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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2006-26193; Directorate Identifier 2001-NE-01-AD; Amendment 39-14853; AD 2006-25-12]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Corporation 501-D Series Turboprop Engines

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD) for Rolls-Royce Corporation (RRC) 501-D series turboprop engines. That AD requires removal from service of certain turbine rotor components at reduced life limits. This AD requires the same actions but adds two new life limits. This AD results from RRC reevaluating and revising component life limits for 501-D22 series turboprop engines. We are issuing this AD to prevent uncontained turbine rotor failure resulting in an in-flight engine shutdown and possible damage to the airplane.

DATES: This AD becomes effective January 23, 2007. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of January 23, 2007.

ADDRESSES: You can get the service information identified in this AD from Rolls-Royce Corporation, P.O. Box 420, 2001 South Tibbs Avenue, Indianapolis, IN 46206-0420; telephone (317) 230-2000; fax (317) 230-4020 for the service information identified in this AD.

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: Michael Downs, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, 2300 East Devon Avenue, Des Plaines, IL 60018; telephone (847) 294-7870; fax (847) 294-7834.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 with a proposed AD. The proposed AD applies to RRC 501-D series turboprop engines. We published the proposed AD in the Federal Register on February 22, 2006 (71 FR 9048). That action proposed to

require removal from service of certain turbine rotor components at reduced life limits, the same as AD 2003-07-02, but would add two new life limits.

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 Offices 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 received no comments on the proposal or on the determination of the cost to the public.

Incorrect Supplemental Type Certificate (STC) Number

Since we issued the proposed AD, we became aware that the STC number SE1161EA, referenced in paragraph (c), is incorrect. We corrected the number to STC SA4-1100 in the AD.

Conclusion

We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD with the change described previously.

Costs of Compliance

We estimate that this AD will affect 684 engines installed on aircraft of U.S. registry. The action does not impose any additional labor costs if performed at the time of scheduled engine overhaul. Required parts will cost about $45,000 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be $30,780,000.

Special Flight Permits Paragraph Removed

Paragraph (f) of the current AD, AD 2003-07-02, contains a paragraph pertaining to special flight permits. Even though this AD does not contain a similar paragraph, we have made no changes with regard to the use of special flight permits to operate the airplane to a repair facility to do the work required by this AD. In July 2002, we published a new Part 39 that contains a general authority regarding special flight permits and airworthiness directives; see Docket No. FAA 2004-8460, Amendment 39-9474 (69 FR 47998, July 22, 2002). Thus, when we now supersede ADs we will not include a specific paragraph on special flight permits unless we want to limit the use of that general authority granted in section 39.23.

Docket Number Change

We are transferring the docket for this AD to the Docket Management System as part of our on-going docket management consolidation efforts. The new Docket No. is FAA-2006-26193. The old Docket No. became the Directorate Identifier, which is 2001-NE-01-AD. This AD might get logged

into the DMS docket, ahead of the previously collected documents from the old docket file, as we are in the process of sending those items to the DMS.

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); 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 39-13098 (68 FR 15937, April 2, 2003), and by adding a new airworthiness directive, Amendment 39-14853, to read as follows:

2006-25-12 Rolls-Royce Corporation (formerly Allison Engine Company): Amendment 39-14853. Docket No. FAA-2006-26193; Directorate Identifier 2001-NE-01-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective January 23, 2007.

Affected ADs

(b) This AD supersedes AD 2003-07-02, Amendment 39-13098.

Applicability

(c) This AD applies to Rolls-Royce Corporation (formerly Allison Engine Company) (RRC) 501-D series turboprop engines. These engines are installed on, but not limited to, Lockheed 188 series and 382 series turboprop airplanes, Airbus 377SG5-F (Super Guppy) airplanes, and Convair Models 340 and 440 airplanes which have RRC 501-D series turboprop engines installed under Supplemental Type Certificate No. SA4-1100. These latter models are commonly referred to as Convair 580/580A or 5800 models.

(d) This AD results from RRC reevaluating and revising component life limits for 501-D22 series turboprop engines. We are issuing this AD to prevent uncontained turbine rotor failure resulting in an in-flight engine shutdown and possible damage to the airplane.

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.

501-D13 Series Engines

(f) For 501-D13 series engines, remove turbine wheels and spacers from service as specified in the following Table 1:

Table 1 – 501-D13 Series Life Limits

Part Name	Part Number	Life Limit for Wheels That Have Complied With Commercial Overhaul Information Letter (COIL) 401, dated May 1978.	Life Limit for Wheels That Have Not Complied with COIL 401, dated May 1978.
(1) Second-stage turbine wheel assembly.	6847142 and 6876892	Remove from service before or upon accumulating 16,000 cycles-in-service (CIS).	Remove from service before or upon accumulating 12,000 CIS.
(2) Third-stage turbine wheel assembly.	6845883 and 6849743	Remove from service before or upon accumulating 13,000 CIS.	Remove from service before or upon accumulating 10,000 CIS.
(3) Fourth-stage turbine wheel assembly.	6876468	Remove from service before or upon accumulating 24,000 CIS.	Remove from service before or upon accumulating 18,000 CIS.

501-D22 Series Engines

(g) For 501-D22 series engines, remove turbine wheels and spacers from service as specified in the following Table 2:

Table 2 – 501-D22 Series Life Limits

Part Name	Part Number	Remove From Service:
(1) Third-stage turbine wheel assembly.	6855083	Before or upon accumulating 10,000 cycles-in-service (CIS).
(2) 1^{st}-2^{nd} -stage spacer assembly.	6844632, 23033463, 23064854, and 23064858	Before or upon accumulating 4,700 CIS.
(3) 1^{st}-2^{nd} -stage spacer assembly.	23056966	(i) Before or upon accumulating 8,000 CIS. (ii) If the 1^{st} –2^{nd} stage spacer assembly passes the hardness criteria in RRC Commercial Engine Bulletin No. CEB-A-72-1135, Revision 2, dated July 11, 2003, then before or upon accumulating 10,000 CIS.
(4) 2^{nd}-3^{rd} -stage spacer assembly.	23033456	Before or upon accumulating 4,200 CIS.
(5) 2^{nd}-3^{rd} -stage spacer assembly.	23033464 and 6842683	Before or upon accumulating 5,200 CIS.
(6) 3^{rd}-4^{th} -stage spacer assembly.	6844794 prior to revision letter “R”.	Before or upon accumulating 5,100 CIS.

Alternative Methods of Compliance

(h) The Manager, Chicago Aircraft 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.

Related Information

(i) Information on 501-D13 series engine turbine life limits can be found in RRC Commercial Service Letter (CSL) No. CSL-120, Revision No. 52, dated July 22, 2002.

(j) Information on 501-D22 series engine turbine life limits can be found in RRC CSL No. CSL-1001, Revision No. 20, dated April 5, 2005.

Material Incorporated by Reference

(k) You must use Rolls-Royce Corporation Commercial Engine Bulletin No. CEB-A-72-1135, Revision 2, dated July 11, 2003, to check if 1st-2nd stage spacer assemblies pass the hardness criteria required by Table 2 of this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Rolls-Royce Corporation, P.O. Box 420, 2001 South Tibbs Avenue, Indianapolis, IN 46206-0420; telephone (317) 230-2000; fax (317) 230-4020 for a copy of this service information. You may review copies 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 December 11, 2006.
Peter A. White,
Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.
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