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[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0980; Project Identifier MCAI-2022-00448-P; Amendment 39-22212; AD 2022-21-13]

RIN 2120-AA64

Airworthiness Directives; Hoffmann GmbH & Co. KG Propellers

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2021-23-17 for all Hoffmann GmbH & Co. KG (Hoffmann) model HO-V 72 propellers. AD 2021-23-17 required amending the existing aircraft flight manual (AFM) by inserting abnormal propeller vibration instructions, visual inspection and non-destructive test (NDT) inspection of the propeller hub and, depending on the results of the inspections, replacement of the propeller hub with a part eligible for installation. Since the FAA issued AD 2021-23-17, further investigation by the manufacturer revealed that cracks found on propeller hubs likely resulted from propeller blade retention nuts that were not tightened using published service information during blade installation. This AD is prompted by reports of cracks at different positions on two affected propeller hubs. This AD retains the required actions of AD 2021-23-17. This AD also requires a maintenance records review and, depending on the results of the maintenance records review, tightening of each propeller blade retention nut to specific torque values. Depending on the results of the maintenance records review, this AD requires physically inspecting the propeller blade for shake. If any axial play is detected during the performance of the inspection, this AD requires the removal of the propeller from service and the

performance of an NDT inspection of the propeller hub, and depending on the NDT inspection results, replacement of the propeller hub with a part eligible for installation. 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 certain publications listed in this AD as of [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 other publication listed in this AD as of January 10, 2022 (86 FR 68905, December 6, 2021).

ADDRESSES:

AD Docket: You may examine the AD docket at regulations.gov under Docket No. FAA-2022-0980; 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, the mandatory continuing airworthiness information (MCAI), 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.

Material Incorporated by Reference:

- For Hoffmann service information identified in this final rule, contact Hoffmann GmbH & Co. KG, Küpferlingstrasse 9, 83022, Rosenheim, Germany; phone: +49 0 8031 1878 0; email: info@hoffmann-prop.com; website: hoffmann-prop.com.
- You may view this 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 (817) 222-5110. It is also available at regulations.gov under Docket No. FAA-2022-0980.

FOR FURTHER INFORMATION CONTACT: Michael Schwetz, Aviation Safety Engineer, Boston ACO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7761; 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 2021-23-17, Amendment 39-21815 (86 FR 68905, December 6, 2021) (AD 2021-23-17). AD 2021-23-17 applied to all Hoffmann GmbH & Co. KG model HO-V 72 propellers. AD 2021-23-17 required amending the existing AFM by inserting abnormal propeller vibration instructions, visual inspection and NDT inspection of the propeller hub and, depending on the results of the inspections, replacement of the propeller hub with a part eligible for installation. The FAA issued AD 2021-23-17 to prevent failure of the propeller hub.

The NPRM published in the *Federal Register* on August 01, 2022 (87 FR 46903). The NPRM was prompted by EASA AD 2022-0061, dated April 4, 2022 (referred to after this as "the MCAI"), issued by the European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union. The MCAI states:

> Cracks have been reported at different positions on two affected parts, both installed on Slingsby T67 "Firefly" aeroplanes. One crack was found during scheduled inspection, the other crack during an unscheduled inspection after abnormal vibrations occurred. Subsequent investigation determined that improper tightening of blade nuts has caused or contributed to those events.

> This condition, if not detected and corrected, could lead to in-flight propeller detachment, possibly resulting in damage to the aeroplane and/or injury to persons on the ground.
>
> To address this potential unsafe condition, Hoffmann Propeller issued the SB, providing applicable instructions, and EASA issued Emergency AD 2020-0226-E (later revised [to EASA AD 2020-0226R1]) to require inspections of affected parts and, depending on findings, replacement. That AD also required, for certain aeroplanes, amendment of the applicable Aircraft Flight Manual (AFM).
>
> Since that [EASA] AD was issued, further investigation revealed that not all propeller blade nuts were tightened in accordance with the Hoffman Propeller blade nut tightening procedure B2.23 which requires a certain over-torquing and loosening of the blade nut to limit a preload reduction due to material settlement. Prompted by this development, Hoffmann Propeller issued SB057 (incorporating blade nut tightening procedure B2.23) providing torquing instructions, and SB58 providing instructions for setting correct counterweight angles. Additionally, Hoffmann Propeller issued the torque tightening SB (referencing SB57 and SB58) providing inspections and corrective action instructions.
>
> For the reasons described above, this [EASA] AD retains the requirements of EASA AD 2020-0226R1, which is superseded, and requires additional blade checks, inspections, and re-tightening of the propeller blade nuts

You may examine the MCAI in the AD docket at regulations.gov under Docket No. FAA-2022-0980.

In the NPRM, the FAA proposed to retain all of the requirements of AD 2021-23-17. In the NPRM, the FAA also proposed to require a maintenance records

review and, depending on the results of the maintenance records review, tightening of each propeller blade retention nut to specified torque values. Depending on the results of the maintenance records review, the NPRM also proposed to require physically inspecting the propeller blade for shake. If any axial play is detected during inspection, the NPRM proposed to require the removal of the propeller from service and the performance of an NDT inspection of the propeller hub, and depending on the NDT inspection results, replacement of the propeller hub with a part eligible for installation.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the costs.

Conclusion

These products have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and the removal of the reference to Hoffmann Propeller Service Bulletin SB059 B, dated February 23, 2022, from paragraph (j)(2), 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

The FAA reviewed the following service information:

- Hoffmann Propeller Service Bulletin SB057 C, dated February 22, 2022. This service bulletin (SB) specifies procedures for tightening the propeller blade retention nut.

- Hoffmann Propeller Service Bulletin SB059 B, dated February 23, 2022. This SB specifies procedures for tightening the propeller blade retention nut with the correct torque and inspecting the propeller blade for shake.

- Hoffmann Propeller GmbH & Co. KG Service Bulletin SB E53 Rev. D, dated February 18, 2021, which was previously approved by the Director of the Federal Register for incorporation by reference on January 10, 2022 (86 FR 68905, December 6, 2021). This SB describes procedures for visual and NDT inspections of the propeller hub for cracks.

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.

Other Related Service Information

The FAA also reviewed the following service information:

• Hoffmann Propeller Service Bulletin SB058 A, dated February 2, 2022. This SB specifies the updated definition of the counterweight angle.

Costs of Compliance

The FAA estimates that this AD affects 35 propellers installed on airplanes of U.S. registry.

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

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Amend AFM	1 work-hour x $85 per hour = $85	$0	$85	$2,975
Visually inspect propeller hub	1 work-hour x $85 per hour = $85	$0	$85	$2,975
NDT inspect	8 work-hours x	$0	$680	$23,800

propeller hub	$85 per hour = $680			
Review maintenance records	0.5 work-hours x $85 per hour = $42.50	$0	$42.50	$1,487.50

The FAA estimates the following costs to do any necessary actions that are required based on the results of the inspections. The agency has no way of determining the number of aircraft that might need these replacements:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace propeller hub	5 work-hours x $85 per hour = $425	$1,600	$2,025
Inspect propeller blade for shake	0.25 work-hours x $85 per hour = $21.25	$0	$21.25
Tighten propeller blade retention nuts	2 work-hours x $85 per hour = $170	$0	$170

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 2021-23-17, Amendment 39-21815 (86 FR 68905, December 6, 2021); and

b. Adding the following new airworthiness directive:

2022-21-13 Hoffmann GmbH & Co. KG: Amendment 39-22212; Docket No. FAA-2022-0980; Project Identifier MCAI-2022-00448-P.

(a) Effective Date

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

(b) Affected ADs

This AD replaces AD 2021-23-17, Amendment 39-21815 (86 FR 68905, December 6, 2021) (AD 2021-23-17).

(c) Applicability

This AD applies to Hoffmann GmbH & Co. KG (Hoffmann) model HO-V 72 propellers.

(d) Subject

Joint Aircraft System Component (JASC) Code 6114, Propeller Hub Section.

(e) Unsafe Condition

This AD was prompted by reports of cracks at different positions on two affected propeller hubs. The FAA is issuing this AD to prevent failure of the propeller hub. The unsafe condition, if not addressed, could result in release of the propeller, damage to the airplane, and injury to persons on the ground.

(f) Compliance

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

(g) Required Actions

(1) Before the next flight after December 22, 2020 (the effective date of AD 2020-25-05, Amendment 39-21347 (85 FR 78702, December 7, 2020)), amend the emergency or abnormal procedures section of the existing aircraft flight manual by inserting this text: “Abnormal propeller vibrations: As applicable, reduce engine RPM.”

(2) Before the next flight after January 10, 2022 (the effective date of AD 2021-23-17), and thereafter, before the next flight after any flight where abnormal propeller vibrations have been experienced, visually inspect propeller hub HO-V 72 ( ) ( )

- ( ) - ( ) for cracks using paragraph 2.1 of Hoffmann Propeller GmbH & Co. KG Service Bulletin SB E53, Rev. D, dated February 18, 2021 (Hoffmann Propeller SB E53 Rev. D).

(3) Within 20 flight hours (FHs) after January 10, 2022 (the effective date of AD 2021-23-17), perform a non-destructive test (NDT) inspection of propeller hub HO-V 72 ( ) ( ) - ( ) - ( ) using paragraph 2.3 of Hoffmann Propeller SB E53 Rev. D.

(4) During each overhaul of propeller hub HO-V 72 ( ) ( ) - ( ) - ( ) after January 10, 2022 (the effective date of AD 2021-23-17), perform an NDT inspection using paragraph 2.3 of Hoffmann Propeller SB E53 Rev. D.

(5) Within 30 days after the effective date of this AD, review the maintenance records to confirm the propeller blade retention nuts were tightened at the last in-shop maintenance visit to the torque values in paragraph 5 of Hoffmann Propeller Service Bulletin SB057 C, dated February 22, 2022 (Hoffmann Propeller SB057 C).

(6) If, during the records review required by paragraph (g)(5) of this AD, it is determined that the propeller blade retention nuts were not tightened to the torque values in paragraph 5 of Hoffmann Propeller SB057 C, or it cannot be confirmed if the propeller blade retention nuts were tightened to the torque values in paragraph 5 of Hoffmann Propeller SB057 C, perform the following actions:

(i) Within 90 FHs after the effective date of this AD, tighten each propeller blade retention nut to the torque values in paragraph 5 of Hoffmann Propeller SB057 C, using paragraphs 6 and 7 of Hoffmann Propeller Service Bulletin SB059 B, dated February 23, 2022.

(ii) Before the next flight after the effective date of this AD and, thereafter, before each flight until the propeller blade retention nut is tightened to the torque values in paragraph 5 of Hoffmann Propeller SB057 C, as required by paragraph (g)(6)(i) of this AD, confirm that there is no axial play in the blade retention system by inspecting the propeller blade for shake. If any axial play is detected, remove the propeller from service

and perform an NDT inspection of the propeller hub using paragraph 2.3 of Hoffmann Propeller SB E53 Rev. D.

(7) If, during any inspection required by paragraph (g)(2), (3), (4) or (6)(ii) of this AD, any crack is detected, replace propeller hub HO-V 72 ( ) ( ) - ( ) - ( ) with a part eligible for installation.

(h) Definition

For the purpose of this AD, a "part eligible for installation" is a propeller hub HO-V 72 ( ) ( ) - ( ) - ( ) with zero hours time since new, or a propeller hub HO-V 72 ( ) ( ) - ( ) - ( ) that has passed an NDT inspection using paragraph 2.3 of Hoffmann Propeller SB E53 Rev. D.

(i) Non-Required Actions

(1) Sending the propeller to Hoffmann for investigation, as contained in paragraph 2.1 of Hoffmann Propeller SB E53 Rev. D, is not required by this AD.

(2) Reporting propeller hubs with cracks to Hoffmann, as contained in paragraph 2.3 of Hoffmann Propeller SB E53 Rev. D, is not required by this AD.

(j) Credit for Previous Actions

(1) You may take credit for the initial visual inspection and NDT inspection of the propeller hub required by paragraphs (g)(2), (3), and (4) of this AD if you performed any of these actions before January 10, 2022 (the effective date of AD 2021 23-17) using Hoffmann Propeller GmbH & Co. KG SB E53, Rev. A, dated October 9, 2020; Rev. B, dated October 14, 2020; or Rev. C, dated December 9, 2020.

(2) You may take credit for the records review to confirm the propeller blade retention nuts were tightened to the torque values as required by paragraph (g)(5) of this AD, and the tightening of each propeller blade retention nut as required by paragraph (g)(6)(i) of this AD if you performed any of these actions before the effective date of this AD during the last in-shop maintenance visit using Hoffmann Propeller

Service Bulletin SB057 B, dated February 8, 2022; or Hoffmann Propeller Service Bulletin SB059 A, dated February 11, 2022.

(k) Special Flight Permit

A special flight permit may be issued in accordance with 14 CFR 21.197 and 21.199 to operate the airplane to a service facility to perform the NDT inspection. Special flight permits are prohibited to perform the visual inspection of the propeller hub.

(l) 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 (m)(1) of this AD.

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

(m) Additional 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; email: 9-AVS-AIR-BACO-COS@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2022-0061, dated April 4, 2022, for related information. This EASA AD may be found in the AD docket at regulatFAA-2022-0980.

(n) 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 [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(i) Hoffmann Propeller Service Bulletin SB057 C, dated February 22, 2022.

(ii) Hoffmann Propeller Service Bulletin SB059 B, dated February 23, 2022.

(4) The following service information was approved for IBR on January 10, 2022 (86 FR 68905, December 6, 2021).

(i) Hoffmann Propeller GmbH & Co. KG Service Bulletin SB E53 Rev. D, dated February 18, 2021.

(ii) Reserved.

(5) For Hoffmann service information identified in this AD, contact Hoffmann GmbH & Co. KG, Küpferlingstrasse 9, 83022, Rosenheim, Germany; phone: +49 0 8031 1878 0; email: info@hoffmann-prop.com; website: hoffmann-prop.com.

(6) 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 (817) 222-5110.

(7) 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: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on October 6, 2022.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2022-23716 Filed: 10/31/2022 8:45 am; Publication Date: 11/1/2022]