| EASA | AIRWORTHINESS DIRECTIVE |
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| | **AD No.: 2010-0235R1**<br><br>**Date: 23 May 2011**<br><br>Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation. |

This AD is issued in accordance with EC 1702/2003, Part 21A.3B. In accordance with EC 2042/2003 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 [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].

| **Type Approval Holder's Name :** | **Type/Model designation(s) :** |
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| Diamond Aircraft Industries GmbH | DA 40 and DA 42 aeroplanes |

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| TCDS Number : | EASA.A.005, EASA.A.022 and EASA.A.513 |
| Foreign AD : | Not applicable |
| Revision : | This AD revises EASA AD 2010-0235 dated 10 November 2010. |

| **ATA 52** | **Doors – Rear Passenger Door Retaining Bracket – Replacement** |
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| Manufacturer(s): | Diamond Aircraft Industries GmbH (DAI), Diamond Aircraft Industries, Inc. (Canada), and Shandong Bin Ao Aircraft Industries Co., Limited (People's Republic of China). |
| Applicability: | DA 40, DA 40 D and DA 40 F aeroplanes, all serial numbers, and<br>DA 42, DA 42 M, DA 42 NG and DA 42 M-NG aeroplanes, all serial numbers. |
| Reason: | Since 2004, more than 30 reports have been received of in-flight loss of a rear passenger door on Diamond aeroplanes, the majority of which were DA 40. In additional, at least 18 doors have been replaced because of damage found on the hinge.<br><br>Diamond Aircraft Industries conducted analyses and structural tests to determine the root cause of the door opening in flight. The conclusions were that the primary locking mechanism provided adequate strength to react to the loads in flight. It was also determined that the root cause was the crew not properly securing the rear passenger door by the main locking mechanism, prior to flight. Damage to the hinges has been caused primarily by external loads (wind gust conditions) while the aeroplane was parked.<br><br>All DA 40 and DA 42 aeroplanes have a system installed that provides a warning if the main door latch is not fully closed and a secondary safety latch (with retaining bracket) design feature. The initial intended design function of this latch was to hold the rear passenger door in the "near closed" position while on the ground, protecting the door from wind gusts. However, the original retaining bracket Part Number (P/N) DA4-5200-00-69 might not hold the door in this "near closed" position while in flight. To address this problem, DAI have designed an improved retaining bracket, P/N DA4-5200-00-69-SB, which has been satisfactory tested to hold the door closed in flight. In |

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| | addition, DAI have revised the Airplane Flight Manual (AFM) emergency door unlocked/open procedure.<br><br>This condition, if not corrected, could result in the rear passenger door opening and departing the aeroplane in flight.<br><br>For the reasons described above, this AD requires implementation of amendment of the AFM procedures for flight with the door unlocked/ open, and replacement of the passenger door retaining bracket with an improved part.<br><br>This AD has been revised to specify that the use of the latest revision of the applicable AFM, if properly revised, is acceptable to comply with the AFM update requirements of this AD. |
| Effective Date: | Revision 1: 06 June 2011<br><br>Original issue: 24 November 2010 |
| Required Action(s) and Compliance Time(s): | Required as indicated, unless accomplished previously:<br><br>(1) Within 200 flight hours or 12 months, whichever occurs first after 24 November 2010 [the effective date of the original issue of this AD], accomplish the following actions concurrently, in accordance with the instructions of DAI Mandatory Service Bulletin (MSB) 40-070, MSB D4-079, MSB F4-024, MSB 42-083 or MSB 42NG-014 (and the associated Work Instructions), as applicable to aeroplane type and model:<br><br>(1.1) Determine the P/N of the installed rear passenger door retaining bracket. If a P/N DA4-5200-00-69 is installed, replace it with a P/N DA4-5200-00-69-SB bracket.<br><br>(1.2) For DA 40 aeroplanes (all models), incorporate DAI Temporary Revision AFM-TR-MAM 40-428 into the applicable AFM (see Table 1 of this AD), or incorporate an AFM revision that contains the information of AFM-TR-MAM 40-428.<br><br>(1.3) For DA 42 and DA 42 M aeroplanes, incorporate DAI Temporary Revision AFM-TR-MAM 42-443 into the applicable AFM (see Table 1 of this AD), or incorporate an AFM revision that contains the information of AFM-TR-MAM 42-443.<br><br>(1.4) For DA 42-NG and DA 42 M-NG aeroplanes, incorporate DAI Temporary Revision AFM-TR-MAM 42-443 into AFM 7.01.15, or incorporate Revision 2 into AFM 7.01.15, which contains the information of AFM-TR-MAM 42-443.<br><br>Table 1 – Airplane Flight Manuals<br><br>**DAI AFM Ref.** / **Applies to aeroplanes:**<br>6.01.01 / DA 40<br>6.01.02 / DA 40 F<br>6.01.05 / DA 40 D<br>7.01.05 / DA 42 and DA 42 M<br>7.01.06 / DA 42 and DA 42 M with GFC 700 Autopilot<br>7.01.15 / DA 42 NG and DA 42 M-NG<br><br>(2) From 24 November 2011 [12 months after the effective date of the original issue of this AD], do not install a P/N DA4-5200-00-69 rear passenger door retaining bracket on any aeroplane. |

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| Ref. Publications: | Diamond Aircraft Industries GmbH Mandatory Service Bulletins:<br>MSB 40-070, MSB D4-079 and MSB F4-024 dated 30 April 2010 (single document) and the associated Work Instructions.<br>MSB 42-083 and MSB 42NG-014 dated 13 July 2010 (single document) and the associated Work Instructions.<br>Diamond Aircraft Industries GmbH Airplane Flight Manuals:<br>AFM 6.01.01 for DA 40 aeroplanes.<br>AFM 6.01.02 for DA 40 F aeroplanes.<br>AFM 6.01.05 for DA 40 D aeroplanes.<br>AFM 7.01.05 for DA 42 and DA 42 M aeroplanes.<br>AFM 7.01.06 for DA 42 and DA 42 M aeroplanes with GFC 700 Autopilot.<br>AFM 7.01.15 Revision 2 dated 30 November 2009, for DA 42 NG and DA 42 M-NG aeroplanes.<br>The use of later approved revisions of these documents 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.<br>2. The original issue of this AD was posted on 21 September 2010 as PAD 10-102 for consultation until 19 October 2010. No comments were received during the consultation period.<br>3. Enquiries regarding this AD should be referred to the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA; E-mail ADs@easa.europa.eu.<br>4. For any question concerning the technical content of the requirements in this AD, please contact:<br>Diamond Aircraft Industries GmbH, Austria.<br>Telephone +43 2622 26700, Facsimile +43 2622 26780,<br>E-mail office@diamond-air.at |