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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0431; Product Identifier 2018-NE-16-AD; Amendment 39-19475; AD 2018-22-02]

RIN 2120-AA64

Airworthiness Directives; International Aero Engines Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for 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 a certain high-pressure compressor (HPC) front hub installed. This AD was prompted by corrosion found on the HPC front hub. This AD requires replacing the HPC front hub with a part eligible for installation. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective December 12, 2018.

ADDRESSES: For service information identified in this final rule, contact International Aero Engines (IAE), 400 Main Street, East Hartford, CT, 06118; phone: 800-565-0140; email: help24@pw.utc.com; internet: <http://fleetcare.pw.utc.com>. 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 781-238-7759. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0431.

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-2018-0431; 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.

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 IAE PW1133G-JM, PW1133GA-JM, PW1130G-JM, PW1127G-JM, PW1127GA-JM, PW1127G1-JM, PW1124G-JM, PW1124G1-JM, and PW1122G-JM turbofan engines with a certain HPC front hub installed. The NPRM published in the Federal Register on June 28, 2018 (83 FR 30370). The NPRM was prompted by a report that corrosion was found on HPC front hub, part number (P/N) 30G2401. The HPC front hub exhibited deposits that could not be removed using standard procedures and worsened over time. After further investigation, pitting corrosion was found below the painted surface. This condition, if not addressed, could result in uncontained HPC front hub release, damage to the engine, and damage to the airplane. The NPRM proposed to require replacing the HPC front hub 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. We have considered the comment received on the NPRM and the FAA's response to each comment.

Request Clarification on CSN Limit

All Nippon Airways requested that we clarify which cycles since new (CSN) limit for this AD is correct. ANA stated the PW Service Bulletin PW1000G-C-72-00-0106-00A-930A-D, dated June 15, 2018 specifies a limit of 4,400 cycles since new (CSN), while paragraph (g) of this AD specifies a limit of 4,440 CSN.

We disagree. The AD limit of 4,440 CSN is correct. We found that 4,440 CSN provides an acceptable level of safety, and reducing the CSN limit in this AD to match the SB is not required. Therefore, we did not change this AD.

Conclusion

We reviewed the relevant data, considered the comment received, and determined that air safety and the public interest require adopting this final rule as proposed, except for minor editorial changes. 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.

Related Service Information

We reviewed Section PW1000G-C-05-10-00-02A-288A-D of the PW1100G-JM Series Airworthiness Limitations Manual, P/N 5316993, dated September 30, 2015. Section PW1000G-C-05-10-00-02A-288A-D provides guidance for an approved FAA method of mixed model cycles since new calculation.

Costs of Compliance

We estimate that this AD affects 16 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
Replace HPC front hub	0 work-hours × \$85 per hour = \$85	\$11,600	\$11,600	\$185,600

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):



FAA
Aviation Safety

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

AD 2018-22-02 International Aero Engines: Amendment 39-19475; Docket No. FAA-2018-0431; Product Identifier 2018-NE-16-AD.

(a) Effective Date

This AD is effective December 12, 2018.

(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 high-pressure compressor (HPC) front hub, part number (P/N) 30G2401, installed.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by corrosion found on the HPC front hub, P/N 30G2401, installed. We are issuing this AD to prevent cracking and failure of the HPC front hub. The unsafe condition, if not addressed, could result in uncontained HPC front hub 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 HPC front hub, P/N 30G2401, within 120 days after the effective date of this AD, or as follows, whichever occurs later, and replace with a part eligible for installation:

(1) For PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127G1-JM, PW1127GA-JM, and PW1127G-JM engines, remove the HPC front hub before exceeding 6,180 cycles since new (CSN) or within five years since the ship date listed in Table 1 to paragraph (g) of this AD, whichever occurs first.

(2) For PW1130G-JM, PW1133GA-JM, and PW1133G-JM engines, remove the HPC front hub before exceeding 4,440 CSN or within four years since the ship date listed in Table 1 to paragraph (g) of this AD, whichever occurs first.

(3) For engines operating as a mix of models listed in paragraphs (g)(1) and (2) of this AD, remove the HPC front hub using a CSN calculated by an approved FAA method or within four years since the ship date listed in Table 1 to paragraph (g) of this AD, whichever occurs first. You may find guidance for an approved FAA method of mixed model CSN calculation in Section PW1000G-C-05-10-00-02A-288A-D of the PW1100G-JM Series Airworthiness Limitations Manual, P/N 5316993, dated September 30, 2015.

(4) For any HPC front hub, P/N 30G2401, whose serial number is not listed in Table 1 to paragraph (g) of this AD, use October 21, 2015, as the ship date.

Table 1 to Paragraph (g) - Steel Front Hub Ship Date

Steel Front Hub Serial Number	Ship Date	Originally Installed in Engine Serial Number
LENCAJ3513	10/23/2015	P770121
LENCAJ4524	11/6/2015	P770125
LENCAJ2782	11/25/2015	P770126
LENCAJ2794	11/9/2015	P770127
LENCAJ4527	11/17/2015	P770128
LENCAJ3500	11/16/2015	P770129
LENCAJ4508	11/23/2015	P770130
LENCAJ3505	6/20/2016	P770131
LENCAJ4518	12/2/2015	P770132
LENCAJ3507	12/31/2015	P770133
LENCAJ2789	12/22/2015	P770134
LENCAJ4516	12/12/2015	P770135
LENCAJ3509	12/31/2015	P770136
LENCAJ3511	12/28/2015	P770137
LENCAJ4538	1/6/2016	P770138
LENCAJ4535	1/8/2016	P770139
LENCAJ2788	1/17/2016	P770140
LENCAJ4512	1/17/2016	P770141
LENCAJ3502	1/31/2016	P770142
LENCAJ3503	2/7/2016	P770143
LENCAJ4540	1/31/2016	P770144
LENCAJ3510	2/17/2016	P770145
LENCAJ4539	2/14/2016	P770146
LENCAJ4525	2/25/2016	P770147
LENCAJ4531	2/20/2016	P770148
LENCAJ4510	3/14/2016	P770149
LENCAJ4522	2/27/2016	P770150
LENCAJ3506	2/27/2016	P770151
LENCAJ4532	3/11/2016	P770153
LENCAJ3506	3/17/2016	P770154
LENCAJ4534	3/31/2016	P770155
LENCAJ4548	6/13/2016	P770160
LENCAJ4552	5/6/2016	P770161
LENCAJ4521	4/30/2016	P770163
LENCAJ4529	4/30/2016	P770164
LENCAJ4520	4/28/2016	P770165
LENCAJ4544	4/30/2016	P770166
LENCAJ4511	8/25/2016	P770167
LENCAJ4549	8/26/2016	P770168

LENCAJ4553	5/19/2016	P770169
LENCAJ4551	5/19/2016	P770170
LENCAJ4517	5/21/2016	P770171
LENCAJ4543	5/19/2016	P770172
LENCAJ4513	5/31/2016	P770173
LENCAJ4550	5/20/2016	P770174
LENCAJ4530	6/8/2016	P770175
LENCAJ4533	5/26/2016	P770176
LENCAJ4515	6/8/2016	P770177
LENCAJ4563	6/26/2016	P770178
LENCAJ4545	6/10/2016	P770179
LENCAJ4542	6/10/2016	P770180
LENCAJ4546	6/22/2016	P770181
LENCAJ4566	6/22/2016	P770182
LENCAJ4558	6/23/2016	P770183
LENCAJ4507	8/31/2016	P770184
LENCAK4516	8/29/2016	P770185
LENCAJ3508	7/8/2016	P770186
LENCAJ4572	6/30/2016	P770187
LENCAJ4573	6/28/2016	P770188
LENCAJ4555	6/29/2016	P770189
LENCAJ4565	6/30/2016	P770190
LENCAJ4559	7/5/2016	P770191
LENCAJ4570	7/16/2016	P770192
LENCAJ4560	7/23/2016	P770193
LENCAJ4571	7/23/2016	P770194
LENCAJ4562	7/25/2016	P770195
LENCAJ4526	8/12/2016	P770196
LENCAJ4561	8/9/2016	P770197
LENCAJ4504	7/29/2016	P770198
LENCAJ4579	8/7/2016	P770199
LENCAJ4519	8/3/2016	P770200
LENCAK4517	8/9/2016	P770201
LENCAJ4595	8/17/2016	P770202
LENCAK4523	8/30/2016	P770203
LENCAK4505	8/15/2016	P770204
LENCAJ4541	8/31/2016	P770205
LENCAJ4592	8/22/2016	P770206
LENCAJ4569	9/30/2016	P770207
LENCAK4512	8/29/2016	P770208
LENCAK4518	10/7/2016	P770210
LENCAK4541	8/31/2016	P770211
LENCAK4535	9/17/2016	P770212

LENCAJ4584	9/20/2016	P770213
LENCAK4538	9/3/2016	P770214
LENCAK4533	11/30/2016	P770215
LENCAJ4594	9/23/2016	P770216
LENCAJ4509	10/25/2016	P770217
LENCAK4526	9/16/2016	P770218
LENCAK4532	9/19/2016	P770219
LENCAJ4602	9/22/2016	P770220
LENCAK4513	9/27/2016	P770221
LENCAK5147	10/19/2016	P770222
LENCAK4536	10/19/2016	P770223
LENCAK4522	9/30/2016	P770224
LENCAJ4578	12/29/2016	P770225
LENCAJ4596	9/30/2016	P770226
LENCAJ4575	10/4/2017	P770227
LENCAJ4577	12/5/2016	P770228
LENCAJ4597	10/12/2016	P770229
LENCAJ4588	10/19/2016	P770230
LENCAK4552	10/14/2016	P770231
LENCAJ4537	10/29/2016	P770232
LENCAJ4586	10/21/2016	P770233
LENCAJ4528	11/18/2016	P770234
LENCAJ4554	12/29/2016	P770235
LENCAK4553	11/1/2016	P770236
LENCAJ4598	11/18/2016	P770237
LENCAK4550	12/5/2016	P770238
LENCAJ4603	12/5/2016	P770239
LENCAJ4585	12/5/2016	P770240
LENCAK4537	12/2/2016	P770241
LENCAK4520	11/8/2016	P770242
LENCAK4528	12/2/2016	P770243
LENCAK5171	11/30/2016	P770244
LENCAK4549	12/5/2016	P770245
LENCAJ4557	12/5/2016	P770246
LENCAK4515	12/7/2016	P770247
LENCAJ4601	1/8/2017	P770248
LENCAK4511	12/7/2016	P770249
LENCAJ4581	2/21/2017	P770250
LENCAK5182	11/30/2016	P770251
LENCAK5153	11/30/2016	P770252
LENCAJ4576	12/12/2016	P770253
LENCAK4539	2/26/2017	P770254
LENCAJ4591	8/23/2017	P770255

LENCAK5166	12/15/2016	P770256
LENCAK5193	12/17/2016	P770258
LENCAK5149	12/21/2016	P770259
LENCAK5157	3/28/2017	P770260
LENCAK5191	12/20/2016	P770261
LENCAK5176	12/20/2016	P770262
LENCAK4545	12/21/2016	P770263
LENCAK5192	12/22/2016	P770264
LENCAK4548	12/23/2016	P770265
LENCAK5154	12/27/2016	P770266
LENCAK5163	12/28/2016	P770267
LENCAK5184	12/23/2016	P770268
LENCAK4507	12/31/2016	P770269
LENCAK5165	2/2/2017	P770270
LENCAK5173	12/29/2016	P770271
LENCAJ4589	12/29/2016	P770272
LENCAK5179	12/31/2016	P770273
LENCAK4543	1/10/2017	P770275
LENCAK4510	3/31/2017	P770276
LENCAK5156	1/17/2017	P770277
LENCAK5169	1/16/2017	P770278
LENCAK4524	1/19/2017	P770279
LENCAK5187	1/24/2017	P770280
LENCAK5175	1/24/2017	P770281
LENCAK4546	1/25/2017	P770282
LENCAK5185	1/24/2017	P770283
LENCAK5162	2/8/2017	P770284
LENCAK5150	8/25/2017	P770285
LENCAK5144	3/31/2017	P770286
LENCAJ2787	1/31/2017	P770287
LENCAK4554	1/25/2017	P770288
LENCAK5186	1/31/2017	P770289
LENCAK5172	1/31/2017	P770290
LENCAK5170	1/31/2017	P770291
LENCAK5155	2/6/2017	P770292
LENCAK5164	2/7/2017	P770293
LENCAK5168	2/13/2017	P770294
LENCAK4514	2/14/2017	P770295
LENCAK5189	6/22/2017	P770296
LENCAK7184	2/16/2017	P770297
LENCAK5146	2/28/2017	P770298
LENCAK5151	2/27/2017	P770299
LENCAK5152	8/14/2017	P770300

LENCAK4527	2/20/2017	P770301
LENCAK5180	8/21/2017	P770302
LENCAJ4567	4/19/2017	P770303
LENCAK5148	3/5/2017	P770304
LENCAJ4590	2/25/2017	P770305
LENCAK4525	3/13/2017	P770306
LENCAK4551	4/25/2017	P770308
LENCAK5142	3/11/2017	P770311
LENCAK5143	2/28/2017	P770312
LENCAK4542	3/14/2017	P770313
LENCAK5181	3/8/2017	P770315
LENCAK7185	3/19/2017	P770316
LENCAK5161	3/21/2017	P770317
LENCAK4544	3/31/2017	P770333
LENCAJ4574	5/25/2017	P770348
LENCAK5183	7/3/2017	P770395
LENCAK4531	11/7/2016	SPARE
LENCAL3099	2/23/2017	SPARE
LENCAK5188	11/3/2017	SPARE
LENCAK5228	12/27/2017	SPARE
LENCAJ4582	12/27/2017	SPARE
LENCAL3091	2/1/2018	SPARE
LENCAK5237	2/5/2018	SPARE
LENCAK5227	2/5/2018	SPARE
LENCAL3092	2/5/2018	SPARE

(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, MA, on November 01, 2018.

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