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[Page 70294-70297]
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2006-26013; Directorate Identifier 2003-NE-21-AD; Amendment 39-14841; AD 2006-25-01]

RIN 2120-AA64

Airworthiness Directives; International Aero Engines AG (IAE) V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD) for certain 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 inspections of the master magnetic chip detector (MCD) or the No. 1, 2, 3 bearing chamber MCD. This AD requires the same MCD inspections. This AD also requires removing certain No. 3 bearings and removing certain high pressure compressor (HPC) stubshaft assemblies as mandatory terminating actions to the repetitive MCD inspections. This AD results from IAE developing a terminating action to the repetitive inspections of the chip detectors, and from expanding the applicability to include additional serial-numbered engines with certain No. 3 bearings installed. We are issuing this AD to prevent failure of the No. 3 bearing, which could result in an in-flight shutdown (IFSD) and smoke in the cockpit and cabin.

DATES: This AD becomes effective January 8, 2007. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of January 8, 2007.

ADDRESSES: You can get the service information identified in this AD from International Aero Engines AG, 400 Main Street, East Hartford, CT 06108; telephone: (860) 565-5515; fax: (860) 565-5510.

You may examine the AD docket on the Internet at <http://dms.dot.gov> or in Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC.

FOR FURTHER INFORMATION CONTACT: James Rosa, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; telephone (781) 238-7152; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 with a proposed airworthiness directive (AD). The proposed AD applies to certain IAE V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 turbofan engines. We published the proposed AD in the Federal Register on September 17, 2003 (69 FR 54400). That action proposed to require initial and repetitive inspections of the master MCD or the No. 1, 2, 3 bearing chamber MCD. That proposal would also have required replacing certain No. 3 bearings and replacing or recoating certain HPC stubshaft assemblies as mandatory terminating actions to the repetitive MCD inspections. We also published a supplemental proposed AD in the Federal Register on January 17, 2006 (71 FR 2491). That action revised the proposed AD by expanding its applicability to include additional serial-numbered engines with certain No. 3 bearings installed.

Examining the AD Docket

You may examine the docket that contains the AD, any comments received, and any final disposition in person at the Docket Management Facility Docket Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone (800) 647-5227) is located on the plaza level of the Department of Transportation Nassif Building at the street address stated in ADDRESSES. Comments will be available in the AD docket shortly after the DMS receives them.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

Request To Remove the Requirement To Rework or Replace the HPC Stubshaft on Certain Engines

IAE and three air carriers request that we remove the requirement to rework or replace the stubshafts that have a low-energy plasma coating in engines that did not have No. 3 bearing, part number (P/N) 2A1165, as this is not necessary for safe operation. We agree. We changed the requirement from "at the next shop visit for any reason, replace the HPC stubshaft that has a low-energy plasma coating with an HPC stubshaft that has a high-energy plasma coating" to "at the next shop visit, for engines listed in Table 1 of Appendix 1 of IAE SB No. V2500-ENG-72-0452, Revision 4, dated September 30, 2005, with a serial number (SN) from V10601 through V11335 inclusive, remove the HPC stubshaft that has a low-energy plasma coating." Table 1 lists engines with a No. 3 bearing, P/N 2A1165.

Another air carrier states that IAE SB No. V2500-ENG-72-0459 is the true, in-shop, root cause corrective action. The commenter further states that the SB compliance requires you to also comply with IAE SB No. V2500-ENG-72-0421, which, while beneficial, does not correct the root cause. SB No. V2500-ENG-72-0421 requires replacing all stubshafts with a low-energy plasma coating, with stubshafts with a high-energy plasma coating, regardless of which No. 3 bearing is installed. The commenter requests that we limit the AD requirement to just replacing the affected No. 3 bearing. We partially agree. The unsafe condition is an HPC stubshaft with a low-energy plasma coating used with a No. 3 bearing, P/N 2A1165, in engines listed in Table 1 of Appendix 1 of SB No. V2500-ENG-72-0452. The supplemental NPRM did not propose to require compliance with SB No. V2500-ENG-72-0421. It expanded the list of affected engines by SN. The table does not refer to any other service document. Furthermore, this final rule requires inspection and removal of hardware from the engines listed in Table 1 of Appendix 1 of SB No. V2500-ENG-72-0452 only.

Request To Reference Revision 3 of IAE SB V2500-ENG-72-0459

IAE requests that we reference the latest revision, which is Revision 3, of IAE SB No. V2500-ENG-72-0459, in the AD. We do not agree. We are only incorporating by reference Table 1 of Appendix 1 of IAE SB No. V2500-ENG-72-0452, Revision 4, dated September 30, 2005, in this AD which identifies the SNs of affected engines. We did not incorporate by reference Table 1 of Appendix 1 of IAE SB No. V2500-ENG-72-0459, in the AD because we discovered that that SB contains SNs of engines that have hybrid No. 3 bearings, and we did not include the hybrid bearings as part of the affected population. We did not change the AD.

Request To More Accurately Describe the Failure Event

IAE requests that we more accurately describe the failure event when the No. 3 bearing fails due to a fracture of the No. 3 bearing race. We agree. We changed the Summary and paragraph (d) from "We are issuing this AD to prevent failure of the No. 3 bearing, which could result in an IFSD and smoke in the cockpit and cabin" to "We are issuing this AD to prevent failure of the No. 3 bearing, which could result in an IFSD and smoke in the cockpit and cabin. The smoke is a result of oil escaping from the bearing compartment due to a fracture of the No. 3 bearing race."

Request To Change the Costs of Compliance

IAE requests that we change the costs of compliance to reflect inspection costs as well as replacement costs of HPC stubshafts that have a low-energy plasma coating. We agree. We changed the costs of compliance to add 0.3 work-hour for inspection. This changed our estimated total cost in the AD from \$5,355,174 to \$5,357,511.

Request To Remove the Requirement To Inspect All Chip Detectors

IAE and four air carriers request that we remove the requirement to inspect the master magnetic chip detector and the No. 1, 2, 3, bearing chamber magnetic chip detectors. The commenters state that inspecting all chip detectors does not provide any additional assurance that the No. 3 bearing deterioration will be detected. We partially agree. We agree that safe engine operation does not require inspecting all chip detectors. However, the comment is directed at the original NPRM. The supplemental NPRM and this AD require that you inspect the master MCD or the No. 1, 2, 3 bearing chamber MCD.

Request To Change the AD As to When Parts Are To Be Removed

Jet Blue Airways requests that we change the AD from when the parts are removed at the next shop visit for any reason, to a prescribed event such as the separation of a major flange. As written, the commenter would incur an increased maintenance burden. We do not agree. The existing removal plan is effective at preventing smoke in the cockpit and cabin. We did not change the AD.

Request To Reference A Related AD That Requires Isolation of the Airplane Environmental Air Packs

IAE requests that we reference AD 2003-13-02, which requires isolation of the airplane environmental air packs, in the event of a No. 3 bearing failure. We agree. AD 2003-10-14 also has similar requirements. We changed the AD to include references to related AD 2003-13-02 and AD 2003-10-14, in paragraph (o) of the AD.

Request To Reduce the Inspection Interval From 125 Hours to 50 Hours

Airline Pilots Association, International requests that we reduce the inspection interval from 125 hours to 50 hours to minimize the possibility of an engine that is near failure from returning to service for an additional 125 hours. We do not agree. Our analysis indicates that a 125-hour interval meets safety requirements. Operators may reduce the inspection interval. However, we suggest that operators with approved maintenance programs coordinate any changes with their local FAA Flight Standards District Office. We did not change the AD.

Request To Add Wording That Complying With SB No. V2500-ENG-72-0421 is Considered as Complying With the AD

All Nippon Airways requests that we add wording that complying with SB No. V2500-ENG-72-0421 is considered complying with the AD. The commenter states that the SB provides instructions to rework the stubshaft by applying a high-energy coating. This coating eliminates hard particle contamination caused by stubshafts with a low-energy coating. We partially agree. Incorporating SB No. V2500-ENG-72-0421 would satisfy the AD requirement to remove stubshafts with a low-energy coating from the identified population. However, we require that if the No. 3 bearing, P/N 2A1165, in engines listed in Table 1 of Appendix 1 of SB No. V2500-ENG-72-0452 is installed with a stubshaft with a low-energy coating, the No. 3 bearing must be removed, due to the bearing continuing to be affected from possible residual hard particle contamination or prior damage from contamination before stubshaft change. We did not change the AD.

Request To Allow Installing New No. 3 Bearings, P/N 2A1165

United Airlines requests that we allow installing new No. 3 bearings, P/N 2A1165, as they are not susceptible to the same problem as earlier manufactured bearings of that P/N. We agree. The AD does not prohibit installing new No. 3 bearings, P/N 2A1165. The only bearings that must be removed and not reused, are installed in engines identified in Table 1 of Appendix 1 of IAE SB No. V2500-ENG-72-0452, Revision 4, dated September 30, 2005. We did not change the AD.

Request To Add IAE SB V2500-ENG-72-0460 as a Requirement to the AD

IAE requests that we add IAE SB No. V2500-ENG-72-0460 as a requirement to the AD. IAE states that the SB provides instructions on recoating or replacing all stubshafts installed on engines identified as suspect because the engine oil system was not designed to work with low-energy coating debris. We do not agree. Although replacing all stubshafts with a low-energy coating is encouraged, we do not require it in the AD, as it is not necessary to assure safety. We did not change the AD.

Request To Include Engine Model V2533-A5

IAE requests that we include engine model V2533-A5 in the AD. We agree that this AD applies to engine model V2533-A5. However, the engine model was added to the supplemental NPRM and is also listed in this AD. We did not change the AD.

Explanation of More Engine SNs Listed in Table 1 of Appendix 1 of IAE SB No. V2500-ENG-72-0459

Table 1 of Appendix 1 of IAE SB No. V2500-ENG-72-0459, which we referenced in the proposed ADs, has more engine SNs listed than in Table 1 of Appendix 1 of IAE SB No. V2500-

ENG-72-0452, Revision 4, dated September 30, 2005. This is because the larger Table 1 also lists engines with hybrid No. 3 bearings installed, that are not susceptible to deterioration as others were.

Docket Number Change

We are transferring the docket for this AD to the Docket Management System as part of our ongoing docket management consolidation efforts. The new Docket No. is FAA-2006-26013. The old Docket No. became the Directorate Identifier, which is 2003-NE-21-AD. This final rule might get logged into the DMS docket, ahead of the proposed AD and comments received, as we are in the process of sending those items to the DMS.

Conclusion

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Addition of Inspection Recommendation

Also, since we issued the supplemental NPRM, we determined that we need to add an inspection recommendation in the compliance section. We recommend the inspection of the master MCD or the No. 1, 2, 3 bearing chamber MCD, using paragraphs (f) through (f)(3) of this AD, on all engines installed on the same airplane, not be done by the same individual before the same flight. This is to minimize the chances of maintenance error on multiple engine airplanes.

Costs of Compliance

We estimate that this AD will affect 123 engines installed on airplanes of U.S. registry. We also estimate it will take 150.3 work-hours per engine to perform the actions, and that the average labor rate is \$65 per work-hour. Required parts will cost about \$33,788 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$5,357,573.

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 Analysis

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); 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.

We prepared a summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary at the address listed under ADDRESSES.

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 Federal Aviation Administration 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 Amendment 39-13183 (68 FR 33621, June 5, 2003) and by adding a new airworthiness directive, Amendment 39-14841, to read as follows:



2006-25-01 International Aero Engines AG: Amendment 39-14841; Docket No. FAA-2006-26013; Directorate Identifier 2003-NE-21-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective January 8, 2007.

Affected ADs

(b) This AD supersedes AD 2003-11-23, Amendment 39-13183.

Applicability

(c) This AD applies to International Aero Engines AG (IAE) V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 turbofan engines with engine serial numbers V10601 through V11335 inclusive and bearings part number (P/N) 2A1165 installed. These engines are installed on, but not limited to, Airbus Industrie A319, A320, and A321 series airplanes.

Unsafe Condition

(d) This AD results from IAE developing a terminating action to the repetitive inspections of the chip detectors, and from expanding the applicability to include additional serial-numbered engines with certain No. 3 bearings installed. We are issuing this AD to prevent failure of the No. 3 bearing, which could result in an IFSD and smoke in the cockpit and cabin. The smoke is a result of oil escaping from the bearing compartment due to a fracture of the No. 3 bearing race.

Compliance

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

Inspection of the Master Magnetic Chip Detector (MCD) or the No. 1, 2, 3 Bearing Chamber MCD

(f) For engines listed in Table 1 of Appendix 1 of IAE Service Bulletin (SB) No. V2500-ENG-72-0452, Revision 4, dated September 30, 2005, and that have a No. 3 bearing, P/N 2A1165, installed at new production build, do the following:

(1) Within 125 hours time-in-service (TIS) after the effective date of this AD, inspect the master MCD or the No. 1, 2, 3 bearing chamber MCD.

(2) Thereafter, within 125 hours time-since-last inspection, inspect the master MCD or the No. 1, 2, 3 bearing chamber MCD.

(3) If you find bearing material on the master MCD or No. 1, 2, 3 bearing chamber MCD, remove the engine from service before further flight.

Inspection Recommendation

(g) We recommend the inspection of the master MCD or the No. 1, 2, 3 bearing chamber MCD, using paragraphs (f) through (f)(3) of this AD, on all engines installed on the same airplane, not be done by the same individual before the same flight. This is to minimize the chances of maintenance error on multiple engine airplanes.

Removal of No. 3 Bearing

(h) At the next shop visit, for engines listed in Table 1 of Appendix 1 of IAE SB No. V2500-ENG-72-0452, Revision 4, dated September 30, 2005, that have a serial number (SN) from V10601 through V11335 inclusive, and that have a No. 3 bearing, P/N 2A1165 installed at new production, remove the No. 3 bearing.

(i) After the effective date of this AD, do not install any No. 3 bearing, P/N 2A1165, removed in paragraph (h) of this AD, into any engine.

Removal of High Pressure Compressor (HPC) Stubshaft

(j) At the next shop visit, for engines listed in Table 1 of Appendix 1 of IAE SB No. V2500-ENG-72-0452, Revision 4, dated September 30, 2005, that have a SN from V10601 through V11335 inclusive, remove the HPC stubshaft that has a low-energy plasma coating.

Terminating Action

(k) Performing the requirements specified in paragraph (h) and (j) of this AD is terminating action to the repetitive MCD inspections specified in paragraphs (f) through (f)(3) of this AD.

Alternative Methods of Compliance

(l) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

Material Incorporated by Reference

(m) For identifying engines within the engine SN range of V10601 to V11335 inclusive, known to have had P/N 2A1165 installed, you must use Table 1 of Appendix 1 of International Aero Engines Service Bulletin No. V2500-ENG-72-0452, Revision 4, dated September 30, 2005. The Director of the Federal Register approved the incorporation by reference of Table 1 of Appendix 1 of International Aero Engines Service Bulletin No. V2500-ENG-72-0452, Revision 4, dated September 30, 2005, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact International Aero Engines AG, 400 Main Street, East Hartford, CT 06108; telephone: (860) 565-5515; fax: (860) 565-5510, for a copy of this service information. You may review copies at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or 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>.

Related Information

(n) The following SBs contain additional information and procedures:

(1) You can find information on inspecting the master MCD and the No. 1, 2, 3 bearing chamber MCD in section 79-00-00-601 of the Aircraft Maintenance Manual.

(2) Additional information on inspection procedures is included in IAE SB No. V2500-ENG-72-0452, Revision 4, dated September 30, 2005.

(3) You can find information on replacing the No. 3 bearing in IAE SB No. V2500-ENG-72-0459, Revision 3, dated April 12, 2003.

(4) You can find information on replacing HPC stubshafts that have a low-energy plasma coating, (all engines) in IAE SB No. V2500-ENG-72-0460, Revision 2, dated March 4, 2006.

(o) Airworthiness directive 2003-10-14 and AD 2003-13-02, which revise the Limitation section of the airplane flight manual to incorporate new procedures to follow in the event of smoke in the cockpit and cabin, are related to the subject of this AD.

Issued in Burlington, Massachusetts, on November 27, 2006.

Peter A. White,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. E6-20323 Filed 12-1-06; 8:45 am]