



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-0664; Project Identifier 2018-NE-03-AD; Amendment 39-21310; AD 2020-22-14]

RIN 2120-AA64

Airworthiness Directives; Austro Engine GmbH Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2018-07-16 for all Austro Engine GmbH model E4 and E4P diesel piston engines. AD 2018-07-16 required initial and repetitive replacement of the waste gate controller and the control rod circlip. This AD retains the requirements of AD 2018-07-16 and requires engine modification by installing a waste gate control-rod fail-safe bridge and new spring-loaded circlip that terminates the initial and repetitive replacement requirements of AD 2018-07-16. This AD was prompted by the development of a modification of the waste gate control rod by adding a fail-safe bridge and spring-loaded circlip. 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 a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: 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; fax: +43 2622 23000-2711; internet: 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 781-238-7759. It is also available on the

internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0664.

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-2019-0664; 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, 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.

FOR FURTHER INFORMATION CONTACT: Barbara Caufield, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7146; fax: 781-238-7199; email: barbara.caufield@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2018-07-16, Amendment 39-19247 (83 FR 15733, April 12, 2018), ("AD 2018-07-16"). AD 2018-07-16 applied to all Austro Engine GmbH model E4 and E4P diesel piston engines. The NPRM published in the *Federal Register* on October 23, 2019 (84 FR 56707). The NPRM was prompted by the development of a modification of the waste gate control-rod by adding a fail-safe bridge and spring-loaded circlip. The NPRM proposed to retain all of the requirements of AD-2018-07-16. The NPRM also proposed engine modification by installing the waste gate control rod fail-safe bridge and new spring-loaded circlip as terminating action for the initial and repetitive replacement of the waste gate controller and the control rod circlip. The FAA is issuing this AD to address the unsafe condition on these products.

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2018-0125, dated June 6, 2018 (referred to after this as "the MCAI"), to address the unsafe condition on these products. The MCAI states:

Occurrences were reported where, on some engines, turbocharger waste gate control rods were found broken and/or disconnected. Investigation results indicate that these failures were due to insufficient fatigue life or improper handling of the waste gate control rod and improper installation of the non-spring-loaded circlip.

These conditions, if not corrected, could lead to improper operation of the waste gate with consequent engine power loss, possibly resulting in reduced control of the aeroplane.

To address this potential unsafe condition, Austro Engine designed a new spring loaded circlip and published MSB-E4-022 (later revised), introducing a life limit for the affected waste gate controllers and circlips. Consequently, EASA issued AD 2017-0250, requiring implementation of those life limits, and prohibiting reinstallation of non-spring-loaded circlips.

Since that [EASA] AD was issued, Austro Engine developed a modification, which allows replacing the waste gate controller and the circlip on condition, and issued the MSB accordingly.

For the reason stated above, this [EASA] AD retains the requirements of EASA AD 2017-0250, which is superseded, and requires an engine modification by installing a waste-gate control-rod fail-safe bridge and a new circlip, which cancels the life limitations.

You may obtain further information by examining the MCAI in the AD docket on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0664.

Update to the Service Information

The FAA determined the need to incorporate the latest service information in this AD. The FAA revised the references to Austro Engine Mandatory Service Bulletin (MSB) No. MSB-E4-022 (the MSB), in paragraphs (g) and (h) of this AD from Rev. No. 3, dated April 16, 2018, to Rev. No. 5, dated December 12, 2018. Rev. No. 5 of the MSB

retains the same instructions for initial and repetitive replacement of the waste gate controller and the control rod circlip as Rev. No. 3. Rev No. 5 of the MSB also includes the same instructions as Rev. No. 3 for modification of an engine by installing a waste gate control rod fail-safe bridge and a new spring-loaded circlip. The FAA is, therefore, revising the references in paragraph (g) and (h) of this AD from Rev. No. 3 to Rev. No. 5 of the MSB so that operators may avoid unnecessary submission of alternative methods of compliance requests.

Update to Credit for Previous Actions

The FAA revised paragraph (j)(2) of this AD to allow credit for the performance of the terminating action in paragraph (h) of this AD, if that terminating action was completed before the effective date of this AD using Rev. No. 4, dated September 12, 2018, or Rev. No. 3, dated April 16, 2018, of the MSB to perform the terminating action.

Comments

The FAA gave the public the opportunity to participate in developing this AD. The FAA received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

The FAA reviewed the relevant data and determined that air safety and the public interest require adopting this AD with the changes described previously and minor editorial changes. The FAA has determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Related Service Information under 1 CFR Part 51

The FAA reviewed Austro Engine MSB No. MSB-E4-022/5, Rev. No. 5, dated December 12, 2018. The MSB describes procedures for initial and repetitive replacement of the waste gate controller and the control rod circlip. The MSB also describes procedures for the installation of the waste gate control-rod fail-safe bridge and new spring-loaded circlip as terminating action for the initial and repetitive replacement procedures of the MSB. 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.

Costs of Compliance

The FAA estimates that this AD affects 211 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 waste gate controller and control rod circlip	0.5 work-hours X \$85 per hour = \$42.50	\$235	\$277.50	\$58,552.50
Install waste gate control rod fail-safe bridge and new spring-loaded circlip	0.5 work-hours X \$85 per hour = \$42.50	\$227	\$269.50	\$56,864.50

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,

(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 removing Airworthiness Directive (AD) 2018-07-16, Amendment 39-19247 (83 FR 15733, April 12, 2018), and adding the following new AD:

2020-22-14 **Austro Engine GmbH**: Amendment 39-21310; Docket No. FAA-2019-0664; Project Identifier 2018-NE-03-AD.

(a) Effective Date

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

(b) Affected ADs

This AD replaces AD 2018-07-16, Amendment 39-19247 (83 FR 15733, April 12, 2018).

(c) Applicability

This AD applies to all Austro Engine GmbH model E4 and E4P diesel piston engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 8560, Reciprocating Engine Supercharger.

(e) Unsafe Condition

This AD was prompted by reports of broken or disconnected turbocharger waste gate control rods on some engines. The FAA is issuing this AD to prevent failure of the turbocharger waste gate control rod. The unsafe condition, if not addressed, could result in loss of engine thrust control and reduced control of the airplane.

(f) Compliance

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

(g) Required Actions

(1) Within the compliance times identified in Table 1 to paragraph (g)(1) of this AD, and thereafter at intervals not to exceed 250 flight hours (FHs), replace the waste gate controller and control rod circlip in accordance with the Accomplishment/Instructions, Paragraph 2.1, Initial Action or Repetitive Action, of Austro Engine Mandatory Service Bulletin (MSB) No. MSB-E4-022/5, Rev. No. 5, dated December 12, 2018.

Table 1 to Paragraph (g)(1) – Initial Replacement Compliance Time

Group	Compliance Time (A, B, or C, whichever occurs later)	
1	A	Within 50 FHs after April 27, 2018 (the effective date of AD 2018-07-16)
	B	Within 250 FHs since the first installation on an engine
	C	Before further flight
2	A	Within 100 FHs after April 27, 2018 (the effective date of AD 2018-07-16)
	B	Within 250 FHs since the first installation on an engine
	C	Before further flight

(2) Within 200 FH or six months, whichever occurs first after the effective date of this AD, modify the engine by installing a waste gate control rod fail-safe bridge and a new spring-loaded circlip in accordance with the Accomplishment/Instructions, Paragraph 2.1, Terminating Action, of Austro Engine GmbH MSB No. MSB-E4-022/5, Rev. No. 5, dated December 12, 2018.

(h) Terminating Action

Modification of an engine by installing a waste gate control rod fail-safe bridge and a new spring-loaded circlip, in accordance with the Accomplishment/Instructions, Paragraph 2.1, Terminating Action, of Austro Engine MSB No. MSB-E4-022/5, Rev. No. 5, dated December 12, 2018, is terminating action for the initial and repetitive replacement requirements of paragraph (g)(1) of this AD for that engine.

(i) Definitions

For the purpose of this AD, a Group 1 engine is an Austro Engine GmbH model E4-A engine, or an Austro Engine GmbH model E4-B or E4-C engine installed on a DA 42 M-NG airplane with external containers. A Group 2 engine is any other Austro Engine GmbH model E4 and E4P engine.

(j) Credit for Previous Actions

(1) You may take credit for initial and repetitive replacements of the waste gate controller and control rod circlip required by paragraph (g)(1) of this AD if you performed this action before the effective date of this AD using Austro Engine MSB No. MSB-E4-022/3, Rev. No. 3, dated April 16, 2018, or earlier versions.

(2) You may take credit for the terminating action in paragraph (h) of this AD if you performed the terminating action before the effective date of this AD using Austro Engine MSB No. MSB-E4-022/4, Rev. No. 4, dated September 12, 2018, or Rev. No. 3, dated April 16, 2018.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO 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 (l)(1) of this AD. You may email your request 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) Related Information

(1) For more information about this AD, contact Barbara Caufield, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7146; fax: 781-238-7199; email: barbara.caufield@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2018-0125, dated June 6, 2018, for more information. You may examine the EASA AD in the AD docket on the internet at <https://www.regulations.gov> by searching for and locating it in Docket No. FAA-2019-0664.

(m) 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.

(i) Austro Engine GmbH Mandatory Service Bulletin No. MSB-E4-022/5, Rev. No. 5, dated December 12, 2018.

(ii) [Reserved]

(3) For Austro Engine GmbH service information identified in this AD, contact Austro Engine GmbH, Rudolf-Diesel-Strasse 11, A-2700 Weiner Neustadt, Austria; phone: +43 2622 23000; fax: +43 2622 23000-2711; internet: www.austroengine.at.

(4) 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.

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

Issued on October 20, 2020.

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

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