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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-1118; Product Identifier 2017-NE-40-AD; Amendment 39-19313; AD 2018-13-01]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Corporation Turboshaft Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Rolls-Royce Corporation (RRC) model 250-C turboshaft engines. This AD was prompted by several reports of engine power loss, one of which resulted in a fatal helicopter accident. This AD requires removal of the power turbine governor (PTG) bearing assembly, part number (P/N) 2544198, and its replacement with a bearing assembly eligible for installation. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective August 16, 2018.

ADDRESSES: For service information identified in this final rule, contact Rolls-Royce Corporation, 450 South Meridian Street, Mail Code NB-02-05, Indianapolis, IN 46225; phone: 317-230-3774; email: indy.pubs.services@rolls-royce.com; internet: www.rolls-royce.com. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7759. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-1118.

Examining the AD Docket

You may examine the AD docket on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1118; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The address for Docket Operations (phone: 800-647-5527) is Docket Operations, 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 ACO Branch, 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 by adding an AD that would apply to certain Rolls-Royce Corporation (RRC) model 250-C turboshaft engines. The NPRM published in the Federal Register on February 1, 2018 (83 FR 4609). The NPRM was prompted by several reports of loss of engine power on certain RRC model 250-C turboshaft engines installed on single-engine helicopters. One of these instances of power loss resulted in a fatal helicopter accident on May 4, 2016. The NPRM proposed to require removal of the affected PTG bearing assembly and replace it with a bearing assembly with a new design. We are issuing this AD to address the unsafe condition on these products.

Comments

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

Request To Specify the New Bearing Assembly

The NTSB and Honeywell Aerospace requested that the AD prohibit the installation of bearing assembly, P/N 2544198, and specify the installation of the new bearing assembly, P/N 2526146. The NTSB expressed concern that differences between the proposed AD and the actions described in the Honeywell SB and Rolls-Royce CEBs could lead to the reinstallation of a dual-spool bearing into an affected PTG.

We partially agree. We agree with the request to prohibit the installation of another bearing assembly, P/N 2544198, because our intent is to remove them from service. We disagree with the request to specify the installation of the new bearing assembly, P/N 2526146, because of the possibility of a new bearing P/N being introduced or the specified P/N being discontinued in the future. We added an installation prohibition paragraph to this AD to prohibit the installation of bearing assembly, P/N 2544198.

Request To Re-Identify the PTG After Changing the Bearing Assembly

The NTSB and Honeywell Aerospace requested that the AD require re-identifying the PTG P/N after changing the bearing assembly in accordance with the related service information. Honeywell Aerospace reasoned that maintenance personnel and operators could easily determine if the service bulletin has been accomplished. This increases the efficiency of operations and reduces the potential for misunderstandings about whether the bearing assembly has been replaced.

We disagree. While re-identifying the PTG after changing the bearing assembly is helpful for maintenance personnel, we are not requiring this action within this AD. During the replacement of the bearing assembly, P/N 2544198, the related service information instructs personnel to re-identify the PTG. We did not change this AD.

Request To Reduce the Compliance Time

Honeywell Aerospace requested that we reduce the compliance time to 50 hours or within 90 days for PTGs that have greater than 750 hours. The commenter reasoned that the original compliance schedule was established 10 years ago based on field experience at that time. The fatal accident referenced in the NPRM occurred on a PTG with 1,048.7 hours since new.

We disagree. The compliance time for removing the bearing assembly, P/N 2544198, in this AD is based on Rolls-Royce Corporation Commercial Engine Bulletin (CEB) 1402, Revision 2, dated February 4, 2009. The failure history shows that the number of bearing assembly failures fell sharply following the initial publication of RRC CEB 1402 in 2008. The replacement strategy has proven successful. As a result, we believe that the majority of the fleet has replaced the bearing assembly, P/N 2544198, and only a few remain in service. Besides the fatal accident, there have not been any other bearing failures noted between 2012 and 2018. We, therefore, find it unnecessary to reduce the compliance time as noted by the commenter. We did not change this AD.

Request To Increase the Number of Affected Engines

Honeywell Aerospace noted that only 1,200 engines installed on airplanes of U.S. registry may be affected, compared with the 2,928 mentioned in the NPRM, based on a review of modification records provided to Honeywell by repair stations.

We disagree. We are estimating the total number of engines affected by this AD based on the data available to us. We did not change this AD.

Request To Clarify the Affected Engines

An individual commenter requested that we clarify that only those engine models that have bearing assembly, P/N 2544198, installed are affected.

We agree. We have updated paragraph (c) of this AD to clarify that engines with bearing assembly, P/N 2544198, installed are affected.

Request To Identify the Model, Brand, and P/N of the PTG

Aircraft Maintenance Netherlands requested that this AD identify the model, brand, and P/N of the affected PTG that must be replaced. The commenter reasoned that various PTG models can be installed on the affected engines.

We disagree. This AD provides the overall engine model applicability. The related service information provides specific information regarding the PTGs, including the manufacturer, model, and P/Ns. We did not change this AD.

Question on Not Issuing the AD Earlier

An individual commenter asked why an AD was not issued in 2009 when RRC issued a statement regarding the failure of the bearing assembly.

The FAA uses a risk-based approach to make continued operational safety decisions. When RRC issued CEB 1402, Revision 2, in 2009, our evaluation of the fleet risk did not support an AD. We update our fleet risk evaluation periodically as new information becomes available and have now determined that an AD is justified. We did not change this AD.

Question if Replacement Part Verification Testing Was Completed

An individual commenter asked if tests or procedures were completed to verify that the replacement bearing assembly resolves the failure of bearing assembly, P/N 2544198, due to the lack of lubrication.

We note that replacement parts, such as this replacement bearing assembly, undergo design analysis and testing before being approved for use by the FAA. No change is requested. We did not change this AD.

Request for Clarification on the Number of Affected Engines

An individual commenter noted that the NPRM estimates that 2,928 model 250-C turboshaft engines are affected, however, the RRC website estimates that there are an estimated 16,000 model 250-C engines currently in service.

This AD applies to all RRC model 250-C turboshaft engines that could have the bearing assembly, P/N 2544198, installed. Many of those engines have already had the bearing assembly, P/N 2544198, replaced when new parts became available. Based on the available data, we estimate that 2,928 engines may still have the bearing assembly, P/N 2544198, installed. We did not change this AD.

Question on the Availability of a Replacement Bearing Assembly

An individual commenter asked if RRC still needs to design a new bearing assembly or if a replacement bearing assembly is already available.

A replacement bearing assembly, P/N 2526146, is available for installation. We did not change this AD.

Support for the AD

An individual commenter expressed support for the NPRM as written.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule with the changes described previously. We have determined that these minor changes:

- [Agr]re consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

Related Service Information

We reviewed Rolls-Royce Corporation Commercial Engine Bulletin ([CEB 1402](#), Revision 2, dated February 4, 2009). The CEB provides guidance on replacing the PTG bearing assembly, P/N 2544198, with a bearing assembly eligible for installation.

Costs of Compliance

We estimate that this AD affects 2,928 engines installed on airplanes of U.S. registry. We estimate the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Remove and replace PTG bearing assembly	8 work-hours × \$85 per hour = \$680	\$1,700	\$2,380	\$6,968,640

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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

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):

Rolls-Royce Property - Uncontrolled Printed Copy

Rolls-Royce Property - Uncontrolled Printed Copy



FAA
Aviation Safety

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

2018-13-01 Roll-Royce Corporation (Type Certificate previously held by Allison Engine Company): Amendment 39-19313; Docket No. FAA-2017-1118; Product Identifier 2017-NE-40-AD.

(a) Effective Date

This AD is effective August 16, 2018.

(b) Affected ADs

None.

(c) Applicability

This AD applies to Rolls-Royce Corporation (RRC) model 250-C10D, 250-C18, 250-C18A, 250-C18B, 250-C18C, 250-C19, 250-C20, 250-C20B, 250-C20C, 250-C20F, 250-C20J, 250-C20R, 250-C20R/1, 250-C20R/2, 250-C20R/4, 250-C20S, 250-C20W, 250-C28, 250-C28B, 250-C28C, 250-C30, 250-C30G, 250-C30G/2, 250-C30M, 250-C30P, 250-C30S, and 250-C30U turboshaft engines with power turbine governor (PTG) bearing assembly, part number (P/N) 2544198, installed.

(d) Subject

Joint Aircraft System Component (JASC) Code 7323, Turbine Governor.

(e) Unsafe Condition

This AD was prompted by several reports of loss of power, one of which resulted in a fatal helicopter accident. We are issuing this AD to prevent failure of the PTG bearing assembly. The unsafe condition, if not addressed, could result in failure of the PTG, failure of the engine, in-flight shutdown, and forced autorotation landing or accident.

(f) Compliance

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

(g) Required Actions

(1) Remove the bearing assembly, P/N 2544198, from the PTG in accordance with the compliance times in Figure 1 to paragraph (g) of this AD, or within 90 days after the effective date of this AD, whichever occurs later.

Figure 1 to Paragraph (g) – Compliance Times

PTG Operational Hours (Time Since New/Time Since Last Overhaul).	Compliance Time
0 to 750	Not later than 750 hours
751 to 1000	Not later than 1,000 hours
1001 to 1250	Not later than 1,250 hours
1251 to 1500	Not later than 1,500 hours
1501 or greater	At the next removal of the PTG for any reason

(2) After such removal, replace the affected PTG bearing assembly with a part eligible for installation before further flight.

(h) Installation Prohibition

After the effective date of this AD, do not install PTG bearing assembly, P/N 2544198, on any engine.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Chicago ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the Chicago ACO Branch, send it to the attention of the person identified in paragraph (j) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

For more information about this AD, contact John Tallarovic, Aerospace Engineer, Chicago ACO Branch, FAA, 2300 E Devon Ave., Des Plaines, IL 60018; phone: 847-294-8180; fax: 847-294-7834; email: john.m.tallarovic@faa.gov.

(k) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on July 6, 2018.
Karen M. Grant,
Acting Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.