

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NE-01-AD; Amendment 39-13098; AD 2003-07-02]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Corporation (Formerly Allison Engine Company) 501-D Series Turboprop Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), that is applicable to Rolls-Royce Corporation (formerly Allison Engine Company) 501-D series turboprop engines. This amendment requires removal from service of certain turbine rotor components at reduced life limits. This amendment is prompted by the result of recalculated material properties by the manufacturer. The actions specified by this AD are intended to prevent uncontained turbine rotor failure resulting in in-flight engine shutdown and possible damage to the airplane.

DATES: Effective May 7, 2003.

ADDRESSES: The service information referenced in this AD may be obtained from Rolls-Royce Corporation, PO Box 420, Indianapolis, IN 46206-0420; telephone (317) 230-6400; fax (317) 230-4243. This information may be examined, by appointment, at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

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: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that is applicable to Rolls-Royce Corporation (formerly Allison Engine Company) 501-D series turboprop engines was published in the Federal Register on October 18, 2002 (67 FR 64328). That action proposed to require removal from service of certain turbine rotor components at reduced life limits due to recalculated material properties by

the manufacturer. As a result, the manufacturer has reduced the life limits of certain second-stage, third-stage, and fourth-stage turbine wheel assemblies, and certain 1st-2nd stage, 2nd-3rd stage, and 3rd-4th stage turbine spacer assemblies.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

AD Not Required

One commenter states that it is a waste of tax dollars to issue the AD when the life limits of Rolls-Royce Customer Service Letter (CSL) 1001, Revision 19, dated July 22, 2002, and the life limit reduction specified by the NRPM are the same. The commenter continues to say that the only possible difference the AD could address would be the "one time exception" permitted by the CSL to operate beyond the revised limits until March 31, 2003, and then only if the AD is adopted as a final rule before March 31, 2003. The commenter believes that the AD does not offer any new information except that the FAA may address the "one time exception" permitted by CSL 1001.

The FAA does not agree. Whenever the FAA lowers the life of critical service parts, an AD is required because the change in service life has become more restricted. The reason CSL 1001 and the NPRM are the same is because Rolls-Royce has already revised the CSL as a result of the NPRM. The AD is not addressing the "one time exception" in CSL 1001, Revision 19, dated July 22, 2002.

Expand the Applicability To Add Airbus Industrie 377S GT-F (Super Guppy)

One commenter requests that the Applicability statement be written to include the Airbus Industrie 377SGT-F (Super Guppy) model.

The FAA agrees. The Applicability statement is revised to reflect this change.

Add Assigned Rework Part Numbers to Table 2

One commenter requests that two additional part numbers (PNs) 23064854 and 23064858, be added to the Supplementary Information section "FAA's Determination of an Unsafe Condition and Proposed Actions" and that the same numbers be added to Table 2 501-D22 Series Life Limits. The two additional PNs are the assigned reworked PNs for 6844632 and 23033463. The reworked PNs have the same life limit as their prior part number; therefore, they should be added to the AD to prevent any confusion regarding their reduction in life limit to 4,700 cycles-in-service (CIS).

The FAA agrees. The assigned reworked PNs are added to Table 2; however the FAA's Determination of an Unsafe Condition and Proposed Actions section in the NPRM preamble does not appear in the final rule.

Original Life Limit for Part Number 6844794 Rev R and Greater

The same commenter requests an additional change to the Supplementary Information Section "FAA's Determination of an Unsafe Condition and Proposed Actions" and to Table 2. The commenter states that the life limit reduction for the PN 6844794, 3rd and 4th stage turbine spacer is only necessary for those parts which were manufactured prior to part number drawing 6844794 revision letter "R". Tighter dimensional control of the spacer critical life location which was implemented with PN 6844794 revision letter "R" allows PNs identified as Rev "R" and greater to remain at their previous life limits. Therefore, the commenter requests that delineation by PN 6844794 "with serial number (SN) less than and including KK22951 * * *" be replaced by "PN 6844794 prior to revision letter R".

The FAA agrees. Table 2 reflects the change in the AD; however, the FAA's Determination of an Unsafe Condition and Proposed Actions section in the NPRM preamble does not appear in the final rule.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes described previously. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Economic Analysis

There are approximately 930 Rolls-Royce 501-D series turboprop engines of the affected design in the worldwide fleet. The FAA estimates that 684 engines installed on airplanes of U.S. registry will be affected by this AD. This AD does not impose any additional labor costs if performed at the time of scheduled engine overhaul. Required parts will cost approximately \$45,000 per engine. Based on these figures, the total cost of the AD to U.S. operators is estimated to be \$30,780,000.

Regulatory Analysis

This final rule does not have federalism implications, as defined in Executive Order 13132, because it 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. Accordingly, the FAA has not consulted with state authorities prior to publication of this final rule.

For the reasons discussed above, I certify that this action (1) Is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under the 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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. Section 39.13 is amended by adding a new airworthiness directive to read as follows:

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC



U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2003-07-02 Rolls-Royce Corporation: Amendment 39-13098. Docket No. 2001-NE-01-AD.

Applicability: This airworthiness directive (AD) is applicable to Rolls-Royce Corporation (formerly Allison Engine Company) 501-D series turboprop engines. These engines are installed on, but not limited to Lockheed 188 series and 382 series turboprop airplanes, Airbus Industrie 377SG5-F (Super Guppy) airplanes, and Convair Models 340 and 440 airplanes which have Rolls-Royce corporation 501-D series turboprop engines installed under a Supplemental Type Certificate. These models are commonly referred to as Convair 580/580A or 5800 models.

Note 1: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Compliance with this AD is required as indicated, unless already done.

To prevent uncontained turbine rotor failure, resulting in in-flight engine shutdown and possible damage to the airplane, do the following:

501-D13 Series Engines

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

501-D22 Series Engines

(c) 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 No.	Remove from service:
(1) Third-stage turbine wheel assembly	6855083	Before or upon accumulating 10,000 cycles-in-service (CIS).
(2) 1st-2nd-stage spacer assembly	6844632, 23033463, 23064854, and 23064858.	Before or upon accumulating 4,700 CIS.
(3) 1st-2nd-stage spacer assembly	23056966	Before or upon accumulating 8,000 CIS.
(4) 2nd-3rd-stage spacer assembly	23033456	Before or upon accumulating 4,000 CIS.
(5) 3rd-4th-stage spacer assembly	6844794 prior to revision letter "R"	Before or upon accumulating 5,100 CIS.

(d) Information on 501-D22 series engine turbine life limits can be found in Rolls-Royce Commercial Service Letter (CSL) No. CSL-1001, Revision No. 19, dated July 22, 2002.

Alternative Methods of Compliance

(e) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Chicago Aircraft Certification Office (ACO). Operators must submit their request through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, ACO.

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the ACO.

Special Flight Permits

(f) Special flight permits may be issued in accordance with §§ 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be done.

Effective Date

(g) This amendment becomes effective on May 7, 2003.

Issued in Burlington, Massachusetts, on March 25, 2003.
Francis A. Favara,
Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.
[FR Doc. 03-7743 Filed 4-1-03; 8:45 am] BILLING CODE 4910-13-P