AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRAZIL

BRAZILIAN AIRWORTHINESS DIRECTIVE

AD No.: 2020-01-02R2 **Effective Date: 26 Jul. 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.: 2020-01-02R2 - EMBRAER / 39-1530.

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, as identified in Embraer Service Bulletin N. 170-54-0015, revision 01, dated April 06, 2016.

(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, as identified in Embraer Service Bulletin N. 190-54-0018, original issue, dated November 26, 2018.

(3) Model ERJ 190-100 ECJ airplanes, as identified in Embraer Service Bulletin N. 190LIN-54-0009, original issue, dated June 24, 2019.

CANCELLATION / REVISION:

This AD cancels and supersedes the AD No. 2020-01-02R1 / 39-1528, dated July 14, 2023, and is being issued to revise its compliance interval and to include a new service information.

REASON:

It has been found the occurrences of cracks on the Left Hand (LH) and Right Hand (RH) sides of engine pylon inboard lower link lugs, which may cause the loss of engine pylon integrity. The loss of integrity of the engine pylon can result in engine separation from the wing affecting the airplane controllability and/or causing injury to persons on ground.

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, repair and modification, as applicable, of LH and RH engine inboard and outboard pylon lower link lugs.

COMPLIANCE:

Required as indicated below, unless already accomplished.

(b) Initial inspection, repair and modification of LH and RH engine inboard and outboard pylon lower link lugs.

(1) For airplanes identified in paragraph **(a)(1)** of this AD and that have reached at least 24,000 Flight Hours (FH), before the next 750 FH after 28 January 2020, the effective date of original revision of this AD, or the airplane have reached 24,750 FH, whichever occurs later, carry out a Detailed Inspection (DET) for cracks on the LH and RH inboard and outboard engine pylon lower link lugs.

(i) If there is any crack on these inspected structural members, before the next flight, the ANAC and Embraer must be contacted according to the paragraph **(e)** of this AD to approve an adequate repair according to the paragraph **(g)** of this AD.

(ii) If there is no crack on these inspected structural members, no maintenance action is required, however, submit an inspection report according the paragraph **(e)** of this AD.

(2) For airplanes identified in paragraph **(a)(2)** of this AD, carry out a DET or a Special Detailed Inspection (SDI), as applicable, for cracks on the LH and RH inboard and outboard engine pylon lower link lugs, according to the paragraphs **(b)(2)(i)** and **(b)(2)(ii)** of this AD, as applicable.

(i) For the airplanes that have not modified its LH and RH engine inboard pylon lower link lugs, as applicable, according to the detailed instructions and procedures described in the Embraer Service Bulletin N. 190-54-0020, revision 02, dated April 06, 2023; or further revisions approved by ANAC, perform the DET according to the following intervals especified in the paragraphs **(b)(2)(i)-a** and **(b)(2)(i)-b** of this AD, whichever occurs first.

(i)-a Before the airplane have reached 14,285 Flight Cycles (FC) or, for airplanes that, in July 14, 2023, the effective date of the revision 1 of this AD, have reached at least 13,710 FC, before the next 575 FC after July 14, 2023, the effective date of the revision 1 of this AD, whichever occurs later.

(i)-b Before the airplane have reached 19,000 FH or, for airplanes that, in January 28, 2020, the effective date of the original issue of this AD, have reached at least 18,240 FH, before the next 760 FH after January 28, 2020, effective date of the original issue of this AD, whichever occurs later.

(ii) For the airplanes that have modified its LH and RH engine inboard pylon lower link lugs, as applicable, according to the detailed instructions and procedures described in the Embraer Service Bulletin N. 190-54-0020, revision 02, dated April 06, 2023; or further revisions approved by ANAC, perform the SDI before the airplane has reached 40,000 FC or 53,200 FH, whichever occurs first.

(iii) If there is any crack on these inspected structural members, before the next flight, the ANAC and Embraer must be contacted according to the paragraph **(e)** of this AD to approve an adequate repair according to the paragraph **(g)** of this AD.

(iv) If there is no crack on these inspected structural members, no

maintenance action is required, however, submit an inspection report according to the paragraph **(e)** of this AD.

(3) For airplanes identified in paragraph **(a)(3)** of this AD and that have reached at least 10,000 FH, before the next 250 FH after 28 January 2020, the effective date of original revision of this AD, or the airplane have reached 10,250 FH, whichever occurs later, carry out a DET for cracks on the LH and RH inboard and outboard engine pylon lower link lugs.

(i) If there is any crack on these inspected structural members, before the next flight, the ANAC and Embraer must be contacted according to the paragraph **(e)** of this AD to approve an adequate repair according to the paragraph **(g)** of this AD.

(ii) If there is no crack on these inspected structural members, no maintenance action is required, however, submit an inspection report according the paragraph **(e)** of this AD.

NOTE 1: 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.

NOTE 2: For the purposes of this AD, a Special Detailed Inspection (SDI) is definied as follows.

Special Detailed Inspection (SDI): An examination of a specific item, installation, or assembly making use of specialized inspection techniques such as Nondestructive Testing (NDT) and/or equipment (e.g. boroscope, videoscope, tap test) to detect damage, failure or irregularity. Intricate cleaning and substantial access or disassembly procedures may be required. Classification of a task as an SDI does not define the required qualifications for the person performing the task.

(c) Repetitive inspections

(1) For the airplanes identified in paragraph **(a)(1)** of this AD, repeat the inspections required by the paragraph **(b)(1)** of this AD at intervals not exceeding 1,150 FH.

(2) For the airplanes identified in paragraph **(a)(2)** of this AD, repeat the inspections required by the paragraph **(b)(2)** of this AD according to the paragraphs **(c)(2)(i)** and **(c)(2)(ii)** of this AD.

(i) For the airplanes that have not modified its LH and RH engine inboard pylon lower link lugs, as applicable, according to the detailed instructions and procedures described in the Embraer Service Bulletin N. 190-54-0020, revision 02, dated April 06, 2023, or further revisions approved by ANAC; repeat the inspection before the airplane has logged 1,450 FH since the last inspection. For the subsequent inspections, in intervals that do not exceed 575 FC or 760 FH, whichever occurs first.

(ii) For the airplanes that have modified its LH and RH engine inboard pylon lower link lugs, as applicable, according to the detailed instructions and procedures described in the Embraer Service Bulletin N. 190-54-0020, revision 02, dated April 06, 2023; or further revisions approved by ANAC; repeat the inspections before the airplane has logged 13,750 FC or 18,300 FH since the last

inspection, whichever occurs first.

(iii) The accomplishment with the Maintenance Review Board Report (MRBR) Task Number 54-50-004-0003 or the Task Number 54-50-004-0004, its respective thresholds and intervals, contained in APPENDIX A - PART 2 - AIRWORTHINESS LIMITATIONS INSPECTIONS (ALI) - STRUCTURES, Rev. 16, dated June 30, 2022, as applicable, constitutes an acceptable method of compliance with the required actions in the paragraph **(c)(2)** of the revision 1 of this AD, but does not replace the accomplishment dates.

(3) For the airplanes identified in paragraph **(a)(3)** of this AD, repeat the inspections required by the paragraph **(b)(3)** of this AD at intervals not exceeding 250 FH

(d) Credit for previous actions.

This paragraph provides credit for the actions specified in paragraph **(b)(1)** of the revision 1 of this AD, if those actions were performed before the effective date of the revision 1 of this AD using Embraer Service Bulletin N. 170-54-0015, original issue, dated September 22, 2015; and credit for the actions specified in paragraph **(b)(2)** and **(c)(2)** of this AD, if those actions were performed before the effective date of the revision 1 of this AD using Embraer Service Bulletin N. 190-54-0020, original revision, dated June 20, 2022 or Embraer Service Bulletin N. 190-54-0020, revision 01, dated September 02, 2022.

(e) Notification of inspection report.

Within the next 96 hours after each inspection conducted according the paragraphs **(b)** and **(c)** of this AD, submit an inspection report to pac@anac.gov.br and also to fleet.performance@embraer.com.br or fleet.reliability@embraer.com.br, containing, at least, the following data:

(1) Date of inspection.

(2) Airplane serial number and side of inspection (RH/LH pylon).

(3) Total flight hours and cycles accumulated by the airplane engine pylon on the inspection date.

(4) Results of the inspection. Examples: nothing found, completely cracked, size of crack (if partial), backup fitting visual inspection finding, etc.

NOTE: An acceptable mean to send the above report consists of submitting it using the in-service difficulties system of ANAC.

(f) Compliance time clarification.

For compliance times identified in paragraph **(b)** of this AD that specify flight hours or flight cycles, and the affected structure (engine pylon inboard lower link lug) is a removable structural component, those compliance times must be measured on the affected structure since its first installation on any airplane, regardless of what the airframe as a whole has accumulated. If the flight hours or flight cycles on the affected structure are not available or cannot be determined, use the airframe total flight hours or flight cycles for the compliance times identified in paragraph **(b)** of this AD.

(g) Alternative methods of compliance (AMOCs).

A different method or a different compliance time, with the requirements of this AD, maybe used if approved by the Manager of the Continuing Airworthiness Technical Branch (GTAC) of ANAC.

(h) Material incorporated by reference.

You must use Embraer Service Bulletin N. 170-54-0015, revision 01, dated April 06, 2016, or Embraer Service Bulletin N. 190-54-0018, original issue, dated November 26, 2018 and Embraer Service Bulletin N. 190-54-0020, revision 02, dated April 06, 2023, or Embraer Service Bulletin N. 190LIN-54-0009, original issue, dated June 24, 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 Continuing Airworthiness Technical Branch (GTAC) of the National Civil Aviation Agency (ANAC).