



適航指令發布單

Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2019-11-010	發布日期 Date issued	2019/11/20
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	Embraer Model ERJ 170 & ERJ 190 serial airplanes		
主旨摘要	This AD requires to repair procedures for corrosion in the pintle pin cross-bore and sulphamate nickel plating application.		
<div style="text-align: center;">民航局 CAA</div> <input type="checkbox"/> 本國產品 Native products <input type="checkbox"/> 其他個案 Other	<div style="text-align: center;">設計國民航主管機構 Original Authorities</div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> FAA <input type="checkbox"/> EASA <input checked="" type="checkbox"/> Brazil <input type="checkbox"/> Transport Canada Civil Aviation <input type="checkbox"/> DGAC </div> <div style="width: 45%;"> <input type="checkbox"/> Germany LBA <input type="checkbox"/> CAA-NL <input type="checkbox"/> UK CAA <input type="checkbox"/> Japan CAB <input type="checkbox"/> CAA of Israel <input type="checkbox"/> Other _____ </div> </div>		
	設計國 AD 編號 Original AD number	Brazil 2019-11-07	
	1. 直接採用原 AD 之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) _ a. 生效日期另訂為(Re-specify the effective date as) : _____ b. 執行時限另訂為(Re-specify the compliance time or period as) : _____ 2. 使用人是否需要將 AD 執行結果向民航局提出報告?(Do Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)		
備註 Note	ATA 32. Ref. SB 190-32-0077, revision 01, dated August 16, 2018, or SB 190LIN-32-0037, original issue, date March 11, 2019.		
註： 1. AD 內容後附。 2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。 3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail： adcaa@mail.caa.gov.tw Note： 1. The AD text is enclosed. 2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval. 3. For further information, please contact Civil Aeronautics Administration on Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail： adcaa@mail.caa.gov.tw			



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:

National Civil Aviation Agency (ANAC)
Aeronautical Product Certification Branch (GGCP)
Rua Laurent Martins, nº 209, Jardim Esplanada
CEP 12242-431 – São José dos Campos - SP, BRAZIL.
Phone: (12) 3203-6600; E-mail: pac@anac.gov.br

APPROVAL:

MÁRIO IGAWA
General Manager
GGCP

ROBERTO JOSÉ SILVEIRA HONORATO
Airworthiness Superintendent
ANAC

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).