
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.1 (1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Rolls Royce (Allison) Turbine Engines - AE 3007 Series

AD/AE 3007/2**Full Authority Digital Engine Control****9/2004**

Applicability: Allison Engine Company Models AE 3007A, AE 3007A1/1, AE 3007A1/2, AE 3007A1, AE 3007A1/3, AE 3007A1P, AE 3007A3, and AE 3007C turbofan engines with full authority digital electronic controls (FADEC).

Note 1: These engines are installed on, but not limited to, Embraer Model EMB-145, EMB-145ER, EMB-145MR, EMB-145LR, EMB-135ER, EMB-135LR and Cessna 750 aeroplanes.

Requirement: A FADEC that has a hardware serial number listed below may not be installed on any engine unless the FADEC hardware has been modified using Rolls-Royce (RR) Service Bulletin (SB) AE 3007A-73-042, Revision 1, dated 23 August 2000 or RR SB AE 3007C-73-024, Revision 1, dated 23 August 2000, as applicable, and the modification tag on the FADEC is marked with **TR1 day/month**. (For example, a repair that was accomplished on 25 September 2000 will show as **TR1 25/09**.)

Engine Model**FADEC Hardware Serial Number**

AE 3007C

BX55758, BX55760, BX55761,
BX55763 through BX55765, BX55767,
and BX61001 through BX61069

AE 3007A AE 3007A1
AE 3007A1/1 AE 3007A1P
AE 3007A1/2 AE 3007A3
AE 3007A1/3

BX56348, BX56361 through BX56364,
BX56374, BX56376, BX56392 through
BX56395, BX59006, BX59007,
BX59013, BX59014, BX59041,
BX59050, BX59062, BX59064 through
BX59066, BX59075 through BX59078,
BX60000 through BX60145, BX60172
through BX60239, BX60265 through
BX60287, BX60301, BX60303,
BX60311 and BX60381 through
BX60384

Note2: FAA AD 2000-18-06 Amdt 39-11891 refers.

Compliance: As of the effective date of this Directive.

Rolls Royce (Allison) Turbine Engines - AE 3007 Series

AD/AE 3007/2 (continued)

This Airworthiness Directive becomes effective on 2 September 2004.

Background: The Allison Engine Company notified the United States Federal Aviation Administration (FAA) that there was a quality problem with FADECs that have certain hardware SN's installed on AE 3007 series engines. This could lead to an uncommanded engine shutdown in flight, the inability of the FADECs to switch from one channel to another channel (channel A to B) or the inability to shutdown an engine. Three uncommanded in-flight engine shutdowns, eight events in which the FADEC channels could not be changed and three events in which the engine could not be shut down prompted these actions. Allison Engine Company has determined that these events resulted from a quality problem with the internal power supply transistor TR1 in FADEC's with certain hardware SN's. This condition, if not corrected, could also result in an uncommanded in-flight engine shutdown and the potential for an in-flight dual-engine shutdown caused by a potential hardware failure mode in some AE 3007 series FADEC's.

The FAA subsequently issued AD 2000-18-06 which required the modification of affected FADECs before 22 December 2000. This Directive is issued to ensure that any unmodified FADECs are not installed on any engine.



Bernard Malcolm Hole
Delegate of the Civil Aviation Safety Authority

20 July 2004