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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2018-0735; Product Identifier 2018-NE-26-AD; Amendment 39-19505; AD 2018-24-01]**

**RIN 2120-AA64**

#### **Airworthiness Directives; International Aero Engines 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 certain International Aero Engines (IAE) PW1100G-JM turbofan engine models with certain low-pressure turbine (LPT) 1st- and 3rd-stage disks installed. This AD was prompted by a report of manufacturing defects found on delivered LPT 1st- and 3rd-stage disks. This AD requires removing the LPT 1st- or 3rd-stage disk from service and replacing with a part eligible for installation. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective March 15, 2019.

#### **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-2018-0735 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, the regulatory evaluation, any comments received, and other information. The address for Docket Operations (phone: 800-647-5527) 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:** Kevin M. Clark, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7088; fax: 781-238-7199; email: [kevin.m.clark@faa.gov](mailto:kevin.m.clark@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 International Aero Engines (IAE) PW1133G-JM, PW1133GA-JM, PW1130G-JM, PW1127G-JM, PW1127GA-JM, PW1127G1-JM, PW1124G-JM, PW1124G1-JM, and PW1122G-JM turbofan engines with certain LPT 1st- and 3rd-stage disks installed. The NPRM published in the Federal Register on September 7, 2018 (83 FR 45359). The NPRM was prompted by a report that multiple LPT 1st- and 3rd-stage disks were delivered before the ingot lot was rejected due to material inclusion. The suspect LPT 1st- and 3rd-stage disks may include defects that may not have been discovered during inspections. The NPRM proposed to require removing the LPT 1st- or 3rd-stage disk from service and replacing with a part eligible for installation. We are issuing this AD to address the unsafe condition on these products.

### **Comments**

We gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

#### **Request To Change Compliance Time**

IAE requested that we change the compliance time for removing from service the LPT 1st- and 3rd-stage disks from “at the next shop visit” to “within a service period.” IAE states its safety risk analysis shows that the prescribed corrective action exceeds all required safety risk criteria. Therefore, requiring removal and replacement of the LPT 1st- and 3rd-stage disks with serial numbers (S/Ns) listed in Figure 1 to paragraph (g) of this AD “at the next shop visit” is overly restrictive.

We partially agree. We agree that requiring removal and replacement of the LPT 1st- and 3rd-stage disks with S/Ns listed in Figure 1 to paragraph (g) of this AD “at the next shop visit” may be overly restrictive based on the risk presented in the safety risk assessment. We disagree with using the words “within a service period” because this might allow reinstallation of parts that do not conform to the approved type design. Therefore, we changed the references in paragraphs (g)(1) and (2) of this AD from “at the next shop visit” to “at the next piece-part exposure.” We find that this change still meets the safety objectives of this AD. We also removed the Definitions paragraph from this AD since it is no longer necessary.

#### **Request To Revise Cost of Compliance**

An individual commenter requested that we define the costs associated with the removal of the LPT 1st- or 3rd grade disks from each unit.

We disagree. We did not define a removal cost estimate because removal of the LPT 1st- or 3rd grade disks occurs when the unit is “at the next piece-part exposure” level. Therefore, no additional cost is incurred by removal of the LPT disks.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule with the change described previously. We have 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.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

**Costs of Compliance**

We estimate that this AD affects 0 engines installed on airplanes of U.S. registry.  
 We estimate the following costs to comply with this AD:

<b>Estimated Costs</b>				
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Remove and replace LPT 1st- or 3rd-stage disk	0 work-hours × \$85 per hour = \$0	\$210,000	\$210,000	\$0

**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 associated 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, 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):



**2018-24-01 International Aero Engines:** Amendment 39-19505; Docket No. FAA-2018-0735; Product Identifier 2018-NE-26-AD.

**(a) Effective Date**

This AD is effective March 15, 2019.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to International Aero Engines (IAE) PW1133G-JM, PW1133GA-JM, PW1130G-JM, PW1127G-JM, PW1127GA-JM, PW1127G1-JM, PW1124G-JM, PW1124G1-JM, and PW1122G-JM turbofan engines with a low-pressure turbine (LPT) 3rd-stage disk with a serial number (S/N) listed in Figure 1 to paragraph (g) of this AD or an LPT 1st-stage disk with an S/N listed in Figure 2 to paragraph (g) of this AD, installed.

**(d) Subject**

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

**(e) Unsafe Condition**

This AD was prompted by a report of manufacturing defects found on delivered LPT 1st- and 3rd-stage disks. We are issuing this AD to prevent failure of the LPT 1st- or 3rd-stage disk. The unsafe condition, if not addressed, could result in uncontained LPT 1st- or 3rd-stage disk release, 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 from service the LPT 1st- and 3rd-stage disk within 30 days after the effective date of this AD, or as identified in paragraphs (g)(1) or (2) of this AD, whichever occurs later, and replace with a part eligible for installation.

(1) Remove the LPT 3rd-stage disk with a serial number (S/N) listed in Figure 1 to paragraph (g) of this AD at the next piece-part exposure, not to exceed 4,800 cycles since new (CSN).

**Figure 1 to Paragraph (g) of this AD – S/Ns of LPT 3<sup>rd</sup>-stage disk**

LLDLAJ4516
LLDLAJ4498
LLDLAJ4518
LLDLAJ4499
LLDLAJ4505
LLDLAJ4511
LLDLAJ4512
LLDLAJ4484
LLDLAJ4494
LLDLAJ4495
LLDLAJ4482
LLDLAJ4500

(2) Remove the LPT 1st-stage disk with an S/N listed in Figure 2 to paragraph (g) of this AD at the next piece-part exposure, not to exceed 2,240 CSN.

**Figure 2 to Paragraph (g) of this AD – S/Ns of LPT 1<sup>st</sup>-stage disk**

LLDLAJ6110
LLDLAJ6111
LLDLAJ6114

**(h) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, ECO 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 (i) of this AD. You may email your request to: ANE-AD-AMOC@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.

**(i) Related Information**

For more information about this AD, contact Kevin M. Clark, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7088; fax: 781-238-7199; email: kevin.m.clark@faa.gov.

**(j) Material Incorporated by Reference**

None.

Issued in Burlington, Massachusetts on January 31, 2019.  
Robert J. Ganley,  
Manager, Engine and Propeller Standards Branch,  
Aircraft Certification Service.