



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0394; Project Identifier AD-2019-00141-E; Amendment 39-21230; AD 2020-18-09]

RIN 2120-AA64

Airworthiness Directives; Honeywell International Inc. Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Honeywell International Inc. (Honeywell) ALF502L, ALF502L-2, ALF502L-2A, ALF502L-2C, ALF502L-3, ALF502R-3, ALF502R-3A, ALF502R-4, ALF502R-5, ALF502R-6, LF507-1F, and LF507-1H model turbofan engines. This AD was prompted by a report of an engine experiencing an uncontained release of low-pressure turbine (LPT) blades. This AD requires initial and repetitive visual inspections of the overspeed fuel solenoid valve assembly and the fuel filter outlet. Depending on the results of these inspections, the AD may require inspection of the adjacent fuel system tube assemblies as well as replacement or overhaul of the overspeed fuel solenoid valve assembly. This AD also requires periodic overhaul of the overspeed fuel solenoid valve assembly. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Honeywell International Inc., 111 S. 34th Street, Phoenix, AZ 85034-2802; phone: 800-601-3099; website: <https://aerospace.honeywell.com/en/#/>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7759. It is also available on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0394.

Examining the AD Docket

You may examine the AD docket on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0394; 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, any comments received, and other information. The address for Docket Operations is 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: Mark Matzke, Aerospace Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5312; fax: 562-627-5210; email: mark.matzke@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Honeywell ALF502L, ALF502L-2, ALF502L-2A, ALF502L-2C, ALF502L-3, ALF502R-3, ALF502R-3A, ALF502R-4, ALF502R-5, ALF502R-6, LF507-1F, and LF507-1H model turbofan engines. The NPRM published in the *Federal Register* on May 4, 2020 (85 FR 26375). The NPRM was prompted by a report of an engine experiencing an uncontained release of LPT blades. The NPRM proposed to require initial and repetitive visual inspections of the

overspeed fuel solenoid valve assembly and the fuel filter outlet. Depending on the results of these inspections, the NPRM proposed to require inspection of the adjacent fuel system tube assemblies as well as replacement or overhaul of the overspeed fuel solenoid valve assembly. The NPRM also proposed to require periodic overhaul of the overspeed fuel solenoid valve assembly. The FAA is issuing this AD to address the unsafe condition on these products.

Comments

The FAA gave the public the opportunity to participate in developing this final rule. The FAA considered the comment received. The National Transportation Safety Board supported the NPRM.

Update to the Service Information

The FAA determined the need to incorporate the latest service information in this AD. The FAA revised the reference to Honeywell Service Bulletin (SB) ALF/LF-72-1120 in paragraph (g) of this AD from Revision 1, dated January 6, 2020, to Revision 2, dated May 14, 2020 (“the SB”). Revision 2 of the SB retains the same visual inspection, overhaul, and replacement instructions as Revision 1. The FAA is, therefore, revising the reference in this AD to Revision 2 so that operators may avoid unnecessary submission of alternative methods of compliance requests.

Added Definition of a Part Eligible for Installation

The FAA determined the need to define a “part eligible for installation” in this AD to clarify the overspeed fuel solenoid valve assemblies that are eligible for installation.

Conclusion

The FAA reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule as proposed except for minor editorial changes and the changes to the service information

reference and definition noted previously. The FAA has determined that these minor changes:

- Are 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.

Service Information Incorporated by Reference under 1 CFR part 51

The FAA reviewed Honeywell SB ALF/LF-72-1120, Revision 2, dated May 14, 2020. The SB describes procedures for a one-time inspection and overhaul of the overspeed fuel solenoid valve assembly, fuel tube, and dual heater oil cooler.

The FAA reviewed Honeywell Temporary Revision (TR) No. 72-1022, dated October 14, 2019, to Honeywell Engine Manual Report No. 286.1, Revision 27, dated August 27, 2004 for Honeywell Engine Manual ALF502R. The TR describes procedures for repetitive overhaul of overspeed fuel solenoid valve assemblies installed on Honeywell ALF502R model engines.

The FAA reviewed Honeywell TR No. 72-202, dated October 10, 2019, to Honeywell Engine Manual Report No. 507F.1, Revision 6, dated August 16, 2013, for Honeywell Engine Manual LF507-1F. The TR describes procedures for repetitive overhaul of overspeed fuel solenoid valve assemblies installed on Honeywell LF507-1F model engines.

The FAA reviewed Honeywell TR No. 72-177, dated October 10, 2019, to Honeywell Engine Manual Report No. 507H.1, Revision 5, dated September 30, 1999, for Honeywell Engine Manual LF507-1H. The TR describes procedures for repetitive overhaul of overspeed fuel solenoid valve assemblies installed on Honeywell LF507-1H model engines.

The FAA reviewed Honeywell TR No. 72-57, dated October 29, 2019, to Honeywell Turbofan Engine Overhaul Manual 72-07-07, Revision 1, dated January 31,

2001, for Honeywell Overhaul Manual ALF502L. The TR describes procedures for repetitive overhaul of overspeed fuel solenoid valve assemblies installed on Honeywell ALF502L model engines.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

The FAA reviewed Wright Components, Inc., Component Maintenance Manual (CMM) 73-19-01, Initial Revision, dated July 30, 1982. The CMM describes procedures for overhauling three-way two-position solenoid operated fuel valves, part number 2-303-175-01.

The FAA reviewed Honeywell Service Bulletin (SB) ALF502-72-0001, Revision 24, dated October 29, 2019. The SB describes procedures for repetitive visual inspections of overspeed fuel solenoid valve assemblies installed on Honeywell ALF502R model engines.

The FAA reviewed Honeywell SB LF507-1F-72-1, Revision 10, dated October 29, 2019. The SB describes procedures for repetitive visual inspections of overspeed fuel solenoid valve assemblies installed on Honeywell LF507-1F model engines.

The FAA reviewed Honeywell SB LF507-1H-72-1, Revision 9, dated October 18, 2019. The SB describes procedures for repetitive visual inspections of overspeed fuel solenoid valve assemblies installed on Honeywell LF507-1H model engines.

The FAA reviewed Honeywell SB ALF502-72-0005, Revision 17, dated October 29, 2019. The SB describes procedures for repetitive visual inspections of overspeed fuel solenoid valve assemblies installed on Honeywell ALF502L model engines.

Costs of Compliance

The FAA estimates that this AD affects 210 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Visual inspection of the fuel solenoid valve, fuel filter outlet, and adjacent fuel system tube assemblies	2 work-hours x \$85 per hour = \$170	\$0	\$170	\$35,700
Overhaul of overspeed fuel solenoid valve assembly	0.25 work-hours x \$85 per hour = \$21.25	\$7,700	\$7,721.25	\$1,621,462.50

The FAA estimates the following costs to do any necessary overhauls or replacements that would be required based on the results of the inspection. The FAA has no way of determining the number of aircraft that might need these overhauls or replacements:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Removal, Inspection, and Cleaning of the engine fuel tube assemblies	2 work-hours x \$85 per hour = \$170	\$0	\$170
Replacement or overhaul of overspeed fuel solenoid valve assembly	0.25 work-hours x \$85 per hour = \$21.25	\$7,700	\$7,721.25

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.

The FAA is 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) Would not affect intrastate aviation in Alaska, and
- (3) Would 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.

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):

2020-18-09 **Honeywell International Inc.**: Amendment 39-21230; Docket No. FAA-2020-0394; Project Identifier AD-2019-00141-E.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Honeywell International Inc. (Honeywell) ALF502L, ALF502L-2, ALF502L-2A, ALF502L-2C, ALF502L-3, ALF502R-3, ALF502R-3A, ALF502R-4, ALF502R-5, ALF502R-6, LF507-1F, and LF507-1H model turbofan engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7200, Engine (Turbine/Turboprop); 7300, Engine Fuel and Control; and 7620, Engine Emergency Shutdown System.

(e) Unsafe Condition

This AD was prompted by a report of an engine experiencing an uncontained release of low-pressure turbine (LPT) blades. The FAA is issuing this AD to prevent failure of the LPT blades. The unsafe condition, if not addressed, could result in uncontained LPT blade release, damage to the engine, and loss of the aircraft.

(f) Compliance

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

(g) Required Actions

(1) Perform an initial visual inspection of the overspeed fuel solenoid valve assembly and fuel filter outlet in accordance with the Accomplishment Instructions, paragraphs 3.B.(1) to (3), of Honeywell Service Bulletin (SB) ALF/LF-72-1120, Revision 2, dated May 14, 2020 (“Honeywell SB ALF/LF-72-1120”), using the times, as applicable, in paragraphs (g)(1)(i), (ii), and (iii) of this AD.

(i) If, on the effective date of this AD, the fuel solenoid valve assembly has 1,500 or less engine cycles since last overhaul, perform the inspection before exceeding 3,000 engine cycles since last overhaul or within 5 years after the effective date of this AD, whichever occurs first.

(ii) If, on the effective date of this AD, the fuel solenoid valve assembly has greater than 1,500 but less than 3,000 engine cycles since last overhaul, perform the inspection before exceeding 3,500 engine cycles since last overhaul or within 5 years after the effective date of this AD, whichever occurs first.

(iii) If, on the effective date of this AD, the fuel solenoid valve assembly has 3,000 or more engine cycles since last overhaul, perform the inspection before exceeding 500 engine cycles or within 5 years after the effective date of this AD, whichever occurs first.

(2) Thereafter, repeat the visual inspection of the overspeed fuel solenoid valve assembly, fuel filter outlet, and adjacent fuel system tube assemblies at intervals not to exceed 3,000 engine cycles since the last visual inspection using the Accomplishment Instructions, paragraphs 3.B.(1) to (3), of Honeywell SB ALF/LF-72-1120.

(3) If, based on the visual inspection required by paragraph (g)(1) or (2) of this AD, an overspeed fuel solenoid valve assembly is rejected for visual coking or varnish residue, as depicted in the Accomplishment Instructions, paragraph 3.B.(3) of Honeywell SB ALF/LF-72-1120, before further flight:

(i) Remove and inspect the adjacent fuel system tube assemblies using the Accomplishment Instructions, paragraph 3.B.(3) of Honeywell SB ALF/LF-72-1120.

(ii) Overhaul the overspeed fuel solenoid valve assembly or replace it with a part eligible for installation using the Accomplishment Instructions, paragraphs 3.B.(5) to (8), of Honeywell SB ALF/LF-72-1120.

Note to paragraph (g)(3)(ii) of this AD: Valves may be serviced at any appropriately rated, FAA-approved repair facility.

(4) At the next engine shop visit after the effective date of this AD, and each shop visit thereafter, if the overspeed fuel solenoid valve assembly time since new or since last overhaul, whichever is less, exceeds 8,000 engine cycles or is unknown, overhaul the overspeed fuel solenoid valve assembly in accordance with the applicable Honeywell Temporary Revision (TR) for the engine, as defined in paragraph (h)(2) of this AD.

(h) Definition

(1) For the purpose of this AD, a “part eligible for installation” is an overspeed fuel solenoid valve assembly including, but not limited to, P/Ns 2-303-175-01, 2-303-175-02, or 2-303-901-01.

(2) For the purpose of this AD, the “applicable Honeywell TR” refers, depending on the affected engine model, to the following engine model TRs:

(i) Honeywell TR No. 72-1022, dated October 14, 2019, to Honeywell Turbofan Aircraft Engine Manual Report No. 286.1, Revision 27, dated August 27, 2004, for Honeywell Engine Manual ALF502R;

(ii) Honeywell TR No. 72-202, dated October 10, 2019, to Honeywell Turbofan Aircraft Engine Manual 507F.1, Revision 6, dated August 16, 2013, for Honeywell Engine Manual LF507-1F;

(iii) Honeywell TR No. 72-177, dated October 10, 2019, to Honeywell Turbofan Aircraft Engine Manual Report No. 507H.1, Revision 5, dated September 30, 1999, for Honeywell Engine Manual LF507-1H; or

(iv) Honeywell TR No. 72-57, dated October 29, 2019, to Honeywell Turbofan Engine Overhaul Manual 72-07-07, Revision 1, dated January 31, 2001, for Honeywell Overhaul Manual ALF502L.

(i) Credit for Previous Actions

You may take credit for the initial visual inspection, overhaul, and replacement required by paragraph (g)(1) to (3) of this AD if the inspection was performed using the Accomplishment Instructions, paragraphs 3.B.(1) to (3) and 3.B.(5) to (8), of Honeywell SB ALF/LF-72-1120, Revision 1, dated January 6, 2020, or paragraphs 3.B.(1) to (3) and 3.B.(6) of Revision 0, dated August 30, 2019.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles 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 certification office, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to: 9-ANM-LAACO-AMOC-Requests@faa.gov.

(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.

(k) Related Information

For more information about this AD, contact Mark Matzke, Aerospace Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5312; fax: 562-627-5210; email: mark.matzke@faa.gov.

(I) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Honeywell International Inc. (Honeywell) Service Bulletin ALF/LF-72-1120, Revision 2, dated May 14, 2020.

(ii) Honeywell Temporary Revision (TR) No. 72-1022, dated October 14, 2019, to Honeywell Turbofan Aircraft Engine Manual Report No. 286.1, Revision 27, dated August 27, 2004, for Honeywell Engine Manual ALF502R.

(iii) Honeywell TR No. 72-202, dated October 10, 2019, to Honeywell Turbofan Aircraft Engine Manual 507F.1, Revision 6, dated August 16, 2013, for Honeywell Engine Manual LF507-1F.

(iv) Honeywell TR No. 72-177, dated October 10, 2019, to Honeywell Turbofan Aircraft Engine Manual Report No. 507H.1, Revision 5, dated September 30, 1999, for Honeywell Engine Manual LF507-1H.

(v) Honeywell TR No. 72-57, dated October 29, 2019, to Honeywell Turbofan Engine Overhaul Manual 72-07-07, Revision 1, dated January 31, 2001, for Honeywell Overhaul Manual ALF502L.

(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; website: <https://aerospace.honeywell.com/en#/>.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fedreg.legal@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on August 24, 2020.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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