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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2013-0937; Directorate Identifier 2013-CE-029-AD; Amendment 39-17762; AD 2014-04-04]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Diamond Aircraft Industries GmbH Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Diamond Aircraft Industries GmbH Models DA 42 NG and DA 42 M-NG airplanes. This AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as the failure of the alternator indication system to indicate warning when one alternator is inoperative. We are issuing this AD to require actions to address the unsafe condition on these products.

**DATES:** This AD is effective April 7, 2014.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of April 7, 2014.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating it in Docket No. FAA-2013-0937; or in person at Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

For service information identified in this AD, contact Diamond Aircraft Industries GmbH, N.A. Otto-Straße 5, A-2700 Wiener Neustadt, Austria, telephone: +43 2622 26700; fax: +43 2622 26700 1369; email: [airworthiness@diamond-air.at](mailto:airworthiness@diamond-air.at); Internet: <http://www.diamond-air.at>. You may view this referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

**FOR FURTHER INFORMATION CONTACT:** Mike Kiesov, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4144; fax: (816) 329-4090; email: [mike.kiesov@faa.gov](mailto:mike.kiesov@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to certain Diamond Aircraft Industries GmbH Models DA 42 NG and DA 42 M-NG airplanes. That NPRM was published in the Federal Register on November 6, 2013 (78 FR 66666). That NPRM proposed to correct an unsafe condition for the specified products and was based on mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country. The MCAI states:

During maintenance troubleshooting of the DA 42 NG alternator indication system it has been discovered that, with one alternator inoperative, the system did not give a warning indication as described in the Airplane Flight Manual.

Subsequent investigation results showed that the voltage regulator warning circuit, which is part of the engine, monitors Bus Voltage and is the only trigger for the alternator fail annunciation. As a result, one alternator may fail but the related voltage regulator does not trigger the alternator fail annunciation as the voltage is being held at the regular level by the second alternator on board.

The remaining generating system indication for the pilot is unaffected. The ampere-meter is indicating a load on each alternator and in case of a Low Voltage condition a caution message will be displayed.

This condition, if not corrected, could lead to an undetected loss of one engine alternator and reduced capability of the electrical generating power system, possibly impairing safe continuation of the flight.

Prompted by this event, Diamond Aircraft Industries (DAI) introduced at airframe level an additional independent alternator fail caution trigger by using the G1000 ampere-meter signals. The trigger is set once an alternator provides less than 5A and thus indicates electrical power supply failure to the ship system.

DAI issued Mandatory Service Bulletin (MSB) 42NG-003/12 providing instructions for installation of the Secondary Configuration Card Part Number (P/N) 010-12074-02 "Additional ALTN FAIL trigger" with system software P/N 010-00670-10 applicable for all DA 42 NG and DA 42 M-NG aeroplanes.

In addition, model DA 42 M-NG now incorporates an output of the GEA 71 to activate the alternator fail relay. DAI issued Mandatory Service Bulletin (MSB) 42MNG-006 to provide instructions for installation of that additional control cable P/N D62-2510-97-00-SB.

For the reasons described above, this AD requires installation of the Secondary Configuration Card P/N 010-12074-02 "Additional ALTN FAIL trigger" and System Software P/N 010-00670-10 for all DA 42 NG and DA 42 M-NG aeroplanes and installation of GEA Alternator fail control cable P/N D62-2510-97-00-SB on certain model DA 42 M-NG aeroplanes.

This AD also prohibits installation of System Software prior to P/N 010-00670-10.

The MCAI can be found in the AD docket on the Internet at:  
<http://www.regulations.gov/#!documentDetail;D=FAA-2013-0937-0002>.

## **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (78 FR 66666, November 6, 2013) or on the determination of the cost to the public.

## **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD as proposed except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (78 FR 66666, November 6, 2013) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (78 FR 66666, November 6, 2013).

## **Costs of Compliance**

We estimate that this AD will affect 26 products of U.S. registry. We also estimate that it would take about 2 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour. Required parts would cost about \$ 115 per product.

Based on these figures, we estimate the cost of the AD on U.S. operators to be \$7,410, or \$285 per product.

## **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.

We are 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.

## **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will 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 AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains the NPRM, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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 adding the following new AD:



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**2014-04-04 Diamond Aircraft Industries GmbH:** Amendment 39-17762; Docket No. FAA-2013-0937; Directorate Identifier 2013-CE-029-AD.

**(a) Effective Date**

This airworthiness directive (AD) becomes effective April 7, 2014.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Diamond Aircraft Industries GmbH Models DA 42 NG and DA 42 M NG airplanes, all serial numbers certificated in any category, except those that have incorporated Supplemental Type Certificate (STC) SA02725NY ([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgstc.nsf/0/286A29A0C46D66048625764900624649?OpenDocument&Highlight=sa02725ny](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/286A29A0C46D66048625764900624649?OpenDocument&Highlight=sa02725ny)).

Note 1 to paragraph (c) of this AD: STC SA02725NY uses different electrical system architecture and the unsafe condition addressed in this AD does not apply to that system.

**(d) Subject**

Air Transport Association of America (ATA) Code 24: Electric Power.

**(e) Reason**

This AD was prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as failure of the alternator indication system to indicate warning when one alternator is inoperative. We are issuing this AD to prevent the undetected loss of one engine alternator, which could result in reduced capability of the electrical generating power system.

**(f) Actions and Compliance**

Unless already done, do the following actions as specified in paragraphs (f)(1) through (f)(3) of this AD, including all subparagraphs:

(1) For all DA 42 NG airplanes: Within the next 12 months after April 7, 2014 (the effective date of this AD), install Secondary Configuration Card part number (P/N) 010-12074-02 "Additional ALTN FAIL trigger" and System Software P/N 010-00670-10 following the Accomplishment/Instructions in Diamond Aircraft Industries GmbH Mandatory Service Bulletin No. MSB 42NG-003/13, dated October 11, 2013; or the Accomplishment/Instructions in Diamond Aircraft Industries GmbH Mandatory Service Bulletin No. MSB 42NG-003/12, dated July 8, 2013.

(2) For DA 42 M-NG airplanes, serial numbers (S/Ns) 42.339, 42.MN001 through 42.MN0026, and all S/Ns modified through Optional Service Bulletin (OSB) 42-081, using Work Instruction (WI) OSB-42-081 up to Revision 1 inclusive: Within the next 100 hours time-in-service after April 7, 2014 (the effective date of this AD) or within the next 12 months after April 7, 2014 (the effective date of this AD), whichever occurs first:

(i) Install GEA Alternator fail control cable P/N D62-2510-97-00-SB following the Instructions in Diamond Aircraft Industries GmbH Work Instruction WI-MSB 42MNG-006, dated July 8, 2013, as specified in the Accomplishments/Instructions in Diamond Aircraft Industries GmbH Mandatory Service Bulletin No. MSB 42MNG-006, July 8, 2013; and

(ii) Install Secondary Configuration Card P/N 010-12074-02 "Additional ALTN FAIL trigger" and System Software P/N 010-00670-10 following the Accomplishment/Instructions in Diamond Aircraft Industries GmbH Mandatory Service Bulletin No. MSB 42NG-003/13, dated October 11, 2013; or the Accomplishment/Instructions in Diamond Aircraft Industries GmbH Mandatory Service Bulletin No. MSB 42NG-003/12, dated July 8, 2013.

(3) For all airplanes: As of April 7, 2014 (the effective date of this AD), do not install on any airplane System Software prior to P/N 010-00670-10.

### **(g) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, Standards Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Mike Kiesov, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4144; fax: (816) 329-4090; email: mike.kiesov@faa.gov. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

### **(h) Related Information**

Refer to MCAI European Aviation Safety Agency (EASA) AD No.: 2013-0224, dated September 19, 2013, for more information. The MCAI can be found in the AD docket on the Internet at: <http://www.regulations.gov/#!documentDetail;D=FAA-2013-0937-0002>. You may also refer to Diamond Aircraft Industries GmbH Optional Service Bulletin OSB 42-081/1 and Diamond Aircraft Industries GmbH Work Instruction WI-OSB 42-081, Rev. 1, both dated December 23, 2010; and Diamond Aircraft Industries GmbH Optional Service Bulletin OSB 42-081 and Diamond Aircraft Industries GmbH Work Instruction WI-OSB 42-081, Rev. 0, both dated March 17, 2010, for more information. For service information related to this AD, you may contact the manufacturer using the information found in paragraph (i)(3) of this AD.

### **(i) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Diamond Aircraft Industries GmbH Mandatory Service Bulletin No. MSB 42NG-003/13, dated October 11, 2013.

(ii) Diamond Aircraft Industries GmbH Mandatory Service Bulletin No. MSB 42NG-003/12, dated July 8, 2013.

(iii) Diamond Aircraft Industries GmbH Mandatory Service Bulletin MSB 42MNG-006, dated July 8, 2013.

(iv) Diamond Aircraft Industries GmbH Work Instruction WI-MSB 42MNG-006, dated July 8, 2013.

(3) For Diamond Aircraft Industries GmbH service information identified in this AD, contact Diamond Aircraft Industries GmbH, N.A. Otto-Straße 5, A-2700 Wiener Neustadt, Austria, telephone: +43 2622 26700; fax: +43 2622 26700 1369; email: [airworthiness@diamond-air.at](mailto:airworthiness@diamond-air.at); Internet: <http://www.diamond-air.at>.

(4) You may view this service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Kansas City, Missouri, on February 12, 2014.

Steven W. Thompson,  
Acting Manager, Small Airplane Directorate,  
Aircraft Certification Service.