Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 22-173

Issued: 16 December 2022

Note: This Proposed Airworthiness Directive (PAD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.
All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

Design Approval Holder's Name:

GE AVIATION CZECH s.r.o.

Type/Model designation(s):

M601 engines

Effective Date:	[TBD - standard: 14 days after AD issue date]
TCDS Number(s):	EASA.E.070
Foreign AD:	Not applicable
Supersedure:	This AD supersedes EASA AD 2021-0060 dated 03 March 2021 and EASA AD 2021-0154 dated 01 July 2021.

ATA 05 – Time Limits / Maintenance Checks – Airworthiness Limitations Section – Amendment

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Manufacturer(s):

GE Aviation Czech (GEAC) s.r.o., formerly Walter Engines a.s.

Applicability:

M601D, M601D-1, M601D-2, M601D-11, M601D-11NZ, M601E, M601E-11, M601E-11A, M601E-11AS, M601E-11S, M601E-21, M601F, M601FS and M601Z engines, all serial numbers.

These engines are known to be installed on, but not limited to, Aircraft Industries (formerly LET) L-410 series; Air Tractor AT-300, AT-400 and AT-500 series; Allied Ag Cat Productions Inc. (formerly Grumman) G-164 series; Pacific Aerospace FU-24; PZL "Warszawa-Okecie" PZL-106 (Kruk) series; GENERAL ATOMICS AeroTec Systems GmbH (formerly RUAG, Dornier) Do 28 series; Thrush Aircraft (formerly Quality, Ayres, Rockwell) S-2R series; Viking Air Ltd. (formerly de Havilland Canada) DHC-3 Otter aeroplanes; Zlin Aircraft a.s. Z 37 T and Z 137 T; and Pacific Aerospace Corporation (formerly Fletcher) FU-24 aeroplanes.

Definitions:

For the purpose of this AD, the following definitions apply:

The ALS: The Airworthiness Limitations Section of the GEAC Engine Maintenance Manual (EMM) No. 0982309 Revision 21, No.0982055 Revision 21, No.0982302 Revision 20 and No.0982051 Revision 17.

The ASB: GEAC Alert Service Bulletin (ASB) ASB-H75-72-10-00-0062, ASB-H80-72-10-00-0107, ASB-H85-72-10-00-0051, ASB-M601F-72-10-00-0070, ASB-M601E-72-10-00-0120, ASB-M601D-72-10-00-0087 and ASB-M601Z-72-10-00-0069, issued as a single document.

The AMP: The Aircraft Maintenance Programme (AMP) contains the tasks on the basis of which the scheduled maintenance is conducted to ensure the continuing airworthiness of each operated engine. For an engine installed on an aeroplane operated under EU regulations, the operator or the owner ensures compliance with the AMP as stipulated in Commission Regulation (EU) 1321/2014.

New and/or more restrictive instructions: This includes all instructions that are new and all instructions for which a threshold or interval was reduced, which were introduced into the ALS (as defined in this AD) since the previous ALS revision that is currently incorporated in the AMP.

Reason:

The airworthiness limitations for M601 engines, which are approved by EASA, are currently defined and published in the GEAC M601 EMM No. 0982309. These instructions have been identified as mandatory for continued airworthiness.

Failure to accomplish these instructions could result in an unsafe condition.

Previously, EASA issued AD 2021-0060 to require the actions described in GEAC EMM No. 0982309 at Revision 18 for certain M601 engine models. EASA also published AD 2021-0125-E to require replacement of certain engine parts, the recalculated life of which exceeded the applicable life limit, and replacement of certain compressor cases; AD 2021-0154 to require implementation of the applicable life limit and replacement of certain propeller shafts; and AD 2021-0264 to require replacement of certain compressor cases and compressor drums.

Since those ADs were issued, GEAC published the ALS, which contains new and/or more restrictive tasks and limitations, expands applicability to all M601 series engines, takes over the requirements of EASA AD 2021-0154, and includes certain requirements addressed by EASA AD 2021-0125-E and AD 2021-0264. GEAC also published the ASB, as defined in this AD, providing instructions to determine the accumulated life of certain propeller shafts.

For the reason described above, this AD retains the requirements of EASA AD 2021-0060 and AD 2021-0154, which are superseded, partially takes over the requirements of EASA AD 2021-0125-E and AD 2021-0264, and requires accomplishment of the actions specified in the ALS.

Required Action(s) and Compliance Time(s):

Required as indicated, unless accomplished previously:

Mandatory Inspections and Replacement of Life Limited Parts:

(1) From the effective date of this AD, accomplish the following instructions, as specified in the ALS, as applicable to engine model and depending on engine configuration (see Note 1 and Note 2 of this AD):

(1.1) Replace each component before exceeding the applicable life limit, and

(1.2) Within the thresholds and intervals, accomplish all applicable maintenance tasks.

Note 1: For the purpose of this AD, the thresholds and intervals include specific tolerances for certain tasks, as defined in the ALS.

Note 2: The ASB provides additional information and instructions which can be used to determine the flight hours and/or flight cycles accumulated by certain 'propeller shaft complete' since first installation on an engine.

Corrective Action(s):

(2) In case of finding discrepancies during accomplishment of any task as required by paragraph (1) of this AD, before next flight, accomplish the applicable corrective action(s) in accordance with the applicable GEAC maintenance documentation. If a detected discrepancy cannot be corrected by using existing GEAC instructions, before next flight, contact GEAC for approved instructions and accomplish those instructions accordingly.

AMP Revision:

(3) Within 12 months after the effective date of this AD, revise the approved AMP by incorporating the instructions and associated thresholds and intervals described in the ALS, as applicable to engine model and depending on engine configuration.

Credit:

(4) If, before the effective date of this AD, the AMP has been revised to incorporate the maintenance tasks and life limitations as specified in a previous ALS revision, that action ensures the continued accomplishment of those tasks and limitations.

Consequently, for an engine to which that AMP applies, it is acceptable to accomplish the new and/or more restrictive tasks and limitations as specified in the ALS, as applicable, depending on engine configuration, within the compliance times (see Note 1 of this AD) as specified in the ALS to comply with paragraph (1) of this AD.

For that AMP, it is acceptable to incorporate the new and/or more restrictive tasks and limitations as specified in the ALS, as applicable, depending on engine configuration, into the AMP to comply with paragraph (3) of this AD.

Recording AD Compliance:

(5) When the AMP of an aeroplane has been revised as required by paragraph (3) or (4) of this AD, as applicable, that action ensures continued accomplishment of the tasks as required by paragraphs (1) and (2) of this AD for that aeroplane. Consequently, after revising the AMP, as required by paragraph (3) or (4) of this AD, as applicable, it is not necessary that accomplishment of individual action is recorded for demonstration of AD compliance on a continued basis.

Ref. Publications:

GEAC M601D-1, M601D-2, M601D-11, M601D-11NZ and M601Z EMM No. 0982309 Revision 21 dated 18 November 2022.

GEAC M601E and M601E-21 EMM No. 0982055 Revision 21 dated 18 November 2022.

GEAC M601E-11, M601E-11S, M601E-11AS, M601F and M601FS EMM No. 0982302 Revision 20 dated 18 November 2022.

GEAC M601D EMM No. 0982051 Revision 17 dated 18 November 2022.

GEAC ASB-H75-72-10-00-0062, ASB-H80-72-10-00-0107, ASB-H85-72-10-00-0051, ASB-M601F-72-10-00-0070, ASB-M601E-72-10-00-0120, ASB-M601D-72-10-00-0087 and ASB-M601Z-72-10-00-0069, published as a single document, original issue dated 15 December 2022.

The use of later approved revisions of the above-mentioned documents is acceptable for compliance with the requirements of this AD.

Remarks:

1. This Proposed AD will be closed for consultation on 13 January 2023.

2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.

3. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this PAD, and which may occur, or have occurred on a product, part or appliance not affected by this PAD, can be reported to the EU aviation safety reporting system. This may include reporting on the same or similar components, other than those covered by the design to which this PAD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.

4. For any question concerning the technical content of the requirements in this PAD, please contact: GE Aviation Czech, Beranových 65, 199 02 Praha 9 – Letnany, Czech Republic, Telephone: +420 222 538 999, Website: https://www.geaviation.cz/customer-support, E-mail: tp.ops@ge.com.