



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-1635; Project Identifier MCAI-2022-01579-T]

RIN 2120-AA64

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

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt 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 proposed 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 proposed AD would require revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations, and for certain airplanes would require a structural modification of the wing lower skin panels, as specified in an Agência Nacional de Aviação Civil (ANAC) AD, which is proposed for incorporation by reference (IBR). The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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 NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

Material Incorporated by Reference:

- For material that is proposed for IBR in this NPRM, contact National Civil Aviation Agency (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. It is also available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-1635.

- 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.

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:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2023-1635; Project Identifier MCAI-2022-01579-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to [regulations.gov](https://www.regulations.gov), including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public

docket of this NPRM. Submissions containing CBI should be sent to Joshua Bragg, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 216-316-6418; email joshua.k.bragg@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

ANAC, which is the aviation authority for Brazil, has issued ANAC AD 2022-12-01, effective December 14, 2022 (ANAC AD 2022-12-01) (also referred to as the MCAI), to correct an unsafe condition for all Embraer S.A. Model ERJ 190-100 STD, -100 LR, -100 IGW, -200 STD, -200 LR, and -200 IGW airplanes. Model ERJ 190-100 SR airplanes are not certificated by the FAA and are not included on the U.S. type certificate data sheet; this proposed AD therefore does not include those airplanes in the applicability. 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 proposed modification specified in this proposed AD would therefore terminate 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.

The FAA is proposing this AD to address cracking in principle structural elements. The unsafe condition, if not addressed, could result in reduced structural integrity of the airplane. See the MCAI for additional background information.

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

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.

FAA's Determination

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 the State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI described above. The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements in this NPRM

This proposed AD would require revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations, which are specified in ANAC AD 2022-12-01 described previously, as incorporated by reference. Any differences with ANAC AD 2022-12-01 are identified as exceptions in the regulatory text of this proposed AD. This proposed AD would also require a structural modification of the wing lower skin panels.

This proposed AD would require revisions to certain operator maintenance documents to include new actions (e.g., inspections) and Critical Design Configuration Control Limitations (CDCCLs). Compliance with these actions and CDCCLs is required by 14 CFR 91.403(c). For airplanes that have been previously modified, altered, or repaired in the areas addressed by this proposed AD, the operator may not be able to accomplish the actions described in the revisions. In this situation, to comply with 14 CFR 91.403(c), the operator must request approval for an alternative method of compliance (AMOC) according to paragraph (k)(1) of this proposed AD.

Explanation of Required Compliance Information

In the FAA's ongoing efforts to improve the efficiency of the AD process, the FAA developed a process to use some civil aviation authority (CAA) ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. The FAA has been coordinating this process with manufacturers and CAAs. As a result, the FAA proposes to incorporate ANAC AD 2022-12-01 by reference in the FAA final rule. This proposed AD would, therefore, require compliance with ANAC AD 2022-12-01 in its entirety through that incorporation, except for any differences identified as exceptions in the regulatory text of this proposed AD. Service information required by ANAC AD 2022-12-01 for compliance will be available at regulations.gov under Docket No. FAA-2023-1635 after the FAA final rule is published.

Airworthiness Limitation ADs Using the New Process

The FAA's process of incorporating by reference MCAI ADs as the primary source of information for compliance with corresponding FAA ADs has been limited to certain MCAI ADs (primarily those with service bulletins as the primary source of information for accomplishing the actions required by the FAA AD). However, the FAA is now expanding the process to include MCAI ADs that require a change to airworthiness limitation documents, such as airworthiness limitation sections.

For these ADs that incorporate by reference an MCAI AD that changes airworthiness limitations, the FAA requirements are unchanged. Operators must revise the existing maintenance or inspection program, as applicable, to incorporate the information specified in the new airworthiness limitation document. The airworthiness limitations must be followed according to 14 CFR 91.403(c) and 91.409(e).

The previous format of the airworthiness limitation ADs included a paragraph that specified that no alternative actions (e.g., inspections), intervals, or CDCCLs may be used unless the actions, intervals, and CDCCLs are approved as an AMOC in accordance with the procedures specified in the AMOC paragraph under “Additional AD Provisions.” This new format includes a “New Provisions for Alternative Actions, Intervals, and CDCCLs” paragraph that does not specifically refer to AMOCs, but operators may still request an AMOC to use an alternative action, interval, or CDCCL.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 33 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed 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

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and

(3) Would 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 Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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:

Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria Aeronáutica S.A.; Embraer S.A.): Docket No. FAA-2023-1635; Project Identifier MCAI-2022-01579-T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 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 International Validation Branch, send it to the attention of the person identified in paragraph (l) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov. 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 service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on July 19, 2023.

Victor Wicklund, Deputy Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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