



## 適航指令發布單

## Airworthiness Directive Issuance Form

民航局AD編號 AD Number	CAA-2017-09-019	發布日期 Date issued	2017/10/6
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	Honeywell International Inc. (Honeywell) TFE731-20 and TFE731-40 turbofan engines.		
主旨摘要	To prevent uncontained failure of the fan disks, damage to the engine, and damage to the airplane.		
民航局 CAA <input type="checkbox"/> 本國產品 Native products <input type="checkbox"/> 其他個案 Other	設計國民航主關機構 Original Authorities <input checked="" type="checkbox"/> FAA <input type="checkbox"/> Germany LBA <input type="checkbox"/> EASA <input type="checkbox"/> CAA-NL <input type="checkbox"/> Brazil <input type="checkbox"/> UK CAA <input type="checkbox"/> Transport Canada Civil Aviation <input type="checkbox"/> Japan CAB <input type="checkbox"/> DGAC <input type="checkbox"/> CAA of Israel <input type="checkbox"/> Other _____		
	設計國AD編號 Original AD number	2017-20-01	
1. 直接採用原AD之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) ____ a. 生效日期另訂為(Re-specify the effective date as) : _____ b. 執行時限另訂為(Re-specify the compliance time or period as) : _____ 2. 使用人是否需要將AD執行結果向民航局提出報告?(Do Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)			
備註 Note	Honeywell Service Bulletin TFE731-72-5256, Revision 0, dated October 7, 2016.		
註： 1. AD內容後附。 2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。 3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw Note： 1. The AD text is enclosed. 2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval. 3. For further information, please contact Civil Aeronautics Administration on Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw			

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[Rules and Regulations]  
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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2016-9451; Product Identifier 2016-NE-24-AD; Amendment 39-19058; AD 2017-20-01]**

**RIN 2120-AA64**

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

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for all Honeywell International Inc. (Honeywell) TFE731-20 and TFE731-40 turbofan engines. This AD was prompted by two fan disks found with a manufacturing-caused flaw. This AD requires removing affected fan disks and replacing fan disks with a part eligible for installation. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective November 2, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of November 2, 2017.

**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; Internet: <https://myaerospace.honeywell.com/wps/portal>. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA 01803. 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-2016-9451.

### **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-2016-9451; 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 final rule, 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 ACO Branch, FAA, 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 all Honeywell TFE731-20 and TFE731-40 turbofan engines. The NPRM published in the Federal Register on March 7, 2017 (82 FR 12755). The NPRM was prompted by two fan disks found with a manufacturing-caused flaw. The NPRM proposed to require removing the affected fan disks, performing a one-time inspection, and replacing fan disks that fail inspection. We are issuing this AD to prevent uncontained failure of the fan disks, damage to the engine, and damage to the airplane.

### **Comments**

We gave the public the opportunity to participate in developing this final rule. We have considered the comment received.

### **Miscellaneous Comment**

We received a comment regarding Honeywell as a company that was not relevant to this AD. No further discussion is required.

### **Changes to This AD**

Based on further review, we made the following changes to this AD.

We corrected the cost per product estimate under “On-condition costs” in the Costs of Compliance section of the NPRM from \$300,510 to \$50,085 in this AD. The cost per product in the NPRM incorrectly estimated the cost for six engines rather than for one engine. On further review, we also redefined the work hours needed to install the new or reworked fan disk. The 8 work hours to inspect the fan disk were listed as a separate item in the NPRM but, in this final rule, we added these work hours to the estimated cost of installing the reworked or new fan disk. The overall estimated cost of this work per engine remains the same.

We corrected the product identification from “Honeywell International Inc. (Type Certificate previously held by AlliedSignal Inc., Garrett Engine Division; Garrett Turbine Engine Company; and AiResearch Manufacturing Company of Arizona)” to “Honeywell International Inc. (Type Certificate previously held by AlliedSignal Inc.).”

We removed paragraph (g)(4) of the NPRM which required inspection of the removed fan disks in accordance with paragraph 3.D.(2) in the Accomplishment Instructions of Honeywell SB TFE731-72-5256, Revision 0, dated October 7, 2016. Although fan disks may be returned to Honeywell for inspection and rework to become eligible for installation, that is not a requirement of this AD.

We revised the definition of “parts eligible for installation” in paragraph (g) of this AD to read: “For the purposes of this AD, parts eligible for installation are: (i) Fan disks not listed in the Accomplishment Instructions, Table 9, in Honeywell SB TFE731-72-5256, Revision 0, dated October 7, 2016; or (ii) fan disks listed in Table 9 that have been inspected, reworked, and marked with “T43374” adjacent to the P/N or S/N. Guidance on returning affected parts to Honeywell for

inspection and rework is found in the Accomplishment Instructions, paragraph 3.D., of Honeywell SB TFE731-72-5256.” This definition clarifies that fan disks with a P/N not affected by this AD, as well as parts that have been reworked and remarked, are eligible for installation.

## Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule as proposed for minor editorial changes and the additional changes explained above. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

## Related Service Information Under 1 CFR Part 51

We reviewed Honeywell Service Bulletin (SB) TFE731-72-5256, Revision 0, dated October 7, 2016. The SB identifies affected fan disks by serial number and describes procedures for removing, inspecting, and replacing the fan disks. This service information is available by the means identified in the ADDRESSES section.

## Costs of Compliance

We estimate that this AD affects 61 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

### Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Remove fan disk	8 work-hours × \$85 per hour = \$680	\$0	\$680	\$41,480
Install reworked or new fan disk	26 work-hours × \$85 per hour = \$2,210	0	2,210	134,810

We estimate the following costs to do any necessary disk replacements that would be required based on the results of the required inspection. We estimate that 6 engines will need this replacement:

### On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replace non-serviceable disks with new fan disk	1 work-hour × \$85 per hour = \$85	\$50,000	\$50,085

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

## **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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

## **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):



**2017-20-01 Honeywell International Inc. (Type Certificate previously held by AlliedSignal Inc.):** Amendment 39-19058; Docket No. FAA-2016-9451; Product Identifier 2016-NE-24-AD.

**(a) Effective Date**

This AD is effective November 2, 2017.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all Honeywell International Inc. (Honeywell) TFE731-20 and TFE731-40 turbofan engines, with a fan disk, part number (P/N) 3060287-2, and a serial number (S/N) listed in Table 9 of Honeywell Service Bulletin (SB) TFE731-72-5256, Revision 0, dated October 7, 2016, that do not have "T43374" marked adjacent to the engine P/N or S/N.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section.

**(e) Unsafe Condition**

This AD was prompted by a report of two fan disks found with surface rollovers in the dovetail slot area. We are issuing this AD to prevent uncontained failure of the fan disks, damage to the engine, and damage to the airplane.

**(f) Compliance**

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

**(g) Required Actions**

Remove the fan disk using the following criteria:

- (1) Remove fan disks with 9,000 cycles-since-new (CSN) or more on the effective date of this AD, within 100 cycles-in-service (CIS), or at the next engine shop visit, or at next access, whichever occurs first, after the effective date of this AD.
- (2) Remove fan disks with between 8,000 and 8,999 CSN, inclusive, on the effective date of this AD, within 9,100 CSN or within 1,000 CIS, or at the next engine shop visit, or at next access, whichever occurs first, after the effective date of this AD.
- (3) Remove fan disks with fewer than 8,000 CSN, on the effective date of this AD, before exceeding 9,000 CSN, or at the next engine shop visit, or at next access, whichever occurs first, after the effective date of this AD.

(4) Replace all removed fan disks with a part eligible for installation.

#### **(h) Definitions**

(1) For the purposes of this AD, an engine shop visit is defined as the removal of the tie-shaft nut from the engine.

(2) For the purposes of this AD, access is defined as the removal of the fan rotor assembly from the engine.

(3) For the purposes of this AD, parts eligible for installation are:

(i) fan disks not listed in the Accomplishment Instructions, Table 9, in Honeywell SB TFE731-72-5256, Revision 0, dated October 7, 2016; or

(ii) fan disks listed in Table 9, in Honeywell SB TFE731-72-5256, Revision 0, dated October 7, 2016, that have been inspected, reworked, and marked with “T43374” adjacent to the P/N or S/N. Guidance on returning affected parts to Honeywell for inspection and rework is found in the Accomplishment Instructions, paragraph 3.D., of Honeywell SB TFE731-72-5256.

#### **(i) 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 Los Angeles ACO Branch, send it to the attention of the person identified in paragraph (j) of this AD.

(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.

#### **(j) Related Information**

For more information about this AD, contact Joseph Costa, Aerospace Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Blvd., Lakewood, CA 90712-4137; phone: 562-627-5246; fax: 562-627-5210; email: joseph.costa@faa.gov.

#### **(k) 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 Service Bulletin TFE731-72-5256, Revision 0, dated October 7, 2016.

(ii) Reserved.

(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>.

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

(5) You may view this service information 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/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on September 21, 2017.

Robert J. Ganley,  
Manager, Engine and Propeller Standards Branch,  
Aircraft Certification Service.