



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL – BRAZIL

BRAZILIAN EMERGENCY AIRWORTHINESS DIRECTIVE

EAD No: 2019-12-01

Effective Date: 9 Dec. 2019

The following Brazilian Emergency Airworthiness Directive (EAD), issued by the Agência Nacional de Aviação Civil (ANAC) in accordance with provisions of Chapter IV, Title III of Código Brasileiro de Aeronáutica - Law No. 7,565 dated 19 December 1986 - and Regulamento Brasileiro da Aviação Civil (RBAC) 39, applies to all aircraft registered in the Registro Aeronáutico Brasileiro. No person may operate an aircraft to which this AD applies, unless it has previously complied with the requirements established herein.

EAD No. 2019-12-01 - EMBRAER / 39-1453.

APPLICABILITY:

(a) This Emergency Airworthiness Directive (EAD) applies to Embraer S.A. models ERJ 190-300 and ERJ 190-400, all serial numbers.

CANCELLATION / REVISION:

Not applicable.

REASON:

During a failure propagation tests campaign, when a complete loss of the electrical DC essential bus 2 was induced, it was noticed that the smoke detection system of the forward and aft e-bays erroneously informs the presence of smoke by means of the respective EICAS messages. The procedures of the approved Airplane Flight Manual (AFM) require that, when these messages are displayed, the essential electrical buses DC ESS BUS 1 and DC ESS BUS 3 shall be turned off. In this situation, resulting from the adoption of this procedure, there would be a loss of all electrical DC essential buses causing loss of electrical power for critical systems of the airplane.

Since this condition affects flight safety, sufficient reason exists to request, without prior notice, compliance with this EAD in the indicated time limit.

REQUIRED ACTION:

Modification of AFM procedure associated with message of smoke in the electronic bays presented on the Engine Indication and Crew Alerting System (EICAS).

COMPLIANCE:

(b) AFM procedure modification

Within 5 days from the effectivity date of this EAD, revise the Section 4 - Abnormal and Emergency Procedures of the AFM by replacing the existing "FORWARD (CENTER) (AFT) ELECTRONIC BAY SMOKE" procedure by the following procedure:

"FORWARD (CENTER) (AFT) ELECTRONIC BAY SMOKE

LAND AT THE NEAREST SUITABLE AIRPORT.

Check if the DC ESS BUS 2 OFF message is displayed on EICAS.

If the DC ESS BUS 2 OFF message is not displayed:

Disengage both autopilot and autothrottle. Turn off the recirculation fan. Press the APU emergency stop button. Set DC BUS TIES switch, TRU 1 switch, TRU ESS switch and battery 1 knob to OFF.

Wait 3 minutes.

DC BUS 1, DC ESS BUS 1 and DC ESS BUS 3 are deenergized.

If the message persists:

Set DC BUS TIES switch, TRU 1 switch and TRU ESS switch to AUTO. Set battery 1 knob to ON.

Limit minimum airspeed to 150 KIAS.

Pull RAT manual lever deploy lever. Turn off the IDGs 1 and 2 and set the emergency lights to OFF.

Exit/avoid icing conditions.

NOTE: *The TAT, SAT and TAS indications may present erroneous values under icing conditions.*

Landing will be performed in Electrical Emergency configuration.

For landing, arm the emergency lights and press both flap override and landing gear warning buttons.

CAUTION: *CORRECT LANDING CONFIGURATION AND LANDING DISTANCE ACCORDING TO BLOCK 5-15, "LANDING IN ABNORMAL CONFIGURATIONS".*

If a go around is required, set slat/flap to 3 and limit minimum airspeed to VREF FULL + 20 KIAS or 130 KIAS, whichever is higher.

On ground, steer the airplane using differential braking and rudder.

If the message extinguishes:

Exit/avoid icing conditions and set the emergency lights to OFF.

NOTE: *- Do not accomplish the SHAKER ANTICIPATED Procedure.*

- Do not accomplish the DC BUS 1 OFF Procedure.

- Do not accomplish the DC ESSENTIAL BUS 1 OFF Procedure.

- Do not accomplish the DC ESSENTIAL BUS 3 OFF Procedure.

- Do not accomplish the AVIONICS MAU 1A FAILURE Procedure.

- Do not accomplish the ANTI-ICE WING FAILURE Procedure.

- Do not accomplish the BRAKE LH (RH) FAULT Procedure.

- Disregard TAT 1 FAIL and TAT 2 FAIL messages.

For landing, arm the emergency lights.

If a go around is required, set slat/flap to FULL and limit minimum airspeed to VREF FULL + 20 KIAS.

The emergency/parking brake must be used to stop the airplane.

CAUTION:

- CORRECT LANDING CONFIGURATION AND LANDING DISTANCE ACCORDING TO BLOCK 5-15, "LANDING IN ABNORMAL CONFIGURATIONS".
- APPLY THE EMERGENCY/PARKING BRAKE MODERATELY UNTIL AIRPLANE DECELERATION IS NOTICED.
- VERIFY THE EMERGENCY/PARKING BRAKE LIGHT IS ON, KEEP MONITORING THE DECELERATION AND, IF NECESSARY, ADJUST THE EMERGENCY/PARKING BRAKE LEVER. ”

NOTE: The AFM alteration procedure required by this EAD may be accomplished by inserting a copy of this EAD into the Aircraft Flight Manual.

(c) Alternative Methods of Compliance (AMOC)

A different method or a different compliance time with the requirements of this AD may be used if approved by the General Manager of ANAC's Aeronautical Product Certification Branch (*Gerência-Geral de Certificação de Produtos Aeronáuticos – GGCP*). The AMOC approval letter must specifically reference this AD.

CONTACT:

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NOTE: Original in Portuguese language signed and available in the files of the Aeronautical Products Certification Branch (GGCP) of the National Civil Aviation Agency (ANAC).