



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRAZIL

BRAZILIAN AIRWORTHINESS DIRECTIVE

AD No.: 2024-08-01

Effective Date: 19 Aug. 2024

The following Brazilian Airworthiness Directive (AD), 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.

AD No. 2024-08-01 - EMBRAER / 39-1568.

APPLICABILITY:

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

CANCELLATION / REVISION:

Not applicable.

REASON:

A report was received about a failure of the MAU 3B announced by the AVNX MAU 3B FAIL caution message associated with BRK LH FAULT and BRK RH FAULT advisory messages. During the landing run, the normal brakes were not available and the messages BRK LH FAIL, BRK RH FAIL, BRK PEDL LH SEAT FAIL and BRK PEDL RH SEAT FAIL were also displayed on the Engine Indicating and Crew Alerting System (EICAS) after the pilots pressed the brake pedals.

The investigation has shown that certain failures of the MAU 3B and MAU 1A may lead to an undetected loss of normal brakes scenario until the brake pedals are pressed by the pilots. Therefore, incorrect on ground performance factors may be applied and, due to a short time available for pilots reaction, a runway excursion event may occur.

Since this condition may affect flight safety, sufficient reason exists to request, compliance with this AD in the indicated time limit.

REQUIRED ACTION:

Modification of AFM procedures associated with AVIONICS MAU 1A FAILURE and AVIONICS MAU 3B FAILURE messages.

COMPLIANCE:

(b) AFM procedure modification

Within 10 days from the effectivity date of this AD, revise the Section 4 - Abnormal and Emergency Procedures of the AFM replacing the "AVIONICS MAU 1A FAILURE" and "AVIONICS MAU 3B FAILURE" existing procedures by the following procedures:

AVIONICS MAU 1A FAILURE

If the A-I WING FAIL message is displayed, exit/avoid icing conditions.

NOTE: – Do not accomplish the SHAKER ANTICIPATED Procedure.
– Do not accomplish the ANTI-ICE WING FAILURE

Verify if the normal brake is available by pressing the left seat pilot brake pedals and the right seat pilot brake pedals.

If the BRK LH FAIL and BRK RH FAIL messages are displayed:

NOTE: – Do not accomplish the BRAKE LH (RH) FAILURE Procedure
– Do not accomplish the BRAKE PEDAL LH (RH) SEATFAILURE Procedure.

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

CAUTION: – CORRECT LANDING CONFIGURATION AND LANDING DISTANCE ACCORDING TO THE FOLLOWING TABLES FOR "LANDING IN ABNORMAL CONFIGURATIONS".

– AVOID LANDING WITH CROSSWIND COMPONENTS ABOVE 10 KT. NOSE WHEEL STEERING MAY NOT BE AVAILABLE

– APPLY THE EMERGENCY/PARKING BRAKEMODERATELY UNTIL AIRPLANE DECELERATION

– VERIFY THE EMERGENCY/PARKING BRAKE LIGHT IS ON, KEEP MONITORING THE DECELERATION AND, IF NECESSARY, ADJUST THE EMERGENCY/PARKING BRAKE LEVER

If the BRK LH FAIL and BRK RH FAIL messages are not displayed:

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

On ground, apply brakes normally.

CAUTION: CORRECT LANDING CONFIGURATION AND LANDING DISTANCE ACCORDING TO THE FOLLOWING TABLES FOR "LANDING IN ABNORMAL CONFIGURATIONS".

If required, steer the airplane using differential braking (if available) and rudder.

E190-E2 – LANDING IN ABNORMAL CONFIGURATION

E190-E2 - DRY RUNWAYS - NO ICE ACCRETION

EMERGENCY/ABNORMAL PROCEDURE		SLAT/FLAP – SPEED	FACTOR	
			DRY	DRY + OVSP
AVIONICS MAU 1A FAILURE	BRK LH FAIL and BRK RH FAIL messages displayed	Slat/Flap FULL - V _{REF} FULL + 17 KIAS	1.43	1.62

	BRK LH FAULT and BRK RH FAULT messages displayed	Slat/Flap FULL - V _{REF} FULL + 17 KIAS	1.90	2.13
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E190-E2 - WET RUNWAYS - NO ICE ACCRETION

EMERGENCY/ABNORMAL PROCEDURE		SLAT/FLAP - SPEED	FACTOR	
			WET	WET + OVSP
AVIONICS MAU 1A FAILURE	BRK LH FAIL and BRK RH FAIL messages displayed	Slat/Flap FULL - V _{REF} FULL + 17 KIAS	1.79	2.03
	BRK LH FAULT and BRK RH FAULT messages displayed	Slat/Flap FULL - V _{REF} FULL + 17 KIAS	2.38	2.67

E190-E2 - DRY RUNWAYS - WITH ICE ACCRETION

EMERGENCY/ABNORMAL PROCEDURE		SLAT/FLAP - SPEED	FACTOR	
			DRY	DRY + OVSP
AVIONICS MAU 1A FAILURE	BRK LH FAIL and BRK RH FAIL messages displayed	Slat/Flap FULL - V _{REF} FULL + 17 KIAS	1.42	1.61
	BRK LH FAULT and BRK RH FAULT messages displayed	Slat/Flap FULL - V _{REF} FULL + 17 KIAS	1.93	2.15

E190-E2 - WET RUNWAYS - WITH ICE ACCRETION

EMERGENCY/ABNORMAL PROCEDURE		SLAT/FLAP - SPEED	FACTOR	
			WET	WET + OVSP
AVIONICS MAU 1A FAILURE	BRK LH FAIL and BRK RH FAIL messages displayed	Slat/Flap FULL - V _{REF} FULL + 17 KIAS	1.78	2.02
	BRK LH FAULT and BRK RH FAULT messages displayed	Slat/Flap FULL - V _{REF} FULL + 17 KIAS	2.42	2.69

E195-E2 – LANDING IN ABNORMAL CONFIGURATION

E195-E2 - DRY RUNWAYS - NO ICE ACCRETION

EMERGENCY/ABNORMAL PROCEDURE		SLAT/FLAP – SPEED	FACTOR	
			DRY	DRY + OVSP
AVIONICS MAU 1A FAILURE	BRK LH FAIL and BRK RH FAIL messages displayed	Slat/Flap FULL - V_{REF} FULL + 17 KIAS	1.43	1.63
	BRK LH FAULT and BRK RH FAULT messages displayed	Slat/Flap FULL - V_{REF} FULL + 17 KIAS	1.94	2.18

E195-E2 - WET RUNWAYS - NO ICE ACCRETION

EMERGENCY/ABNORMAL PROCEDURE		SLAT/FLAP – SPEED	FACTOR	
			WET	WET + OVSP
AVIONICS MAU 1A FAILURE	BRK LH FAIL and BRK RH FAIL messages displayed	Slat/Flap FULL - V_{REF} FULL + 17 KIAS	1.79	2.04
	BRK LH FAULT and BRK RH FAULT messages displayed	Slat/Flap FULL - V_{REF} FULL + 17 KIAS	2.43	2.73

E195-E2 - DRY RUNWAYS – WITH ICE ACCRETION

EMERGENCY/ABNORMAL PROCEDURE		SLAT/FLAP – SPEED	FACTOR	
			DRY	DRY + OVSP
AVIONICS MAU 1A FAILURE	BRK LH FAIL and BRK RH FAIL messages displayed	Slat/Flap FULL - V_{REF} FULL + 17 KIAS	1.43	1.62
	BRK LH FAULT and BRK RH FAULT messages displayed	Slat/Flap FULL - V_{REF} FULL + 17 KIAS	1.97	2.22

E195-E2 - WET RUNWAYS - WITH ICE ACCRETION

EMERGENCY/ABNORMAL PROCEDURE	SLAT/FLAP – SPEED	FACTOR	
		DRY	DRY + OVSP

			WET	WET + OVSP
AVIONICS MAU 1A FAILURE	BRK LH FAIL and BRK RH FAIL messages displayed	Slat/Flap FULL - V _{REF FULL} + 17 KIAS	1.79	2.03
	BRK LH FAULT and BRK RH FAULT messages displayed	Slat/Flap FULL - V _{REF FULL} + 17 KIAS	2.47	2.78

AVIONICS MAU 3B FAILURE

NOTE: Do not accomplish the APU FAILURE Procedure.

Press the APU emergency stop button.

Verify if the normal brake is available by pressing the left seat pilot brake pedals and the right seat pilot brake pedals.

If the BRK LH FAIL and BRK RH FAIL messages are displayed:

NOTE: Do not accomplish the BRAKE PEDAL LH (RH) SEAT FAILURE Procedure.

Accomplish the BRAKE LH (RH) FAILURE Procedure.

If the BRK LH FAIL and BRK RH FAIL messages are not displayed:

Accomplish the BRAKE LH (RH) FAULT Procedure.

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

(c) Interim action

This AD is considered an interim action. ANAC may consider further mandatory actions.

(d) 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 Manager of the Continuing Airworthiness Technical Branch (GTAC) of ANAC..

CONTACT:

For additional technical information, contact:

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APPROVAL:

Original in Portuguese language available at the Continuing Airworthiness Technical Branch (GTAC) of the National Civil Aviation Agency (ANAC). Signed by:

ROBERTO JOSÉ SILVEIRA HONORATO

Head of Department
Department of Airworthiness (SAR)
ANAC

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SUPERSEDED