



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0780; Project Identifier AD-2021-00916-E; Amendment 39-21728; AD 2021-19-10]

RIN 2120-AA64

Airworthiness Directives; International Aero Engines, LLC Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain International Aero Engines, LLC (IAE) PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127G1-JM, PW1127GA-JM, PW1127G-JM, PW1129G-JM, PW1130G-JM, PW1133GA-JM, and PW1133G-JM model turbofan engines. This AD was prompted by a root cause analysis of an event involving an uncontained failure of a high-pressure turbine (HPT) disk that resulted in high-energy debris penetrating the engine cowling on an Airbus Model A321-231 airplane, powered by IAE V2533-A5 model turbofan engines. This AD requires removing certain HPT 1st-stage and HPT 2nd-stage disks from service. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive comments on this 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 <https://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.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0780; 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 street address for the Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Mark Taylor, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7229; fax: (781) 238-7199; email: Mark.Taylor@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

On March 18, 2020, an Airbus Model A321-231 airplane, powered by IAE V2533-A5 model turbofan engines, experienced an uncontained HPT 1st-stage disk failure that resulted in high-energy debris penetrating the engine cowling. Based on a preliminary analysis of this event, on March 21, 2020, the FAA issued Emergency AD 2020-07-51 (followed by publication in the *Federal Register* on April 13, 2020, as a Final Rule, Request for Comments (85 FR 20402)), which requires the removal from service of certain HPT 1st-stage disks installed on IAE V2522-A5, V2524-A5, V2525-D5, V2527-A5, V2527E-A5, V2527M-A5, V2528-D5, V2530-A5, and V2533-A5 model turbofan engines.

Pratt & Whitney (PW) determined that the failure of the V2533-A5 model turbofan engine was due to an undetected subsurface material defect in an HPT disk that may affect the life of the part. In June 2021, PW expanded its root cause analysis to include a review of records for all other IAE and PW engines that contain parts of similar material.

On July 29, 2021, PW provided its PW1100G analysis results to the FAA. PW's analysis identified a different population of HPT 1st-stage and HPT 2nd-stage disks installed on IAE PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127G1-JM, PW1127GA-JM, PW1127G-JM, PW1129G-JM, PW1130G-JM, PW1133GA-JM, and PW1133G-JM model turbofan engines that are also affected by the unsafe condition in AD 2020-07-51 and require removal from service. This condition, if not addressed, could result in uncontained HPT disk failure, release of high-energy debris, damage to the engine, damage to the airplane, and loss of the airplane. The FAA is issuing this AD to address the unsafe condition on these products.

FAA's Determination

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

AD Requirements

This AD requires the removal from service of certain HPT 1st-stage and HPT 2nd-stage disks installed on PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127G1-JM, PW1127GA-JM, PW1127G-JM, PW1129G-JM, PW1130G-JM, PW1133GA-JM, and PW1133G-JM model turbofan engines.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for "good cause," finds that those procedures are "impracticable, unnecessary, or contrary to the public interest." Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies foregoing notice and comment prior to adoption of this rule. PW determined that the failure of the V2533-A5 model turbofan

engine was due to an undetected subsurface material defect in an HPT disk that may affect the life of the part. Based on the follow-on analysis performed since that event, PW has identified a different population of affected HPT 1st-stage and HPT 2nd-stage disks installed on IAE PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127G1-JM, PW1127GA-JM, PW1127G-JM, PW1129G-JM, PW1130G-JM, PW1133GA-JM, and PW1133G-JM model turbofan engines that are affected by the same unsafe condition as contained in AD 2020-07-51 and require removal from service. These HPT disks have the highest risk of failure and require removal within 30 days after the effective date of this AD to prevent additional HPT disk failures and maintain an acceptable level of safety. This unsafe condition may result in loss of the airplane. The FAA considers removal of certain HPT 1st-stage and HPT 2nd-stage disks to be an urgent safety issue. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forego notice and comment.

Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-0780 and Project Identifier AD-2021-00916-E” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Mark Taylor, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD affects 3 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
Remove HPT 1st-stage or HPT 2nd-stage disk	94 work-hours x \$85 per hour = \$7,990	\$171,430	\$179,420	\$538,260

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, and
- (2) Will not affect intrastate aviation in Alaska.

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:

2021-19-10 International Aero Engines, LLC: Amendment 39-21728; Docket No. FAA-2021-0780; Project Identifier AD-2021-00916-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to International Aero Engines, LLC (IAE) PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127G1-JM, PW1127GA-JM, PW1127G-JM, PW1129G-JM, PW1130G-JM, PW1133GA-JM, and PW1133G-JM model turbofan engines with an installed:

- (1) High-pressure turbine (HPT) 1st-stage disk, part number (P/N) 30G6201 or 30G7301, with a serial number (S/N) listed in Figure 1 to paragraph (c) of this AD; or
- (2) HPT 2nd-stage disk, P/N 30G5502 or 30G6602, with an S/N listed in Figure 2 to paragraph (c) of this AD.

Figure 1 to Paragraph (c) – HPT 1st-Stage Disk, P/N 30G6201 or 30G7301

HPT 1st-Stage Disk P/N	HPT 1st-Stage Disk S/N
30G6201	LKLBCG9614
30G6201	LKLBDX9135
30G6201	LKLBEF4499
30G6201	LKLBCL8431
30G6201	LKLBDX9233
30G6201	LKLBDX9159
30G6201	LKLBDX9273
30G6201	LKLBBX3713
30G6201	LKLBDX9200
30G6201	LKLBDX9276
30G6201	LKLBD A1782
30G6201	LKLBEF4550
30G7301	LKLBEK6166
30G7301	LKLBEY0974
30G7301	LKLBEJ7493
30G7301	LKLBEY4908

HPT 1st-Stage Disk P/N	HPT 1st-Stage Disk S/N
30G7301	LKLBEP5334
30G7301	LKLBEY5852
30G7301	LKLBF2128
30G7301	LKLBEY4944
30G7301	LKLBF8458

Figure 2 to Paragraph (c) – HPT 2nd-Stage Disk, P/N 30G5502 or 30G6602

HPT 2nd-Stage Disk P/N	HPT 2nd-Stage Disk S/N
30G5502	LKLBC0111
30G5502	LKLBD40504
30G5502	LKLBD40476
30G5502	LKLBC29705
30G5502	LKLBC29734
30G5502	LKLBCP4546
30G5502	LKLBCP4502
30G5502	LKLBC02866
30G5502	LKLBCP4501
30G5502	LKLBBX2558
30G5502	LKLBC02909
30G5502	LKLBC02820
30G5502	LKLBC02871
30G5502	LKLBC02859
30G5502	LKLBC02877
30G5502	LKLBBX2564
30G5502	LKLBCP4555
30G5502	LKLBBX2576
30G5502	LKLBC29762
30G5502	LKLBC02860
30G5502	LKLBC02881
30G5502	LKLBC02864
30G5502	LKLBC02876
30G5502	LKLBC02880
30G5502	LKLBD40491
30G5502	LKLBC02873
30G5502	LKLBBX2560
30G5502	LKLBCP4504
30G5502	LKLBC02840
30G5502	LKLBD40433
30G5502	LKLBD40437
30G6602	LKLBEY5800

HPT 2nd-Stage Disk P/N	HPT 2nd-Stage Disk S/N
30G6602	LKLBEK1972
30G6602	LKLBEP4213
30G6602	LKLbfd4429
30G6602	LKLbfd4445
30G6602	LKLbgj4215
30G6602	LKLbfd4402

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by an analysis performed by Pratt & Whitney of an event involving an uncontained failure of an HPT 1st-stage disk that resulted in high-energy debris penetrating the engine cowling. The FAA is issuing this AD to prevent failure of the HPT 1st-stage and HPT 2nd-stage disks. The unsafe condition, if not addressed, could result in uncontained HPT disk failure, release of high-energy debris, damage to the engine, damage to the airplane, and loss of the airplane.

(f) Compliance

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

(g) Required Actions

(1) For IAE model turbofan engines with an HPT 1st-stage disk, P/N 30G6201 or 30G7301, with an S/N listed in Figure 1 to paragraph (c) of this AD, within 30 days after the effective days of the AD, remove the HPT 1st-stage disk from service.

(2) For IAE model turbofan engines with an HPT 2nd-stage disk, P/N 30G5502 or 30G6602, with an S/N listed in Figure 2 to paragraph (c) of this AD, within 30 days after the effective days of the AD, remove the HPT 2nd-stage disk from service.

(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. Information may be emailed 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 Mark Taylor, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7229; fax: (781) 238-7199; email: Mark.Taylor@faa.gov.

(j) Material Incorporated by Reference

None.

Issued on September 7, 2021.

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

[FR Doc. 2021-19600 Filed: 9/8/2021 11:15 am; Publication Date: 9/10/2021]