



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0032; Project Identifier AD-2020-01314-P]

RIN 2120-AA64

Airworthiness Directives; Hamilton Sundstrand Corporation Propellers

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive (AD) 2020-12-07, which applies to certain Hamilton Sundstrand Corporation (Hamilton Sundstrand) 54H model propellers. AD 2020-12-07 requires initial and repetitive eddy current inspections (ECI) of certain propeller blades and replacement of the propeller blades that fail the inspection. Since the FAA issued AD 2020-12-07, the manufacturer determined that all propeller blades installed on Hamilton Sundstrand 54H model propellers with a 54H60 model propeller hub are susceptible to intergranular corrosion cracking in the blade taper bore. This proposed AD would require initial and repetitive ECI of all propeller blades installed on Hamilton Sundstrand 54H60 propeller hubs and replacement of any propeller blade that fails inspection. 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 Hamilton Sundstrand, 1 Hamilton Road, Windsor Locks, CT 06096-1010; phone: (877) 808-7575; email: CRC@collins.com. You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0032; 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.

FOR FURTHER INFORMATION CONTACT: Michael Schwetz, Aviation Safety Engineer, Boston ACO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7761; fax: (781) 238-7199; email: michael.schwetz@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-0032; Project Identifier AD-2020-01314-P” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

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 post all comments received, without change, to <https://www.regulations.gov>, including any

personal information you provide. The agency will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

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 Michael Schwetz, Aviation Safety Engineer, Boston ACO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA issued AD 2020-12-07, Amendment 39-21142 (85 FR 36145, June 15, 2020) (AD 2020-12-07) for certain Hamilton Sundstrand 54H model propellers. Note that AD 2020-12-07 and the Hamilton Sundstrand service information reference 54H60 model propellers whereas this AD references 54H model propellers. Hamilton Sundstrand 54H60 model propellers are 54H model propellers with a 54H60 model propeller hub.

AD 2020-12-07 was prompted by a report of the separation of a 54H60 model propeller blade installed on a United States Marine Corps Reserve (USMCR) KC-130T airplane during a flight in July 2017. The USMCR investigation of this event revealed the Hamilton Sundstrand 54H60 model propeller blade separated due to corrosion pitting and a resultant intergranular radial crack that was not corrected at the last propeller overhaul. From this intergranular crack, a fatigue crack initiated and grew under service loading until the Hamilton Sundstrand 54H60 model propeller blade could no longer sustain the applied loads and ultimately the blade separated. The separation of the blade resulted in

the loss of the airplane and 17 fatalities. The investigation further revealed that 54H60 model propeller blades manufactured before 1971 are susceptible to cracks of the propeller blade in the area of the internal taper bore. The applicability of AD 2020-12-07 was therefore limited to those Hamilton Sundstrand 54H60 model propellers blades with a blade serial number (S/N) below 813320, which are those propeller blades manufactured before 1971. AD 2020-12-07 required initial and repetitive ECI of the affected propeller blades and replacement of any propeller blade that fails inspection. The agency issued AD 2020-12-07 to detect cracking in the propeller blade taper bore.

Actions Since AD 2020-12-07 Was Issued

Since the FAA issued AD 2020-12-07, the manufacturer determined that all propeller blades installed on Hamilton Sundstrand 54H model propellers with a 54H60 model propeller hub are susceptible to intergranular corrosion cracking in the blade taper bore. As a result, the manufacturer published Hamilton Sundstrand Alert Service Bulletin (ASB) 54H60-61-A154, Revision 1, dated May 29, 2020, to expand the effectivity of the ASB to include all propeller blades installed on a propeller that contains a blade S/N below 813320, and all propeller blades installed on a propeller that has not been overhauled within ten years. Hamilton Sundstrand ASB 54H60-61-A154, Revision 1, dated May 29, 2020, also provides instructions for concurrent compliance with Hamilton Sundstrand ASB 54H60-61-A155, dated May 29, 2020, to ECI an expanded and deeper taper bore area.

FAA's Determination

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed Hamilton Sundstrand ASB 54H60-61-A154, Revision 1, dated May 29, 2020. This ASB identifies the affected propeller models and specifies procedures for performing an ECI of the propeller blade taper bore. The FAA also reviewed Hamilton Sundstrand ASB 54H60-61-A155, dated May 29, 2020. This ASB also identifies affected propeller models and specifies procedures for performing an

expanded ECI of the propeller blade taper bore. 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 ADDRESSES.

Proposed AD Requirements in this NPRM

This proposed AD would retain certain requirements of AD 2020-12-07. This proposed AD would require initial and repetitive ECI of all propeller blades installed on Hamilton Sundstrand 54H60 propeller hubs and replacement of any propeller blade that fails inspection.

Interim Action

The FAA considers that this proposed AD would be an interim action. This unsafe condition is still under investigation by the manufacturer and, depending on the results of that investigation, the FAA may consider further rulemaking action.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 212 propellers installed on 53 aircraft of U.S. registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
ECI all propeller blades installed on propeller	16 work-hours x \$85 per hour = \$1,360	\$700	\$2,060	\$436,720
Report results of ECI	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$18,020

The FAA estimates the following costs to do any necessary replacement that would be required based on the results of the proposed inspection. The agency has no way of determining the number of aircraft that might need this replacement:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace propeller blade	1 work-hour x \$85 per hour = \$85	\$63,500	\$63,585

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

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 that the proposed regulation:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Would not affect intrastate aviation in Alaska, and

(3) Would 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:

a. Removing Airworthiness Directive 2020-12-07, Amendment 39-21142 (85 FR 36145, June 15, 2020); and

b. Adding the following new airworthiness directive:

Hamilton Sundstrand Corporation: Docket No. FAA-2021-0032; Project Identifier AD-2020-01314-P.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2020-12-07, Amendment 39-21142 (85 FR 36145, June 15, 2020).

(c) Applicability

This AD applies to all Hamilton Sundstrand Corporation (Hamilton Sundstrand) 54H model propellers with a propeller hub, model 54H60, installed.

Note to paragraph (c): Hamilton Sundstrand references propeller model 54H60 in Hamilton Sundstrand Alert Service Bulletin (ASB) 54H60-61-A154, Revision 1, dated May 29, 2020. These are model 54H propellers with a 54H60 model propeller hub.

(d) Subject

Joint Aircraft System Component (JASC) Code 6111, Propeller Blade Section.

(e) Unsafe Condition

This AD was prompted by the separation of a propeller blade that resulted in the loss of an airplane and 17 fatalities. The FAA is issuing this AD to detect cracking in the propeller blade taper bore. The unsafe condition, if not addressed, could result in failure of the propeller blade, blade separation, and loss of the airplane.

(f) Compliance

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

(g) Required Actions

(1) For propellers with an installed propeller blade having a blade serial number (S/N) below 813320, that has not been overhauled within the past sixty (60) months, within one year or 500 flight hours (FHs) after July 20, 2020 (the effective date of AD 2020-12-07), whichever occurs first, perform an eddy current inspection (ECI) of all blades installed on the propeller.

(2) For propellers with an installed propeller blade having a blade S/N below 813320, that has been overhauled within the past sixty (60) months, within two years or 1,000 FHs after July 20, 2020 (the effective date of AD 2020-12-07), whichever occurs first, perform an ECI of all blades installed on the propeller.

(3) For propellers with an installed propeller blade, blade S/N 813320 and above, that has not been overhauled within ten years since new or since last overhaul, within one year or 500 FHs after the effective date of this AD, whichever occurs first, perform an ECI of all blades installed on the propeller.

(4) Perform the ECI of the propeller blades required by paragraphs (g)(1) through (3) of this AD in accordance with the Accomplishment Instructions, paragraph 3.C.(5), of both Hamilton Sundstrand ASB 54H60-61-A154, Revision 1, dated May 29, 2020, and of Hamilton Sundstrand ASB 54H60-61-A155, dated May 29, 2020.

(5) For all propellers identified in paragraphs (g)(1) through (3) of this AD, repeat the inspection required by paragraphs (g)(1) through (4) of this AD at intervals not exceeding 3 years or 1,500 FHs, whichever comes first, from the previous inspection.

(6) If a propeller blade fails any inspection required by this AD, based on the criteria in Accomplishment Instructions, paragraph 3.C.(5)(g) of Hamilton Sundstrand ASB 54H60-61-A154, Revision 1, dated May 29, 2020, and paragraph 3.C.(5)(j) of Hamilton Sundstrand ASB 54H60-61-A155, dated May 29, 2020, remove the blade from service before further flight and replace with a blade eligible for installation.

(7) Report the results of the ECI required by paragraphs (g)(1) through (5) of this AD in accordance with the Accomplishment Instructions, paragraph 3.C.(6), of Hamilton Sundstrand ASB 54H60-61-A154, Revision 1, dated May 29, 2020.

(h) Installation Prohibition

(1) After the effective date of this AD, do not install onto any propeller a Hamilton Sundstrand propeller blade identified in paragraphs (g)(1) through (4) of this AD, unless the blade has first passed the initial inspection required by paragraphs (g)(1) through (4) of this AD.

(2) After the effective date of this AD, do not install any propeller assembly with a propeller blade identified in paragraphs (g)(1) through (4) of this AD onto any aircraft unless the propeller blades have passed the initial inspection required by paragraphs (g)(1) through (4) of this AD.

(i) Credit for Previous Actions

You may take credit for the initial ECI of a propeller blade required by paragraphs (g)(1) and (2) of this AD and the replacement of a propeller blade required by paragraph (g)(6) of this AD if the actions were completed before the effective date of this AD using Hamilton Sundstrand ASB 54H60-61-A154, dated August 26, 2019.

(j) 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 Related Information.

(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.

(k) Related Information

(1) For more information about this AD, contact Michael Schwetz, Aviation Safety Engineer, Boston ACO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7761; fax: (781) 238-7199; email: michael.schwetz@faa.gov.

(2) For service information identified in this AD, contact Hamilton Sundstrand, 1 Hamilton Road, Windsor Locks, CT 06096-1010; phone: (877) 808-7575; email: CRC@collins.com. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

Issued on February 8, 2021.

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

[FR Doc. 2021-03607 Filed: 2/24/2021 8:45 am; Publication Date: 2/25/2021]