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[Page 34213-34215]  
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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2009-0437; Directorate Identifier 2009-CE-018-AD; Amendment 39-15963; AD 2009-14-13]**

**RIN 2120-AA64**

**Airworthiness Directives; Pilatus Aircraft Ltd. Models PC-12, PC-12/45, PC-12/47, and PC-12/47E Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are superseding an existing 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 (two different MCAI) describes the unsafe condition as:

FOCA AD HB 2002-271 was issued because the Nose Landing Gear (NLG) Right Hand (RH) upper drag link, Part Number (P/N) 532.20.12.140 was found broken on some aircraft due to fatigue cracking, and therefore a life limit of 4,000 landings was introduced.

Recent investigation of a new occurrence revealed that the replacement part NLG RH upper drag link P/N 532.20.12.289 also suffered fatigue cracking, however on a different location.

Complete failure of the NLG RH upper drag link could result in NLG collapse during landing.

and

This Airworthiness Directive (AD) is prompted by reports of several in-service cracked torque tubes. A reduced wall thickness produced during the manufacturing process has been determined to be the initial cause.

Additionally, all the involved torque tubes have been found to show fatigue cracking problems.

Such a condition, if left uncorrected, could lead to failure of the torque tube and result in loss of the steering control on ground and consequent unsafe condition.

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

**DATES:** This AD becomes effective August 19, 2009.

On August 19, 2009, 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 the Docket 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 FURTHER INFORMATION CONTACT:** Doug Rudolph, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4059; fax: (816) 329-4090.

#### **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 8, 2009 (74 FR 21561), and proposed to supersede AD 2003-14-07, Amendment 39-13226 (68 FR 41903, July 16, 2003). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI (two different MCAI) states:

FOCA AD HB 2002-271 was issued because the Nose Landing Gear (NLG) Right Hand (RH) upper drag link, Part Number (P/N) 532.20.12.140 was found broken on some aircraft due to fatigue cracking, and therefore a life limit of 4,000 landings was introduced.

Recent investigation of a new occurrence revealed that the replacement part NLG RH upper drag link P/N 532.20.12.289 also suffered fatigue cracking, however on a different location.

Complete failure of the NLG RH upper drag link could result in NLG collapse during landing. To address that condition, this AD is issued to mandate the implementation of the latest revision of the PC-12 Aircraft Maintenance Manual (AMM) chapter 4—airworthiness limitations section—by establishing repetitive inspections for the NLG RH upper drag links P/N 532.20.12.140 and P/N 532.20.12.289.

and

This Airworthiness Directive (AD) is prompted by reports of several in-service cracked torque tubes. A reduced wall thickness produced during the manufacturing process has been determined to be the initial cause.

Additionally, all the involved torque tubes have been found to show fatigue cracking problems.

Such a condition, if left uncorrected, could lead to failure of the torque tube and result in loss of the steering control on ground and consequent unsafe condition.

For the reason described above, this new AD mandates the replacement of certain torque tubes by new ones of an improved design and the latest revision of chapter 4 'limitations' of the PC-12 Aircraft Maintenance Manual (AMM) which introduces the new life limit for torque tubes with Part Number (P/N) 532.50.12.047.

We reviewed the available data, including the comment received, and determined that air safety and the public interest require adopting the AD as proposed.

## **Comments**

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

### **Comment Issue: Require Using Limitations Document in Latest Maintenance Manual Revision**

Tim Kitzman states that document 12-A-04-00-00-00A-000T-A, dated January 28, 2009, has been incorporated into the latest revision of the aircraft maintenance manual. He requests that we update the AD to require incorporating the data module found in PC-12 AMM, Document No. 02049, Rev 19, dated March 1, 2009.

We disagree with the commenter. Structural and Component Limitations–Airworthiness Limitations, document 12-A-04-00-00-00A-000T-A, dated January 28, 2009, contains the required limitations information for this AD. We are aware Pilatus periodically updates their aircraft maintenance manuals (both electronic and paper versions), and the manuals contain the limitations section referenced in this AD. We encourage owners/operators to keep their maintenance manuals up-to-date. However, paragraph 145.c.(2) of the FAA Airworthiness Directives Manual FAA-IR-M-8040.1B, dated May 28, 2008, states:

Only the version given to the OFR (Office of the Federal Register) for IBR (incorporation by reference) is the legally enforceable one. Later revised service bulletin pages, for instance, would constitute a change to the document and an "alternative method of compliance" that has not been subject to public notice and comment.

We use the AD process to mandate changes to the limitations section and we can not mandate future revisions. If the document containing the limitations section is updated and an owner/operator wants to incorporate the latest version of the document (including the limitations section) into their maintenance program, they can request an alternative method of compliance (AMOC) following the procedures in paragraph (h)(1) of this AD. You may get a copy of the FAA Airworthiness Directives Manual on the Internet at [http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgOrders.nsf/Frameset?OpenPage](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgOrders.nsf/Frameset?OpenPage).

We are not changing the final rule AD action based on this comment.

## **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 540 products of U.S. registry. We also estimate that it will take about 3.5 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$80 per work-hour. Required parts will cost about \$300 per product. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$313,200, or \$580 per product.

In addition, we estimate that any necessary follow-on actions would take about 6 work-hours and require parts costing \$4,000, for a cost of \$4,480 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 removing Amendment 39-13226 (68 FR 41903, July 16, 2003) and adding the following new AD:



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**2009-14-13 Pilatus Aircraft Ltd.:** Amendment 39-15963; Docket No. FAA-2009-0437; Directorate Identifier 2009-CE-018-AD.

**Effective Date**

- (a) This airworthiness directive (AD) becomes effective August 19, 2009.

**Affected ADs**

- (b) This AD supersedes AD 2003-14-07, Amendment 39-13226.

**Applicability**

(c) This AD applies to the following model and serial number airplanes, certificated in any category:

- (1) Models PC-12, PC-12/45, PC-12/47, manufacturer serial numbers (MSNs) 101 through 544 and MSNs 546 through 888; and
- (2) Model PC-12/47E, MSN 545 and MSNs 1001 through 1150.

**Subject**

- (d) Air Transport Association of America (ATA) Code 32: Landing Gear.

**Reason**

- (e) The mandatory continuing airworthiness information (MCAI) (two different MCAI) states:

FOCA AD HB 2002-271 was issued because the Nose Landing Gear (NLG) Right Hand (RH) upper drag link, Part Number (P/N) 532.20.12.140 was found broken on some aircraft due to fatigue cracking, and therefore a life limit of 4,000 landings was introduced.

Recent investigation of a new occurrence revealed that the replacement part NLG RH upper drag link P/N 532.20.12.289 also suffered fatigue cracking, however on a different location.

Complete failure of the NLG RH upper drag link could result in NLG collapse during landing. To address that condition, this AD is issued to mandate the implementation of the latest revision of the PC-12 Aircraft Maintenance Manual (AMM) chapter 4—airworthiness limitations section—by establishing repetitive inspections for the NLG RH upper drag links P/N 532.20.12.140 and P/N 532.20.12.289.

and

This Airworthiness Directive (AD) is prompted by reports of several in-service cracked torque tubes. A reduced wall thickness produced during the manufacturing process has

been determined to be the initial cause. Additionally, all the involved torque tubes have been found to show fatigue cracking problems.

Such a condition, if left uncorrected, could lead to failure of the torque tube and result in loss of the steering control on ground and consequent unsafe condition.

For the reason described above, this new AD mandates the replacement of certain torque tubes by new ones of an improved design and the latest revision of chapter 4 "limitations" of the PC-12 Aircraft Maintenance Manual (AMM) which introduces the new life limit for torque tubes with Part Number (P/N) 532.50.12.047.

## **Actions and Compliance**

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

(1) Limitations Section Actions: For all airplanes, before further flight after August 19, 2009 (the effective date of this AD), insert Structural and Component Limitations–Airworthiness Limitations, document 12-A-04-00-00-00A-000T-A, dated January 28, 2009 (for PC-12, PC-12/45, PC-12/47), and Structural and Component Limitations–Airworthiness Limitations, document 12-B-04-00-00-00A-000A-A, dated January 27, 2009 (for PC-12/47E), into the Limitations section of the FAA approved maintenance program (e.g., maintenance manual). The limitations section revision does the following:

(i) Establishes a life limit for torque tube P/N 532.50.12.047 and does not impose a life limit on torque tube P/N 532.50.12.064;

(ii) Requires doing initial and repetitive inspections of nose landing gear right hand upper drag link P/N 532.20.12.140 (for PC-12 and PC-12/45 airplanes) or P/N 532.20.12.289 (for all airplanes) in accordance with the time limits specified in the revision. The limitations do not allow installation of the upper drag link P/N 532.20.12.140 on PC-12/47 and PC-12/47E airplanes. The 4,000 landing limit for the upper drag link P/N 532.20.12.140 installed on the PC-12 and PC-12/45 is retained from AD 2003-14-07 through this limitation requirement; and

(iii) Does not require doing initial and repetitive inspections of nose landing gear right hand upper drag link P/N 532.20.12.296; therefore, installation of upper drag link P/N 532.20.12.296 terminates the inspection requirement referenced in paragraph (f)(1)(ii) of this AD.

(2) Additional Torque Tube Actions:

(i) For PC-12 and PC-12/45, S/N 101 through 299, airplanes: Within the next 100 hours time-in-service (TIS) after August 19, 2009 (the effective date of this AD) or 1 year after August 19, 2009 (the effective date of this AD), whichever occurs first, replace the torque tube P/N 532.50.12.047 with torque tube P/N 532.50.12.064 following PILATUS AIRCRAFT LTD. Service Bulletin No: 32-021, dated November 21, 2008.

(ii) For all airplanes: As of August 19, 2009 (the effective date of this AD), do not install torque tube P/N 532.50.12.047.

## **FAA AD Differences**

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

## **Other FAA AD Provisions**

(h) 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: Doug Rudolph, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4059; fax:

(816) 329-4090. 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, under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.), the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120-0056.

### **Special Flight Permit**

(i) We are limiting the special flight permits for this AD by requiring you to fly with the landing gear extended in order to reach the nearest maintenance facility where the inspection or replacement is done. Consult the airplane flight manual or contact PILATUS AIRCRAFT LTD. for the additional limitations for flight with landing gear extended.

### **Related Information**

(j) Refer to MCAI (two different MCAI) AD No.: 2009-0086 dated April 14, 2009, and AD No.: 2009-0060 dated March 11, 2009; PILATUS AIRCRAFT LTD. Service Bulletin No: 32-021, dated November 21, 2008; Structural and Component Limitations–Airworthiness Limitations, document 12-A-04-00-00-00A-000T-A, dated January 28, 2009; and Structural and Component Limitations–Airworthiness Limitations, document 12-B-04-00-00-00A-000A-A, dated January 27, 2009, for related information.

### **Material Incorporated by Reference**

(k) You must use PILATUS AIRCRAFT LTD. Service Bulletin No: 32-021, dated November 21, 2008; Structural and Component Limitations–Airworthiness Limitations, document 12-A-04-00-00-00A-000T-A, dated January 28, 2009; and Structural and Component Limitations–Airworthiness Limitations, document 12-B-04-00-00-00A-000A-A, dated January 27, 2009, 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 PILATUS AIRCRAFT LTD., Customer Service Manager, CH-6371 STANS, Switzerland; telephone: +41 (0)41 619 62 08; fax: +41 (0)41 619 73 11; Internet: <http://www.pilatus-aircraft.com/>, or e-mail: SupportPC12@pilatus-aircraft.com.

(3) You may review copies of the service information incorporated by reference for this AD at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the Central Region, call (816) 329-3768.

(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 July 1, 2009.  
Scott A. Horn,  
Acting Manager, Small Airplane Directorate,  
Aircraft Certification Service.