

## SERVICE INFORMATION NO. SI 20-043

**NOTE:** SI's are used only:  
1) To distribute information from DAI to our customers.  
2) To distribute applicable information/documents from our suppliers to our customers with additional information.  
Typically there is no revision service for SI's. Each new information or change of that will be sent along with a new SI.

### I. TECHNICAL DETAILS

#### 1.1 Airplanes affected:

All DV 20 aircraft

#### 1.2 Subject:

FAA Airworthiness Directive No. 2010-23-17  
ATA-Code: 72-20

#### 1.3 Reason:

FAA has issued Airworthiness Directive No. 2010-23-17 mandating initial and repetitive visual inspections of the engine crankcase and if necessary the replacement of the engine crankcase following Rotax Mandatory Service Bulletin SB-912-029 R3. In addition a test procedure to determine the engine suitability for a special flight permit is provided.

#### 1.4 Information:

For detailed technical information refer to FAA Airworthiness Directive No. 2010-23-17 which is applicable without any further additions or restrictions.

### II. OTHERS

In case of doubt contact BRP-Powertrain GmbH & Co. KG or Diamond Aircraft Industries GmbH.

The FAA Airworthiness Directive No. 2010-23-17 is attached to this SI.

[Federal Register: November 17, 2010 (Volume 75, Number 221)]  
[Rules and Regulations]  
[Page 70098-70101]  
From the Federal Register Online via GPO Access [wais.access.gpo.gov]  
[DOCID:fr17no10-5]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2010-0522; Directorate Identifier 2010-CE-022-AD; Amendment 39-16506; AD 2010-23-17]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Various Aircraft Equipped With Rotax Aircraft Engines 912 A Series Engines**

**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 the products listed above. 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:

This Airworthiness Directive (AD) results from reports of cracks in the engine crankcase. Austro Control GmbH (ACG) addressed the problem by issuing AD No 107R3 which was superseded by ACG AD A-2004-01.

The present AD supersedes the ACG AD A-2004-01. On one hand, introduction by Rotax of an optimized crankcase assembly has permitted to reduce applicability of the new AD, when based on engines' serial numbers (s/n). On the other hand, applicability is extended for some engines that may have been fitted with certain crankcase s/n, supplied as spare parts.

In addition, accomplishment instructions given through the relevant Service Bulletins (SB) have been detailed to better locate engine's areas that are to be scrutinised.

We are issuing this AD to require actions to correct the unsafe condition on these products.

**DATES:** This AD becomes effective December 22, 2010.

On December 22, 2010, the Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov> 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 BRP-Powertrain GMBH & Co KG, Welser Strasse 32, A-4623 Gunskirchen, Austria; phone: (+43) (0) 7246 601-0; fax: (+43) (0) 7246 6370; Internet: <http://www.rotax.com>. You may review copies of the 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:** Sarjapur Nagarajan, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4145; fax: (816) 329-4090 e-mail: [sarjapur.nagarajan@faa.gov](mailto:sarjapur.nagarajan@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 the specified products. That NPRM was published in the Federal Register on May 21, 2010 (75 FR 28504). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

This Airworthiness Directive (AD) results from reports of cracks in the engine crankcase. Austro Control GmbH (ACG) addressed the problem by issuing AD No 107R3 which was superseded by ACG AD A-2004-01.

The present AD supersedes the ACG AD A-2004-01. On one hand, introduction by Rotax of an optimized crankcase assembly has permitted to reduce applicability of the new AD, when based on engines' serial numbers (s/n). On the other hand, applicability is extended for some engines that may have been fitted with certain crankcase s/n, supplied as spare parts.

In addition, accomplishment instructions given through the relevant Service Bulletins (SB) have been detailed to better locate engine's areas that are to be scrutinised.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We have considered the comment received.

### **Request To Change AD 2002-16-26**

Robert Seton of Rotech Research Canada Ltd. requested information regarding if AD 2006-16-26 would be changed to incorporate the same terminating action specified in this AD. We infer that he wants us to supersede AD 2002-16-26 with a new AD that incorporates the same terminating action. Mr. Seton also commented there was confusion regarding the starting serial number range for the new crankcase.

We agree with the comment that AD 2002-16-26 should be superseded. AD 2002-16-26 does address the same unsafe condition, but that AD applies to a different group of products. On October 4, 2010, AD 2010-20-23, Amendment 39-16458 (75 FR 61046, October 4, 2010) was published and

is effective on November 8, 2010. AD 2010-20-23 supersedes AD 2002-16-26 and added the following terminating action:

(k) Installing a crankcase that has a S/N above 27811 terminates the inspection requirements of paragraphs (g)(1) through (g)(4) and (h) of this AD.

The wording for the applicable starting S/N for the terminating action in AD 2010-20-23 is slightly different than what was in the proposed rulemaking for this final rule AD. To clarify the starting S/N for the terminating action, we changed the starting S/N in this final rule AD action to match AD 2010-20-23.

## **Conclusion**

We reviewed the available data, including the comment received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

## **Differences Between This AD and the MCAI or Service Information**

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI and related service information.

We might also have required different actions in this AD from those in the MCAI in order to follow FAA policies. Any such differences are highlighted in a Note within the AD.

## **Costs of Compliance**

We estimate that this AD will affect 60 products of U.S. registry. We also estimate that it will take about 3 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour.

Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$15,300, or \$255 per product.

In addition, we estimate that any necessary follow-on actions will take about 20 work-hours and require parts costing \$6,500, for a cost of \$8,200 per product. We have no way of determining the number of products that may need these actions.

## **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 DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
- (3) 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD Docket.

## **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:



**2010-23-17 Various Aircraft:** Amendment 39-16506; Docket No. FAA-2010-0522; Directorate Identifier 2010-CE-022-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective December 22, 2010.

**Affected ADs**

(b) None.

**Applicability**

(c) This AD applies to all serial numbers (S/N) of the following aircraft, equipped with a Rotax Aircraft Engines 912 A series engine with a crankcase assembly S/N up to and including S/N 27811, certificated in any category:

Type certificate holder	Aircraft model	Engine model
Aeromot-Industria Meccanico Metalurgica ltda	AMT-200	912 A2
Diamond Aircraft Industries	HK 36 R "SUPER DIMONA"	912 A
Diamond Aircraft Industries GmbH	HK 36 TS	912 A3
	HK 36 TC	912 A3
Diamond Aircraft Industries Inc.	DA20-A1	912 A3
HOAC-Austria	DV 20 KATANA	912 A3
Iniziativa Industriali Italiane S.p.A.	Sky Arrow 650 TC	912 A2
SCHEIBE-Flugzeugbau GmbH	SF 25C	912 A2 or 912 A3

**Subject**

(d) Air Transport Association of America (ATA) Code 72: Engine.

**Reason**

(e) The mandatory continuing airworthiness information (MCAI) states:

This Airworthiness Directive (AD) results from reports of cracks in the engine crankcase. Austro Control GmbH (ACG) addressed the problem by issuing AD No 107R3 which was superseded by ACG AD A-2004-01.

The present AD supersedes the ACG AD A-2004-01. On one hand, introduction by Rotax of an optimized crankcase assembly has permitted to reduce applicability of the new AD, when based on engines' serial numbers (s/n). On the other hand, applicability is extended for some engines that may have been fitted with certain crankcase s/n, supplied as spare parts.

In addition, accomplishment instructions given through the relevant Service Bulletins (SB) have been detailed to better locate engine's areas that are to be scrutinised.

The aim of this AD is to ensure that the requested engine power is available at any time to prevent a sudden loss of power that could lead to a hazardous situation in a low altitude phase of flight.

The MCAI requires inspecting certain crankcases for cracks and replacing the crankcase if cracks are found.

### **Actions and Compliance**

(f) Unless already done, do the following actions:

(1) Within the next 50 hours time-in-service (TIS) after December 22, 2010 (the effective date of this AD), inspect the engine crankcase for cracks following Rotax Aircraft Engines Service Bulletin SB-912-029 R3, dated July 11, 2006. Repetitively thereafter do the inspection at each 100-hour, annual, or progressive inspection or within 110 hours TIS since last inspection, whichever occurs first.

(2) If cracks in the engine crankcase are found during any inspection required by paragraph (f)(1) of this AD, before further flight, replace the crankcase following Rotax Aircraft Engines Service Bulletin SB-912-029 R3, dated July 11, 2006.

(3) Installing a crankcase that has a S/N above 27811 terminates the inspection requirements of paragraph (f)(1) of this AD.

Note 1: The service information is a combined service bulletin for both the 912 type (Service Bulletin SB-912-029 R3, dated July 11, 2006) and 914 type (Service Bulletin SB-914-018, Revision 3, dated July 11, 2006) engines. This AD does not reference Service Bulletin SB-914-018, Revision 3, dated July 11, 2006, because this AD does not apply to the 914 series engines. This unsafe condition for the 914 type engines is the subject of AD 2010-20-23.

### **FAA AD Differences**

Note 2: This AD differs from the MCAI and/or service information as follows: No differences.

### **Other FAA AD Provisions**

(g) 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: Sarjapur Nagarajan, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4145; fax: (816) 329-4090; e-mail: sarjapur.nagarajan@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.

(3) Reporting Requirements: For any reporting requirement in this AD, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW., Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

### **Special Flight Permit**

(h) We are limiting the special flight permits for this AD by the following conditions if the crankcase is cracked or there is evidence of oil leakage from the crankcase:

(1) Perform a leak check as follows:

(i) Clean the crankcase surface to remove any oil.

(ii) Warm up the engine to a minimum oil temperature of 50 degrees C (120 degrees F).

Information about warming up the engine can be found in the applicable line maintenance manual.

(iii) Accelerate the engine to full throttle and stabilize at full throttle speed for a time period of 5 to 10 seconds. Information about performing a full throttle run can be found in the applicable line maintenance manual.

(iv) Shutdown after running the engine at idle only long enough to prevent vapor locks in the cooling system and fuel system.

(v) Inspect the crankcase for evidence of oil leakage. Oil wetting is permitted, but oil leakage of more than one drip in 3 minutes after engine shutdown is not allowed.

(2) Check the crankcase mean pressure to confirm that it is 1.46 pounds-per-square inch gage (psig) (0.1 bar) or higher when checked at takeoff power to ensure proper return of oil from the crankcase to the oil tank. Information about checking crankcase mean pressure is available in the Lubrication System section of the applicable engine installation manual.

(3) A ferry flight is not allowed if oil leakage exceeds one drip in 3 minutes or if crankcase mean pressure is below 1.46 psig.

### **Related Information**

(i) Refer to MCAI EASA AD No.: 2007-0025, dated February 1, 2007, for related information.

### **Material Incorporated by Reference**

(j) You must use Rotax Aircraft Engines Service Bulletin SB-912-029 R3, dated July 11, 2006, to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) For service information identified in this AD, contact BRP-Powertrain GMBH & Co KG, Welser Strasse 32, A-4623 Gunskirchen, Austria; phone: (+43) (0) 7246 601-0; fax: (+43) (0) 7246 6370; Internet: <http://www.rotax.com>.

(3) You may review copies of the 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.



(4) You may also review copies of the service information incorporated by reference for this AD 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/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Kansas City, Missouri, on November 1, 2010.

John Colomy,  
Acting Manager, Small Airplane Directorate,  
Aircraft Certification Service.