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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-4866; Directorate Identifier 2015-NE-33-AD; Amendment 39-18648; AD 2016-18-17]

RIN 2120-AA64

Airworthiness Directives; Honeywell International Inc. Turboprop and Turboshaft Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Honeywell International Inc. (Honeywell) TPE331 model turboprop engines and TSE331-3U model turboshaft engines. This AD was prompted by the discovery of cracks in a 2nd stage compressor impeller during a routine shop visit. This AD requires removal of the 2nd stage compressor impeller. We are issuing this AD to prevent failure of the compressor impeller, uncontained part release, damage to the engine, and damage to the airplane.

DATES: This AD is effective November 4, 2016.

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-2015-4866; 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: Joseph Costa, Aerospace Engineer, Los Angeles Aircraft Certification Office, FAA, Transport Airplane Directorate, 3960 Paramount Blvd., Lakewood, CA 90712-4137; phone: 562-627-5246; fax: 562-627-5210; email: joseph.costa@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 Honeywell TPE331 model turboprop engines and TSE331-3U model turboshaft engines. The NPRM published in the Federal Register on March 15, 2016 (81 FR 13764) ("the NPRM"). The NPRM was prompted by the discovery of cracks in a 2nd stage compressor impeller during a routine shop visit. The NPRM proposed to require removal of the 2nd stage compressor impeller. We are issuing this AD to prevent failure of the compressor impeller, uncontained part release, damage to the engine, and damage to the airplane.

Comments

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

Request To Change Compliance

Bearskin Airlines and Turbine Standard, LTD requested that the compliance time interval be changed because many TPE331 engine operators are on a Continuous Airworthiness Maintenance (CAM) program. This program does not require impeller inspections per the overhaul manual and the impeller is not considered as "overhauled". AD compliance under CAM may be interpreted as being within 200 cycles or 30 to 45 days.

Other commenters requested that the compliance time be changed to a less aggressive time interval appropriate to the unsafe condition. Many high-usage operators have suspect impellers that currently exceed 7,000 cycles since the last compressor inspection.

We agree. We changed compliance interval in paragraph (e)(1) of this AD.

Request To Allow Other Inspection Facilities To Return Impellers to Service

Turbine Standard, LTD requested that this AD allow other inspection facilities to return impellers to service. There are many inspection facilities that are capable of inspecting the 2nd stage compressor impeller.

We partially agree. We agree that many inspection facilities are capable of performing a focused inspection of the 2nd stage compressor impeller. We disagree with allowing other inspection and regrinding facilities to return impellers to service. This AD does not address inspection or regrinding of the curvic area of the 2nd stage compressor impeller. Regrinding of the curvic area of the 2nd stage compressor impeller involves machining of a critical rotating part, which must be approved by the FAA. We did not change this AD.

Request To Change Costs of Compliance

Honeywell; Perimeter Aviation, LP; and Intercontinental Jet Service Corp. requested that the costs of compliance be changed because the NPRM is not representative of the impeller's replacement costs. Honeywell quotes the cost of a new 2nd stage compressor impeller at \$11,922.50.

We partially agree. We agree with the comment because the costs were not clearly defined. We disagree with the comment because replacement costs are based on pro-rated costs that are estimated at 50% of new parts costs. Since issuing the NPRM, the FAA estimated that 30% of impellers will be scrapped; therefore, we changed the costs of compliance accordingly.

Request To Include Service Information

The European Aviation Safety Agency, Honeywell, and Candler & Associates, Inc. requested that service information be included in this AD. Having the service information available would aid in understanding any differences between this AD and the service information.

We agree. We added Honeywell Service Bulletin (SB) TPE331-72-2208, dated July 29, 2014, as related information in this AD.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously.

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

Related Service Information

We reviewed Honeywell SB TPE331-72-2208, dated July 29, 2014. The SB describes procedures for replacing the 2nd stage compressor impeller.

Costs of Compliance

We estimate that this AD will affect 4,000 engines installed on airplanes of U.S. registry. We estimate that it will take 2 hours per engine to comply with this AD. The average labor rate is \$85 per hour. We also estimate that required parts will cost about \$4,404.50 per engine. Based on these figures, we estimate the total cost of this AD on U.S. operators to be \$18,298,000.

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

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 to the extent that it justifies making a regulatory distinction, 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):



2016-18-17 Honeywell International Inc. (Type Certificate Previously Held by AlliedSignal Inc., Garrett Engine Division; Garrett Turbine Engine Company; and AiResearch Manufacturing Company of Arizona): Amendment 39-18648; Docket No. FAA-2015-4866; Directorate Identifier 2015-NE-33-AD.

(a) Effective Date

This AD is effective November 4, 2016.

(b) Affected ADs

None.

(c) Applicability

This AD applies to Honeywell International Inc. (Honeywell) TPE331-3U, -3UW, -5, -5A, -5AB, -5B, -6, -6A, -8, -10, -10AV, -10GP, -10GT, -10N, -10P, -10R, -10T, -10U, -10UA, -10UF, -10UG, -10UGR, -10UR, and -11U model turboprop engines, and TSE331-3U model turboshaft engines, with a 2nd stage compressor impeller, part number (P/N) 893482-1 through -5, inclusive, or P/N 3107056-1 or P/N 3107056-2, installed.

(d) Unsafe Condition

This AD was prompted by the discovery of cracks in a 2nd stage compressor impeller during a routine shop visit. We are issuing this AD to prevent failure of the compressor impeller, uncontained part release, damage to the engine, and damage to the airplane.

(e) Compliance

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

(1) Remove from service the 2nd stage compressor impeller at next removal of the 2nd stage compressor impeller from the engine or before exceeding 11,500 cycles in service after the effective date of this AD, whichever occurs first.

(2) Reserved.

(f) Installation Prohibition

After the effective date of this AD, do not install a 2nd stage compressor impeller, part number (P/N) 893482-1 through -5, inclusive, or P/N 3107056-1 or P/N 3107056-2, into any engine.

(g) Alternative Methods of Compliance (AMOCs)

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

(h) Related Information

(1) For more information about this AD, contact Joseph Costa, Aerospace Engineer, Los Angeles Aircraft Certification Office, FAA, Transport Airplane Directorate, 3960 Paramount Blvd., Lakewood, CA 90712-4137; phone: 562-627-5246; fax: 562-627-5210; email: joseph.costa@faa.gov.

(2) Honeywell SB TPE331-72-2208, dated July 29, 2014, which is not incorporated by reference in this AD, can be obtained from Honeywell, using the contact information in paragraph (h)(3) of this AD.

(3) For Honeywell service information identified in this AD, contact Honeywell International Inc., 111 S 34th Street, Phoenix, AZ 85034-2802; phone: 800-601-3099; Internet: <https://myaerospace.honeywell.com/wps/portal!/ut/>.

(4) You may view this service information at FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(i) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on August 26, 2016.
Colleen M. D'Alessandro,
Manager, Engine & Propeller Directorate,
Aircraft Certification Service.