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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2004-19648; Directorate Identifier 2004-NE-31-AD; Amendment 39-14090; AD 2005-10-13]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Corporation (Formerly Allison Engine Company) 250-B17B, -B17C, -B17D, -B17E, -C20, -C20B, -C20F, -C20J, -C20S, and -C20W Turboprop and Turboshaft Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for Rolls-Royce Corporation (RRC) (formerly Allison Engine Company) 250-B17B, -B17C, -B17D, -B17E, -C20, -C20B, -C20F, -C20J, -C20S, and -C20W turboprop and turboshaft engines that do not have turbine energy absorbing ring, RRC part number (P/N) 23035175, or an equivalent FAA-approved serviceable turbine energy absorbing ring, installed. This AD requires installation of a turbine energy absorbing ring in the plane of the 1st stage turbine wheel. This AD results from an unacceptable rate of uncontained 1st stage turbine wheel failures. We are issuing this AD to minimize the risk of uncontained 1st stage turbine wheel fragments from causing damage to the aircraft or damage to the second engine on twin-engine installations, which could lead to loss of control and loss of the aircraft.

DATES: This AD becomes effective June 22, 2005. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of June 22, 2005.

ADDRESSES: Contact Rolls-Royce Corporation, P.O. Box 420, Indianapolis, IN 46206-0420; telephone (317) 230-2712; fax (317) 230-3381 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: Melissa T. Bradley, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, 2300 East Devon Avenue, Des Plaines, IL 60018-4696; telephone (847) 294-8110; fax (847) 294-7834.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 with a proposed airworthiness directive (AD). The proposed AD applies to Rolls-Royce Corporation (RRC) (formerly Allison Engine Company) 250-B17B, -B17C, -B17D, -B17E, -C20, -C20B, -C20F, -C20J, -C20S, and -C20W turboprop and turboshaft engines that do not have turbine energy absorbing ring, RRC P/N 23035175, installed. We published the proposed AD in the Federal Register on November 22, 2004 (69 FR 67867). That action proposed to require installation of a turbine energy absorbing ring in the plane of the 1st stage turbine wheel. That action also proposed to require installation of 1st stage turbine nozzles, 2nd stage turbine nozzles, and a gas producer support assembly, all modified to allow for installation of the turbine energy absorbing ring.

Examining the AD Docket

You may examine the docket that contains the AD, any comments received, and any final disposition in person at the DMS 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 have considered the comments received.

Request To Add Helicopters to the Applicability of the AD

One commenter requests that we add to the applicability of the AD, the Rogerson Hiller Corporation UH-12E helicopter, modified by Supplemental Type Certificate (STC) SH178WE, in addition to including STC SH657NW applicability. The commenter states that the proposed AD did not reference all known installations of the affected engines.

We agree that all known installations of the affected engines should have been listed. We have corrected the applicability, by adding helicopters that are listed under STC SH177WE, STC SH178WE, STC SH218NW-D, and STC SH657NW.

Request the FAA Require RRC To Supply All Parts Needed at No Cost

One commenter requests that we require RRC to supply all parts needed to comply with the AD, at no cost to the operator. The commenter is concerned about the financial impact the AD will have on operators.

We understand the commenter's concern over parts costs, however, we do not have the authority to control or eliminate parts costs.

Request To Change the Compliance

One commenter requests that the compliance be done at the next 1,750-hour hot section inspection or turbine overhaul.

We do not agree. Our existing compliance time is based on minimizing the risk of failure. If compliance time is extended to the next hot section inspection or turbine overhaul for the entire population of engines, then the associated fleet risk would increase to an unacceptable level.

Request To Eliminate the Final Compliance Date

One commenter requests we eliminate the final compliance date of October 31, 2011. The commenter has a concern that operators who have recently overhauled the turbine, will not accumulate the 1,750 hours before the final compliance date.

We do not agree. We have a final compliance date in the AD to ensure compliance within a reasonable period of time (over six years) for engines that may not accumulate 1,750 hours, or may not be disassembled for any reason before the final compliance date. Risk of failure increases with each additional year the engine does not comply.

Request To Include FAA-PMA P/Ns

One commenter requests that the AD include the FAA-PMA P/N for the turbine energy absorbing ring manufactured by EXTEX, as well as all other equivalent FAA-PMA P/Ns for turbine energy absorbing rings. The commenter's concern is that the proposed AD states that the AD applies to engines that do not have turbine energy absorbing ring, P/N 23035175, installed. The commenter states that this wording implies that the only method of compliance is by installing the turbine energy absorbing ring manufactured by the Type Certificate holder, RRC. Equivalent FAA-PMA turbine energy absorbing rings are also available to install.

We partially agree. We have changed the AD to identify the part number referenced, as an RRC part number, and, to take into account that there are equivalent parts available.

Request To Remove Paragraphs (f) and (g) From the Compliance

One commenter requests that we remove paragraphs (f) and (g) from the compliance. The commenter states that these paragraphs are unnecessary and restrictive. AD compliance paragraph (f) states to use paragraph 2. of RRC Alert Commercial Engine Bulletin (CEB) No. CEB-A-1254, Revision 3, dated May 21, 2004, to modify the gas producer support. This paragraph would prevent the use of currently available and widely used FAA-Designated Engineering Representative (DER)-approved methods to modify the gas producer support, for installing the turbine energy absorbing ring. An operator would have to request numerous Alternative Methods of Compliance (AMOCs) because of the overly restrictive wording.

The commenter also states that AD compliance paragraph (g) specifies to use paragraph 2. of RRC Alert CEB No. CEB-A-1253, Revision 4, dated May 21, 2004, to modify and install the 1st stage turbine nozzle and 2nd stage turbine nozzle. This CEB Revision 4 only lists the latest P/N for the 1st stage turbine nozzle. Since the issuance of the original version of this CEB on June 1, 1988, several P/Ns of 1st stage turbine nozzles exist which are the required configuration to allow installation of a turbine energy absorbing ring. These earlier 1st stage turbine nozzles are still in wide circulation and are perfectly suitable for use. AD compliance paragraph (g) would prevent the use of these earlier P/N 1st stage turbine nozzles without first receiving AMOC approval.

The commenter concludes by stating that installing the turbine energy absorbing ring without modifying the gas producer support and nozzles is physically impossible. Paragraph 1.M of RRC CEB No. CEB-A-1255, Revision 4, dated September 29, 2004, lists CEB No. CEB-A-1253 and No. CEB-A-1254 as prerequisites to CEB No. CEB-A-1255, without the overly restrictive use of specific revision numbers and dates. That same prerequisite paragraph also includes the necessary words "or equivalent" to these two CEBs.

We agree. We have replaced paragraphs (f), (g), and (h) of this AD with the following single paragraph: "(f) Install a turbine energy absorbing ring, RRC P/N 23035175, or an equivalent FAA-approved serviceable turbine energy absorbing ring, in the plane of the 1st stage turbine wheel, using paragraphs 1.M., 2.A., and 2.B. of Rolls-Royce Corporation Alert Commercial Engine Bulletin No. CEB-A-1255, Revision 4, dated September 29, 2004, to do the installation."

Request To Reevaluate the Basis for the AD

One commenter requests we reevaluate the basis for the AD. The request is based on field experience of an operator who has maintained the 250-C20 series engines for over 25 years, and is concerned with the financial impact on operators. The commenter has never seen a 1st stage turbine wheel failure and questions the validity of RRC's analysis.

We do not agree. We reviewed the analysis and associated risk and find it necessary to issue this AD.

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.

Costs of Compliance

There are about 13,299 RRC 250-B17B, -B17C, -B17D, -B17E, -C20, -C20B, -C20F, -C20J, -C20S, and -C20W turboprop and turboshaft engines of the affected design in the worldwide fleet. We estimate that 5,000 engines installed on helicopters of U.S. registry require the installation of a turbine energy absorbing ring. Of those 5,000 engines, we also estimate that 4,000 engines require installation of a gas producer support assembly, 1st stage turbine nozzle, and 2nd stage turbine nozzle. About 16 work hours per engine are needed to install the turbine energy absorbing ring, 35 work hours to install the gas producer support assembly, and 20 work hours to install the 1st stage turbine nozzle, and 2nd stage turbine nozzle. The average labor rate is $65 per work hour. Required turbine energy absorbing rings cost about $10,765 per engine. Required gas producer support assemblies cost about $2,500 per engine. Required 1st stage turbine nozzles and 2nd stage turbine nozzles cost about $1,000 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be $87,325,000.

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 adding the following new airworthiness directive:

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).

2005-10-13 Rolls-Royce Corporation (formerly Allison Engine Company): Amendment 39-14090. Docket No. FAA-2004-19648; Directorate Identifier. 2004-NE-31-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective June 22, 2005.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Rolls-Royce Corporation (RRC) (formerly Allison Engine Company) 250-B17B, B17C, -B17D, -B17E, -C20, -C20B, -C20F, -C20J, -C20S, and -C20W turboprop and turboshaft engines that do not have turbine energy absorbing ring, RRC part number (P/N) 23035175, or an equivalent FAA-approved serviceable turbine energy absorbing ring, installed. These engines are installed on, but not limited to, the following aircraft:

Agusta A109
Agusta A109A
Agusta A109A II
B-N Group BN-2T
Bell 206A
Bell 206B
Bell 206L
Bell Helicopter Textron 47G-2A (Supplemental Type Certificate (STC) SH657NW)
Bell Helicopter Textron 47G-2A-1 (STC SH657NW)
Bell Helicopter Textron 47G-3B (STC SH657NW)
Bell Helicopter Textron 47G-3B-1 (TH-13T) (STC SH657NW)
Bell Helicopter Textron 47G-3B-2 (STC SH657NW)
Bell Helicopter Textron 47G-3B-2A (STC SH657NW)
Bell Helicopter Textron 47G-4 (STC SH657NW)
Bell Helicopter Textron 47G-4A (STC SH657NW)
Bell Helicopter Textron 47G-5 (STC SH657NW)
Bell Helicopter Textron 47G-5A (STC SH657NW)
Eurocopter Deutchland BO-105C
Eurocopter Deutchland BO-105C (STC SH218NW-D)
Eurocopter Deutchland BO-105S

Eurocopter France AS355E
Eurocopter France AS355F
Eurocopter France AS355F1
Eurocopter France AS355F2
FH-1100 Manufacturing Corp FH-1100
Hiller Aviation UH-12D (Army UH-23D) (STC SH177WE)
MDHI 369D
MDHI 369E
MDHI 369HM
MDHI 369HS
MDHI 369HE
Rogerson Hiller Corporation UH-12E (STC SH178WE)
Rogerson Hiller Corporation UH-12E-L (STC SH178WE)
SIAI Marchetti s.r.l. SF600

Unsafe Condition

(d) This AD results from an unacceptable rate of uncontained 1st stage turbine wheel failures. We are issuing this AD to minimize the risk of uncontained 1st stage turbine wheel fragments from causing damage to the aircraft or damage to the second engine on twin-engine installations, which could lead to loss of control and loss of the aircraft.

Compliance

(e) You are responsible for having the actions required by this AD performed at the next time the gas producer turbine rotor is disassembled for any reason, or within 1,750 hours time-since-last-overhaul, time-since-new, time-since-last-heavy-maintenance, or time-since-last-hot section inspection after the effective date of this AD, whichever occurs first, but no later than October 31, 2011, unless already done.

Required Actions

(f) Install a turbine energy absorbing ring, RRC P/N 23035175, or an equivalent FAA-approved turbine energy absorbing ring, in the plane of the 1st stage turbine wheel, using paragraphs 1.M., 2.A., and 2.B. of Rolls-Royce Corporation Alert Commercial Engine Bulletin No. CEB-A-1255, Revision 4, dated September 29, 2004, to do the installation.

Alternative Methods of Compliance

(g) 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

(h) None.

Material Incorporated by Reference

(i) You must use Rolls-Royce Corporation Alert Commercial Engine Bulletin No. CEB-A-1255, Revision 4, dated September 29, 2004, to perform the actions required by 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, Indianapolis, IN 46206-0420; telephone (317) 230-2712; fax (317) 230-3381 for the service information identified in this AD for a copy of this service information. You may review copies at the Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-001, on the internet at *http://dms.dot.gov*, 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/code_of_federal_regulations/ibr_locations.html*.

Issued in Burlington, Massachusetts, on May 10, 2005.

Robert Ganley,

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

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