
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 39.001(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.

Embraer ERJ-170 Series Aeroplanes**AD/ERJ-170/22****FADEC Software****5/2009**

Applicability: Model ERJ 170-100 STD, ERJ 170-100 LR, ERJ 170-100 SU, ERJ 170-100 SE, ERJ 170-200 STD, ERJ 170-200 LR and ERJ 170-200 SU aeroplanes.

Requirement: Replace the current engines full authority digital engine control (FADEC) software version by the new version V5.41 or any further FADEC software version approved by the Brazilian Agência Nacional de Aviação Civil (ANAC).

The detailed instructions and procedures to accomplish this AD are described in the Embraer Service Bulletin 170-73-0006 original issue, or further revisions approved by the ANAC.

Note: ANAC AD 2008-03-01R2 refers.

Compliance: Within the next 1,200 hours time in service after the effective date of this Directive.

This Airworthiness Directive becomes effective on 7 May 2009.

Background: Initially, the ANAC had advised that instances have been reported of loss of thrust control due to problems in the Fuel Metering Valve (FMV) position feedback signal, which resulted in excessive thrust during some flight conditions. Such problems become critical during final approach flight phase. Since this condition affected flight safety, the AD/ERJ-170/16 required the FADEC software to be upgraded to version V5.40.

Since AD/ERJ-170/16 was issued the ANAC received reports of several instances of commanded in-flight shut down (IFSD) during use of FADEC with software version V5.40. Investigation has identified that these events linked to a logic error in software version V5.40. These IFSDs have a higher occurrence rate than the loss of thrust control events which resulted in the issue of AD/ERJ-170/16, therefore AD/ERJ-170/16 Amdt 1 was issued to require the FADEC software to be returned to version V5.30.

FADEC software version V5.41 has now been issued with corrects the foregoing anomalies. This Directive requires the installation of software version V5.41.

Embraer ERJ-170 Series Aeroplanes

AD/ERJ-170/22 (continued)

This Directive supersedes AD/ERJ-170/16 Amdt 1 which will be cancelled.

A handwritten signature in black ink, appearing to read 'James Coyne', with a stylized flourish at the end.

James Coyne
Delegate of the Civil Aviation Safety Authority

26 March 2009