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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0146; Project Identifier AD-2021-00449-R; Amendment 39-22054; AD 2022-11-04]

RIN 2120-AA64

Airworthiness Directives; Sikorsky Aircraft Corporation Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2020-26-13, which applied to certain Sikorsky Aircraft Corporation (Sikorsky) Model S-92A helicopters. AD 2020-26-13 required establishing the life limit for certain part-numbered horizontal stabilizer root fittings FWD (forward root fittings) and certain part-numbered stabilizer strut fittings. AD 2020-26-13 also required repetitively inspecting certain parts, and depending on the inspection results, removing parts from service. Finally AD 2020-26-13 prohibited installing certain stabilizer assemblies on any helicopter. Since the FAA issued AD 2020-26-13, the manufacturer notified the FAA that due to an error in the service information, certain part numbers in AD 2020-26-13 are incorrect. Also, the FAA determined that additional inspections are required to address the unsafe condition. This AD retains certain requirements and the prohibition for installing certain stabilizer assemblies on any helicopter from AD 2020-26-13, corrects certain part numbers, and requires additional repetitive inspections. The actions of this AD are intended to address an unsafe condition on these products.

DATES: This AD is effective June 27, 2022.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of February 1, 2021 (85 FR 84201, December 28, 2020).

ADDRESSES: For service information identified in this final rule, contact Sikorsky's Engineering Group at Sikorsky Aircraft Corporation, 124 Quarry Road, Trumbull, CT 06611, United States; phone: (800) 946-4337; email: wcs_cust_service_eng.gr-sik@lmco.com; website: 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 at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0146.

Examining the AD Docket

You may examine the AD docket on the internet at <https://www.regulations.gov> in Docket No. FAA-2022-0146; 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, any service information that is incorporated by reference, 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, Aviation Safety Section, Boston ACO Branch, Compliance & Airworthiness Division, 1200 District Avenue, Burlington, MA 01803; telephone (781) 238-7693; email 9-AVS-AIR-BACO-COS@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2020-26-13, Amendment 39-21368 (85 FR 84201, December 28, 2020) (AD 2020-26-13). AD 2020-26-13 applied to Sikorsky Model S-92A helicopters with 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. The NPRM published in the Federal Register on February 23, 2022 (87 FR 10115). The NPRM was prompted by the discovery that incorrect P/Ns were identified in the Applicability and the Required Actions paragraphs of AD 2020-26-13. Additionally, after the FAA issued AD 2020-26-13, Sikorsky notified the FAA that an additional repetitive inspection of certain parts of the stabilizer strut assembly is required to prevent the unsafe condition. Finally, after the FAA issued AD 2020-26-13, Sikorsky requested and the FAA approved a global Alternative Method of Compliance (AMOC) to allow only removing parts from service that are cracked, corroded, or have fretting, deformation, or wear rather than require removing 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.

In the NPRM, the FAA proposed to expand the applicability of AD 2020-26-13 by adding an additional part-numbered stabilizer assembly. The NPRM also proposed to correct paragraph (g)(4) of the Required Actions so that the installation of the titanium stabilizer strut fitting is terminating action for the 50-hour time-in-service (TIS) inspections of the aluminum stabilizer strut fitting. The NPRM also proposed to require an additional repetitive inspection of certain parts of the stabilizer strut assembly. Finally, the NPRM proposed to incorporate the FAA approved global AMOC.

Discussion of Final Airworthiness Directive

Comments

The FAA received a comments from Sikorsky stating that in the section titled “Actions Since AD 2020-26-13 Was Issued” of the NPRM, the part number specified (92070-20117-04) is incorrect and should be 92070-20117-041. The FAA acknowledges this comment; however, the part number is not used in the “Background” section of this final rule. In light of this, the commenter's request no longer applies.

Conclusion

The FAA reviewed the relevant data, considered the comments received, and determined that air safety requires adopting the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information Under 1 CFR Part 51

This AD continues to require S-92 Maintenance Manual, SA S92A-AMM-000, Temporary Revision (TR) 55-33, dated March 24, 2020 (TR 55-33), which the Director of the Federal Register approved for incorporation by reference as of February 1, 2021 (85 FR 84201, December 28, 2020).

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 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 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 82 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 takes about 3 work-hours for an estimated cost of \$255 per helicopter and \$20,910 for the U.S. fleet per inspection cycle.

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

If required, replacing Mylar washers takes about 0.5 work-hour and parts cost about \$76 for an estimated cost of \$119 per replacement.

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

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

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

If required, replacing a stabilizer strut fitting takes about 10 work-hours and parts 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 takes about 20 work-hours and parts cost about \$50,000 for an estimated cost of \$51,700 per replacement.

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

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

If required, replacing a fastener takes about 0.1 work-hour and parts 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 takes about 5 work-hours for an estimated cost of \$425 per inspection.

If required, applying alodine or equivalent and applying abrasion-resistant Teflon coating takes 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

The FAA has 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.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

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:

- a. Removing Airworthiness Directive AD 2020-26-13, Amendment 39-21368 (85 FR 84201, December 28, 2020); and
- b. Adding the following new airworthiness directive:



FAA
Aviation Safety

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

2022-11-04 Sikorsky Aircraft Corporation: Amendment 39-22054; Docket No. FAA-2022-0146; Project Identifier AD-2021-00449-R.

(a) Effective Date

This airworthiness directive (AD) is effective June 27, 2022.

(b) Affected ADs

This AD replaces AD 2020-26-13, Amendment 39-21368 (85 FR 84201, December 28, 2020) (AD 2020-26-13).

(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 92209-07403-041 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, 92205-07400-045, or 92205-07400-047.

(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) after the effective date of this AD:

(i) Determine the total hours TIS of the forward root fitting P/N 92209-07111-101 or 92070-20125-101. If the total hours TIS of the forward root fitting is unknown, use the total 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 total 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 92070-20117-041 or 92209-07403-041 installed, within 50 hours TIS after the effective date of this AD 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) If installed, visually inspect the surface of each Mylar washer P/N 92070-20117-104 (Mylar washer). The surface should be smooth and continuous. If there is any visible damage such as any tear or scrape, remove the Mylar washer from the peelable-ply washer P/N 92070-20117-105 (peelable-ply washer) and remove the Mylar washer from service as follows:

(A) Dampen a low-lint cloth with 3M 6041 adhesive remover and place on the top of the Mylar washer.

(B) Allow the adhesive remover to soften the Mylar washer and peel the Mylar washer back.

(C) Repeat with more solvent until the Mylar washer and adhesive are removed.

(D) Clean the peelable-ply washer with cheese cloth moistened with isopropyl alcohol and adhere a new Mylar washer to the peelable-ply washer.

Note 1 to paragraph (g)(2)(ii): Stabilizer assembly P/Ns 92070-20125-041, 92070-20125-042, 92070-20125-043, and 92070-20125-044 do not utilize the Mylar washer. The inspection of the Mylar washer is not required on helicopters with stabilizer assembly P/N 92070-20125-041, 92070-20125-042, 92070-20125-043, or 92070-20125-044 installed.

(iii) 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 on any part, before further flight, remove the part from service.

(iv) Using a 10X or higher power magnifying glass, a flashlight, and a mirror, visually inspect both upper and lower support strut rod ends, including each 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 on any part, before further flight, remove the part from service.

(3) Within 250 hours TIS or one year, whichever occurs first after the effective date of this AD, 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 or higher 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 penetrant 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 92209-07404-041 is a terminating action for the 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 (i) 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 9-AVS-AIR-BACO-COS@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.

(3) The following service information was approved for IBR on February 1, 2021 (85 FR 84201, December 28, 2020).

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

(ii) [Reserved]

(4) For Sikorsky Aircraft Corporation service information identified in this AD, contact Sikorsky's Engineering Group at Sikorsky Aircraft Corporation, 124 Quarry Road, Trumbull, CT 06611, United States; phone: (800) 946-4337; email: wcs_cust_service_eng.gr-sik@lmco.com; website: www.sikorsky360.com.

(5) You may view this service information at 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.

(6) 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: fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on May 16, 2022.

Gaetano A. Sciortino,
Deputy Director for Strategic Initiatives, Compliance & Airworthiness Division, Aircraft Certification Service.

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