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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-1100; Directorate Identifier 2009-NE-37-AD; Amendment 39-17044; AD 2012-09-09]

RIN 2120-AA64

Airworthiness Directives; International Aero Engines AG Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are superseding an existing airworthiness directive (AD) for all International Aero Engines AG (IAE) V2500-A1, V2525-D5 and V2528-D5 turbofan engines, and certain serial numbers (S/Ns) of IAE V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 turbofan engines. That AD currently requires initial and repetitive ultrasonic inspections (USIs) of certain high-pressure compressor (HPC) stage 3 to 8 drums, and replacement of drum attachment nuts. This new AD expands the affected population for initial and repetitive inspections of the HPC stage 3 to 8 drum, introduces an eddy current inspection (ECI) procedure, and requires additional cleaning and repetitive USI of some HPC stage 3 to 8 drums. We are issuing this AD to prevent uncontained failure of the HPC stage 3 to 8 drum, which could result in damage to the airplane.

DATES: This AD is effective June 27, 2012.

The Director of the Federal Register approved the incorporation by reference (IBR) of certain publications listed in the AD as of June 27, 2012.

ADDRESSES: For service information identified in this AD, contact International Aero Engines AG, 628 Hebron Avenue, Suite 400, Glastonbury, CT 06033; phone: 860-368-3700; fax: 860-368-4600; email: iaeinfo@iaev2500.com; Web site: https://www.iaeworld.com. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov; 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 AD, 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: Carlos Fernandes, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7189; fax: 781-238-7199; email: carlos.fernandes@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2010-20-07, Amendment 39-16441 (75 FR 59067, September 27, 2010). That AD applies to the specified products. The NPRM published in the Federal Register on December 30, 2011 (76 FR 82202). That NPRM proposed to continue to require initial and repetitive USIs of certain HPC stage 3 to 8 drums, and replacement of drum attachment nuts. That NPRM also proposed to expand the affected population for initial and repetitive inspections of the HPC stage 3 to 8 drum, introduce an ECI procedure, and require additional cleaning and repetitive USI of some HPC stage 3 to 8 drums.

Comments

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

Request To Include Entire V2500 Fleet of Engines, and Modify the Optional Terminating Action

Airbus and IAE requested that we change the applicability to include the entire V2500 fleet of engines, and to modify the optional terminating action to include partially silver plated nuts, part number (P/N) AS64367. The commenters stated that one new HPC stage 3 to 8 drum was discovered installed with partially silver plated nuts, P/N AS64367, that had some corrosion pitting.

We partially agree. We agree with making a change to the optional terminating action, because the corrosion pitting found was on the optional terminating action configuration. We changed the AD, deleting the optional terminating action from the AD. We do not agree with including the entire V2500 fleet of engines, because we do not yet have enough information to determine what actions are needed if the nuts are only partially silver plated. We did not change the AD to affect the entire V2500 engine population.

Request To Correct Paragraph Reference Errors

Seven commenters requested that in paragraph (i), Optional Terminating Action, we correct the paragraph references of (h)(1) and (h)(2) to (i)(1) and (i)(2).

We agree. However, we have deleted the Optional Terminating Action paragraph from the AD, as described previously, and redesignated the subsequent paragraphs accordingly. We did not change the AD based on this comment.

Request To Add a Section to Previous Credit

Air New Zealand requested that we add a section to paragraph (k), Previous Credit, for prior installation of a zero-time HPC stage 3 to 8 drum that has never operated with fully silver plated nuts.

We do not agree. We already state in Compliance paragraph (e) that actions are required unless the actions have already been done. We did not change the AD.

Request To Reference the AD Being Superseded

Onur Air requested that we reference the AD being superseded, as it is not mentioned in the proposed AD.

We do not agree. We already reference the superseded AD in the Discussion and in paragraph (b). We did not change the AD.

Exclude Certain HPC Stage 3 to 8 Drums

Onur Air stated that drums which were cleaned, fluorescent penetrant inspected (FPI), and installed with non-fully silver plated nuts into the engine in a previous shop visit are not addressed, and should be excluded in the mandatory terminating action of the proposed AD.

We do not agree. These drums are subject to the repetitive inspections specified in the AD. We did not change the AD.

Request To Rewrite Paragraphs (f) and (h)

Christchurch Engine Centre and United Airlines requested that we rewrite paragraph (f) and (h) because they believe those paragraphs imply that the grace period of FPI or ECI apply to the repetitive USI frequency.

We do not agree. The grace period affects the USI start, based on the type of previous inspection and not the USI re-inspection interval. As specified in paragraph (h) of the proposed AD, USI inspections are to be done every 750 cycles-since-last USI. If an FPI is done, then the USI is required within 2,500 cycles from the FPI, and then done every 750 cycles-since-last USI. The process for the ECI is the same. We did not change the AD.

Request To Use the Engine Manual (EM) Instead of the Service Bulletin (SB) for Cleaning

Christchurch Engine Centre and IAE requested that cleaning be done using the EM instead of the SB.

We partially agree. The EM or the SB may be used as the cleaning procedure. We changed the AD to include the EM and SB as guidance for the cleaning procedure.

Request To Correct a Service Bulletin No.

Christchurch Engine Centre requested that we correct an error in the SB No. in paragraph (k)(4) of the proposed AD from "V2500-ENG-72-615" to "V2500-ENG-72-0615".

We agree. We changed the AD to use the correct SB No. V2500-ENG-72-0615.

Request To Incorporate by Reference (IBR) SBs

Christchurch Engine Centre requested that we IBR the SBs into the AD, and stated that the proposed AD is missing the Material Incorporated by Reference section.

We agree. In the NPRM, we identified SBs needed for compliance. But in NPRMs, we do not set them in a separate IBR paragraph. In our final rules we do, as required by the Office of the Federal Register. In this final rule, we IBR'd SBs necessary for compliance in the AD.

Request To Reconsider the Cost of Compliance

Japan Airlines requested that we reconsider the Cost of Compliance. Based on their experience, they believe it requires at least 11 hours to perform the required work.

We do not agree. The hours are based on average times provided by the type certificate holder. Actual times may vary depending on engine configuration and number of engines inspected. We did not change the Cost of Compliance.

Request To Mandate Only Relevant Sections of the USI Procedures

Japan Airlines and United Airlines requested that the AD mandate only the relevant sections of the USI procedures in IAE Non-Modification SB (NMSB) No. V2500-ENG-72-0608, Revision 3, dated September 20, 2011, and NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011.

We agree. We changed the AD to clarify the initial inspection requirements of the AD.

Request for Previous Credit

Japan Airlines and United Airlines requested that we give previous credit for operators using earlier revisions of the USI SBs listed in the proposed AD, as some operators have already inspected using the earlier revisions.

We agree. We changed AD to give credit for commpliance to the earlier SBs listed in the AD.

Request To Allow Special Flight Permits

United Airlines and TAM Airlines requested that we allow Special Flight Permits so that the airplane can be flown to a location where the work required by the AD can be performed.

We do not agree. The AD already allows flights to a repair facility. We did not change the AD.

Request To Include All HPC Stage 3 to 8 Drum P/N Possibilities

United Airlines requested that we include all HPC stage 3 to 8 drum P/N possibilities in the SB. The commenter believes that drum P/N 6B1404, which is manufactured from the same titanium material as drum P/N 6A8316, should be included.

We do not agree. The AD currently applies to all engines with HPC stage 3 to 8 drums that operated with fully silver plated nuts. Drum P/N 6B1404 was introduced into production with engine S/N higher than V13191 and "Select One" engines S/N higher than V15575, and are outside of the applicability of this AD. We did not change the AD.

Request To Clarify Piece-Part Exposure Definition

United Airlines and MTU Maintenance Hanover GmbH requested that we clarify the definition of piece-part exposure.

We agree. We changed the definition to: "For the purpose of this AD, piece-part exposure is removal of the HPC stage 3 to 8 drum from the engine, removal of all blades from the drum, and separation of the HPC stage 3 to 8 drum from the stage 9 to 12 drum."

Request To Remove Redundant SB Listing

IAE requested that we remove the redundant listing of NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, under Relevant Service Information in the preamble of the proposed AD.

We agree. However, we do not repeat the Relevant Service Information in the final rule. We did not change the AD.

Request To Clarify Compliance Timeframe and Establish a Calendar End-Date

IAE requested that we clarify why a compliance timeframe is required to remove all fully silver plated nuts and also establish a calendar end-date of 2021.

We do not agree. The unsafe condition results from a corrosive operating environment. The amount of corrosion varies with time and location, and we have no data to support a calendar end-date of 2021. We did not change the AD.

Request To Delay USI Start Time and Repeat Inspection Time

TAM Airlines requested that we delay the USI start time to 13,500 cycles-since-new, and increase the repeat inspection time to 1,500 cycles-since-the-last USI.

We do not agree. The initial and repetitive inspection intervals were established based on field experience, and extensive analysis and testing. We have no data that supports an increase in the compliance times. We did not change the AD.

Request for Special Increase Limit

PT GMF Aeroasia requested that we allow them a special increase limit for one of their engines that is above 13,700 cycles to allow time to receive the special tooling required for the inspections.

We do not agree. The analysis and testing does not support continued safe flight above 13,700 cycles. We did not change the AD.

Request for Changes To Make It Easier for Operators to Comply With the AD

United Airlines requested that we add specific accept/reject criteria of missing liner material in the USI inspection area. The commenter also requested that we remove the requirement for borescoping the HPC stage 7 to 8 drum ceramic liner for staining or axial cracking, or, that we specify accept/reject criteria for staining and cracking of the ceramic liner. They also requested that we delay blending limit measurements of the HPC case port and add details for material removal to allow access for the probe manipulators. These changes would make it easier for operators to comply with the AD and avoid unnecessary delays.

We partially agree. We agree with specifying accept/reject criteria for missing liner material in the USI inspection area. The borescope requirement of the HPC stage 7 to 8 drum ceramic liner for staining or axial cracking improves the probability of detection, however we agree to remove it due to lack of clear accept/reject criteria. We do not agree with including in the AD when to perform blending limits measurements and adding details for material removal to allow access for the probe manipulators because they are part of preparation. We added to the AD that any liner loss which results in lifting of the USI probe from the liner will need to be repaired to perform an acceptable inspection. Liner loss found under the intended path of the USI probe must be smaller than the head of the probe.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We also determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

Costs of Compliance

We estimate that this AD will affect about 906 IAE V2500-A1, V2522-A5, V2524-A5, V2525-D5, V2527-A5, V2527E-A5, V2527M-A5, V2528-D5, V2530-A5, and V2533-A5 turbofan engines installed on airplanes of U.S. registry. We estimate that it will take about 3 work-hours per engine to perform the USI, and about 2 work-hours per engine to perform the FPI of the HPC stage 3 to 8 drum. The average labor rate is $85 per work-hour. We also estimate that removal of silver residue from the engine will cost about $2,600 per engine, and required parts about $795 per engine. We also estimate the cost of replacing a drum if found cracked will be $189,000. We have no way of determining the number of aircraft that might need this replacement. Based on these figures, we estimate the total cost of the AD to U.S. operators to be $4,385,040.

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, 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

We have determined that 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 removing airworthiness directive (AD) 2010-20-07, Amendment 39-16441 (75 FR 59067, September 27, 2010), and adding the following new AD:

2012-09-09 International Aero Engines AG: Amendment 39-17044; Docket No. FAA-2009-1100, Directorate Identifier 2009-NE-37-AD.

(a) Effective Date

This airworthiness directive (AD) is effective June 27, 2012.

(b) Affected ADs

This AD supersedes AD 2010-20-07, Amendment 39-16441 (75 FR 59067, September 27, 2010).

(c) Applicability

This AD applies to:
(1) All International Aero Engines AG (IAE) V2500-A1 turbofan engines; and
(2) All IAE V2525-D5 and V2528-D5 turbofan engines; and
(3) IAE V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 turbofan engines with serial numbers (S/Ns) up to and including V13181, and with S/Ns from V15000 up to and including V15245.

(d) Unsafe Condition

This AD results from reports of 50 additional high-pressure compressor (HPC) stage 3 to 8 drums found cracked since AD 2010-20-07 was issued. We are issuing this AD to prevent failure of the HPC stage 3 to 8 drum, uncontained engine failure, and damage to the airplane.

(e) Compliance

You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

(f) Initial Ultrasonic Inspections (USIs) of the HPC Stage 3 to 8 Drum–''Group A''

For IAE V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 turbofan engines with S/Ns in "Group A" in paragraph 1.A. in IAE Non-Modification Service Bulletin (NMSB) No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, perform an initial USI of the HPC stage 3 to 8 drum before accumulating 5,000 cycles-since-new (CSN) or within 500 cycles from the effective date of this AD, whichever occurs later, as follows:
(1) For IAE V2500-A1 turbofan engines:
(i) For on-wing inspections of the outer diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections E, G(1) through G(5), I, and J.

(ii) For on-wing inspections of the inner diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections L, N(1) through N(5), P(1), and Q.

(iii) For shop inspections of the outer diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections AU, AW(1) through AW(5), AY, and AZ.

(iv) For shop inspections of the inner diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections BB, BD(1) through BD(5), BF(1), and BG.

(v) Any liner loss which results in lifting of the USI probe from the liner will need to be repaired in order to perform an acceptable inspection. Liner loss found under the intended path of the USI probe must be smaller than the head of the probe.

(2) For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 turbofan engines:

(i) For on-wing inspections of the outer diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections Z, AB(1) through AB(5), AD, and AE.

(ii) For on-wing inspections of the inner diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections AG, AI(1) through AI(5), AK(1), and AL.

(iii) For shop inspections of the outer diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections BO, BQ(1) through BQ(5), BS, and BT.

(iv) For shop inspections of the inner diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections BV, BX(1) through BX(5), BZ(1), and CA.

(v) Any liner loss which results in lifting of the USI probe from the liner will need to be repaired in order to perform an acceptable inspection. Liner loss found under the intended path of the USI probe must be smaller than the head of the probe.

(g) Initial USIs of the HPC Stage 3 to 8 Drum–''Group B''

For IAE V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 Turbofan Engines with S/Ns in "Group B" in Paragraph 1.A. in IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, perform an initial USI of the HPC stage 3 to 8 drum before accumulating 12,500 CSN or within 500 cycles from the effective date of this AD, whichever occurs later, not to exceed 13,700 CSN, as follows:

(1) For IAE V2500-A1 turbofan engines:

(i) For on-wing inspections of the outer diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections E, G(1) through G(5), I, and J.

(ii) For on-wing inspections of the inner diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections L, N(1) through N(5), P(1), and Q.

(iii) For shop inspections of the outer diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections AU, AW(1) through AW(5), AY, and AZ.

(iv) For shop inspections of the inner diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections BB, BD(1) through BD(5), BF(1), and BG.

(v) Any liner loss which results in lifting of the USI probe from the liner will need to be repaired in order to perform an acceptable inspection. Liner loss found under the intended path of the USI probe must be smaller than the head of the probe.

(2) For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 turbofan engines:

(i) For on-wing inspections of the outer diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections Z, AB(1) through AB(5), AD, and AE.

(ii) For on-wing inspections of the inner diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections AG, AI(1) through AI(5), AK(1), and AL.

(iii) For shop inspections of the outer diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections BO, BQ(1) through BQ(5), BS, and BT.

(iv) For shop inspections of the inner diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections BV, BX(1) through BX(5), BZ(1), and CA.

(v) Any liner loss which results in lifting of the USI probe from the liner will need to be repaired in order to perform an acceptable inspection. Liner loss found under the intended path of the USI probe must be smaller than the head of the probe.

(h) Initial USIs for All IAE V2525-D5 and V2528-D5 Turbofan Engines

(1) For all IAE V2525-D5 and V2528-D5 turbofan engines, perform an initial USI of the HPC stage 3 to 8 drum before accumulating 12,500 CSN or within 500 cycles from the effective date of this AD, whichever occurs later, not to exceed 13,700 CSN.

(i) For on-wing inspections of the outer diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0608, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections E, G(1) through G(5), I, and J.

(ii) For on-wing inspections of the inner diameter, perform an initial USI using IAENMSB No. V2500-ENG-72-0608, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections L, N(1) through N(5), P(1), and Q.

(iii) For shop inspections of the outer diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0608, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections Z, AB(1) through AB(5), AD, and AE.

(iv) For shop inspections of the inner diameter, perform an initial USI using IAE NMSB No. V2500-ENG-72-0608, Revision 3, dated September 20, 2011, Accomplishment Instructions, paragraph 3, sections AG, AI(1) through AI(5), AK(1), and AL.

(v) Any liner loss which results in lifting of the USI probe from the liner will need to be repaired in order to perform an acceptable inspection. Liner loss found under the intended path of the USI probe must be smaller than the head of the probe.

(i) Removal of All Fully Silver Plated Nuts

(1) At the next piece part exposure of the HPC stage 3 to 8 drum after the effective date of this AD, but no later than 8 years from the effective date of this AD, do the following before returning any HPC stage 3 to 8 drum to service:

(i) Remove from service all fully silver plated nuts, part number AS44862 or equivalent that attach the HPC stage 3 to 8 drum to the HPC stage 9 to 12 drum.

(ii) Remove the silver residue from the HPC stage 3 to 8 drum. You can find guidance to remove the silver residue of the HPC stage 3 to 8 drum in IAE NMSB No. V2500-ENG-72-0601, Revision 2, dated April 12, 2010, or in IAE engine manual task 72-41-11-110-001.

(2) Perform an inspection using one of the following methods:

(i) Fluorescent penetrant inspect (FPI) the HPC stage 3 to 8 drum for cracks, and remove from service any drum found cracked. You can find guidance on performing an FPI of the HPC stage 3 to 8 drum in IAE engine manual task 72-41-11-200-001.

(ii) Eddy current inspect (ECI) the HPC stage 3 to 8 drum for cracks, using IAE NMSB No. V2500-ENG-72-0625, dated September 20, 2011, and remove from service any drum found cracked.

(3) If cracks or crack indications are identified, remove the drum from service before further flight.

(4) Accomplishing paragraphs (i)(1) and (i)(2) of this AD before the inspection criteria requirements of paragraphs (f), (g) or (h) of this AD, may be substituted for the initial USI requirement of paragraphs (f), (g) or (h) of this AD.

(j) Repetitive USIs of the HPC Stage 3 to 8 Drum

Perform repetitive USIs of the HPC stage 3 to 8 drum for cracks in accordance with paragraphs (f)(1), (f)(2), (g)(1), (g)(2), or (h)(1) of this AD as applicable, as follows:

(1) Within every 750 cycles-since-last USI; or

(2) Within 2,500 cycles-since-last FPI; or

(3) Within 13,000 cycles-since-last ECI, whichever occurs latest.

(k) Definition

For the purpose of this AD, piece-part exposure is removal of the HPC stage 3 to 8 drum from the engine, removal of all blades from the drum, and separation of the HPC stage 3 to 8 drum from the stage 9 to 12 drum.

(l) Credit for Previous Actions

(1) If you performed a USI before the effective date of this AD using the following IAE NMSB's, you met the requirements of this AD:

(i) IAE NMSB No. V2500-ENG-72-0594, Revision 3, dated August 7, 2009, or Revision 4, dated October 13, 2009; or Revision 5, dated November 23, 2009; or Revision 6, dated April 12, 2010.

(ii) IAE NMSB No. V2500-ENG-72-0603, Initial Issue, dated November 24 2009; or Revision 1, dated December 18, 2009; or Revision 2, dated March 17, 2010.

(iii) IAE NMSB No. V2500-ENG-72-0608, Initial Issue, dated May 5, 2010; Revision 1, dated August 6, 2010; or Revision 2, dated January 4, 2011.

(iv) IAE NMSB No. V2500-ENG-72-0615, Initial Issue, dated July 19, 2010; Revision 1, dated August 2, 2010; or Revision 2, dated November 24, 2010.

(m) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(n) Related Information

(1) For more information about this AD, contact Carlos Fernandes, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7189; fax: 781-238-7199; email: carlos.fernandes@faa.gov.

(2) Guidance on removing the silver residue of the HPC stage 3 to 8 drum may be found in International Aero Engines Service Bulletin No. V2500-ENG-72-0601, Revision 2, dated April 12, 2010, and in IAE engine manual task 72-41-11-110-001.

(o) Material Incorporated by Reference

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

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

(i) International Aero Engines Non-Modification Service Bulletin No. V2500-ENG-72-0608, Revision 3, dated September 20, 2011.

(ii) International Aero Engines Non-Modification Service Bulletin No. V2500-ENG-72-0615, Revision 3, dated September 20, 2011.

(iii) International Aero Engines Non-Modification Service Bulletin No. V2500-ENG-72-0625, dated September 20, 2011.

(3) For service information identified in this AD, contact International Aero Engines AG, 628 Hebron Avenue, Suite 400, Glastonbury, CT 06033; phone: 860-368-3700; fax: 860-368-4600; email: iaeinfo@iaev2500.com; Web site: https://www.iaeworld.com.

(4) You may review copies of the service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may also review copies of the 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.

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