



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2017-0034; Directorate Identifier 2016-NE-32-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Honeywell International Inc. Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for certain Honeywell International Inc. (Honeywell) AS907-1-1A turbofan engines. This proposed AD was prompted by reports of loss of power due to failure of the second stage low-pressure turbine (LPT2) blade. This proposed AD would require a one-time inspection of the LPT2 blades and, if the blades fail the inspection, the replacement of the blades with a part eligible for installation. We are proposing this AD to correct the unsafe condition on these products.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Honeywell International Inc., 111 S 34<sup>th</sup> Street, Phoenix, AZ 85034-2802; phone: 800-601-3099; Internet: <https://myaerospace.honeywell.com/wps/portal!/ut/>. You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

### **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-2017-0034; 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 proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**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](mailto:joseph.costa@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2017-0034; Directorate Identifier 2016-NE-32-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory,

economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We received reports of a loss of power due to failure of the LPT2 blade from high-cycle fatigue in the blade's dovetail region at similar times-in-service. The probable cause of this failure is wear and fretting of the LPT2 blade Z gap contact area at the blade tip shroud that leads to loss of dampening and increased vibration of the LPT2 blade. This tip shroud condition in two new production engines with the same time-in-service, if not corrected, could result in failure of the LPT2 blades, failure of one or more engines, and loss of the airplane.

### **Related Service Information under 1 CFR part 51**

We reviewed Honeywell Service Bulletin (SB) AS907-72-9067, Revision 1, dated March 20, 2017. This SB describes procedures for inspecting the LPT2 blades. 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**

We reviewed Honeywell SB AS907-72-9067, Revision 0, dated December 12, 2016, which also describe procedures for inspecting the LPT2 blades. We also reviewed the Honeywell Light Maintenance Manual, AS907-1-1A, 72-00-00, Section 72-05-12,

dated May 25, 2016, and Section 72-55-03, dated September 27, 2011, which provide additional guidance for performing borescope inspections.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would require a one-time borescope inspection of the LPT2 blades and, if the blades fail the inspection, replacement of the blades with an LPT2 rotor assembly eligible for installation.

### **Differences Between this Proposed AD and the Service Information**

Honeywell SB AS907-72-9067, Revision 1, dated March 20, 2017, recommends borescope inspections of the affected LPT2 blades with more than 8,000 hours-since-new (HSN) and recommends that these inspections be completed within 400 operating hours after the issuance of Honeywell SB AS907-72-9067, Revision 0, dated December 12, 2016. This NPRM would require inspections of affected LPT2 blades with more than 8,000 HSN and requires that these inspections be completed within 200 operating hours after the effective date of this AD. This NPRM includes a reporting requirement that Honeywell SB AS907-72-9067, Revision 1, dated March 20, 2017 does not.

### **Costs of Compliance**

We estimate that this proposed AD affects 40 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

**Estimated costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Borescope inspection	10 work-hours x \$85 per hour = \$850	\$0	\$850	\$34,000
Report results of inspection	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$3,400

We estimate the following costs to do any necessary replacements that would be required based on the results of the proposed inspection. We estimate that 40 engines will need this replacement.

**On-condition costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Replacement of the LPT2 blade set	50 work-hours X \$85 per hour = \$4,250	\$50,000	\$54,250

**Paperwork Reduction Act**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB control number. The control number for the collection of information required by this AD is 2120-0056. The paperwork cost associated with this AD has been detailed in the Costs of Compliance section of this document and includes time for reviewing instructions, as well as completing and reviewing the collection of information. Therefore, all reporting associated with this AD is mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at 800

Independence Ave., SW, Washington, DC 20591. ATTN: Information Collection Clearance Officer, AES-200.

### **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**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the 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.

**The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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):

**Honeywell International Inc.:** Docket No. FAA-2017-0034; Directorate Identifier 2016-NE-32-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Honeywell International Inc. (Honeywell) AS907-1-1A turbofan engines with second stage low-pressure turbine (LPT2) rotor blades, part number (P/N) 3035602-1, installed.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

**(e) Unsafe Condition**

This AD was prompted by reports of loss of power due to failure of the LPT2 blade. We are issuing this AD to prevent failure of the LPT2 blades, failure of one or more engines, and loss of the airplane.

**(f) Compliance**

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

(1) For LPT2 rotor blades, P/N 3035602-1 that have more than 8,000 hours since new on the effective date of this AD, perform a one-time borescope inspection for wear of the Z gap contact area at the blade tip shroud for each of the 62 LPT2 rotor blades within 200 hours time in service after the effective date of this AD.

(2) Use the Accomplishment Instructions, Paragraph 3.B.(1), of Honeywell Service Bulletin (SB) AS907-72-9067, Revision 1, dated March 20, 2017, to do the inspection.

(3) If the measured wear and/or fretting of any Z gap contact area is greater than 0.005 inch, replace the LPT2 rotor assembly with a part eligible for installation before further flight.

(4) Do the following actions within 200 hours time in service after the effective date of this AD:

(i) Using a borescope make a clear digital image of the Z gap contact area at the blade tip shroud of the 62 LPT2 rotor blades.

(ii) Identify the three Z gap contact areas with the greatest amount of wear and/or fretting.

(iii) Record the blade position on the LPT2 rotor assembly and the measured wear of the three Z gap contact areas with the greatest amount of wear and/or fretting.

(iv) Send the results to Honeywell at [engine.reliability@honeywell.com](mailto:engine.reliability@honeywell.com) within 30 days after completing these actions.

**(g) Credit for Previous Actions**

You may take credit for the actions required by paragraphs (f)(1) and (4) of this AD, if you performed these actions before the effective date of this AD using Honeywell SB AS907-72-9067, Revision 0, dated December 12, 2016.

**(h) Paperwork Reduction Act Burden Statement**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

**(i) 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.

**(j) Related Information**

(1) For more information about this proposed 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](mailto:joseph.costa@faa.gov).

(2) Honeywell SBs AS907-72-9067, Revision 0, dated December 12, 2016 and AS907-72-9067, Revision 1, dated March 20, 2017, can be obtained from Honeywell International Inc., using the contact information in paragraph (j)(3) of this proposed AD.

(3) For service information identified in this proposed 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 the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on June 13, 2017.

Robert J. Ganley,  
Acting Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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