[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-1021; Project Identifier MCAI-2019-00120-E; Amendment 39-21166; AD 2020-15-03]

RIN 2120-AA64

Airworthiness Directives; GE Aviation Czech s.r.o. Turboprop Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2016-07-13 and AD 2018-03-22 which apply to certain GE Aviation Czech s.r.o. M601D-11, M601E-11, M601E-11A, M601E-11AS, M601E-11S, and M601F model turboprop engines. AD 2016-07-13 required inspection of the engine power turbine (PT) disk and, if found damaged, its replacement with a part eligible for installation. AD 2018-03-22 required the removal of certain engine PT disks identified by part number (P/N) installed on the affected engines. This AD requires an inspection of the engine PT disk and, if found damaged, its replacement with a part eligible for installation. This AD also requires the removal of certain engine PT disks identified by P/N installed on the affected engines. This AD was prompted by the discovery of damage to certain engine PT disks and a review by the manufacturer that determined that certain engine PT rotors have less overspeed margin than originally declared during product certification. This AD was also prompted by the manufacturer identifying additional P/Ns and serial numbers (S/Ns) of engine PT disks affected by damage or non-conformity since publishing AD 2016-07-13 and AD 2018-03-22. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact GE Aviation Czech s.r.o., Beranových 65, 199 02 Praha 9 - Letňany, Czech Republic; phone: +420 222 538 111; fax +420 222 538 222; email: tp.ops@ge.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety 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 https://www.regulations.gov by searching for and locating Docket No. FAA-2019-1021.

Examining the AD Docket

You may examine the AD docket on the Internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2019-1021; 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 mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations 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: Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7743; fax: 781-238-7199; email: Mehdi.Lamnyi@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2016-07-13, Amendment 39-18458 (81 FR 20222, April 7, 2016) ("AD 2016-07-13"), and AD 2018-03-22, Amendment 39-19195 (83 FR 6455, February 14, 2018) ("AD 2018-03-22"). AD 2016-07-13 and AD 2018-03-22 applied to certain GE Aviation Czech s.r.o. M601D-11, M601E-11, M601E-11A, M601E-11AS, M601E-11S, and M601F model turboprop engines. The NPRM published in the *Federal Register* on February 21, 2020 (85 FR 10099). The NPRM was prompted by the discovery of damage to certain engine PT disks and a review by the manufacturer that determined that certain engine PT rotors have less overspeed margin than originally declared during product certification. The NPRM was also prompted by the manufacturer identifying additional P/Ns and S/Ns of engine PT disks affected by damage or non-conformity since publishing AD 2016-07-13 and AD 2018-03-22. The NPRM proposed to require an inspection of the engine PT disk and, if found damaged, its replacement with a part eligible for installation. The NPRM also proposed to require the removal of certain engine PT disks identified by P/N installed on the affected engines. The FAA is issuing this AD to address the unsafe condition on these products.

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2019-0143, dated June 13, 2019 (referred to after this as "the MCAI"), to address the unsafe condition on these products. The MCAI states:

> During engine shop visits or overhauls, certain PT discs may have been damaged in the area of the balance weights. Additional PT discs with non-conforming geometry of the slot radius may also have been released to service as a result of incorrect machining of the PT disc slot.

> This condition, if not detected and corrected, could lead to PT disc failure, with subsequent release of high-energy debris, possibly resulting in damage to, and/or reduced control of, the aeroplane.
>
> After [EASA] ADs [2016-0025-E and 2017-0100] were issued, GEAC identified additional P/N and s/n of PT discs affected by damage or non-conformity. For those, as well as for the PT discs affected by the reduction of the declared theoretical PT rotor overspeed limit, an update of the risk assessment was performed, and GEAC issued the original issue of the ASB, later revised, providing applicable instructions.
>
> Consequently, EASA issued AD 2019-0061, retaining the requirements of EASA AD 2016-0025-E and EASA AD 2017-0100, which were superseded, and requiring a one-time inspection and, depending on findings, replacement of certain PT discs identified by P/N and s/n. That [EASA] AD also required replacement of certain PT discs identified by P/N, and prohibited (re)installation of affected parts.
>
> Since that [EASA] AD was issued, it has been determined that the compliance time for replacement of affected part on Group 2 engines has to be amended, and GEAC published the ASB (now at Revision 02).
>
> For the reason stated above, this [EASA] AD retains the requirements of EASA AD 2019-0061, which is superseded, introducing amended compliance times for Group 2 engines.

You may obtain further information by examining the MCAI in the AD docket on the Internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2019-1021.

Comments

The FAA gave the public the opportunity to participate in developing this final rule. The FAA received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

The FAA reviewed the relevant data and determined that air safety and the public interest require adopting this AD as proposed except for minor editorial changes. The FAA has 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 under 1 CFR Part 51

The FAA reviewed GE Aviation Alert Service Bulletin (ASB) ASB-M601E-72-50-00-0069[02], ASB-M601D-72-50-00-0052[02], ASB-M601T-72-50-00-0028[02], ASB-M601F-72-50-00-0035[02], and ASB-M601Z-72-50-00-0038[02] (single document; formatted as service bulletin identifier[revision number]), dated June 11, 2019. The ASB provides procedures for replacing the engine PT disk. 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.

Costs of Compliance

The FAA estimates that this AD affects 24 GE Aviation Czech s.r.o. M601 turboprop engines installed on airplanes of U.S. registry. The FAA estimates that 12 affected turboprop engines are “Group 1” engines and 12 are “Group 2” engines.

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
Inspect the engine PT disk (Group 1 engines)	52 work-hours x $85 per hour = $4,420	$0	$4,420	$53,040
Replace the engine PT disk (Group 2 and 3 engines)	56 work-hours x $85 per hour = $4,760	$6,989	$11,749	$140,988

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the required inspections. The FAA has no way of determining the number of engines that might need this replacement:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace the engine PT disk (Group 1 engines)	8 work-hours x $85 per hour = $680	$6,989	$7,669

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all costs in its 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.

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 this AD:

(1) Is not a "significant regulatory action" under Executive Order 12866,

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

(3) 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:

a. Removing Airworthiness Directive (AD) 2016-07-13, Amendment 39-18458 (81 FR 20222, April 7, 2016), and AD 2018-03-22, Amendment 39-19195 (83 FR 6455, February 14, 2018); and

b. Adding the following new AD:

2020-15-03 **GE Aviation Czech s.r.o.:** Amendment 39-21166; Docket No. FAA-2019-1021; Project Identifier MCAI-2019-00120-E.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2016-07-13, Amendment 39-18458 (81 FR 20222, April 7, 2016) ("2016-07-13"), and AD 2018-03-22, Amendment 39-19195 (83 FR 6455, February 14, 2018) ("2018-03-22").

(c) Applicability

This AD applies to all GE Aviation Czech s.r.o. M601D-11, M601E-11, M601E-11A, M601E-11AS, M601E-11S, and M601F model turboprop engines.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by the discovery of damage to certain engine power turbine (PT) disks and a review by the manufacturer that determined that certain engine PT rotors have less overspeed margin than originally declared during product certification. This AD was also prompted by the manufacturer identifying additional part numbers (P/Ns) and serial numbers (S/Ns) of engine PT disks affected by damage or non-conformity since publishing AD 2016-07-13 and AD 2018-03-22. The FAA is issuing this AD to prevent failure of the engine PT disk and rotor. The unsafe condition, if not addressed, could result in uncontained release of the engine PT disk and rotor, 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

(1) For Group 1 engines: Before the affected engine PT disk accumulates the number of cycles since new as specified in Attachment B of GE Aviation Alert Service Bulletin (ASB) ASB-M601E-72-50-00-0069[02], ASB-M601D-72-50-00-0052[02], ASB-M601T-72-50-00-0028[02], ASB-M601F-72-50-00-0035[02], and ASB-M601Z-72-50-00-0038[02] (single document; formatted as service bulletin identifier[revision number]), dated June 11, 2019 ("the ASB"), or at the next engine shop visit, whichever occurs first after the effective date of this AD, perform a visual inspection, dimensional inspection, and fluorescent penetrant inspection on the affected engine PT disk using Attachment G, Inspection Instruction, of the ASB.

(2) If, during the inspections required by paragraph (g)(1) of this AD, any damage is detected, or a non-conforming slot radius is found that exceeds the acceptability criteria as defined in Table 1 – PT Disc P/N M601-3220.5 inspection limits of the ASB, before further flight, remove the affected engine PT disk from service and replace it with a part eligible for installation using Attachment F, Replacement Instruction, of the ASB.

(3) For Group 2 engines: Within the compliance time identified in Table 1 to paragraph (g)(3) of this AD, modify the engine by removing the affected engine PT disk from service and replacing it with a part eligible for installation using Attachment F, Replacement Instruction, of the ASB.

Table 1 to Paragraph (g)(3) – Compliance Time Requirements for Group 2 Engines

Compliance Time (A, B, C, D, or E, whichever occurs first after the effective date of this AD)	
A	Before the engine exceeds the Time Between Overhaul (TBO) cycle limit specified in the Applicable Engine Maintenance Manual (EMM).
B	Before the engine PT disk accumulates the number of cycles since overhaul as specified in Attachment D of the ASB.

C	Before the engine PT disk accumulates the number of cycles since new as specified in Attachment D of the ASB.
D	Within 180 days.
E	During the next shop visit (engine overhaul or rebuild), or within five years after March 21, 2018 (the effective date of AD 2018-03-22), whichever occurs first.

(4) For Group 3 engines: Within five years after March 21, 2018 (the effective date of AD 2018-03-22), or during the next engine shop visit after the effective date of this AD, whichever occurs first, remove the affected engine PT disk from service and replace it with a part eligible for installation using Attachment F, Replacement Instruction, of the ASB.

(h) Definitions

(1) For the purpose of this AD, a Group 1 engine is a GE Aviation Czech s.r.o. turboprop engine that has an engine PT disk having P/N M601-3220.5 and S/N 407560-158, 407560-164, 406380-196 or 407560-190, installed.

(2) For the purpose of this AD, a Group 2 engine is a GE Aviation Czech s.r.o. turboprop engine that has an engine PT disk having P/N M601-3220.6 or P/N M601-3220.7, and a S/N listed in Attachment C of the ASB, installed.

(3) For the purpose of this AD, a Group 3 engine is a GE Aviation Czech s.r.o. turboprop engine that has an engine PT disk having P/N M601-3220.6 or P/N M601-3220.7, and any S/N not listed in Attachment C of the ASB, installed.

(4) For the purpose of this AD, an “affected engine PT disk” is an engine PT disk having P/N M601-3220.5 and S/N 407560-158, 407560-164, 406380-196 or 407560-190, except those that passed an inspection (no defects detected) using Attachment G, Inspection Instruction, of the ASB. An “affected engine PT disk” is also an engine PT disk having P/N M601-3220.6 or M601-3220.7.

(i) Credit for Previous Actions

You may take credit for the inspections and replacement of the affected engine PT disk that are required by paragraph (g) of this AD if you performed the inspections and replacement before the effective date of this AD using the ASB, Revision 01 or the original issue.

(j) No Reporting Requirement

The reporting requirements in the Attachment G, Inspection Instruction, of the ASB, are not required by this AD.

(k) 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 ECO Branch, send it to the attention of the person identified in paragraph (l)(1) 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.

(l) Related Information

(1) For more information about this AD, contact Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7743; fax: 781-238-7199; email: Mehdi.Lamnyi@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2019-0143, dated June 13, 2019, for more information. You may examine the EASA AD in the AD docket on the Internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2019-1021.

(m) 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) GE Aviation Alert Service Bulletin (ASB) ASB-M601E-72-50-00-0069[02], ASB-M601D-72-50-00-0052[02], ASB-M601T-72-50-00-0028[02], ASB-M601F-72-50-00-0035[02], and ASB-M601Z-72-50-00-0038[02] (single document; formatted as service bulletin identifier[revision number]), dated June 11, 2019.

(ii) [Reserved]

(3) For GE Aviation Czech service information identified in this AD, contact GE Aviation Czech s.r.o., Beranových 65, 199 02 Praha 9 - Letňany, Czech Republic; phone: +420 222 538 111; fax +420 222 538 222; email: tp.ops@ge.com.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fedreg.legal@nara.gov, or go to: https://www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on July 9, 2020.

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