



CIVIL AVIATION AUTHORITY  
CZECH REPUBLIC  
Airworthiness Division

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## AIRWORTHINESS DIRECTIVE

**Number: CAA-AD-046/2003**

**Cancels CAA-AD-029/2003**

Date of issue: May 19, 2003

**AIRBUS**

A310, A300-600

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### AIRCRAFT - LOSS OF AUTOTRIM FUNCTION (ATA 22) - INSPECTION

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**Applicability:**

AIRBUS A300-600 series aircraft with following configuration:

- not equipped with trim tank (installed by AIRBUS modification 4801)  
and
- equipped with FAC (Flight Augmentation Computer) at "Theta Trim" standard PN B471AAM7 installed in accordance with AIRBUS Service Bulletin (SB) A300-22-6041 (AIRBUS modification No. 12277), or with SB A300-22-6045 (AIRBUS modification No. 12698 only applicable to MSN 344)  
and
- without embodiment of SB A300-22A6048 (AIRBUS modification No. 12750).

AIRBUS A310-200 series aircraft with the following configuration:

- equipped with FAC to "Theta Trim" standard PN B471ABM4 installed in accordance with SB A310-22-2052 (AIRBUS modification 12277)  
and
- without embodiment of SB A310-22A2056 (AIRBUS modification No. 12750) or AIRBUS modification No. 5436 in production.

**Effective date:** July 10, 2003

**Compliance:** Required as indicated DGAC AD No.: 2003-165(B).

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*Remarks: The compliance of this AD must be recorded in Aircraft Logbook, where applicable the requirements of this AD must be integrated into Aircraft Technical Documentation. Address inquiries concerning this AD to: Civil Aviation Authority, Airworthiness Division, Ruzyně Airport, 160 08 Prague 6, Czech Republic, tel.: 420 2 33320922, fax: 420 2 20562270.*

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**Director**

**DGAC AD No.: 2003-165(B)**

**AIRBUS A310 and A300-600 aircraft**

Loss of autotrim function (ATA 22)

**1. APPLICABILITY:**

AIRBUS A300-600 series aircraft with following configuration:

- not equipped with trim tank (installed by AIRBUS modification 4801)  
and
- equipped with FAC (Flight Augmentation Computer) at "Theta Trim" standard PN B471AAM7 installed in accordance with AIRBUS Service Bulletin (SB) A300-22-6041 (AIRBUS modification No. 12277), or with SB A300-22-6045 (AIRBUS modification No. 12698 only applicable to MSN 344)  
and
- without embodiment of SB A300-22A6048 (AIRBUS modification No. 12750).

AIRBUS A310-200 series aircraft with the following configuration:

- equipped with FAC to "Theta Trim" standard PN B471ABM4 installed in accordance with SB A310-22-2052 (AIRBUS modification 12277)  
and
- without embodiment of SB A310-22A2056 (AIRBUS modification No. 12750) or AIRBUS modification No. 5436 in production.

**Note:**

For A310 aircraft, implementation of SB A310-22-2052 is rendered mandatory by AD 2001-463(B) requiring the replacement of both A310 FACs not later than August 31, 2003.

For A300-600 aircraft, implementation of SB A300-22-6041 is rendered mandatory by AD 2001-017-329(B) requiring the replacement of both A300-600 FACs not later than May 31, 2003.

**2. REASONS:**

This Airworthiness Directive (AD) deals with the same subject as AD 2003-110(B) the reasons of which are recalled below.

An A300-600 dispatched under MMEL condition with pitch trim No.1 inoperative experienced an undetected slow pitch trim movement in the nose down direction after autopilot 2 engagement in level change/climb mode. This undetected pitch trim movement led to an out-of-trim condition and aircraft nose down attitude, resulting in aircraft acceleration to VMO. The crew engaged the vertical speed mode, leading to auto-throttle speed mode and subsequent thrust reduction with further nose down effect. The crew took over by disconnecting the autopilot and the auto-throttle.

On ground, an open circuit was found in the connection responsible for transmitting autotrim signals between Flight Control Computer 2 (FCC2) and Right Augmentation Computer 2 (FAC2). In this case the FAC does not receive the FCC signals leading to erroneous nose down autotrim orders by the FAC. Expertise of the current FAC software design has shown that the monitoring function that should have led to automatic disengagement of the autopilot in such a situation did not operate properly. This malfunction is due to a software defect specific to these FACs (PN B471ABM4 and PN B471AAM7).

When in flight conditions where the autotrim monitoring function of the FAC is ineffective (clean configuration, Mach number higher or equal to 0.45), an erroneous nose down autotrim order may lead to an out-of-trim situation. If this situation is not promptly detected and corrected by the crew, this may result in significant load factor increase and potential reduced controllability of the aircraft.

The aim of AD 2003-110(B) was to ensure by a maintenance check the integrity of the autotrim function on A300-

600 and A310 aircraft fitted with FAC PN B471ABM4 or PN B471AAM7.

An FAC pin programming modification has since been certified and restores the automatic pitch trim disengagement function in case of identical events. The embodiment of this modification eliminates the need for the maintenance test required by AOT A310-22A2055 or A300-22A6046.

This new AD repeats therefore the requirement of AD 2003-110(B) (maintenance test) until accomplishment of the terminating action (pin programming) rendered mandatory at the threshold given in the paragraph which follows.

### **3. MANDATORY ACTIONS AND COMPLIANCE TIMES:**

#### 3.1. Maintenance test

- Before the next flight after March 07, 2003 (effective date of AD 2003-110(B)) unless already accomplished within the week preceding March 07, 2003, perform an integrity check of the autotrim function for all possible combinations of autopilot and pitch trim in accordance with paragraph 4.2. of AIRBUS AOT A300-22A6046 dated March 06, 2003 for A300-600 aircraft or AIRBUS AOT A310-22A2055 dated March 06, 2003 for A310 aircraft.
- Repeat this check at intervals not exceeding 1 (one) week.
- in addition, perform this check before next flight
  - after replacement of either FAC or FCC,
  - after removal/installation of either FAC or FCC for any maintenance or troubleshooting action,
  - after removal/installation of either FAC or FCC for repair on rack connectors of either FAC or FCC,
  - after pitch trim MMEL dispatch condition.

#### 3.2. Terminating action (pin programming)

All aircraft concerned except for MSN 344

Before May 31, 2003, embody the modification called by SB A310-22A2056 or A300-22A6048 as applicable.

Aircraft MSN 344

Before May 31, 2003, embody the modification called by SB A300-22A6048 and A300-22-6045.

Compliance with this terminating action renders nul and void the requirements of maintenance test called by the here above paragraph 3.1.

REF.: AIRBUS AOT A300-22A6046 dated March 06, 2003 AIRBUS AOT A310-22A2055 dated March 06, 2003

AIRBUS Alert Service Bulletins:

A310-22A2056

A300-22A6048 AIRBUS Service Bulletin:

A300-22-6045 (Any later approved revision of these SBs is acceptable).

This AD replaces AD 2003-110(B) which is cancelled.

EFFECTIVE DATE: Upon receipt from APRIL 30, 2003