

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2011-0961; Directorate Identifier 2011-NE-22-AD; Amendment 39-17120; AD 2012-14-06]

RIN 2120-AA64

#### Airworthiness Directives; Rolls-Royce Corporation Turboshift Engines

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Rolls-Royce Corporation (RRC) 250-C20, -C20B, and -C20R/2 turboshaft engines. This AD was prompted by seven cases reported of released turbine blades and shrouds, which led to loss of power and engine in-flight shutdowns (IFSDs). This AD requires a one-time visual inspection and fluorescent penetrant inspection (FPI) on certain 3rd and 4th stage turbine wheels for cracks in the turbine blades. We are issuing this AD to prevent failure of 3rd or 4th stage turbine wheel blades which could cause engine failure and damage to the airplane.

**DATES:** This AD is effective August 14, 2012.

**ADDRESSES:** For service information identified in this AD, contact Rolls-Royce Corporation Customer Support, P.O. Box 420, Indianapolis, IN 46206-0420; phone: 888-255-4766 or 317-230-2720; fax: 317-230-3381, email: [helicoptercustsupp@rolls-royce.com](mailto:helicoptercustsupp@rolls-royce.com), and Web site: [www.rolls-royce.com](http://www.rolls-royce.com). You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

#### Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** John Tallarovic, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, 2300 E. Devon Ave., Des Plaines, IL 60018; phone: 847-294-8180; fax: 847-294-7834; email: john.m.tallarovic@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM published in the Federal Register on December 20, 2011 (76 FR 78863). That NPRM proposed to require a one-time visual inspection and FPI on certain 3rd and 4th stage turbine wheels for cracks in the turbine blades.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and the FAA's response to each comment.

### **Proposed AD Applicability Clarity**

One commenter said that the proposed AD applicability is unclear. The commenter stated that the RRC Commercial Engine Bulletins (CEBs) referenced in the proposed AD apply to specific model 250 engines in MD Helicopter, Inc. aircraft only. However, the proposed AD appears to cover the subject part number (P/N) wheels in three engine models in all applications. Also, the subject P/N wheels can be installed in many engine models in addition to the 250-C20, C20B, and C20R/2 engines called out in the proposed AD. The original issue with the wheels cracking was tied to specific power turbine speed ranges as manifested in specific aircraft applications. As the proposed AD is written, there are airframe applications where one model of installed engine would be subject to the AD and another model being only slightly different and identical in the power turbine section concerned, would not be subject to the AD.

We do not agree. The proposed AD is only applicable to the model 250-C20, C20B, and C20R/2 turboshaft engines on all installations. The affected turbine wheels, P/N 23065818 and P/N 23055944, can be installed on other model 250 engines. However, the proposed AD is only applicable to the model 250-C20, C20B, and C20R/2 turboshaft engines. While RRC Alert CEB-A-1407, Revision 1, dated February 7, 2011 and CEB-A-72-4098, Revision 1, dated February 7, 2011 (combined in one document) is directed at engines installed on MD Helicopters Inc. aircraft, the proposed AD is applicable to all installations of model 250-C20, C20B, and C20R/2 turboshaft engines. The service bulletins do not establish the applicability for the proposed AD. The service bulletins are referenced as related information only. We did not change the AD.

### **Overhaul Period**

One commenter pointed out that paragraph (e)(1) of the proposed AD stated to remove the turbine wheels at the next 1,750 hour overhaul. The overhaul period in these engines is 3,500 hours, not 1,750 hours.

We agree. We changed paragraph (e)(1) to state to remove the 3rd stage turbine wheel, P/N 23065818, and the 4th stage turbine wheel, P/N 23055944, before accumulating 1,750-hours since last inspection.

## Conclusion

We reviewed the relevant data, considered the comments received, 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 500 RRC C250-C20, -C20B, and -C20R/2 turboshaft engines installed on aircraft of U.S. registry. We also estimate that it will take about 5 hours to perform a one-time visual inspection and FPI of the 3rd stage turbine wheel and the 4th stage turbine wheel for each engine. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$212,500.

## 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

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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

## 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 FAA 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 (AD):

SUPERSEDED



**2012-14-06 Rolls-Royce Corporation (Formerly Allison Engine Company and Allison Gas Turbine Division of General Motors):** Amendment 39-17120; Docket No. FAA-2011-0961; Directorate Identifier 2011-NE-22-AD.

**(a) Effective Date**

This AD is effective August 14, 2012.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies only to Rolls-Royce Corporation 250-C20, -C20B, and -C20R/2 turboshaft engines with 3rd stage turbine wheel, part number (P/N) 23065818, and 4th stage turbine wheel, P/N 23055944.

**(d) Unsafe Condition**

This AD was prompted by seven cases reported of released turbine blades and shrouds, which led to loss of power and engine in-flight shutdowns. We are issuing this AD to prevent failure of 3rd or 4th stage turbine wheel blades which could cause engine failure and damage to the airplane.

**(e) Compliance**

Comply with this AD within the compliance times specified, unless already done.

(1) Remove the 3rd stage turbine wheel, P/N 23065818, and the 4th stage turbine wheel, P/N 23055944, within 1,750-hours since last inspection.

(2) Perform a one-time visual inspection and a fluorescent penetrant inspection on the 3rd and 4th stage turbine wheels for cracks at the trailing edge of the turbine blades near the fillet at the rim.

(3) If any cracks in the trailing edge near the rim are detected, do not return the wheel to service.

**(f) Alternative Methods of Compliance (AMOCs)**

The Manager, Chicago Aircraft Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(g) Related Information**

(1) For more information about this AD, contact John Tallarovic, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, 2300 E. Devon Ave., Des Plaines, IL 60018; phone: 847-294-8180; fax: 847-294-7834; email: [john.m.tallarovic@faa.gov](mailto:john.m.tallarovic@faa.gov).

(2) Rolls-Royce Corporation Alert Commercial Engine Bulletin No. CEB-A-1407, Revision 1, dated February 7, 2011 and CEB-A-72-4098, Revision 1, dated February 7, 2011 (combined in one document) pertain to the subject of this AD.

(3) For service information identified in this AD, contact Rolls-Royce Corporation Customer Support, P.O. Box 420, Indianapolis, IN 46206-0420; phone: 888-255-4766 or 317-230-2720; fax: 317-230-3381; email: [helicoptercustsupp@rolls-royce.com](mailto:helicoptercustsupp@rolls-royce.com), and Web site: [www.rolls-royce.com](http://www.rolls-royce.com).

(4) You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on June 25, 2012.

Peter A. White,  
Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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