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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-0913; Directorate Identifier 2012-NE-23-AD; Amendment 39-18261; AD 2015-18-03]

RIN 2120-AA64

Airworthiness Directives; Honeywell International Inc. Turboprop Engines (Type Certificate Previously Held by AlliedSignal Inc., Garrett Engine Division; Garrett Turbine Engine Company; and AiResearch Manufacturing Company of Arizona)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Honeywell International Inc. TPE331-5, -5A, -5AB, -5B, -10, -10R, -10U, -10UF, -10UG, -10UGR, and -10UR model turboprop engines. This AD was prompted by engine propeller shaft coupling failures, leading to unexpected propeller pitch changes causing increased aerodynamic and asymmetric drag on the airplanes using these engines. This AD requires removing certain part number (P/N) engine propeller shaft couplings from service. This AD also requires inserting a copy of certain airplane operating procedures into applicable flight manuals. We are issuing this AD to prevent loss of airplane control, leading to an accident.

DATES: This AD is effective November 13, 2015.

ADDRESSES: For service information identified in this AD, contact Honeywell International Inc., 111 S. 34th Street, Phoenix, AZ 85034-2802; phone: 800-601-3099; Internet: <http://portal.honeywell.com>. You may view this 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. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2012-0913.

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-2012-0913; 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 International Inc. TPE331-5, -5A, -5AB, -5B, -10, -10R, -10U, -10UF, -10UG, -10UGR, and -10UR model turboprop engines. The NPRM published in the Federal Register on May 12, 2014 (79 FR 26906). The NPRM was prompted by numerous reports of engine propeller shaft coupling failures, leading to engine overspeed and unexpected propeller pitch changes. This condition causes high aerodynamic and asymmetric drag that has resulted in uncommanded airplane yaw and roll. The NPRM proposed to require removing certain P/N engine propeller shaft couplings from service within certain compliance times to address the flight safety risk. The NPRM also proposed to insert a copy of certain airplane operating procedures into the applicable flight manuals. These procedures describe an emergency procedure for pilot reaction to an engine overspeed event after an engine propeller shaft coupling failure. We are issuing this AD to prevent loss of airplane control, leading to an accident.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comment received on the NPRM (79 FR 26906, May 12, 2014) and the FAA's response to the comment.

Request To Change Compliance Time Basis

Honeywell International questioned whether compliance time should be stated in flight hours as opposed to flight cycles as used in the NPRM (79 FR 26906, May 12, 2014). Major periodic inspections are based on hours and not cycles.

We disagree. The FAA practice of stating compliance time is based on the component's mode of failure. In this case the failure mode was fatigue; therefore, a compliance time in flight cycles is appropriate. We did not change this AD.

Clarified Requirement

Since we issued the NPRM (79 FR 26906, May 12, 2014), we discovered that paragraph (e)(4) of the Compliance section required clarification. We clarified that paragraph in this AD by deleting the requirement to insert a copy of Honeywell International Inc. Operating Information Letter (OIL) and requiring that Figure 1 to Paragraph (e)–Airplane Operating Procedures be inserted. Reference to the OIL was added as related information. The replacement procedure provides simplified, more concise text, for increased clarity.

Conclusion

We reviewed the relevant data, considered the comment received, and determined that air safety and the public interest require adopting this AD with clarification.

Costs of Compliance

We estimate that this AD will affect 485 engines installed on airplanes of U.S. registry. We also estimate that it will take about one hour per engine to perform the actions required by this AD, if done at the next scheduled turbine hot section inspection (HSI), and 40 hours per engine if done during an unscheduled access of the engine propeller shaft coupling. We also estimate that 400 engines will have the replacement actions done at a scheduled time of next turbine HSI, and 85 engines will have the replacement actions done at an unscheduled access of the engine propeller shaft coupling. The average labor rate is \$85 per hour. Required parts will cost about \$12,000 per engine. Based on these figures, we estimate the total cost of this AD to U.S. operators to be \$6,143,000.

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):



2015-18-03 Honeywell International Inc. (Type Certificate previously held by AlliedSignal Inc., Garrett Engine Division; Garrett Turbine Engine Company; and AiResearch Manufacturing Company of Arizona): Docket No. FAA-2012-0913; Directorate Identifier 2012-NE-23-AD.

(a) Effective Date

This AD is effective November 13, 2015.

(b) Affected ADs

None.

(c) Applicability

This AD applies to Honeywell International Inc. TPE331-5, -5A, -5AB, -5B, -10, -10R, -10U, -10UF, -10UG, -10UGR, and -10UR model turboprop engines, with an engine propeller shaft coupling, part number (P/N) 3107065-1, 865888-3, 865888-6, or 865888-8, installed.

(d) Unsafe Condition

This AD was prompted by engine propeller shaft coupling failures, leading to unexpected propeller pitch changes causing increased aerodynamic and asymmetric drag on the airplanes using these engines. We are issuing this AD to prevent loss of airplane control, leading to an accident.

(e) Compliance

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

(1) Engines Installed in Mitsubishi MU-2B Series (MU-2 Series) Airplanes:

(i) Remove from service the affected engine propeller shaft coupling at the earliest of the following:

(A) Next piece-part exposure; or

(B) Next turbine (hot) section inspection (HSI); or

(C) Before accumulating an additional 1,200 cycles after the effective date of this AD.

(2) Engines Installed in Construcciones Aeronauticas, S.A. (CASA) C-212 Series, and Twin Commander 690 and 695 Series (Jetprop Commander) Airplanes:

(i) Remove from service the affected engine propeller shaft coupling at the earliest of the following:

(A) Next piece-part exposure; or

(B) Next turbine HSI; or

(C) Before accumulating an additional 2,400 cycles after the effective date of this AD.

(3) Engines Installed in British Aerospace Jetstream 3101 Series, Dornier Luftfahrt Dornier 228 Series, and M7 (formerly Fairchild, Swearingen) SA226 and SA227 Series Airplanes, and all other airplanes not listed in this AD using affected engines:

(i) Remove from service the affected engine propeller shaft coupling at the earliest of the following:

- (A) Next piece-part exposure; or
- (B) Next turbine HSI; or
- (C) Before accumulating an additional 3,600 cycles after the effective date of this AD.
- (4) Within 60 days after the effective date of this AD, for all airplanes that use the affected engines, insert a copy of Figure 1 to paragraph (e) of this AD, into the Emergency Procedures Section of the Airplane Flight Manual (AFM), Pilot Operating Handbook (POH), and the Manufacturer's Operating Manual (MOM).

Figure 2 to Paragraph (e) – Airplane Operating Procedures

NOTE

Procedures in dotted line boxes are immediate actions to be performed by the pilot / flight crew.

PROPELLER BLADES ARE FEATHERED, ENGINE SPEED APPROXIMATELY 104%, AND ENGINE TORQUE APPROXIMATELY 0%

- Shut Down Affected Engine in accordance with Emergency Procedures.

(f) Definition

For the purpose of this AD, next piece-part exposure is when the nose cone assembly is removed from the engine.

(g) Installation Prohibition

After the effective date of this AD, do not install any engine propeller shaft coupling, P/N 3107065-1, 865888-3, 865888-6, or 865888-8, into any engine.

(h) 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.

(i) 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) Allied-Signal Aerospace Company Service Bulletin No. TPE331-72-0873, Revision 1, dated May 20, 1993 and Honeywell International Inc. Operating Information Letter OI331-26, dated March 2, 2010, which are not incorporated by reference in this AD, can be obtained from Honeywell International, using the contact information in paragraph (i)(3) of this AD.

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

(4) You may view this 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.

(j) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on: October 2, 2015.
Colleen M. D'Alessandro,
Directorate Manager, Engine & Propeller Directorate,
Aircraft Certification Service.