



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0021; Directorate Identifier 2017-NE-01-AD; Amendment 39-18951; AD 2017-14-07]

RIN 2120-AA64

Airworthiness Directives; International Aero Engines AG Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain International Aero Engines AG (IAE) V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5, and V2531-E5 turbofan engines. This AD was prompted following a self-disclosure by IAE regarding manufacturing quality escapes. This AD requires replacing the affected and suspect parts within the time limits specified in the compliance section. We are 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 International Aero Engines AG, 400 Main Street, East Hartford, CT 06118; phone: 860-565-0140; email: help24@pw.utc.com; Internet: <http://fleetcare.pw.utc.com>. You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue,

Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0021.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0021; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, 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: Brian Kierstead, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7772; fax: 781-238-7199; email: brian.kierstead@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain IAE V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5, and V2531-E5 turbofan engines. The NPRM published in the Federal Register on March 14, 2017 (82 FR 13570). The NPRM was prompted following a self-disclosure by IAE regarding manufacturing quality escapes. The NPRM proposed to require replacing the affected and suspect parts within the time limits specified in the compliance section. We are issuing

this AD to prevent failure of high-energy, rotating hardware, uncontained part release, damage to the engine, and damage to the airplane.

Comments

We gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request to Change Service Information

MTU and United Airlines (UAL) requested that we revise the service information citations in the Applicability and Compliance paragraphs of this AD to reference the "latest approved revision" or "latest issue" of the service bulletin (SB). Citing future issues/revisions would avoid Alternative Method of Compliance (AMOC) requests if the SBs are updated.

We disagree. We are only authorized to mandate use of SBs that we have reviewed and which are published. Since future revisions of SBs are not yet published, we are not authorized to mandate their use. We did not change this AD.

Request to Change Compliance Time

MTU and UAL requested that we revise the removal interval referenced in Compliance paragraph (g)(2) of this AD from "when the high-pressure turbine (HPT) module is disassembled and access to the part is available". UAL feels that the proposed compliance period may not prevent part failure and requests the compliance be revised to "anytime the HPT module is removed from the engine". MTU believes that the word "access" is unclear and requests alignment with the IAE NewsFlash NF-048, which recommends replacing at "next piece part exposure."

We disagree. Changing compliance to "next piece part exposure" would allow parts to remain in service longer, resulting in an unacceptable level of risk. We also disagree with mandating removal of the hardware upon separation of the HPT module

from the engine because this would require an earlier compliance than is required.

Neither MTU nor UAL submitted data to support a change to the compliance period. We did not change this AD.

Request to Change Part Eligibility

UAL requests that the AD elaborate that a part eligible for installation includes “any approved original equipment manufacturer (OEM) part number, be it new, or previously operated, provided that it is not affected by this AD.” UAL states that the referenced SB(s) require the owner/operator to “install a new part of a specific part number.”

We disagree. The installation of specific hardware is not mandated by this AD. Any part eligible for installation, new or previously installed, may be installed in place of the affected part. We did not change this AD.

Request to Change Disposition of Affected Hardware

UAL requests that this AD not include the sections of the SBs that refer to how the affected hardware is dispositioned upon removal. United highlights concerns with the reporting requirements listed in the SB and does not want this AD to incorporate by reference (IBR) those sections of the SB(s).

We agree. The disposition of this hardware is not mandated by this AD. We did not change this AD.

Request to Change Applicability

MTU requested that we remove the V2531-E5 from the Summary and Applicability sections of this AD. MTU stated that the V2531-E5 is not listed as an affected engine in the associated SBs.

We disagree. We have determined that the IAE V2531-E5 turbofan engine might have an affected part installed. The IAE V2531-E5 turbofan engine is included in the

Applicability paragraph of this AD to ensure those engines comply with this AD in the event that an affected part is installed on a V2531-E5 engine. We did not change this AD.

Request to Change Costs of Compliance

MTU requested that we align the “Cost per product” and “Cost on U.S. operators” with the latest SB information. MTU cites that the “Cost per product” and “Cost on U.S. operators” as listed in the AD are lower than the numbers given in the associated SBs.

We disagree. The cost estimate listed in the AD is pro-rated based on the part cycles accrued and the cycles at which the affected hardware will be removed from service, versus the certified life. The SB only lists new part cost. We did not change this AD.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule as proposed. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting 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

IAE Non-Modification Service Bulletin (NMSB) V2500-ENG-72-0676, dated October 14, 2016; IAE NMSB V2500-ENG-72-0677, Revision 1, dated January 11, 2017; IAE NMSB V2500-ENG-72-0682, dated December 2, 2016; IAE NMSB V2500-ENG-72-0681, Revision 2, dated January 9, 2017; and IAE NMSB V2500-ENG-72-0678, Revision 1, dated January 5, 2017. Each of the NMSBs describes procedures for replacing a different affected 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.

Costs of Compliance

We estimate that this AD affects 70 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Removal of HPT stage 2 air seal (cycle limited)	\$0	\$154,119.00	\$154,119.00	\$308,238.00
Removal of HPT 1 st stage air seal (cycle limited)	\$0	\$87,503.00	\$87,503.00	\$175,006.00
Removal of HPT stage 2 ring plate (cycle limited)	\$0	\$56,207.00	\$56,207.00	\$112,414.00
Removal of HPT stage 2 ring plate (upon access)	\$0	\$31,403.00	\$31,403.00	\$2,041,195.00

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

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.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, and 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) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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 adding the following new airworthiness directive (AD):

2017-14-07 **International Aero Engines AG**: Amendment 39-18951; Docket No. FAA-2017-0021; Directorate Identifier 2017-NE-01-AD.

(a) Effective Date

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

(b) Affected ADs

None.

(c) Applicability

(1) This AD applies to International Aero Engines AG (IAE) V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, V2528-D5, and V2531-E5 turbofan engines, with one or more of the following installed:

(i) High-pressure turbine (HPT) stage 2 air seal, part number (P/N) 2A4157, with a serial number (S/N) listed in Table 1 of IAE Non-Modification Service Bulletin (NMSB) V2500-ENG-72-0676, dated October 14, 2016.

(ii) HPT 1st stage air seal, P/N 2A3423, with an S/N listed in Table 1 of IAE NMSB V2500-ENG-72-0677, Revision 1, dated January 11, 2017; or IAE NMSB V2500-ENG-72-0678, Revision 1, dated January 5, 2017.

(iii) HPT stage 2 ring plate, P/N 2A3437, with an S/N listed in Table 1 of IAE NMSB V2500-ENG-72-0682, dated December 2, 2016; or IAE NMSB V2500-ENG-72-0681, Revision 2, dated January 9, 2017.

(2) Reserved.

(d) Subject

Joint Aircraft System Component (JASC) Code 7250, Turbine Engine.

(e) Unsafe Condition

This AD was prompted by several reports by IAE of quality escapes during manufacture of HPT stage 2 air seals, HPT 1st stage air seals, and/or HPT stage 2 ring plates, at the Pratt and Whitney Chengdu facility. We are issuing this AD to prevent failure of high-energy, rotating hardware, uncontained part release, damage to the engine, and damage to the airplane.

(f) Compliance

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

(g) Required Actions

(1) Remove the following hardware from service before reaching the specified part cycles since new listed in the service instructions in paragraphs (g)(1)(i) through (iii) of this AD, or within 50 cycles in service after the effective date of this AD, whichever occurs later, and replace with a part eligible for installation:

(i) HPT stage 2 air seal, P/N 2A4157, identified in Table 1 of IAE NMSB V2500-ENG-72-0676, dated October 14, 2016.

(ii) HPT 1st stage air seal, P/N 2A3423, identified in Table 1 of IAE NMSB V2500-ENG-72-0677, Revision 1, dated January 11, 2017.

(iii) HPT stage 2 ring plate, P/N 2A3437, identified in Table 1 of IAE NMSB V2500-ENG-72-0682, dated December 2, 2016.

(2) After the effective date of this AD, remove the following hardware from service when the HPT module is disassembled and access to the part is available and replace with a part eligible for installation;

(i) HPT 1st stage air seal, P/N 2A3423, identified in Accomplishment Instructions, Table 1, of IAE NMSB V2500-ENG-72-0678, Revision 1, dated January 5, 2017.

(ii) HPT stage 2 ring plate, P/N 2A3437, identified in Accomplishment Instructions, Table 1, of IAE NMSB V2500-ENG-72-0681, Revision 2, dated January 9, 2017.

(h) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: ANE-AD-AMOC@faa.gov.

(i) Related Information

For more information about this AD, contact Brian Kierstead, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7772; fax: 781-238-7199; email: brian.kierstead@faa.gov.

(j) 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) International Aero Engines (IAE) Non-Modification Service Bulletin (NMSB) V2500-ENG-72-0676, dated October 14, 2016.

(ii) IAE NMSB V2500-ENG-72-0677, Revision 1, dated January 11, 2017.

(iii) IAE NMSB V2500-ENG-72-0678, Revision 1, dated January 5, 2017.

(iv) IAE NMSB V2500-ENG-72-0681, Revision 2, dated January 9, 2017.

(v) IAE NMSB V2500-ENG-72-0682, dated December 2, 2016.

(3) For International Aero Engines service information identified in this AD, contact International Aero Engines AG, 400 Main Street, East Hartford, CT 06118; phone: 860-565-0140; email: help24@pw.utc.com; Internet: <http://fleetcare.pw.utc.com>.

(4) You may view this service information at FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(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, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on July 3, 2017.

Kevin Dickert,
Acting Manager, Engine & Propeller Directorate,
Aircraft Certification Service.
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