

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