 4-58), and S-92 Maintenance Manual SA S92A-AWL-000, TR No. 4-66 dated November 20, 2019 (TR 4-66). This service information revises Task 4-00-00-200-000, Table 1 Replacement Schedule, dated November 30, 2015. Both TR 4-58 and 4-66 revise the Airworthiness Limitations Schedule by removing certain part-numbered components, introducing new part-numbered components, and establishing replacement intervals and recurring inspections for the forward root fitting and the horizontal stabilizer strut fitting. TR 4-58 also specifies inspecting the horizontal stabilizer and attaching hardware at a recurring interval of 250 hours time in service

(TIS).

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

The service information requires returning affected parts to a Sikorsky specialist; this AD does not.

### **Costs of Compliance**

The FAA estimates that this AD affects 85 helicopters of U.S. registry. Labor costs are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Visually inspecting the stabilizer assembly and attached hardware will take about 3 work-hours for an estimated cost of \$255 per helicopter and \$21,675 for the U.S. fleet per inspection cycle.

If required, replacing a hat bushing and both upper fittings and lower fittings will take about 1 work-hour and parts will cost about \$10,000 for an estimated cost of \$10,085 per replacement.

If required, replacing the upper and lower support strut rod ends, including lug and conical fitting, will take about 1 work-hour and parts will cost about \$10,000 for an estimated cost of \$10,085 per replacement.

If required, performing a fluorescent penetrant inspection will take about 3 work-hours for an estimated cost of \$255 per inspection.

If required, replacing a stabilizer assembly will take about 6 work-hours and parts will cost about \$312,000 for an estimated cost of \$312,510 per replacement.

If required, replacing a forward root fitting will take about 10 work-hours and parts will cost about \$25,000 for an estimated cost of \$25,850 per replacement.

If required, replacing a stabilizer strut fitting will take about 10 work-hours and parts will cost about \$10,000 for an estimated cost of \$10,850 per replacement.

If required, replacing a forward root fitting and an aft attachment fitting will take about 20 work-hours and parts will cost about \$50,000 for an estimated cost of \$51,700 per replacement.

If required, removing wear or corrosion and applying corrosion preventative compound will take about 0.5 work-hour and parts will cost a nominal amount for an estimated cost of \$43 per action.

If required, replacing a stabilizer attachment bolt and barrel nut set will take about 1 work-hour and parts will cost about \$500 for an estimated cost of \$585 per replacement.

If required, replacing a fastener will take about 0.1 work-hour and parts will cost a nominal amount for an estimated cost of \$9 per fastener.

If required, removing the abrasion-resistant Teflon coating to inspect each forward and aft attachment fitting mating surface will take about 5 work-hours for an estimated cost of \$425 per inspection.

If required, applying alodine or equivalent and applying abrasion-resistant Teflon coating will take about 5 work hours with minimal parts cost for an estimated cost of \$425 per application.

According to Sikorsky, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all costs in this cost estimate.

#### **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**

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.

### **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:  
**2020-26-13 Sikorsky Aircraft Corporation:** Amendment 39-21368; Docket No. FAA-2020-0792; Project Identifier 2018-SW-049-AD.

**(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Sikorsky Aircraft Corporation Model S-92A helicopters, certificated in any category, with the following installed: Horizontal stabilizer root fitting FWD (forward root fitting) part number (P/N) 92209-07111-101 or 92070-20125-101; or stabilizer strut fitting P/N 92209-07404-041, 92209-07403-041, or 92070-20117-041 installed on horizontal stabilizer assembly (stabilizer assembly) P/N 92070-20117-045, 92070-20117-046, 92070-20125-041, 92070-20125-042, 92070-20125-043, 92070-20125-044, 92205-07400-043, or 92205-07400-045.

**(d) Subject**

Joint Aircraft System Component (JASC) Code: 5510, Horizontal Stabilizer Structure.

**(e) Unsafe Condition**

This AD was prompted by incidents of fatigue cracks in a forward root fitting and life limit recalculations for forward root fitting P/N 92209-07111-101 and 92070-20125-101. The FAA is issuing this AD to prevent a forward root fitting from remaining in service beyond its life limit, detect fatigue cracking in a forward root fitting, and prevent increased load and stress cracking in the stabilizer root fitting aft. The unsafe condition, if not addressed, could result in failure of a stabilizer root fitting, separation of the stabilizer

assembly from the helicopter, and subsequent loss of control of the helicopter.

**(f) Compliance**

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

**(g) Required Actions**

(1) Within 50 hours time-in-service (TIS):

(i) Determine the total hours TIS of the forward root fitting P/N 92209-07111-101 or 92070-20125-101. If the hours TIS of the forward root fitting is unknown, use the hours TIS of the stabilizer assembly instead.

(A) If the forward root fitting has accumulated 7,900 or more total hours TIS, before further flight, remove the forward root fitting from service.

(B) If the forward root fitting has accumulated less than 7,900 total hours TIS, before exceeding 7,900 hours TIS, remove the forward root fitting from service.

(ii) Thereafter following paragraph (g)(1)(i) of this AD, remove the forward root fitting from service before accumulating 7,900 total hours TIS.

(iii) For stabilizer assemblies with stabilizer strut fitting P/N 92070-20117-041 installed, perform the following actions:

(A) Determine the total hours TIS of stabilizer strut fitting P/N 92070-20117-041.

(B) If the stabilizer strut fitting has accumulated 19,100 or more total hours TIS, before further flight, remove the stabilizer strut fitting from service.

(C) If the stabilizer strut fitting has accumulated less than 19,100 total hours TIS, before exceeding 19,100 total hours TIS, remove the stabilizer strut fitting from service.

(iv) Thereafter following paragraph (g)(1)(iii) of this AD, remove the stabilizer strut fitting from service before accumulating 19,100 total hours TIS.

(2) For helicopters with stabilizer strut fitting P/N 92209-07404-041 or 92209-07403-041 installed, within 50 hours TIS and thereafter at intervals not to exceed 50 hours TIS:

(i) Remove the support strut and using a cheese cloth (or similar cloth) and isopropyl alcohol, clean the upper and lower support strut rod ends, horizontal stabilizer attachment fitting, and the tail rotor pylon attachment fitting.

(ii) Using a 10X or higher power magnifying glass, a flashlight, and a mirror, visually inspect the hat bushing and both upper fittings and lower fittings for a crack, corrosion, fretting, deformation, and wear. If there is a crack, corrosion, fretting, deformation, or wear, before further flight, remove the hat bushing and both upper fittings and lower fittings from service.

(iii) Using a 10X or higher power magnifying glass, a flashlight, and a mirror, visually inspect both upper and lower support strut rod ends, including lug and conical fitting, and both upper and lower attachment fittings on the stabilizer and pylon including the bushings for a crack, corrosion, fretting, deformation, and wear. If there is a crack, corrosion, fretting, deformation, or wear, before further flight, remove the upper and lower support strut rod ends, including lug and conical fitting, and both upper and lower attachment fittings on the stabilizer from service.

(3) Within 250 hours TIS or one year, whichever occurs first, and thereafter at intervals not to exceed 250 hours TIS or one year, whichever occurs first:

(i) Remove the stabilizer assembly and visually inspect each stabilizer attachment bolt and barrel nut set for corrosion, a crack, and damage to the threads. For the purposes of this inspection, damage may be indicated by uneven threads, missing threads, or cross-threading.

(A) If there is corrosion within allowable limits, before further flight, treat for corrosion in accordance with FAA-approved procedures.

(B) If there is corrosion that exceeds allowable limits, or a crack or damage to the threads, before further flight, remove the bolt and barrel nut set from service.

(ii) Inspect the forward root fitting and the aft attachment fitting by:

(A) Gaining access to the inside of the horizontal stabilizer.

(B) Using Brulin Cleaner SD 1291 (or equivalent) and a low-lint cloth, remove all traces of sealing compound, oil, and dirt from the stabilizer mounting surfaces.

(C) Using a 10X magnifying glass, inspect for any crack, wear, and corrosion.

(1) If there is a crack, before further flight, remove the affected forward root fitting and the affected aft attachment fitting from service.

(2) If there is wear or corrosion that exceeds allowable limits, before further flight, remove the affected forward root fitting and the affected aft attachment fitting from service.

(3) If there is wear or corrosion within allowable limits, before further flight, treat for corrosion in accordance with FAA-approved procedures.

(D) Visually inspect each attachment fitting bolt hole and fastener hole for a crack, wear, and corrosion.

(1) If there is a crack, before further flight, remove the affected forward root fitting and the affected aft attachment fitting from service.

(2) If there is wear or corrosion that exceeds allowable limits, before further flight, remove the affected forward root fitting and the affected aft attachment fitting from service.

(3) If there is wear or corrosion within allowable limits, before further flight, treat for corrosion in accordance with FAA approved procedures.

(E) Inspect for loose or working fasteners. If there is a loose or working fastener, before further flight, remove the fastener from service.

(iii) As an alternative means to inspect for cracks in paragraphs (g)(3)(i) and (ii) of this AD, perform a florescent penetrate inspection (FPI).

(iv) Visually inspect each forward and aft attachment fitting mating surface for wear of the abrasion-resistant Teflon coating and degradation. For the purposes of this

inspection, degradation may be indicated by fretting. Refer to Figure 204, of S-92 Maintenance Manual, SA S92A-AMM-000, Temporary Revision 55-33, Task 55-11-01-210-004, dated March 24, 2020 (TR 55-33), for a depiction of the area to be inspected. For the purposes of this inspection, wear may be indicated by less than 100% coverage of the abrasion-resistant Teflon coating. If there is wear to the abrasion-resistant Teflon coating or degradation, before further flight:

(A) Chemically strip the abrasion-resistant Teflon coating from the entire mounting pad in accordance with paragraph 7.A.(7)(a) of TR 55-33.

(B) FPI or eddy current inspect for a crack. If there is a crack, before further flight, remove the stabilizer assembly from service.

(C) If there is no crack, treat the affected area by applying alodine or equivalent. Apply abrasion-resistant Teflon coating in accordance with paragraphs 7.A.(7)(d) through (e) of TR 55-33.

(4) Installing stabilizer strut fitting P/N 92070-20117-041 is a terminating action for the 50 hour TIS repetitive requirements in paragraph (g)(2) of this AD.

(5) As of the effective date of this AD, do not install stabilizer assembly P/N 92205-07400-043, 92205-07400-045, or 92205-07400-047 on any helicopter.

**(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 (j) 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**

For more information about this AD, contact Dorie Resnik, Aerospace Engineer, Boston ACO Branch, 1200 District Avenue, Burlington, Massachusetts 01803; telephone 781-238-7693; email [dorie.resnik@faa.gov](mailto:dorie.resnik@faa.gov).

**(j) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) S-92 Maintenance Manual, SA S92A-AMM-000, Temporary Revision (TR) 55-33, dated March 24, 2020.

(ii) [Reserved]

(3) For Sikorsky Aircraft Corporation service information identified in 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 1-800-946-4337 (1-800-Winged-S); email [wcs\\_cust\\_service\\_eng.gr-sik@lmco.com](mailto:wcs_cust_service_eng.gr-sik@lmco.com). Operators may also log on to the Sikorsky 360 website at <https://www.sikorsky360.com>.

(4) You may view this 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.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fedreg.legal@nara.gov](mailto:fedreg.legal@nara.gov), or go to:

<https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on December 10, 2020.

Lance T. Gant, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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