



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-1635; Project Identifier MCAI-2022-01579-T; Amendment 39-22583; AD 2023-21-11]

RIN 2120-AA64

Airworthiness Directives; Embraer S.A. (Type Certificate Previously Held by Yaborá Indústria Aeronáutica S.A.; Embraer S.A.) Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Embraer S.A. Model ERJ 190-100 STD, -100 LR, -100 IGW, -200 STD, -200 LR, and -200 IGW airplanes. This AD was prompted by a determination that new or more restrictive airworthiness limitations are necessary and a determination by the design approval holder (DAH) that some structural elements are subject to widespread fatigue damage (WFD). This AD requires revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations, and for certain airplanes requires a structural modification of the wing lower skin panels, as specified in an Agência Nacional de Aviação Civil (ANAC) AD, which is incorporated by reference.

The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-1635; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

- For material incorporated by reference in this AD, contact ANAC, Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 - Centro Empresarial Aquarius - Torre B - Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 - São José dos Campos - SP, Brazil; telephone 55 (12) 3203-6600; email pac@anac.gov.br; website anac.gov.br/en/. You may find this material on the ANAC website sistemas.anac.gov.br/certificacao/DA/DAE.asp.

- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th Street, Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-1635.

FOR FURTHER INFORMATION CONTACT: Joshua Bragg, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 817-222-5366; email joshua.k.bragg@faa.gov.

SUPPLEMENTARY INFORMATION:**Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Embraer S.A. Model ERJ 190-100 STD,

-100 LR, -100 IGW, -200 STD, -200 LR, and -200 IGW airplanes. The NPRM published in the *Federal Register* on August 17, 2023 (88 FR 55956). The NPRM was prompted by AD 2022-12-01, effective December 14, 2022, issued by ANAC (ANAC AD 2022-12-01), which is the aviation authority for Brazil (also referred to as the MCAI). The MCAI states that new or more restrictive airworthiness limitations have been developed to address structural fatigue. Additionally, an evaluation by the DAH indicated that some structural elements, particularly the wing lower skin stringers, are subject to WFD. A modification is needed before the wing lower skin panel reaches its structural modification point (SMP), and inspections are needed to preclude WFD. ANAC AD 2022-12-01 specifies that it requires a modification of the wing lower skin panels that terminates the repetitive inspections required by ANAC AD 2019-06-01 (which corresponds to FAA AD 2020-04-16, Amendment 39-19853 (85 FR 18435, dated April 2, 2020)) (AD 2020-04-16). Accomplishment of the modification specified in this AD terminates the repetitive inspections required by paragraph (g) of AD 2020-04-16, for the airplanes identified in paragraph (a)(2) of ANAC AD 2022-12-01 only.

In the NPRM, the FAA proposed to require revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations, and for certain airplanes to require a structural modification of the wing lower skin panels, as specified in ANAC AD 2022-12-01. The FAA is issuing this AD to address cracking in principle structural elements. The unsafe condition, if not addressed, could result in reduced structural integrity of the airplane.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-1635.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on this product. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information Under 1 CFR Part 51

ANAC AD 2022-12-01 describes new or more restrictive airworthiness limitations for airplane structures. For certain airplanes, ANAC AD 2022-12-01 specifies procedures for the incorporation of a certain structural modification (i.e., reinforcement of left-hand (LH) and right-hand (RH) wing lower skin panels). This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES section.

Costs of Compliance

The FAA estimates that this AD affects 33 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

The FAA has determined that revising the existing maintenance or inspection program takes an average of 90 work-hours per operator, although the agency recognizes that this number may vary from operator to operator. Since operators incorporate

maintenance or inspection program changes for their affected fleet(s), the FAA has determined that a per-operator estimate is more accurate than a per-airplane estimate.

The FAA estimates the total cost per operator for the new revision to the existing maintenance or inspection program to be \$7,650 (90 work-hours x \$85 per work-hour).

Estimated costs for required actions

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Up to 569 work-hours X \$85 per hour = \$48,365	Up to \$280,825	\$329,190	Up to \$10,863,270

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a

substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2023-21-11 Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria

Aeronáutica S.A.; Embraer S.A.): Amendment 39-22583; Docket No. FAA-2023-

1635; Project Identifier MCAI-2022-01579-T.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD affects AD 2020-04-16, Amendment 39-19853 (85 FR 18435, April 2, 2020) (AD 2020-04-16).

(c) Applicability

This AD applies to all Embraer S.A. (Type Certificate previously held by Yaborã Indústria Aeronáutica S.A.; Embraer S.A.) Model ERJ 190-100 STD, -100 LR, -100 IGW, -200 STD, -200 LR, and -200 IGW airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code: 57, Wings.

(e) Unsafe Condition

This AD was prompted by a determination that new or more restrictive airworthiness limitations are necessary and a determination by the design approval holder (DAH) that some structural elements are subject to widespread fatigue damage (WFD). The FAA is issuing this AD to address cracking in principle structural elements. The unsafe condition, if not addressed, could result in reduced structural integrity of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Requirements

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, Agência Nacional de Aviação Civil (ANAC) AD 2022-12-01, effective December 14, 2022 (ANAC AD 2022-12-01).

(h) Exceptions to ANAC AD 2022-12-01

(1) Where ANAC AD 2022-12-01 refers to its effective date, this AD requires using the effective date of this AD.

(2) The initial compliance time for doing the tasks specified in paragraph (b)(3) of ANAC AD 2022-12-01 is at the applicable “threshold or interval” as incorporated by the requirements of paragraph (b)(3) of ANAC AD 2022-12-01, or within 30 days after the effective date of this AD, whichever occurs later. Where the service information

referenced in ANAC AD 2022-12-01 does not specify a threshold, this AD requires using the applicable flight cycles (FC), flight hours (FH), or months (MO) identified as the interval as the threshold. The applicable FC, FH, and MO in the “T: Threshold I: Interval” column of the service information referenced in ANAC AD 2022-12-01 are as specified in paragraph (h)(2)(i) or (ii) of this AD:

(i) For any task with an applicability that includes “POST-MOD SB,” use the specified number of FC, FH, or MO since accomplishment of the applicable service bulletin.

(ii) For any task with an applicability that does not include “POST-MOD SB,” use total FC, total FH, or MO since issuance of the original airworthiness certificate or original export certificate of airworthiness, as applicable.

(3) Table 01 and paragraph (c)(2) of ANAC AD 2022-12-01 specify a grace period. However, for this AD the grace period is as identified in Table 01 of ANAC AD 2022-12-01, except replace the text “within the next 3,000 FC” with “within 3,000 FC after the effective date of this AD;” and replace the text “within the next 4,000 FH” with “within 4,000 FH after the effective date of this AD.”

(4) Where ANAC AD 2022-12-01 Table 01 specifies a compliance time based on the accomplishment of certain service information, replace the text “the accomplishment of the Embraer SB No. 190-57-005, Revision 01, dated October 27, 2006,” with “the accomplishment of Embraer SB 190-57-0005.”

(5) This AD does not adopt the provisions specified in paragraph (e)(1) of ANAC AD 2022-12-01.

(i) Provisions for Alternative Actions, Intervals, and Critical Design Configuration Control Limitations (CDCCLs)

After the existing maintenance or inspection program has been revised as required by paragraph (g) of this AD, no alternative actions (e.g., inspections), intervals, and

CDCCLs are allowed unless they are approved as specified in the provisions of paragraph (f) of ANAC AD 2022-12-01.

(j) Terminating Action for AD 2020-04-16

Accomplishing the actions required by this AD terminates the repetitive inspection requirements of paragraph (g) of AD 2020-04-16, for the airplanes identified in paragraph (a)(2) of ANAC AD 2022-12-01 only.

(k) Additional AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the International Validation Branch, mail it to the address identified in paragraph (l) of this AD or email to: 9-AVS-AIR-730-AMOC@faa.gov. If mailing information, also submit information by email. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, International Validation Branch, FAA; or ANAC; or ANAC's authorized Designee. If approved by the ANAC Designee, the approval must include the Designee's authorized signature.

(3) *Required for Compliance (RC)*: Except as required by paragraph (k)(2) of this AD, if any service information referenced in ANAC AD 2022-12-01 contains steps in the Accomplishment Instructions or figures that are labeled as RC, the instructions in RC steps, including subparagraphs under an RC step and any figures identified in an RC step,

must be done to comply with this AD; any steps including substeps under those steps, that are not identified as RC are recommended. The instructions in steps, including substeps under those steps, not identified as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the instructions identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to instructions identified as RC require approval of an AMOC. If a step or substep is labeled "RC Exempt," then the RC requirement is removed from that step or substep.

(l) Additional Information

For more information about this AD, contact Joshua Bragg, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 216-316-6418; email joshua.k.bragg@faa.gov.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Agência Nacional de Aviação Civil (ANAC) AD 2022-12-01, effective December 14, 2022.

(ii) [Reserved]

(3) For ANAC AD 2022-12-01, contact ANAC, Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 - Centro Empresarial Aquarius - Torre B - Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 - São José dos Campos - SP, Brazil; telephone 55 (12) 3203-6600; email

pac@anac.gov.br; website anac.gov.br/en/. You may find this ANAC AD on the ANAC website: sistemas.anac.gov.br/certificacao/DA/DAE.asp.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th Street, Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.

Issued on October 20, 2023.

Ross Landes, Deputy Director for Regulatory Operations,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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