



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2023-1708; Project Identifier MCAI-2023-00554-A; Amendment  
39-22576; AD 2023-21-04]

RIN 2120-AA64

#### Airworthiness Directives; Embraer S.A. Airplanes

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Embraer S.A. (Embraer) Model EMB-505 airplanes. This AD was prompted by occurrences of an uncommanded change in the setting of the barometric pressure in both primary flight displays (PFDs). This AD requires installing a new version of the airplane avionics system software, 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-2023-1708; 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 service information identified in this final rule, 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](mailto:pac@anac.gov.br); website: [anac.gov.br/en/](http://anac.gov.br/en/). You may find this material on the ANAC website at [sistemas.anac.gov.br/certificacao/DA/DAE.asp](http://sistemas.anac.gov.br/certificacao/DA/DAE.asp).

- 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. It is also available in the AD docket at [regulations.gov](http://regulations.gov) under Docket No. FAA-2023-1708.

**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](mailto:jim.rutherford@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 certain Embraer Model EMB-505 airplanes. The NPRM published in the *Federal Register* on August 14, 2023 (88 FR 54941). The NPRM was prompted by AD 2023-04-01, effective April 4, 2023, issued by ANAC, which is the aviation authority for Brazil (ANAC AD 2023-04-01) (also referred to as the MCAI), to correct an unsafe condition for Embraer Model EMB-505 airplanes equipped with the

Garmin G3000 avionics system. The MCAI states that there have been occurrences of uncommanded change in the setting of the barometric pressure in both PFDs resulting in erroneous altitude information. Erroneous altitude information on both PFDs could result in altitude mismanagement or spatial disorientation of the flight crew.

In the NPRM, the FAA proposed to require installing a new version of the airplane avionics system software, as specified in ANAC AD 2023-04-01. The FAA is issuing this AD to address the uncommanded change in the setting of the barometric pressure in both PFDs, which could consequently lead to a deviation from the intended altitude and loss of control of the airplane, risk of air collision due to inadequate air traffic separation, or risk of controlled flight into terrain.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-1708.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received no comments on the NPRM or on the determination of the costs.

### **Conclusion**

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 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 these products. Except for minor editorial changes, this AD is adopted as proposed in the NPRM.

## Related Service Information under 1 CFR Part 51

ANAC AD 2023-04-01 specifies procedures for installing Garmin G3000 avionics system software updates.

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.

## Differences Between this AD and the MCAI

ANAC AD 2023-04-01 requires installing the software update in accordance with the service information specified in ANAC AD 2023-04-01, and this AD does not require using that service information to install the software update.

Paragraph (c) of ANAC AD 2023-04-01 provides credit for performing previous actions using previous revisions of the service information specified in ANAC AD 2023-04-01. Paragraph (d) of ANAC AD 2023-04-01 provides procedures for obtaining an alternative method of compliance. Paragraph (e) of ANAC AD 2023-04-01 requires using the service information specified in ANAC AD 2023-04-01, or future revisions approved by ANAC, to do the software update. This AD does not require compliance with paragraphs (c) through (e) of ANAC AD 2023-04-01.

## Costs of Compliance

The FAA estimates that this AD affects 183 airplanes of U.S. registry.

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

### Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Install software	8 work-hours x \$85 per hour = \$680	\$50	\$730	\$133,590

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, all of the costs associated with the software update may be covered under warranty.

### **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:

**2023-21-04 Embraer S.A.:** Amendment 39-22576; Docket No. FAA-2023-1708; Project Identifier MCAI-2023-00554-A.

#### **(a) Effective Date**

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

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to Embraer S.A. Model EMB-505 airplanes, as identified in paragraph (a) of Agência Nacional de Aviação Civil (ANAC) AD 2023-04-01, effective April 4, 2023 (ANAC AD 2023-04-01), certificated in any category.

#### **(d) Subject**

Joint Aircraft System Component (JASC) Code 3100, Indicating/recording system.

**(e) Unsafe Condition**

This AD was prompted by occurrences of an uncommanded change in the setting of the barometric pressure in both primary flight displays (PFDs). The FAA is issuing this AD to address the uncommanded change in the setting of the barometric pressure in both PFDs. The unsafe condition, if not addressed, could result in altitude mismanagement or spatial disorientation of the flight crew, with consequent deviation from the intended altitude and loss of control of the airplane, risk of air collision due to inadequate air traffic separation, or risk of controlled flight into terrain.

**(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, ANAC AD 2023-04-01.

**(h) Exceptions to ANAC AD 2023-04-01**

(1) Where ANAC AD 2023-04-01 refers to its effective date, this AD requires using the effective date of this AD.

(2) This AD does not adopt paragraphs (c), (d), and (e) of ANAC AD 2023-04-01.

**(i) No Reporting Required**

Although the service information referenced in ANAC AD 2023-04-01 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

**(j) 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 local

Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, mail it to the address identified in paragraph (k) 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 local Flight Standards District Office/certificate holding district office.

**(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 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 the AD specifies otherwise.

(i) Agência Nacional de Aviação Civil (ANAC) AD 2023-04-01, effective April 4, 2023.

(ii) [Reserved]

(3) For ANAC AD 2023-04-01, 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](http://www.archives.gov/federal-register/cfr/ibr-locations) or email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov).

Issued on October 26, 2023.

Caitlin Locke, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

[FR Doc. 2023-24393 Filed: 11/3/2023 8:45 am; Publication Date: 11/6/2023]