Airworthiness Directive

AD No.: 2021-0154

Issued: 01 July 2021

Note: This Airworthiness Directive (AD) 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.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:

GE AVIATION CZECH

Type/Model designation(s):

M601 engines

Effective Date: 15 July 2021

TCDS Number(s): EASA.E.070

Foreign AD: Not applicable

Supersedure: This AD supersedes AD 2021-0052 dated 24 February 2021.

ATA 72 – Engine – Propeller Shaft – Replacement [Life Limit]

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, M601F-11, M601F-22, M601F-32, M601FS, M601T and M601Z engines, all serial numbers (s/n).

These engines are known to be installed on, but not limited to, Aircraft Industries (formerly LET) L-410 series and L-420; Air Tractor AT-300, AT-400 and AT-500 series; Allied Ag Cat Productions Inc. (formerly Grumman) G-164 series; Airbus Poland S.A. (formerly PZL "Warszawa-Okęcie") PZL-106 (Turbo Kruk) series; RUAG Aerospace Services (formerly Dornier) Do 28 series; Thrush Aircraft (formerly Quality, Ayres, Rockwell) S-2R series; Viking Air Ltd. (formerly de Havilland Canada) DHC-3 Otter; Zlin Aircraft Z-37T series; and PAC FU-24 aeroplanes.

Definitions:

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

The ASB: GEAC Alert Service Bulletin (ASB) ASB-M601D-72-10-00-0072[02], ASB-M601E-72-10-00-0103[02], ASB-M601F-72-10-00-0056[02] and ASB-M601Z-72-10-00-0056[02] (issued as a single document).

Applicable life limit: Propeller shaft life limit, as identified in the Airworthiness Limitation Section (ALS) of the applicable Engine Maintenance Manual. If no life limit is identified in the ALS for the propeller shaft P/N M601-6081.6, a life limit of 12 000 FH applies.

Groups: Group 1 are M601D, M601D-11NZ, M601D-2, M601F and M601Z engines having a propeller shaft P/N M601-6081.6 installed.
Appendix 1 of the ASB provides a list of engines by s/n known to be Group 1.
Group 2 are M601E, M601E-11, M601E-11A and M601E-21 engines, having a propeller shaft P/N M601-6081.6 installed.
Group 3 are M601 engines (all models), having a propeller shaft P/N M601-6081.2 or P/N M601-6081.4 installed.

Serviceable propeller shaft: A propeller shaft, as identified in Table 1 of the ASB, as applicable to engine model, which has not exceeded the applicable life limit.

Reason:
It has been determined that the life limit for the propeller shaft P/N M601-6081.6 is not published in the applicable ALS for M601 engines. In addition, it has also been reported that some data, which can be used to determine the accumulated life of certain propeller shafts, may have not been provided to operators, so the propeller shaft life limit may not have been implemented correctly.

These conditions, if not corrected, may lead to failure of a propeller shaft, possibly resulting in detachment of the propeller and consequent damage to the engine and/or the aircraft, and reduced control of the aeroplane.

To address this potential unsafe condition, GEAC issued the original issue of the ASB, providing applicable instructions, and EASA issued AD 2021-0052 to require implementation of the applicable life limit and replacing each propeller shaft with a serviceable propeller shaft.

Since that AD was issued, additional data, which can be used to determine the accumulated life of certain propeller shafts, and to support an extended compliance time for Group 1 engines, has been made available; GEAC revised accordingly the ASB (now at revision 02).

For the reasons described above, this AD partially retains the requirements of EASA AD 2021-0052, which is superseded, introducing updated affected population and different compliance times.

Required Action(s) and Compliance Time(s):
Required as indicated, unless accomplished previously:

Modification(s):
(1) For Group 1 engines: Within 350 flight hours (FH) after 03 March 2021 [the effective date of EASA AD 2021-0052], or before exceeding 12 000 FH since first installation on an engine, whichever occurs first, replace the propeller shaft with a serviceable propeller shaft in accordance with the instructions of the ASB.

Life Limit Implementation:

(2) For Group 2 and Group 3 engines: Before the propeller shaft exceeds the applicable life limit, as defined in this AD, replace that propeller shaft with a serviceable propeller shaft in accordance with the instructions of the ASB (see Note 1 of this AD).

Note 1: The ASB provides additional information which can be used to determine the FH accumulated by certain propeller shafts since first installation on an engine.

Part(s) Installation:

(3) For all engines: From the effective date of this AD, it is allowed to install on any engine a propeller shaft, provided it is a serviceable propeller shaft, as defined in this AD, and that, following installation, it is replaced before exceeding the applicable life limit, as defined in this AD.

Ref. Publications:

GEAC ASB-M601D-72-10-00-0072, ASB-M601E-72-10-00-0103, ASB-M601F-72-10-00-0056 and ASB-M601Z-72-10-00-0056 (single document) original issue dated 13 February 2021, or Revision 01 dated 18 March 2021 and Revision 02 dated 31 May 2021.

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

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.

2. This AD was posted on 01 June 2021 as PAD 21-080 for consultation until 29 June 2021. No comments were received during the consultation period.

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

4. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, 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 AD 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.

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