



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-1021; Project Identifier MCAI-2019-00120-E]

RIN 2120-AA64

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

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede 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 turboprop engines. AD 2016-07-13 requires inspection of the engine power turbine (PT) disk and, if found damaged, its replacement with a part eligible for installation. AD 2018-03-22 requires the removal of certain engine PT disks identified by part number (P/N) installed on the affected engines. Since the FAA issued AD 2016-07-13 and AD 2018-03-22, the manufacturer identified additional P/Ns and serial numbers (S/Ns) of engine PT disks affected by damage or non-conformity. This proposed AD would require an inspection of the engine PT disk and, if found damaged, its replacement with a part eligible for installation. This proposed AD would also require the removal of certain engine PT disks identified by P/N installed on the affected engines. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed 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.

For service information identified in this NPRM, 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, 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.

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 NPRM, the mandatory continuing airworthiness information (MCAI), the regulatory evaluation, any comments received, and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

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:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2019-1021; Project Identifier MCAI-2019-00120-E” at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. The FAA will consider all comments received by the closing date and may amend this NPRM because of those comments.

Except for Confidential Business Information 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 FAA will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

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 NPRM 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 NPRM, 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 NPRM. Submissions containing CBI should be sent to Mehdi Lamnyi, Aerospace 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.

Discussion

The FAA issued 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”) for certain GE Aviation Czech s.r.o. M601D-11, M601E-11, M601E-11A, M601E-11AS, M601E-11S, and M601F turboprop engines. AD 2016-07-13 requires inspection of the engine PT disk and, if found damaged, its replacement with a part eligible for installation. AD 2016-07-13 resulted from the discovery of damage to certain engine PT disks during engine shop visits. AD 2018-03-22 requires the removal of certain engine PT disks installed on the affected engines. AD 2018-03-22 resulted from a design review by the manufacturer that determined engine PT rotors with certain engine PT disks have less overspeed margin than originally stated during product certification.

The FAA issued AD 2016-07-13 to prevent failure of the engine PT disk, which could result in release of high-energy debris, damage to the engine, and reduced control of the airplane. The FAA issued AD 2018-03-22 to prevent failure of the engine PT rotor, which could result in uncontained release of the engine PT disk, damage to the engine, and damage to the airplane.

Actions Since AD 2016-07-13 and 2018-03-22 Were Issued

Since the FAA issued AD 2016-07-13 and AD 2018-03-22, 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. To address this potential unsafe condition, GEAC published a Service Bulletin (SB) to provide instructions to inspect and, depending on findings, replace certain PT discs, and EASA issued AD 2016-0025-E accordingly.

After that AD was issued, it was identified that PT rotors with certain P/N discs have a reduction in the declared theoretical PT rotor overspeed limit. Consequently, GEAC issued a new ASB, providing PT disc replacement instructions, and EASA issued AD 2017-0100, to require replacement of the affected PT discs, and to prohibit their further installation.

After those ADs 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.

Related Service Information under 1 CFR Part 51

The FAA reviewed GE Aviation Czech s.r.o 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), 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.

FAA's Determination

This product has been approved by EASA, and is approved for operation in the United States. Pursuant to our bilateral agreement with the European Community, EASA

has notified us of the unsafe condition described in the MCAI and service information referenced above. The FAA is proposing this AD because it evaluated all the relevant information provided by EASA and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would retain certain requirements of AD 2016-07-13 and AD 2018-03-22. This proposed AD would require an inspection of the engine PT disk and, if found damaged, its replacement with a part eligible for installation. This proposed AD would also require the removal of certain engine PT disks identified by P/N installed on the affected engines. In addition, this proposed AD expands the applicability to additional engine PT disk P/Ns and S/Ns affected by the damage or non-conformity.

Differences Between this Proposed AD and the MCAI

EASA AD 2019-0143, dated June 13, 2019, identifies the applicability as GE Aviation Czech s.r.o. M601D, M601D- 1, M601D- 2, M601D- 11, M601D- 11NZ, M601E, M601E- 11, M601E- 11A, M601E-11AS, M601E- 11S, M601E- 21, M601F, M601FS, M601F- 11, M601F- 22, M601F- 32, M601T, and M601Z turboprop engines. This proposed AD is applicable to only GE Aviation Czech s.r.o. M601D-11, M601E-11, M601E-11A, M601E-11AS, M601E-11S, and M601F turboprop engines. The GE Aviation Czech s.r.o. turboprop engines not listed in this proposed AD have not been type validated for operation in the United States.

Costs of Compliance

The FAA estimates that this proposed 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 proposed 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 proposed inspection. 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 proposed 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.

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

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 proposed regulation:

- (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.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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:

GE Aviation Czech s.r.o.: Docket No. FAA-2019-1021; Project Identifier MCAI-2019-00120-E.

(a) Comments Due Date

The FAA must receive comments by [INSERT DATE 45 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), and AD 2018-03-22, Amendment 39-19195 (83 FR 6455, February 14, 2018).

(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 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 P/Ns and serial numbers 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 engine PT disk accumulates the number of cycles since new as specified in Attachment B of GE Aviation Czech s.r.o 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), 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 engine PT disk in accordance with 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 in accordance with 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 in accordance 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 in accordance with 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 part” 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) in accordance with Attachment G, Inspection Instruction, of the ASB. An “affected part” 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 engine PT disk replacements 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 (1)(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.

(1) 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 it in Docket No. FAA-2019-1021.

(3) For 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. You may view this referenced 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.

Issued in Burlington, Massachusetts, on February 13, 2020.

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

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