



**AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRAZIL**

## **BRAZILIAN AIRWORTHINESS DIRECTIVE**

**AD No.: 2023-02-02**

**Effective Date: 01 Mar. 2023**

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. 2023-02-02 - EMBRAER / 39-1512.**

#### **APPLICABILITY:**

This Airworthiness Directive (AD) applies to Embraer S.A. airplanes model ERJ 190-300 and ERJ 190-400 as identified in Embraer Service Bulletin (SB) N. 190E2-32-0015, revision 01, dated January 27, 2023.

#### **CANCELLATION / REVISION:**

Not applicable.

#### **REASON:**

It has been found the occurrence of missing parts of Main Landing Gear (MLG) side stay upper spindle assembly, which may compromise the locking and holding of the MLG side stay in its correct kinematics position. The failure of these locking elements may cause a non-annunciated loss of downlocking capability, which may collapse the MLG structure during takeoff or landing operations of the airplane.

Since this condition may occur in other airplanes of the same type and affects flight safety, a corrective action is required. Thus, sufficient reason exists to request compliance with this AD in the indicated time limit.

#### **REQUIRED ACTION:**

Inspection and replacement, if necessary, of Left Hand (LH) and Right Hand (RH) MLG side stay upper spindle assembly attachments.

#### **COMPLIANCE:**

Required as indicated below, unless already accomplished.

**(a) Inspection and replacement of LH and RH MLG side stay upper spindle assembly attachments.**

**(1)** Within the next 75 Flight Hours (FH) or 50 Flight Cycles (FC) or 14 days after the effective date of this AD, whichever occurs first, carry out a General Visual Inspection (GVI) on the LH and RH MLG side stay upper spindle assembly to check if the bolts with Part Number (P/N) AN4-25, the washers with P/N NAS1149C0432R, the locknuts with P/N MS17825-4 and the cotter pins with P/N MS24665-134 are correctly installed on LH and RH MLG side stay upper spindle.

**(i)** If there is any missing part, install new bolts with P/N AN4-25, new washers with P/N NAS1149C0432R, new locknuts with P/N MS17825-4 and new cotter pins with P/N MS24665-134, and accomplish the paragraph **(b)** of this AD, before the next flight.

**(ii)** If all the parts are installed, accomplish the paragraph **(b)** of this AD, in the next 425 FH or 300 FC or 76 days, whichever occurs first, after the GVI accomplishment required by the paragraph **(a)** of this AD.

**NOTE:** For the purposes of this AD, a General Visual Inspection (GVI) is defined as follows.

**General Visual Inspection (GVI):** A visual examination of an interior or exterior area, installation or assembly to detect obvious damage, failure or irregularity. This level of inspection is made from within touching distance, unless otherwise specified. A mirror may be necessary to enhance visual access to all exposed surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight or drop-light and may require removal or opening of access panels or doors. Stands, ladders or platforms may be required to gain proximity to the area being checked.

**(b) Clearances measurements.**

**(1)** Carry out a Detailed Inspection (DET) to measure the clearance between the spindle shoulder and the bushing flange (dimension A) and the clearance between the bushing flange and the washer (dimension B) on both LH and RH MLG side stay upper spindle.

**(i)** If the sum of the clearance dimension (A+B) is less than or equal to 0.5 mm (0.0196 in), no action is required.

**(ii)** If the sum of the clearance dimension (A+B) is between 0.6 mm (0.0236 in) and 2.0 mm (0.0787 in), remove and reinstall the LH and/or the RH MLG side-stay upper spindle, as applicable, before the next 10 FC.

**(iii)** If the sum of the clearance dimension (A+B) is more than 2 mm (0.0787 in) remove and reinstall the the LH and/or the RH MLG side-stay upper spindle, as applicable, before the next flight.

**NOTE:** For the purposes of this AD, a Detailed Inspection (DET) is defined as follows.

**Detailed Inspection (DET):** An intensive examination of a specific item, installation or assembly to detect damage, failure or irregularity. This could include tactile assessment in which a component or assembly can be checked for tightness/security. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors and magnifying lenses may be necessary. Surface cleaning and elaborate access procedures may be required.

**(c) Credit for previous actions.**

This paragraph provides credit for the actions specified in paragraph **(a)** and **(b)** of this AD, if those actions were performed before the effective date of this AD according to Embraer Service Bulletin N. 190E2-32-0015, original issue, dated

August 05, 2022, since the airplane maintenance records clearly identify that the actions required by the paragraphs **(a)** and **(b)** of this AD have been complied with.

**(d) Alternative methods of compliance (AMOCs).**

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.

**(e) Material incorporated by reference.**

You must use the Embraer Service Bulletin N. 190E2-32-0015, revision 01, dated January 27, 2023; or further revisions approved by ANAC, to do the actions required by this AD, unless this AD specifies otherwise.

Record compliance with this AD in the applicable maintenance log book.

**CONTACT:**

For additional technical information, contact:

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**APPROVAL:**

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**NOTA:** Original in Portuguese language signed and available in the files of the Continuing Airworthiness Technical Branch (GTAC) of the National Civil Aviation Agency (ANAC).