



Notification of a proposal to issue an Airworthiness Directive

PAD No.: 16-097

Issued: 01 July 2016

Note: This Proposed Airworthiness Directive (PAD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 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:

DIAMOND AIRCRAFT INDUSTRIES GmbH

Type/Model designation(s):

DA 42 and DA 42 M aeroplanes

Effective Date: [TBD - standard: 14 days after AD issue date]

TCDS Number(s): EASA.A.022

Foreign AD: Not applicable

Supersedure: None

ATA 78 – Engine Exhaust – Exhaust Pipes – Replacement

Manufacturer(s):

Diamond Aircraft Industries GmbH (Austria), Diamond Aircraft Industries Inc. (Canada)

Applicability:

DA 42 and DA 42 M (both Normal and Restricted category) aeroplanes, all manufacturer serial numbers, if equipped with TAE 125-02-99 engines (modification MÄM 42-198 or Optional Service Bulletin (OSB) 42-046) or TAE 125-02-114 engines (modification OÄM 42-252 or OSB 42-107).

Reason:

Two cases were reported of uncommanded engine in-flight shutdown (IFSD) on DA 42 aeroplanes. Subsequent investigations identified these occurrences were due to failure of the propeller regulating valve, caused by hot exhaust gases coming from fractured engine exhaust pipes. The initiating cracks on the exhaust pipes were not detected during previous inspections, since those exhaust pipes are equipped with non-removable heat shields that do not allow inspection for certain sections of the exhaust pipe.

This condition, if not corrected, could lead to further cases of IFSD or overheat damage, possibly resulting in a forced landing, with consequent damage to the aeroplane and injury to occupants.



To address this potential unsafe condition, Diamond Aircraft Industries (DAI) developed an exhaust pipe without a directly attached integral heat shield that allows visual inspection over the entire exhaust pipe length. DAI issued Mandatory Service Bulletin (MSB) 42-120 and relevant Working Instruction (WI) WI-MSB 42-120, providing instructions to install the modified exhaust pipes. As an interim measure, an additional bracket was designed to hold the exhaust pipe in place in case of a pipe fracture.

For the reasons described above, this AD requires replacement of the exhaust pipes with pipes having new design, and prohibits (re)installation of the previous design pipes.

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

Required as indicated, unless accomplished previously:

Note 1: For the purpose of this AD, an “affected exhaust pipe” is an exhaust pipe having DAI P/N D60-9078-06-01, or Technify P/N 52-7810-H0001 02, or Technify P/N 52-7810-H0001 03, or Technify P/N 52-7810-H0001 04. A “not affected exhaust pipe” is an exhaust pipe having DAI P/N D60-9078-06-01_01 or Technify P/N 52-7810-H0014 01.

Note 2: For the purpose of this AD, in case the FH accumulated since first installation of an affected exhaust pipe are not known, the total time accumulated by the aeroplane since its first flight applies instead.

- (1) For an aeroplane equipped with an affected exhaust pipe that, on the effective date of this AD, does not exceed 1 300 FH since its first installation on an aeroplane, before that pipe exceeds 1 500 flight hours (FH) since its first installation on an aeroplane, replace that exhaust pipe with a not affected exhaust pipe in accordance with the instructions of Section III.1 of DAI WI-MSB 42-120 (see Note 1 and 2 of this AD).
- (2) For an aeroplane equipped with an affected exhaust pipe that, on the effective date of this AD, exceeds 1 300 FH since its first installation on an aeroplane, and does not exceed 2 800 FH since its first installation on an aeroplane, accomplish the actions as required by paragraph (2.1) or (2.2) of this AD (see Note 1 and 2 of this AD):
 - (2.1) within 200 FH or 12 months, whichever occurs first after the effective date of this AD, install additional exhaust clamps on the affected engine in accordance with the instruction of Section III.2 of DAI WI-MSB 42-120, and thereafter, before that exhaust pipe exceeds 3 000 FH since its first installation on an aeroplane, replace that exhaust pipe with a not affected exhaust pipe in accordance with the instructions of Section III.1 of DAI WI-MSB 42-120 (see Note 1 of this AD).
 - (2.2) within 200 FH or 12 months, whichever occurs first after the effective date of this AD, replace that exhaust pipe with a not affected exhaust pipe in accordance with the instructions of Section III.1 of DAI WI-MSB 42-120 (see Note 1 of this AD).
- (3) For an aeroplane equipped with an affected exhaust pipe that, on the effective date of this AD, exceeds 2 800 FH since its first installation on an aeroplane, within 200 FH or 12 months, whichever occurs first after the effective date of this AD, replace that exhaust pipe with a not



affected exhaust pipe in accordance with the instructions of Section III.1 of DAI WI-MSB 42-120 (see Note 1 and 2 of this AD).

- (4) Do not install on any aeroplane an affected exhaust pipe (see Note 1 of this AD) as required by paragraph (4.1) or (4.2) of this AD, as applicable.

(4.1) For an aeroplane with an affected exhaust pipe installed (see Note 1 of this AD): After modification of that aeroplane as required by paragraph (1) or (2) or (3) of this AD.

(4.2) For an aeroplane that does not have an affected exhaust pipe installed (see Note 1 of this AD): From the effective date of this AD.

Ref. Publications:

DAI MSB 42-120 original issue, dated 24 June 2016.

DAI WI-MSB 42-120 original issue, dated 24 June 2016.

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

Remarks:

1. This Proposed AD will be closed for consultation on 29 July 2016.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
3. For any question concerning the technical content of the requirements in this PAD, please contact: Diamond Aircraft Industries GmbH, Austria.
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