



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2023-2233; Project Identifier MCAI-2023-00755-E]**

**RIN 2120-AA64**

### **Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to adopt a new airworthiness directive (AD) for all Rolls-Royce Deutschland Ltd & Co KG (RRD) Model Trent 1000-AE3, Trent 1000-CE3, Trent 1000-D3, Trent 1000-G3, Trent 1000-H3, Trent 1000-J3, Trent 1000-K3, Trent 1000-L3, Trent 1000-M3, Trent 1000-N3, Trent 1000-P3, Trent 1000-Q3, and Trent 1000-R3 engines. This proposed AD was prompted by reports of wear in the combining spill-valve (CSV) assembly of certain hydro-mechanical units (HMUs). This proposed AD would require removing certain HMUs from service and replacing with a serviceable part or modifying the HMU by replacing the CSV assembly, which is an optional terminating action; and would prohibit installing certain HMUs unless the HMU is a serviceable part, as specified in a European Union Aviation Safety Agency (EASA) AD, which is proposed for incorporation by reference. The FAA is proposing this AD to address the unsafe condition on these products.

**DATES:** The FAA must receive comments on this NPRM 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-2023-2233; 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, 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 NPRM, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; phone: +49 221 8999 000; email: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu). You may find this material on the EASA website at [ad.easa.europa.eu](http://ad.easa.europa.eu).

- 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.

**FOR FURTHER INFORMATION CONTACT:** Sungmo Cho, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7241; email: [sungmo.d.cho@faa.gov](mailto:sungmo.d.cho@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-2023-2233; Project Identifier MCAI-2023-00755-E” 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 this 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 regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

### **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 Sungmo Cho, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198. Any

commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

## **Background**

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2023-0119, dated June 12, 2023 (EASA AD 2023-0119) (also referred to as the MCAI), to correct an unsafe condition for all RRD Model Trent 1000-AE3, Trent 1000-CE3, Trent 1000-D3, Trent 1000-G3, Trent 1000-H3, Trent 1000-J3, Trent 1000-K3, Trent 1000-L3, Trent 1000-M3, Trent 1000-N3, Trent 1000-P3, Trent 1000-Q3, and Trent 1000-R3 engines. The MCAI states that occurrences have been reported of finding wear in the CSV assembly of the HMU. This wear can reduce the fuel flow output when the engine is operated at high-power conditions. To address this unsafe condition, the manufacturer published service information that specifies procedures to remove certain HMUs from service and replace with a serviceable part or modify the HMU by replacing the CSV assembly. The MCAI also specifies an implementation schedule of engine flight-hour limits for replacement of each affected part with a serviceable part and prohibits installation or reinstallation of affected HMUs that have exceeded the allowable engine flight-hour limit unless the HMU is a serviceable part.

The FAA is proposing this AD to prevent thrust reduction, which if not addressed, could result in reduced control of the airplane.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-2233.

## **Related Service Information under 1 CFR Part 51**

The FAA reviewed EASA AD 2023-0119, which specifies procedures for removing certain part-numbered HMUs from service and replacing with a serviceable part or modifying the HMU by replacing the CSV assembly. The EASA AD also

specifies prohibiting installation or reinstallation of an affected HMU on any engine unless the HMU is a serviceable part.

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.

### **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 referenced above. 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.

### **Proposed AD Requirements in this NPRM**

This proposed AD would require accomplishing the actions specified in the MCAI, except for any differences identified as exceptions in the regulatory text of this proposed AD.

### **Explanation of Required Compliance Information**

In the FAA's ongoing efforts to improve the efficiency of the AD process, the FAA developed a process to use some civil aviation authority (CAA) ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. The FAA has since coordinated with other manufacturers and CAAs to use this process. As a result, the FAA proposes to incorporate by reference EASA AD 2023-0119 in the FAA final rule. This proposed AD would, therefore, require compliance with EASA AD 2023-0119 in its entirety through that incorporation, except for any differences identified as exceptions in the regulatory text of this proposed AD. Using common terms that are the same as the heading of a particular section in the EASA AD does not mean that

operators need comply only with that section. For example, where the AD requirement refers to “all required actions within the compliance times,” compliance with this AD requirement is not limited to the section titled “Required Action(s) and Compliance Time(s)” in EASA AD 2023-0119. Service information required by the EASA AD for compliance will be available at regulations.gov under Docket No. FAA-2023-2233 after the FAA final rule is published.

**Costs of Compliance**

The FAA estimates that this AD, if adopted as proposed, would affect 14 engines installed on airplanes of U.S. registry.

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

**Estimated costs**

<b>Action</b>	<b>Labor Cost</b>	<b>Parts Cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Replace the HMU	7 work-hours x \$85 per hour = \$595	\$560,000	\$560,595	\$7,848,330

Operators may modify the HMU to comply with this proposed AD. For modification of the HMU, the FAA estimates the following costs:

<b>Action</b>	<b>Labor Cost</b>	<b>Parts Cost</b>	<b>Cost per product</b>
Modify the HMU	7 work-hours x \$85 per hour = \$595	\$168,000	\$168,595

**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 this 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 adding the following new airworthiness directive:

**Rolls-Royce Deutschland Ltd & Co KG:** Docket No. FAA-2023-2233; Project

Identifier MCAI-2023-00755-E.

**(a) Comments Due Date**

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

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Rolls-Royce Deutschland Ltd & Co KG Model Trent 1000-AE3, Trent 1000-CE3, Trent 1000-D3, Trent 1000-G3, Trent 1000-H3, Trent 1000-J3, Trent 1000-K3, Trent 1000-L3, Trent 1000-M3, Trent 1000-N3, Trent 1000-P3, Trent 1000-Q3, and Trent 1000-R3 engines.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7300, Engine Fuel and Control.

**(e) Unsafe Condition**

This AD was prompted by reports of wear in the combining spill-valve assembly of certain hydro-mechanical units. The FAA is issuing this AD to prevent thrust reduction. The unsafe condition, if not addressed, could result in reduced control of the airplane.

**(f) Compliance**

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

**(g) Required Actions**

Except as specified in paragraph (h) of this AD: Perform all required actions within the compliance times specified in, and in accordance with, European Union

Aviation Safety Agency (EASA) AD 2023-0119, dated June 12, 2023 (EASA AD 2023-0119).

**(h) Exceptions to EASA AD 2023-0119**

(1) Where EASA AD 2023-0119 requires compliance from its effective date, this AD requires using the effective date of this AD.

(2) Where Table 1 of EASA AD 2023-0119 specifies “26 June 2023;” replace that text with “As of the effective date of this AD.”

(3) Where Table 1 of EASA AD 2023-0119 specifies “01 October 2024;” replace that text with “Within 4 months after the effective date of this AD or October 1, 2024, whichever occurs later.”

(4) Where the service information referenced in EASA AD 2023-0019 specifies to discard certain parts, this AD requires those parts to be removed from service.

(5) This AD does not adopt the Remarks paragraph of EASA AD 2023-0119.

**(i) Definitions**

For the purposes of this AD, the “implementation date” is defined as the date the applicable engine flight hours (EFH) limit takes effect.

**(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, AIR-520 Continued Operational Safety 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 AIR-520 Continued Operational Safety Branch, send it to the attention of the person identified in paragraph (k) 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.

**(k) Additional Information**

For more information about this AD, contact Sungmo Cho, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7241; email: [sungmo.d.cho@faa.gov](mailto:sungmo.d.cho@faa.gov).

**(l) 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) European Union Aviation Safety Agency (EASA) AD 2023-0119, dated June 12, 2023.

(ii) [Reserved]

(3) For the EASA AD, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; phone: +49 221 8999 000; email: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu). You may find EASA AD 2023-0119 on the EASA website at [ad.easa.europa.eu](http://ad.easa.europa.eu).

(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 material 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](http://www.archives.gov/federal-register/cfr/ibr-locations) or email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov).

Issued on November 29, 2023.

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

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