AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRAZIL

BRAZILIAN AIRWORTHINESS DIRECTIVE

AD No.: 2019-11-07 **Effective Date: 18 Nov. 2019**

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. 2019-11-07 - EMBRAER / 39-1451.

APPLICABILITY:

(a) This Airworthiness Directive (AD) applies to Embraer S.A. airplanes, as specified in paragraphs (a)(1) thru (a)(3) of this AD.

(1) Model ERJ 170-100 LR, ERJ 170-100 SE, ERJ 170-100 STD, ERJ 170-100 SU, ERJ 170-200 LL, ERJ 170-200 LR, ERJ 170-200 STD, and ERJ 170-200 SU airplanes equipped with Left Hand (LH) and Right Hand (RH) Main Landing Gear (MLG) aft pintle pin Part Number (P/N) 1840-0024, all Serial Numbers (S/N) repaired in accordance with Liebherr Aerospace Engineering Disposition (ED) L-6011-ED-0013, or S/N L45 repaired in accordance with Liebherr Aerospace ED L-1835-ED-0165, as identified in Embraer Service Bulletin N. 170-32-0088, original issue, dated August 08, 2018.

(2) Model ERJ 190-100 STD, ERJ 190-100 LR, ERJ 190-100 IGW, ERJ 190-100 SR, ERJ 190-200 STD, ERJ 190-200 LR, and ERJ 190-200 IGW airplanes equipped with LH and RH MLG aft pintle pin P/N 2821-0025, all S/N repaired in accordance with Liebherr Aerospace ED L-6011-ED-0011, as identified in Embraer Service Bulletin N. 190-32-0077, revision 01, dated August 16, 2018.

(3) Model ERJ 190-100 ECJ airplanes equipped with LH and RH MLG aft pintle pin P/N 2821-0025, all S/N repaired in accordance with Liebherr Aerospace ED L-6011-ED-0011, as identified in Embraer Service Bulletin N. 190LIN-32-0037, original issue, date March 11, 2019.

CANCELLATION / REVISION:

Not applicable.

REASON:

The previous ANAC AD 2018-07-01 was issued to correct the Pintle Pin having corrosion and chromium layer chipping on rearward and forward Pintle Pin of the Main Landing Gear (MLG) Shock Struts, which could cause the Pintle Pin to shear under normal load and lead to MLG collapse

during take-off or landing operations.

Since then, Embraer has received a report from the supplier about a decrease in the pintle pin life limit that was repaired according some supplier engineering dispositions. In some of those dispositions, it was issued repair procedures for corrosion in the pintle pin cross-bore that requires the sulphamate nickel plating application. Further analysis and tests have shown that the repaired pintle pins life limitations are different than the certified values, which limitations are contained in MLG Shock Strut Life Limit Item (LLI). An incorrect life limit may cause a Pintle Pin failure and the MLG collapse during take-off or landing operations.

Since this condition may occur in other airplanes 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 LH and RH MLG aft pintle pin.

COMPLIANCE:

Required as indicated below, unless already accomplished.

(b) Inspection and replacement

(1) For airplanes identified in paragraphs **(a)(1)** of this AD, before the pintle pin has logged 43,000 Flight Cycles (FC) since the repair was done, carry out an inspection in the airplane technical documentation and a General Visual Inspection (GVI) on them to certify if the affected pins are installed in the airplane. In positive case, replace the affected pins by new serviceable ones bearing the same P/N without a sulphamate nickel repair.

(2) For airplanes identified in paragraphs **(a)(2)** of this AD, before the pintle pin has logged 23,000 FC since the repair was done, carry out an inspection in the airplane technical documentation and a GVI on them to certify if the affected pins are installed in the airplane. In positive case, replace the affected pins by new serviceable ones bearing the same P/N without a sulphamate nickel repair.

(3) For airplanes identified in paragraphs **(a)(3)** of this AD, before the pintle pin has logged 15,000 FC since the repair was done, or within the next 60 months after the effective date of this AD, or at the next landing gear overhaul, whichever occurs first; carry out an inspection in the airplane technical documentation and a GVI on them to certify if the affected pins are installed in the airplane. In positive case, replace the affected pins by new serviceable ones bearing the same P/N without a sulphamate nickel repair.

NOTE 1: The pintle pin is considered serviceable when it does not have the nickel repair, ie, pintle pins that did not apply the engineering dispositions ED L-6011-ED-0013 or ED L-1835-ED-0165 or ED L-6011-ED-0011, as applicable.

NOTE 2: For the purpose of this AD, a General Visual Inspection (GVI) is 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. Basic cleaning may be required to ensure appropriate visibility.

(c) Prohibition

From the effective date of this AD, it is prohibited to install any pintle pin having a nickel repair on airplane MLG assembly, ie, pintle pins that did apply the engineering dispositions ED L-6011-ED-0013 or ED L-1835-ED-0165 or ED L-6011-ED-0011, as applicable.

(d) Credit for previous actions

This paragraph provides credit for the actions specified in paragraph **(b)(2)** of this AD, if those actions were performed before the effective date of this AD using Embraer Service Bulletin N. 190-32-0077, original issue, dated August 08, 2018.

(e) 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 General Manager of the Aeronautical Product Certification Branch (Gerência-Geral de Certificação de Produto Aeronáutico – GGCP).

(f) Service information

You must use Embraer Service Bulletin N. 170-32-0088, original issue, dated August 08, 2018, or Embraer Service Bulletin N. 190-32-0077, revision 01, dated August 16, 2018, or Embraer Service Bulletin N. 190LIN-32-0037, original issue, dated March 11, 2019, as applicable; or further revisions approved by the ANAC, to do the actions required by this AD.

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

CONTACT:

For additional technical information, contact:

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

Documento assinado eletronicamente por **Maria Clara da Costa Teixeira**, **Especialista em Regulação de Aviação Civil**, em 14/11/2019, às 09:42, conforme horário oficial de Brasília, com fundamento no art. 6º, § 1º, do Decreto nº 8.539, de 8 de outubro de 2015.

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