



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2025-0478; Project Identifier MCAI-2024-00647-A]

RIN 2120-AA64

Airworthiness Directives; Embraer S.A. Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive (AD) 2023-22-11, which applies to certain Embraer S.A. (Embraer) Model EMB-505 airplanes. AD 2023-22-11 requires repetitively replacing the clutch retaining bolt and washer of the aileron autopilot servo mount. Since the FAA issued AD 2023-22-11, the FAA has determined that the applicability should be expanded to include all Model EMB-505 airplanes and, for certain airplanes, an additional requirement is necessary for the initial replacement of the retaining bolt and washer. This proposed AD would also provide an optional terminating action for the repetitive retaining bolt and washer replacement.

These actions are specified in an Agência Nacional de Aviação Civil (ANAC) AD, which is proposed for incorporation by reference. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this NPRM 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-2025-0478; 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 ANAC material identified in this proposed AD, contact ANAC, Continuing Airworthiness Technical Branch (GTAC), Rua Doutor 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; phone: 55 (12) 3203-6600; email: pac@anac.gov.br; website: anac.gov.br/en/. You may find this material on the ANAC website at sistemas.anac.gov.br/certificacao/DA/DAE.asp. It is also available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2025-0478.

- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

FOR FURTHER INFORMATION CONTACT: Jim Rutherford, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (816)

329-4165; email: jim.rutherford@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-2025-0478; Project Identifier MCAI-2024-00647-A” 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 the 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, 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 Jim Rutherford, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590.

Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA issued AD 2023-22-11, Amendment 39-22595 (88 FR 80565, November 20, 2023), (AD 2023-22-11), for certain serial-numbered Embraer Model EMB-505 airplanes. AD 2023-22-11 was prompted by an MCAI originated by ANAC, which is the aviation authority for Brazil. ANAC issued ANAC AD 2023-02-01R1, effective March 14, 2023 (ANAC AD 2023-02-01R1) to correct an unsafe condition.

AD 2023-22-11 requires repetitively replacing the clutch retaining bolt and washer of the aileron autopilot servo mount. The FAA issued AD 2023-22-11 to address failure of the clutch retaining bolt of the aileron autopilot servo mount, which could disengage the clutch from the drive pin and jam the aileron controls, resulting in reduced controllability of the airplane.

Actions Since AD 2023-22-11 was Issued

Since the FAA issued AD 2023-22-11, ANAC superseded ANAC AD 2023-02-01R1 that was for certain serial-numbered Embraer Model EMB-505 airplanes and issued ANAC AD 2023-02-01R2, effective October 16, 2024, for all serial-numbered Embraer Model EMB-505 airplanes, which was superseded by ANAC AD 2023-02-01R3, effective October 25, 2024 (ANAC AD 2023-02-01R3) (also referred to as the MCAI). ANAC AD 2023-02-01R3 maintains the applicability of ANAC AD 2023-02-01R2 to include all Embraer Model EMB-505 airplanes, includes a requirement for the initial replacement of the retaining bolt and washer, and requires repetitively replacing the aileron autopilot servo mount clutch retaining bolt and washer. ANAC AD 2023-02-01R3 also provides an optional terminating action for the repetitive replacement of the aileron autopilot servo mount clutch retaining bolt and washer by replacing the cable guard, clutch cartridge, bolt, and washer with new parts having new part numbers.

The FAA is issuing this AD to address failure of the clutch retaining bolt of the aileron autopilot servo mount, which could disengage the clutch from the drive pin and jam the aileron controls, which could result in reduced controllability of the airplane.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2025-0478.

Material Incorporated by Reference under 1 CFR Part 51

The FAA reviewed ANAC AD 2023-02-01R3, which specifies procedures for repetitively replacing the clutch retaining bolt and washer of the aileron autopilot servo mount. ANAC AD 2023-02-01R3 also provides a terminating action for repetitively replacing the clutch retaining bolt and washer of the aileron autopilot servo mount by replacing the cable guard, clutch cartridge, bolt, and washer with new parts having new part numbers.

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 the ADDRESSES section.

FAA's Determination

These products have been approved by the aviation authority of another country and are 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 is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Proposed AD Requirements in this NPRM

This proposed AD would retain some of the requirements of AD 2023-22-11, specifically the repetitive replacement requirements. This proposed AD would require accomplishing the actions specified in ANAC AD 2023-02-01R3 described previously,

except for any differences identified as exceptions in the regulatory text of this proposed AD and except as discussed under “Differences Between this Proposed AD and the MCAI.”

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 2023-02-01R3 by reference in the FAA final rule. This proposed AD would, therefore, require compliance with ANAC AD 2023-02-01R3 in its entirety through that incorporation, except for any differences identified as exceptions in the regulatory text of this proposed AD. Material required by ANAC AD 2023-02-01R3 for compliance will be available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2025-0478 after the FAA final rule is published.

Differences Between this Proposed AD and the MCAI

The material specified in ANAC AD 2023-02-01R3 states that operators should take pictures of the removed clutch retaining bolt and the removed washer and email them, along with additional information, to Embraer S.A and Garmin. ANAC AD 2023-02-01R3 does not specifically require this task, and the proposed AD would not include this task.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 586 airplanes of U.S. registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Replace bolt and washer	1 work-hour x \$85 per hour = \$85 per replacement interval	\$50	\$135 per replacement interval	\$79,110 per replacement interval

The FAA estimates the following costs to do any necessary replacements that would be required based on selection of the terminating action. The agency has no way of determining the number of airplanes that might need these replacements:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Optional terminating action (replace cable guard, clutch cartridge, bolt, and washer with new parts)	6 work-hours x \$85 per hour = \$510	\$300	\$810

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

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 that the 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:

a. Removing Airworthiness Directive 2023-22-11, Amendment 39-22595 (88 FR 80565, November 20, 2023); and

b. Adding the following new airworthiness directive:

Embraer S.A.: Docket No. FAA-2025-0478; Project Identifier MCAI-2024-00647-A.

(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 replaces AD 2023-22-11, Amendment 39-22595 (88 FR 80565, November 20, 2023) (AD 2023-22-11).

(c) Applicability

This AD applies to Embraer S.A. Model EMB-505 airplanes, certificated in any category.

(d) Subject

Joint Aircraft System Component (JASC) Code 2215, Autopilot Main Servo.

(e) Unsafe Condition

This AD was prompted by corrosion on the clutch retaining bolt of the aileron autopilot servo mount. The FAA is issuing this AD to address the unsafe condition. The unsafe condition, if not addressed, could result in failure of the clutch retaining bolt of the aileron autopilot servo mount, which could disengage the clutch from the drive pin and jam the aileron controls, which could result in reduced controllability of the airplane.

(f) Compliance

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

(g) Required Actions

Except as specified in paragraphs (h) and (i) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, Agência Nacional de Aviação Civil (ANAC) AD 2023-02-01R3, effective October 25, 2024 (ANAC AD 2023-02-01R3).

(h) Exceptions to ANAC AD 2023-02-01R3

(1) Where ANAC AD 2023-02-01R3 refers to February 6, 2023, the effective date of ANAC AD 2023-02-01, this AD requires using December 26, 2023, the effective date of AD 2023-22-11.

(2) Where ANAC AD 2023-02-01R3 refers to its effective date, this AD requires using the effective date of this AD.

(3) Where ANAC AD 2023-02-01R3 requires replacing a part with a new part, for the purposes of this AD, a new part means a part that has accumulated zero flight hours.

(4) Where the “NOTE” to Table 01 in ANAC AD 2023-02-01R3 specifies “If the airplane operation age and/or the flight hours criteria change before the SB accomplishment, the most restrictive criteria must be obeyed,” this AD requires replacing that text with “comply with the most restrictive criteria for each applicability range (in months and flight hours) in Table 01 of ANAC AD 2023-02-01R3.”

(5) This AD does not adopt paragraph (e) of ANAC AD 2023-02-01R3.

(i) No Reporting Requirement

Although the service information referenced in ANAC AD 2023-02-01R3 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(j) Alternative Methods of Compliance (AMOCs)

(1) 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 local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (k) of this AD and email to: 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 local Flight Standards District Office/certificate holding district office.

(2) AMOCs approved for AD 2023-22-11 are approved as AMOCs for the corresponding provisions of this AD.

(k) Additional Information

For more information about this AD, contact Jim Rutherford, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (816) 329-4165; email: jim.rutherford@faa.gov.

(l) Material Incorporated by Reference

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

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

(i) Agência Nacional de Aviação Civil (ANAC) AD 2023-02-01R3, effective October 25, 2024.

(ii) [Reserved]

(3) For ANAC material identified in this AD, contact ANAC, Continuing Airworthiness Technical Branch (GTAC), Rua Doutor 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; phone: 55 (12) 3203-6600; email:

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

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

(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 March 27, 2025.

Steven W. Thompson,
Acting Deputy Director, Compliance & Airworthiness Division,
Aircraft Certification Service.
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