



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0136; Project Identifier MCAI-2019-00114-E; Amendment 39-21168; AD 2020-15-05]

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) 2018-18-02 for certain Austro Engine GmbH model E4 engines and all Austro Engine GmbH model E4P engines. AD 2018-18-02 required replacement of the timing chain and amending certain airplane flight manuals (AFMs) to limit the use of windmill restarts. This AD requires amendment of certain existing AFMs to limit the use of windmill restarts and removes the timing chain replacement requirement in AD 2018-18-02. This AD was prompted by reports of considerable wear of the timing chain on the affected engines. 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].

ADDRESSES: For service information identified in this final rule, contact Diamond Aircraft Industries, N. A., Otto-Straße 5, A-2700 Wiener Neustadt, A2700, Austria; phone: +43 2622 26700; fax: +43 2622 26780; website: www.diamondaircraft.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 781-238-7759. It is also available on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0136.

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-2020-0136; 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.

FOR FURTHER INFORMATION CONTACT: Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7743; fax: 781-238-7199; email: Mehdi.Lamnyi@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2018-18-02, Amendment 39-19381 (83 FR 53802, October 25, 2018), (“AD 2018-18-02”). AD 2018-18-02 applied to certain Austro Engine GmbH model E4 engines and all Austro Engine GmbH model E4P engines. The NPRM published in the Federal Register on March 17, 2020 (85 FR 15079). The NPRM was prompted by reports of considerable wear of the timing chain on the affected engines. The NPRM proposed to retain the requirements of AD 2018-18-02 for amending certain AFMs to limit the use of windmill restarts to emergency procedures. The NPRM also

proposed to remove the requirement in AD 2018-18-02 for replacing the timing chain. 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 2017-0103R1, dated February 25, 2019 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

Considerable wear of the timing chain has been detected on some engines. This may have been caused by windmilling restarts, which are known to cause high stress to the timing chain.

This condition, if not detected and corrected, could lead to failure of the timing chain and consequent engine power loss, possibly resulting in reduced control of the aeroplane.

To address this potential unsafe condition, AE included instructions in the engine maintenance manual to periodically inspect the condition of the timing chain and, depending on findings, to replace the timing chain and the chain wheel. The operation manual was updated to allow windmilling restart only as an emergency procedure. AE also published Mandatory Service Bulletin (MSB) MSB-E4-017/2, providing instructions to replace the timing chain for engines with known windmilling restarts, and EASA issued AD 2017-0103, requiring replacement of the timing chain for engines with known windmilling restarts, and amendment of the applicable Aircraft Flight Manual (AFM).

Since that [EASA] AD was issued, AE revised the applicable Airworthiness Limitation Section (ALS) including, among others, the limitation required by that AD. Consequently, EASA published

AD 2019-0041, requiring accomplishment of the actions specified in the ALS.

For the reason described above, this [EASA] AD is revised accordingly, removing the requirement of timing chain replacement. This action remain required through EASA AD 2019-0041.

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-2020-0136.

Comments

The FAA gave the public the opportunity to participate in developing this final rule. 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 final rule as proposed except for 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 Diamond Aircraft (DA) Temporary Revision (TR) TR-MÄM-42-973, dated August 12, 2016, for the Diamond Aircraft Industries (DAI) model DA 42 NG Airplane Flight Manual (AFM) and DA TR TR-MÄM-62-240, dated August 12, 2016, for the DAI model DA 62 AFM. These TRs define the removal of the normal operation procedure for windmilling restart for the respective airplanes. 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
Amend AFM	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$17,935

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 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.

Adoption of 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 AD 2018-18-02, Amendment 39-19381 (83 FR 53802, October 25, 2018); and

b. Adding the following new airworthiness directive (AD):

2020-15-05 **Austro Engine GmbH**: Amendment 39-21168; Docket No. FAA-2020-0136; Project Identifier MCAI-2019-00114-E.

(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 2018-18-02, Amendment 39-19381 (83 FR 53802, October 25, 2018).

(c) Applicability

This AD applies to Austro Engine GmbH model E4 engines with serial numbers that have a "-B" or "-C" configuration and to model E4P engines, all serial numbers.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports of considerable wear of the timing chain on the affected engines. The FAA is issuing this AD to prevent failure of the engine timing chain. The unsafe condition, if not addressed, could result in failure of the engine timing chain, 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 30 days after the effective date of this AD, under the Emergency Procedures chapter, amend the applicable airplane flight manual (AFM) by adding the information in Figure 1 to paragraph (g)(1) of this AD to limit the use of a windmilling restart to only an emergency procedure.

Figure 1 to Paragraph (g)(1) – *Restart In-Flight by Windmilling*

Restart In-Flight by Windmilling

In case of an engine malfunction, determine the root cause and only continue if a safe restart is possible.

1. Max. demonstrated altitude for immediate restart by windmilling: 15,000 ft.
2. Max. demonstrated altitude for restart after 10 min. and ambient air temperature higher than ISA by windmilling: 10,000 ft.
3. Max. demonstrated altitude for restart after 5 min. and ambient air temperature between ISA and ISA minus 10°C by windmilling: 10,000 ft.
4. Max. demonstrated altitude for restart after 2 min. and ambient air temperature below ISA minus 10°C by windmilling: 10,000 ft.
5. Airspeed: See applicable Aircraft Flight Manual.
6. Power Levers – “IDLE”
7. Engine Master – “ON”

Move power lever slightly forward to a power rating that assures the referring engine is delivering thrust as a rotating propeller is not a guarantee for a running engine.

(2) For affected Austro Engine GmbH model E4 engines installed on Diamond Aircraft Industries (DAI) model Diamond Aircraft (DA) 42 NG and DA 42 M-NG airplanes, and for Austro Engine GmbH model E4P engines installed on DAI model DA 62 airplanes, using DA AFM Temporary Revision (TR) TR-MÄM-42-973, and DA AFM TR TR-MÄM-62-240, both dated August 12, 2016, to update the applicable AFM is an acceptable method to comply with paragraph (g)(1) of this AD.

(h) Credit for Previous Actions

You may take credit for actions required by paragraph (g) of this AD if you amended the applicable AFM for the airplane with the affected engine installed before the effective date of this AD in accordance with AD 2018-18-02.

(i) 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 ECO

Branch, send it to the attention of the person identified in paragraph (j)(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.

(j) Related Information

(1) For more information about this AD, contact Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7743; fax: 781-238-7199; email: Mehdi.Lamnyi@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2017-0103R1, dated February 25, 2019, 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-2020-0136.

(k) 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) Diamond Aircraft (DA) Temporary Revision (TR) TR-MÄM-42-973, dated August 12, 2016, for the Diamond Aircraft Industries (DAI) model DA 42 NG Airplane Flight Manual (AFM).

(ii) DA AFM TR TR-MÄM-62-240, dated August 12, 2016, for the DAI model DA 62 AFM.

(3) For Diamond Aircraft Industries service information identified in this AD, contact Diamond Aircraft Industries, N. A., Otto-Straße 5, A-2700 Wiener Neustadt,

A2700, Austria; phone: +43 2622 26700; fax: +43 2622 26780; website:
www.diamondaircraft.com.

(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 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 July 9, 2020.

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

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