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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2003-NE-02-AD; Amendment 39-13619; AD 2004-09-29]

RIN 2120-AA64

Airworthiness Directives; Honeywell International Inc. (Formerly AlliedSignal Inc., Garrett Turbine Engine Company, and AiResearch Manufacturing Company of Arizona) TPE331-10 and -11 Series Turboprop Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for Honeywell International Inc. (formerly AlliedSignal Inc., Garrett Turbine Engine Company, and AiResearch Manufacturing Company of Arizona) (Honeywell) TPE331-10 and -11 series turboprop engines with certain part numbers (P/Ns) and serial numbers (SNs) of first stage turbine disks. This AD requires initial and repetitive fluorescent penetrant inspections (FPIs) and eddy current inspections (ECIs) of the affected first stage turbine disks. This AD results from a report of a first stage turbine disk found cracked at the disk bore. The crack originated from a localized; melt related, low-alloy area of the disk. We are issuing this AD to prevent cracked first stage turbine disks from causing uncontained disk separation, resulting in engine damage and shutdown and damage to the airplane.

DATES: This AD becomes effective June 15, 2004. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of June 15, 2004.

ADDRESSES: You can get the service information identified in this proposed AD from Honeywell Engines, Systems & Services, Technical Data Distribution, M/S 2101-201, P.O. Box 52170, Phoenix, AZ 85072-2170; telephone: (602) 365-2493 (General Aviation); (602) 365-5535 (Commercial); fax: (602) 365-5577 (General Aviation and Commercial).

You may examine the AD docket, by appointment, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA. You may examine the service information, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; 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.

FOR FURTHER INFORMATION CONTACT: Joseph Costa, Aerospace Engineer, Los Angeles Aircraft Certification Office, FAA, Transport Airplane Directorate, 3960 Paramount Blvd., Lakewood CA 90712-4137; telephone: (562) 627-5246; fax (562) 627-5210.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR Part 39 with a proposed airworthiness directive (AD). The proposed AD applies to Honeywell TPE331-10 and -11 series turboprop engines with certain P/Ns and SNs of first stage turbine disks. We published the proposed AD in the Federal Register on August 8, 2003 (68 FR 47267). That action proposed to require:

- Initial and repetitive FPIs of the SNs of first stage turbine disks P/N 3101520-1, and
- Repetitive FPIs only of the disks P/N 3107079-1 listed in Table 1 of the Honeywell Alert Service Bulletin (ASB) TPE331-A72-2102, dated March 28, 2002, and
- An ECI on disks that pass the FPI.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

Request To Clarify Relevant Service Information Section

One commenter recommends that we clarify the Relevant Service Information Section of the NPRM to state that Honeywell ASB TPE331-A72-2102, dated March 28, 2002, requires an initial FPI on disk P/Ns 3101520-1 and 3107079-1 that are not installed in engines. The commenter believes that clarification of the Relevant Service Information is required to accurately reflect the Service Bulletin information. We agree. The section that the commenter is requesting us to change is not included in a final rule so there will not be any change to that section. However, we have changed the regulatory requirements to require performing an FPI before installation into the engine.

Question About Definition of Next Access

The same commenter asks if the definition of next access includes parts before installation into the engine. The commenter states that disks that have already had an FPI and ECI may have been removed from another engine and may have accumulated substantial numbers of cycles before installation into an engine. We partially agree. We have changed the regulatory requirements to require performing an FPI of the disk before installation into an engine.

Addition of a Terminating Action

We inadvertently left out a terminating action to the repetitive inspection requirements specified in this AD. We added the terminating action to the Regulatory text of the final rule.

Editorial Change To Clarify the Summary Section

We made an editorial change to the Summary Section to the starting location of the crack in the disk bore. In addition, we added "and damage to the airplane" to the unsafe condition statement in the Summary and in the regulatory text.

Conclusion

We have carefully reviewed the available data, including the comment[s] 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.

Changes to 14 CFR Part 39–Effect on the AD

On July 10, 2002, the FAA published a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's AD system. That regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance. The material previously was included in each individual AD. Since the material is included in 14 CFR part 39, we will not include it in future AD actions.

Costs of Compliance

There are approximately 72 TPE331-10 and -11 series turboprop engines of the affected design in the worldwide fleet. We estimate that 36 engines installed on airplanes of U.S. registry will be affected by this AD. We estimate that it will take approximately 5 work hours per engine to perform the disk inspections during a scheduled disassembly, and 40 work hours per engine to perform the proposed disk inspections for an unscheduled disassembly. The average labor rate is \$65 per work hour. Required parts would cost approximately \$5,000 per engine. Based on these figures, we estimate the total cost of this AD to U.S. operators for disassembly, inspections, and part replacement to be \$105,300.

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 by sending a request to us at the address listed under ADDRESSES. Include "AD Docket No. 2003-NE-02-AD" in your request.

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 (AD):

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).

2004-09-29 Honeywell International Inc. (formerly AlliedSignal Inc., Garrett Turbine Engine Company, and AiResearch Manufacturing Company of Arizona): Amendment 39-13619. Docket No. 2003-NE-02-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective June 15, 2004.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Honeywell International Inc. (formerly AlliedSignal Inc., Garrett Turbine Engine Company and AiResearch Manufacturing Company of Arizona) TPE331-10-501C, -10-511C, -10-501K, -10-511K, -10-501M, -10-511M, -10AV-511B, -10AV-511M, -10GP-511D, -10GT-511D, -10N-511S, -10N-512S, -10N-513S, -10N-514S, -10N-515S, -10N-531S, -10N-532S, -10N-533S, -10N-534S, -10N-535S, -10P-511D, -10R-501C, -10R-502C, -10R-511C, -10R-512C, -10R-513C, -10T-511D, -10T-511K, -10T-511M, -10T-512K, -10T-513K, -10T-515K, -10T-516K, -10T-517K, -10U-501G, -10U-502G, -10U-511G, -10U-512G, -10U-503G, -10U-513G, -10UA-511G, -10UF-501H, -10UF-511H, -10UF-512H, -10UF-513H, -10UF-514H, -10UF-515H, -10UF-516H, -10UG-513H, -10UG-514H, -10UG-515H, -10UG-516H, -10UGR-513H, -10UGR-514H, -10UGR-516H, -10UR-513H, -10UR-516H, -11U-601G, -11U-602G, -11U-611G, and -11U-612G turboprop engines with first stage turbine disk part number (P/N) 3101520-1 or P/N 3107079-1, with serial numbers (SNs) listed in Table 1 of Honeywell International Inc. Alert Service Bulletin (ASB) TPE331-A72-2102, dated March 28, 2002, installed. These engines are installed on, but not limited to Mitsubishi MU-2B series, Construcciones Aeronauticas S.A. (CASA) C-212 series, Fairchild SA226 series (Swearingen Merlin and Metro series), Twin Commander 680 and 690 series (Jetprop Commander), Dornier 228 series, Beech 18 and 45 series, Beech Models JRB-6, 3N, 3TM, and B100, Cessna Aircraft Company Model 441 Conquest, and Jetstream 3201 series airplanes.

Unsafe Condition

(d) This AD results from a report of a first stage turbine disk found cracked at the disk bore. We are issuing this AD to prevent cracked first stage turbine disks from causing uncontained disk separation, resulting in engine damage and shutdown and damage to the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

Initial Inspection

(f) Perform a fluorescent penetrant inspection (FPI) of first stage turbine disks, P/N 3101520-1, in accordance with 2.A.(4)(a) through 2.A.(4)(d) of Accomplishment Instructions of ASB TPE331-A72-2102, dated March 28, 2002, and the following:

(1) For first stage turbine disks with 4,100 cycles-since-new (CSN) or less, inspect at next access, but no later than 4,500 CSN.

(2) For first stage turbine disks with more than 4,100 CSN, inspect at next access, but within 400 cycles-in-service (CIS) after the effective date of this AD.

(3) First stage turbine disks that pass FPI must be eddy current inspected (ECI) before return to service. Information on procedures for returning disks to Honeywell Engines, Systems, & Services, for ECI, can be found in ASB TPE331-A72-2102, dated March 28, 2002.

(4) First stage turbine disks, P/N 3107079-1, do not require initial inspection because they received an initial FPI and ECI at the time of conversion.

Repetitive Inspections

(g) Perform repetitive FPIs of first stage turbine disks P/N 3101520-1 and P/N 3107079-1, in accordance with 2.B.(3)(a) through 2.B.(3)(d) of Accomplishment Instructions of ASB TPE331-A72-2102, dated March 28, 2002 and the following:

(1) FPI first stage turbine disks at each scheduled hot section inspection.

(2) First stage turbine disks that pass FPI must be ECI before they are returned to service.

Information on procedures for returning disks to Honeywell Engines, Systems, & Services, for ECI, can be found in ASB TPE331-A72-2102, dated March 28, 2002.

Optional Terminating Action

(h) Replacing a first stage turbine disk, that has a SN specified in this AD, with a disk that does not have a SN specified in this AD, is terminating action for the repetitive inspection requirements specified in paragraphs (g)(1) through (g)(2) of this AD.

Definition

(i) For the purposes of this AD, next access is when the turbine wheel assembly is removed from the engine or before installation into an engine.

Alternative Methods of Compliance

(j) The Manager, Los Angeles 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.

Material Incorporated by Reference

(k) You must use Honeywell International Inc. ASB TPE331-A72-2102, dated March 28, 2002 to perform the inspections required by this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin under 5 U.S.C. 552(a) and 1 CFR part 51. You can get the service information identified in this AD from Honeywell Engines, Systems & Services, Technical Data Distribution, M/S 2101-201, P.O. Box 52170, Phoenix, AZ 85072-2170; telephone: (602) 365-2493 (General Aviation); (602) 365-5535 (Commercial); fax: (602) 365-5577 (General Aviation and Commercial). You may examine the service information, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; 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.

Related Information

(l) None.

Issued in Burlington, Massachusetts, on April 28, 2004.

Jay J. Pardee,

Manager, Engine and Propeller Directorate, Aircraft Certification Service.

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