



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2024-0456; Project Identifier MCAI-2024-00084-E; Amendment 39-22691; AD 2024-05-01]

RIN 2120-AA64

Airworthiness Directives; Austro Engine GmbH Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Austro Engine GmbH Model E4 and E4P engines. This AD was prompted by reports of engine failures and the determination that certain batches of cap screws, installed on the inner main bearing positions of the engine, were manufactured at the lower end of the material strength tolerance. This AD requires replacing certain cap screws with a part eligible for installation and prohibits installing certain cap screws on any inner main bearing position of any engine. This AD also prohibits installing certain engine cores on any engine unless certain requirements are met. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 5 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 5 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive comments on this 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 [regulations.gov](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.

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2024-0456; 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 street address for Docket Operations is listed above.

Material Incorporated by Reference:

- For service information identified in this final rule, contact Austro Engine GmbH, Rudolf-Diesel-Strasse 11, A-2700 Weiner Neustadt, Austria; phone: +43 2622 23000; website: [austroengine.at](https://www.austroengine.at).

- 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](https://www.regulations.gov) under Docket No. FAA-2024-0456.

FOR FURTHER INFORMATION CONTACT: Barbara Caufield, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (781) 238-7146; email: barbara.caufield@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2024-0456; Project Identifier MCAI-2024-00084-E” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, 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 this final rule 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 regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

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 AD 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 AD, 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 AD. Submissions containing CBI should be sent to Barbara Caufield, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590.

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 European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2024-0037R1, dated February 6, 2024 (EASA AD 2024-0037R1) (also referred to as the MCAI), to address an unsafe condition on Austro Engine GmbH Model E4 and E4P engines. The MCAI states that there were reports of engine failures, and subsequent investigation identified a cap screw installed on an inner main bearing that had failed, which caused the engine failure. Further investigation determined that certain batches of cap screws meeting the lower end of their design specification could fail when installed on the inner main bearing and the engine is operated in specific operating conditions. To address this unsafe condition, the manufacturer published a service bulletin to provide instructions for replacement of these affected parts. EASA then issued EASA Emergency AD 2024-0037-E, dated February 2, 2024 (EASA Emergency AD 2024-0037-E), which specified replacing the cap screws installed on the inner main bearing positions with serviceable parts and additional requirements for installation of certain parts and engines.

Additionally, the manufacturer has determined that certain batches of cap screws, installed on the inner main bearing positions of the engine, were produced at the lower end of the material strength tolerance for Class 8.8 screws. Depending on the magnitude of the cap screw's strength properties, the potential for failure, leading to engine failure, exists in cases where abnormal operating conditions are experienced such as fuel quality issues or significant deviations from the fuel system requirements.

Since EASA Emergency AD 2024-0037-E was issued, due to requests for clarification, the compliance time for certain engines has been modified. As a result, EASA revised EASA Emergency AD 2024-0037-E and issued EASA AD 2024-0037R1

to include the updated compliance times and additionally to include ferry flight criteria for certain affected engines. The unsafe condition, if not addressed, could result in engine failure, reduced control of the airplane, and for single engine airplanes, an emergency landing, possibly resulting in damage to the airplane and injury to occupants.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2024-0456.

Related Service Information under 1 CFR Part 51

The FAA reviewed the following service information:

- Austro Engine GmbH Mandatory No. Service Bulletin MSB-E4-042, Revision 0, dated January 31, 2024, which details certain engines and engine cores with affected cap screws installed on the inner main bearing positions of the engine.

- Austro Engine GmbH Work Instruction WI-MSB-E4-042, Revision 0, dated February 2, 2024, which specifies instructions for replacing the affected cap screws installed on the inner main bearing positions of the engine.

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.

FAA's Determination

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 and service information referenced above. The FAA is issuing this AD after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

AD Requirements

This AD requires replacing certain cap screws, installed on the inner main bearing positions of the engine, with a part eligible for installation. This AD also prohibits installing certain cap screws on any inner main bearing position of any engine. This AD also prohibits installing certain engine cores on any engine unless certain requirements are met.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies forgoing notice and comment prior to adoption of this rule because the cap screws installed on the inner main bearing positions of the engine are critical components for engine operation. The inadequate strength properties and subsequent failure of the cap screws could lead to engine failure during flight. The FAA also has received no information indicating how quickly the condition may propagate to failure, therefore these affected parts must be replaced before further flight on certain engines. Consequently, the required replacement of cap screws before those engines is shorter than the time necessary for the public to comment and for publication of the final rule. Accordingly, notice and opportunity for prior public

comment are impracticable and contrary to the public interest pursuant to 5 U.S.C.

553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forgo notice and comment.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD affects 357 engines 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
Replace 6 cap screws installed on the inner main bearing positions.	8 work-hours x \$85 per hour = \$680	\$1,000	\$1,680	\$599,760

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator.

Subtitle VII: Aviation Programs describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska

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 adding the following new airworthiness directive:

2024-05-01 Austro Engine GmbH: Amendment 39-22691; Docket No. FAA-2024-0456; Project Identifier MCAI-2024-00084-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 5 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Austro Engine GmbH Model E4 and E4P engines with one of the following:

(1) An engine serial number or engine core serial number specified in Table 1 of Austro Engine GMBH Mandatory Service Bulletin No. MSB-E4-042, Revision 0, dated January 31, 2024 (MSB-E4-042), or;

(2) An engine serial number or engine core serial number specified in Table 2 of MSB-E4-042.

(d) Subject

Joint Aircraft System Component (JASC) Codes: 8520, Reciprocating Engine Power Section.

(e) Unsafe Condition

This AD was prompted by reports of engine failures and the determination that certain batches of cap screws, installed on the inner main bearing positions of the engine, were manufactured at the lower end of the material strength tolerance. The FAA is issuing this AD to prevent piston failure. The unsafe condition, if not addressed, could result in engine failure, reduced control of the airplane, and for single engine airplanes,

an emergency landing, possibly resulting in damage to the airplane and injury to occupants.

(f) Compliance

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

(g) Required Actions

(1) For engines or engine cores identified in paragraph (c)(1) of this AD, before further flight after the effective date of this AD, remove each cap screw, installed on the inner main bearing positions of the engine, from service and replace it with a part eligible for installation in accordance with paragraph 2.3, “Main Bearing Screws Replacement” of Austro Engine GmbH Work Instruction WI-MSB-E4-042, Revision 0, dated February 2, 2024 (WI-MSB-E4-042).

(2) For engines or engine cores identified in paragraph (c)(2) of this AD, remove each cap screw, installed on the inner main bearing positions of the engine, from service and replace it with a part eligible for installation in accordance with paragraph 2.3, “Main Bearing Screws Replacement” of WI-MSB-E4-042, at the compliance times referenced in paragraph (g)(2)(i) or (ii) of this AD, whichever occurs first:

(i) Within 300 flight hours after first installation on an airplane or since last overhaul, as applicable, or before further flight after the effective date of this AD, whichever occurs later.

(ii) At the next scheduled engine maintenance, after the effective date of this AD.

(h) Installation Prohibition

(1) As of the effective date of this AD, do not install an engine core, having a serial number specified in Table 1 or Table 2 of MSB-E4-042, on any engine, unless the cap screws installed on the inner main bearing positions of that engine core have been replaced with parts eligible for installation in accordance with paragraph 2., Technical Details of MSB-E4-042.

(2) As of the effective date of this AD, do not install cap screws having part number (P/N) E4A-10-100-201 on the inner main bearing positions of any engine.

(i) Definitions

For the purposes of this AD:

(1) A part eligible for installation is a cap screw, class 12.9, having P/N E4A-10-100-202.

(2) The inner main bearing positions are engine bearing positions 3 through 8 inclusive, as shown in Figure 1, “Main bearing cap screws to be replaced.” of MSB-E4-042.

(j) Special Flight Permits

A special flight permit may be issued in accordance with 14 CFR 21.197 and 21.199 to permit a single ferry flight to a location where the actions required by this AD can be accomplished, provided that the flight is accomplished without passengers and does not exceed 3 flight hours.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation 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 International Validation Branch, send it to the attention of the person identified in paragraph (1)(2) of this AD and email 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.

(l) Additional Information

(1) Refer to European Union Aviation Safety Agency (EASA) AD 2024-0037R1, dated February 6, 2024, for related information. This EASA AD may be found in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2024-0456.

(2) For more information about this AD, contact Barbara Caufield, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (781) 238-7146; email: barbara.caufield@faa.gov.

(m) Material Incorporated by Reference

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

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

(i) Austro Engine GMBH Mandatory Service Bulletin No. MSB-E4-042, Revision 0, dated January 31, 2024.

(ii) Austro Engine GmbH Work Instruction WI-MSB-E4-042, Revision 0, dated February 2, 2024.

(3) For service information identified in this AD, contact Austro Engine GmbH, Rudolf-Diesel-Strasse 11, A-2700 Weiner Neustadt, Austria; phone: +43 2622 23000; website: austroengine.at.

(4) 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.

(5) You may view this service information at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA,

visit: www.archives.gov/federal-register/cfr/ibr-locations or email:

fr.inspection@nara.gov.

Issued on February 27, 2024.

Victor Wicklund,
Deputy Director, Compliance & Airworthiness Division,
Aircraft Certification Service.

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