

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 39**

[Docket No. 2000-CE-77-AD; Amendment 39-12563; AD 2001-25-10]

RIN 2120-AA64

Airworthiness Directives; Pilatus Aircraft Ltd. Models PC-12 and PC-12/45 Airplanes**AGENCY:** Federal Aviation Administration, DOT.**ACTION:** Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that supersedes Airworthiness Directive (AD) 99-19-32, which applies to certain Pilatus Aircraft Ltd. (Pilatus) Models PC-12 and PC-12/45 airplanes. AD 99-19-32 currently requires you to inspect the flap actuator internal gear system for correct end-play and backlash measurements and accomplish any corrective adjustments, as necessary. Pilatus has identified modifications for the flap system and designed and manufactured a new flap control and warning unit (FCWU) that permits the flap power drive-unit circuit breaker to close during flight. This AD requires you to modify the flap control wiring and install a flap power drive-unit field control panel. The actions specified by this AD are intended to allow the flap power drive-unit circuit breaker to close during flight and prevent current surges in the flap control system. If the pilot cannot close the circuit breaker during flight, the flight control and warning unit (FCWU) would not sense a worn actuator. Current surges in the flap control system could decrease the electrical life of the flap power drive-unit motor contactor. Both conditions have the potential for flap system failure with consequent reduced or loss of control of the airplane.

DATES: This AD becomes effective on January 25, 2002.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of January 25, 2002.

ADDRESSES: You may get the service information referenced in this AD from

Pilatus Aircraft Ltd., Customer Liaison Manager, CH-6371 Stans, Switzerland; telephone: +41 41 619 63 19; facsimile: +41 41 619 6224; or from Pilatus Business Aircraft Ltd., Product Support Department, 11755 Airport Way, Broomfield, Colorado 80021; telephone: (303) 465-9099; facsimile: (303) 465-6040. You may view this information at the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 2000-CE-77-AD, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT:

Doug Rudolph, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4059; facsimile: (816) 329-4090.

SUPPLEMENTARY INFORMATION:**Discussion***What Events Have Caused This AD?*

Reports of excessive backlash in the flap actuators of the internal gear system on certain Pilatus Models PC-12 and PC-12/45 airplanes caused FAA to issue AD 99-19-32, Amendment 39-11319 (64 FR 50439, September 17, 1999).

AD 99-19-32 currently requires you to inspect the flap actuator internal gear system for correct end-play and backlash measurements and accomplish any corrective adjustments, as necessary.

The Federal Office for Civil Aviation (FOCA), which is the airworthiness authority for Switzerland, recently notified FAA of the need to change AD 99-19-32. The FOCA reports that Pilatus has identified modifications for the flap system and designed and manufactured a new flap control and warning unit (FCWU) that permits the flap power drive-unit circuit breaker to close during flight.

The previous FCWU does not allow the pilot to close the flap power drive-unit circuit breaker during flight and the FCWU cannot sense when a single actuator becomes worn. This could result in flap panel distortion. The incorporation of these modifications to the flap system and the installation of the new design FCWU, Pilatus part

number FCWU 99-3, make the current end-play and backlash measurement procedures incorrect.

Pilatus has also identified quality deficiencies with serial numbers less than 100,001 of Pilatus part number FCWU 99-3.

In addition, the FOCA reports that electrical surges in the flap system can decrease the electrical life of the flap power drive-unit motor contactor. At the 40-degree flaps position, the flaps-down limit switch (S035) operates before the flap control warning unit can stop the extend command, which causes the flap power drive-unit's Up/Down relay (K32) to change from the extend to the retract position. The current in the field winding then goes in the opposite direction while a current still flows to the motor. Electrical current to the flap power drive-unit motor and field windings remains when the circuit breaker (CB034) closes and the motor contactor (K31 or K670) stays closed.

Has FAA Taken Any Action to This Point?

We issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to all Pilatus PC-12 and PC-12/45 airplanes. This proposal was published in the **Federal Register** as a notice of proposed rulemaking (NPRM) on September 20, 2001 (66 FR 48381). The NPRM proposed to supersede AD 99-19-32 and proposed to require you to accomplish the following:

- Repetitively inspect the flap actuator internal gear system for correct end-play and backlash measurements with any necessary corrective adjustments;
- Incorporate certain modifications to the flap system and install a new design FCWU with a serial number of 100,001 or higher, or FAA-approved equivalent part number; and
- Modify the flap control wiring and install a flap power drive-unit field control panel.

Accomplishment of these proposed actions as specified in the NPRM would be required in accordance with the following:

- Pilatus PC-12 Service Bulletin No. 27-008, which incorporates the following pages:

Effective pages	Revision level	Date
1, 2, and 11	2	September 13, 2000.
3 through 10 and 12 through 114	1	June 26, 2000

- Pilatus PC-12 Service Bulletin No. 27-012, dated September 13, 2000;
- Pilatus PC-12 Maintenance Manual Temporary Revision No. 27-13, dated April 30, 2000; and
- Pilatus PC-12 Service Bulletin No. 27-011, Revision No. 1, dated January 26, 2001.

Note: We added to the final rule Pilatus PC-12 Maintenance Manual Temporary Revision No. 27-14 (which superseded Temporary Revision No. 27-13), dated December 4, 2000, and Pilatus PC-12 Aircraft Maintenance Manual 27-50-03, pages 601 through 608, dated April 30, 2000.

What Is the Potential Impact if FAA Took No Action?

These conditions, if not corrected, could cause the flap power drive-unit circuit breaker to not close during flight and cause current surges in the flap control system. Both conditions have the potential for flap system failure with consequent reduced or loss of control of the airplane.

Was the Public Invited To Comment?

The FAA encouraged interested persons to participate in the making of this amendment. The following presents the comments received on the proposal and FAA's response to each comment:

Comment Issue No. 1: The AD Is not Necessary

What is the commenter's concern? Several commenters state that the AD is not necessary and the actions that are currently required by AD 99-19-32 are sufficient. The commenters request that FAA withdraw the NPRM.

What is FAA's response to the concern? We do not concur that this AD is not necessary. As previously discussed, the unsafe conditions specified in this document, if not corrected, could cause the flap power

drive-unit circuit breaker to not close during flight and cause current surges in the flap control system. If the pilot cannot close the circuit breaker during flight, the flight control and warning unit (FCWU) would not sense a worn actuator. Current surges in the flap control system could decrease the electrical life of the flap power drive-unit motor contactor. Both conditions have the potential for flap system failure with consequent reduced or loss of control of the airplane.

We are not changing the final rule as a result of these comments.

Comment Issue No. 2: Change the Compliance Time

What is the commenter's concern? One commenter suggests that FAA change the repetitive inspection interval for the actuator backlash from 100 hours time-in-service (TIS) to 600 hours TIS. This would coincide with Pilatus PC-12 Service Bulletin No. 27-008 and Pilatus PC-12 Maintenance Manual Temporary Revision No. 27-14 (which superseded Temporary Revision No. 27-13), dated December 4, 2000, or Pilatus PC-12 Aircraft Maintenance Manual 27-50-03, pages 601 through 608, dated April 30, 2000.

What is FAA's response to the concern? We concur with this comment. Our intent was to make the repeat inspections at 600-hour TIS intervals once the improved design actuators were installed.

We are changing the final rule to reflect:

- The change in repeat inspections from 100-hour TIS to 600-hour TIS intervals; and
- Reference to Pilatus PC-12 Maintenance Manual Temporary Revision No. 27-14 (which superseded Temporary Revision No.

27-13), dated December 4, 2000, or Pilatus PC-12 Aircraft Maintenance Manual 27-50-03, pages 601 through 608, dated April 30, 2000.

FAA's Determination

What Is FAA's Final Determination on This Issue?

We carefully reviewed all available information related to the subject presented above and determined that air safety and the public interest require the adoption of the rule as proposed except for the changes discussed above and minor editorial questions. We have determined that these changes and minor corrections:

- Provide the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Cost Impact

How Many Airplanes Does This AD Impact?

We estimate that this AD affects 135 airplanes in the U.S. registry.

What Is the Cost Impact of This AD on Owners/Operators of the Affected Airplanes?

We estimate the following costs to accomplish the initial inspection of the flap actuator internal gear system for end-play and backlash measurements. We have no way of determining the number of corrective adjustments each owner/operator of the affected airplanes would need to accomplish, the nature of such adjustments, or the number of repetitive inspections each owner/operator would incur. Therefore, the cost estimate only takes into account the cost of the proposed initial inspection:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
6 workhours × \$60 per hour = \$360.	Not Applicable	\$360	\$48,600

We estimate the following costs to incorporate certain modifications to the flap system and install a new design FCWU with a serial number of 100,001 or higher:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
70 workhours × \$60 per hour = \$4,200	Pilatus will provide parts at no cost to the owner/operator.	\$4,200	\$567,000

We estimate the following costs to modify the flap control wiring and install a flap power drive-unit field control panel:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
5 workhours × \$60 per hour = \$300	Pilatus will provide parts at no cost to the owner/operator.	\$300	\$40,500

Regulatory Impact

Does This AD Impact Various Entities?

The regulations adopted herein 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. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

Does This AD Involve a Significant Rule or Regulatory Action?

For the reasons discussed above, I certify that this action (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. A copy of the final evaluation prepared for this action is contained in the Rules Docket. A copy

of it may be obtained by contacting the Rules Docket at the location provided under the caption **ADDRESSES**.

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 Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. FAA amends § 39.13 by removing Airworthiness Directive (AD) 99-19-32, Amendment 39-11319 (64 FR 50439, September 17, 1999), and adding a new AD to read as follows:

2001-25-10 Pilatus Aircraft Ltd.:

Amendment 39-12563; Docket No. 2000-CE-77-AD. Supersedes AD 99-19-32, Amendment 39-11319.

(a) *What airplanes are affected by this AD?* This AD affects Models PC-12 and PC-12/45 airplanes, all serial numbers, that are certificated in any category. Carefully check paragraphs (d)(1) through (d)(6) of this AD for the specific actions that apply to each airplane. All airplanes will be affected by multiple actions specified in these paragraphs.

(b) *Who must comply with this AD?* Anyone who wishes to operate any of the above airplanes must comply with this AD.

(c) *What problem does this AD address?* The actions specified by the AD are intended to allow the flap power drive-unit circuit breaker to close during flight and prevent current surges in the flap control system. If the pilot cannot close the circuit breaker during flight, the flight control and warning unit (FCWU) would not sense a worn actuator. Current surges in the flap control system could decrease the electrical life of the flap power drive-unit motor contactor. Both conditions have the potential for flap system failure with consequent reduced or loss of control of the airplane.

(d) *What actions must I accomplish to address this problem?* To address this problem, you must accomplish the following:

Actions	Compliance	Procedures
(1) For airplanes that incorporate a manufacturer serial number (MSN) in the range of 101 through 320, accomplish the following: (i) Do the modifications and installations to the flap system, as specified in the service information. (ii) Install a new design flap control and warning unit (FCWU) (Pilatus part number FCWU 99-3) with a serial number of 100,001 or higher, or FAA-approved equivalent part number.	Within the next 50 hours time-in-service (TIS) after January 25, 2002 (the effective date of this AD), unless already accomplished.	In accordance with the Accomplishment Instructions section of Pilatus PC-12 Service Bulletin No. 27-008, pages 1, 2, and 11 at the Revision 2 level, dated September 13, 2000; and pages 3 through 10 and 12 through 114 at the Revision 1 level, dated June 26, 2000. Pilatus PC-12 Service Bulletin 27-012, dated September 13, 2000, also relates to this subject.
(2) If you accomplished the modifications required by paragraph (d)(1) of this AD in accordance with Pilatus PC-12 Service Bulletin 27-008, all pages at the Revision 1 level, dated June 26, 2000, you only have to install a new design FCWU (Pilatus part number FCWU 99-3) with a serial number of 100,001 or higher, or FAA-approved equivalent part number..	Within the next 50 hours TIS after January 25, 2002 (the effective date of this AD), unless already accomplished.	In accordance with the Accomplishment Instructions section of Pilatus PC-12 Service Bulletin No. 27-008, pages 1, 2, and 11 at the Revision 2 level, dated September 13, 2000; and pages 3 through 10 and 12 through 114 at the Revision 1 level, dated June 26, 2000. Pilatus PC-12 Service Bulletin 27-012, dated September 13, 2000, also relates to this subject.

Actions	Compliance	Procedures
(3) For airplanes that incorporate an MSN in the range of 321 through 331, 333, 335, 336, 338 through 341, 343, or 345, install a new design FCWU (Pilatus part number FCWU 99-3) with a serial number of 100,001 or higher, or FAA-approved equivalent part number..	Within the next 50 hours TIS after January 25, 2002 (the effective date of this AD), unless already accomplished.	In accordance with the Accomplishment Instructions section of Pilatus PC-12 Service Bulletin No. 27-008, pages 1, 2, and 11 at the Revision 2 level, dated September 13, 2000; and pages 3 through 10 and 12 through 114 at the Revision 1 level, dated June 26, 2000. Pilatus PC-12 Service Bulletin 27-012, dated September 13, 2000, also relates to this subject.
(4) For airplanes that incorporate an MSN in the range of 101 through 400, modify the flap control wiring and install a flap power drive-unit field control panel..	Within the next 50 hours TIS after January 25, 2002 (the effective date of this AD).	In accordance with the Accomplishment Instructions section of Pilatus PC-12 Service Bulletin No. 27-011, Revision No. 1, dated January 26, 2001.
(5) For all MSN airplanes, inspect the flap actuator internal gear system for correct end-play and backlash measurements and make any necessary corrective adjustments..	Inspect initially within the next 50 hours TIS after January 25, 2002 (the effective date of this AD) and thereafter at intervals not to exceed 600 hours TIS. Accomplish corrective adjustments prior to further flight after the inspection where deficiencies are detected.	In accordance with the instructions in Pilatus PC-12 Maintenance Manual Temporary Revision No. 27-14 (which superseded Temporary Revision No. 27-13), dated December 4, 2000, or Pilatus PC-12 Aircraft Maintenance Manual 27-50-03, pages 601 through 608, dated April 30, 2000, as applicable.
(6) For all MSN airplanes, do not install any Pilatus part number FCWU 99-3 that has a serial number of 100,000 or less..	As of January 25, 2002 (the effective date of this AD).	Not Applicable.

Note 1: The FAA recommends that you incorporate the most up-to-date Pilatus reports and revisions pertaining to this subject into the Pilatus PC-12 Pilot's Operating Handbook. The most up-to-date documents as of the issue date of this AD are Temporary Revision No. 15, Report No. 01973-001, Issued: April 3, 2000, Sections 3 and 7; and Temporary Revision No. 32, Report No. 01973-001, Issued: January 8, 2001, Sections 2 and 3.

(e) *Can I comply with this AD in any other way?* You may use an alternative method of compliance or adjust the compliance time if:

- (1) Your alternative method of compliance provides an equivalent level of safety; and
- (2) The Manager, Small Airplane Directorate, approves your alternative. Submit your request through an FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Small Airplane Directorate.

Note 2: This AD applies to each airplane identified in paragraph (a) of this AD, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if you have not eliminated the unsafe condition, specific actions you propose to address it.

(f) *Where can I get information about any already-approved alternative methods of compliance?* Contact Doug Rudolph, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas

City, Missouri 64106; telephone: (816) 329-4059; facsimile: (816) 329-4090.

(g) *What if I need to fly the airplane to another location to comply with this AD?* The FAA can issue a special flight permit under sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate your airplane to a location where you can accomplish the requirements of this AD.

(h) *Are any service bulletins incorporated into this AD by reference?* Actions required by this AD must be done in accordance with Pilatus PC-12 Service Bulletin No. 27-008, pages 1, 2, and 11 at the Revision 2 level, dated September 13, 2000, and pages 3 through 10 and 12 through 114 at the Revision 1 level, dated June 26, 2000; Pilatus PC-12 Service Bulletin 27-012, dated September 13, 2000; Pilatus PC-12 Service Bulletin No. 27-011, Revision No. 1, dated January 26, 2001; Pilatus PC-12 Maintenance Manual Temporary Revision No. 27-14 (which superseded Temporary Revision No. 27-13), dated December 4, 2000; and Pilatus PC-12 Aircraft Maintenance Manual 27-50-03, pages 601 through 608, dated April 30, 2000. The Director of the Federal Register approved this incorporation by reference under 5 U.S.C. 552(a) and 1 CFR part 51. You can get copies from Pilatus Aircraft Ltd., Customer Liaison Manager, CH-6371 Stans, Switzerland; telephone: +41 41 619 63 19; facsimile: +41 41 619 6224; or from Pilatus Business Aircraft Ltd., Product Support Department, 11755 Airport Way, Broomfield, Colorado 80021; telephone: (303) 465-9099; facsimile: (303) 465-6040. You can look at copies at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Room 506, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(i) *When does this amendment become effective?* This amendment becomes effective on January 25, 2002.

Issued in Kansas City, Missouri, on December 11, 2001.

Michael Gallagher,
Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 01-31102 Filed 12-20-01; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NE-28-AD; Amendment 39-12570; AD 2001-26-06]

RIN 2120-AA64

Airworthiness Directives; CFE Company Model CFE738-1-1B Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to CFE Company model CFE738-1-1B turbofan engines. This action requires the removal of certain fan rotor disks from service. This amendment is prompted by a report from a forging manufacturer, of a metallurgical inclusion (contaminant) found in a forging made from a certain