



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0792; Product Identifier 2018-SW-049-AD]

RIN 2120-AA64

Airworthiness Directives; Sikorsky Aircraft Corporation Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for Sikorsky Aircraft Corporation (Sikorsky) Model S-92A helicopters. This proposed AD was prompted by seven incidents of fatigue cracks in the horizontal stabilizer root fitting FWD (forward root fitting). This proposed AD would require 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. This proposed AD would also prohibit the installation of certain parts. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, 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. 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.

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 NPRM, any comments received, and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

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.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. 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.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will file in the docket all comments received, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, the FAA will consider all comments received on or before the closing date for comments. The FAA will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. The FAA may change this proposal in light of the comments received.

Confidential Business Information

Confidential Business Information (CBI) is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your

comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Dorie Resnik, Aviation Safety Engineer, Boston ACO Branch, 1200 District Avenue, Burlington, Massachusetts 01803; telephone 781-238-7693; email dorie.resnik@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Discussion

The FAA proposes to adopt a new AD for 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. This proposed AD 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.

This proposed AD would require establishing the life limit of certain part-numbered forward root fittings and certain part-numbered stabilizer strut fittings. This proposed AD would also 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, this proposed AD would require removing parts from service. Finally, this proposed AD would prohibit installing certain stabilizer assemblies on any helicopter.

The proposed actions are intended to prevent a forward root fitting remaining in service beyond its fatigue life, detect fatigue cracking in a forward root fitting, and prevent increased load and stress cracking in the stabilizer root fitting aft. This condition, if not addressed, could result in failure of a forward root fitting, separation of the stabilizer assembly from the helicopter, and subsequent loss of control of the helicopter.

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/N) 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).

FAA's Determination

The FAA is proposing this AD after evaluating all the relevant information and determining the unsafe condition described previously is likely to exist or develop in other helicopters of the same type design.

Proposed AD Requirements

This proposed AD would require determining the total hours TIS of the forward root fitting and the stabilizer strut fitting. This proposed AD would require establishing a life limit of 7,900 hours TIS for certain part-numbered forward root fittings and establishing a life limit of 19,100 hours TIS for stabilizer strut fitting P/N 92070-20117-

041. This proposed AD would also require for certain part-numbered stabilizer strut fittings installed, repetitively inspecting the following at intervals not to exceed 50 hours TIS:

- The hat bushing and both upper and lower fittings for a crack, corrosion, fretting, deformation, and wear.
- 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.

This proposed AD would also require repetitively inspecting the following at intervals not to exceed 250 hours TIS or one year, whichever occurs first:

- Each stabilizer attachment bolt and barrel nut set for corrosion, a crack, and damage to the threads indicated by uneven threads, missing threads, or cross-threading.
- Each forward root fitting and aft attachment fitting, including inspecting the bolt holes and fastener holes for a crack, wear, and corrosion, or as an alternative to detect cracks, fluorescent penetrant inspecting (FPI) the area.
- 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. If there is any wear of the coating or fretting, this proposed AD would require stripping the coating and performing a FPI or eddy current inspection to inspect for a crack. If there are no cracks, this proposed AD would require recoating the surfaces.

Depending on the inspection results, this proposed AD would require removing parts from service before further flight.

Finally, this proposed AD would prohibit installing stabilizer assembly P/N 92205-07400-043, 92205-07400-045, and 92205-07400-047 on any helicopter.

Differences Between this Proposed AD and the Service Information

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

Costs of Compliance

The FAA estimates that this proposed AD would affect 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 proposed AD.

Visually inspecting the stabilizer assembly and attached hardware would 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 would take about 1 work-hour and parts would 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, would take about 1 work-hour and parts would cost about \$10,000 for an estimated cost of \$10,085 per replacement.

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

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

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

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

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

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

If required, replacing a fastener would take about 0.1 work-hour and parts would 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 would 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 would 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 proposed 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 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 above, I certify this proposed regulation:

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 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 adding the following new airworthiness directive (AD):

Sikorsky Aircraft Corporation: Docket No. FAA-2020-0792; Product Identifier 2018-SW-049-AD.

(a) Comments Due Date

The FAA must receive comments by [INSERT DATE 45 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 (i)(1) of this AD. Information may be emailed to: ANE-AD-AMOC@faa.gov.

(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 Dorie Resnik, Aerospace Engineer, Boston ACO Branch, 1200 District Avenue, Burlington, Massachusetts 01803; telephone 781-238-7693; email dorie.resnik@faa.gov.

(2) For 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. You may view this referenced 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 on September 11, 2020.

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

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