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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-8160; Directorate Identifier 2016-CE-019-AD; Amendment 39-18691; AD 2016-22-02]

RIN 2120-AA64

Airworthiness Directives; Embraer S.A. Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for Embraer S.A. Models EMB-500 and EMB-505 airplanes. This AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as incorrect installation of passenger seat attachment fittings. We are issuing this AD to correct the unsafe condition on these products.

DATES: This AD is effective December 1, 2016.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of December 1, 2016.

ADDRESSES: You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-8160; or in person at Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

For service information identified in this AD, contact Embraer—S.A., Phenom Maintenance Support, Avenida Brigadeiro Faria Lima, 2170, São José dos Campos—SP—12227-901, P.O. Box 36/2, Brasil; phone: +55 12 3927 1000; fax: +55 12 3927-2619; email: phenom.reliability@embraer.com.br; Internet: <http://www.embraer.com.br/en-US/Pages/home.aspx>. You may view this referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148. It is also available on the Internet at <http://www.regulations.gov> by searching for Docket No. FAA-2016-8160.

FOR FURTHER INFORMATION CONTACT: Jim Rutherford, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4165; fax: (816) 329-4090; email: jim.rutherford@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to Embraer S.A. Models EMB-500 and EMB-505 airplanes. The NPRM was published in the Federal Register on July 7, 2016 (81 FR 44238). The NPRM proposed to correct an unsafe condition for the specified products and was based on mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country. The MCAI states:

There is the possibility that certain attachment fittings of passenger seats have been incorrectly installed. This AD results from a determination that the passenger seat on which the attachment fittings were improperly installed may not meet certain static strength, and dynamic strength criteria. Failure to meet static and dynamic strength criteria could result in injuries to the occupants during an emergency landing condition.

This AD requires the inspection of each passenger seat for the correct installation of the attachment fittings and correction, if necessary.

The MCAI can be found in the AD docket on the Internet at:
<https://www.regulations.gov/document?D=FAA-2016-8160-0001>.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Withdraw the Proposed AD and Replace With SAIB

Embraer S.A requested that the FAA withdraw this AD stating there is no data available considering the real seat dynamic strength if the fittings were not assembled in the correct way, as this wrong configuration was never tested during the seat certification process. The commenter stated that assuming the possible uncorrected seat fittings were installed, the unsafe condition would require a survivable crash landing to exist. Due to lack of better data and considering a total of six (6) hull losses in the fleet as being survivable crash landings, then the current fleet probability of a crash landing would be $1,15 \times 10^{-5}$. Based on this consideration, Embraer understood that the probability of an unsafe condition would be extremely remote, therefore not justifying the issuance of an AD as per 14 CFR part 39 requirements.

The commenter suggested that the issuance of a special airworthiness information bulletin (SAIB) would be more appropriate for a possible improper installation because, per FAA definition, the "Special Airworthiness Information Bulletin (SAIB) is an information tool that alerts, educates, and makes recommendations to the aviation community. SAIBs contain non-regulatory information and guidance that does not meet the criteria for an AD."

We don't agree because as part of the investigation into the Embraer request, the FAA contacted the Brazilian Airworthiness Authority, ANAC, to get their input as the certifying authority and originator of the original mandatory continuing airworthiness information (MCAI). ANAC reported that they had received similar comments from Embraer and had decided to go ahead and issue their

AD. They justified this decision because there is no data indicating that a seat installation on which the aluminum and steel fittings have been switched would meet the static and dynamic criteria. They also reasoned that the seat assembly criteria for the current requirements are to provide a specific level of safety to the occupants in case of impact. Therefore, they disagreed with removing these safety features just because they would only be used in a crash landing event. After review of the Embraer request and the related comments from ANAC, the FAA has decided that we agree with ANAC and will not withdraw our proposed AD for this unsafe condition.

Request To Change Wording for Passenger Seat

Justin Collins requested that the FAA make changes to the wording of the proposed AD Applicability, paragraph (c)(2), which excludes "any passenger seat replaced during routine maintenance." The commenter believes that a more appropriate phrase would be "any passenger seat removed and reinstalled" or "any passenger seat that has been installed."

The commenter states that the word 'replaced' in the proposed AD infers a different part has been installed.

We don't agree with adding the concept of 'reinstallation' to the final rule. If the unsafe condition exists on the aircraft, it is possible that this seat could be removed and reinstalled without the fitting installation being corrected and thus still have the unsafe condition. The Embraer S.A. Service Bulletin (SB) No. 500-25-0016, dated December 8, 2015, states in paragraph 1.A., that "This effectivity list includes the aircraft originally equipped with the affected component. Since this component is a "Line Replaceable Unit" (LRU), it may be necessary to refer to the fleet maintenance control record and verify whether the unit has been replaced with another one during routine maintenance." The other referenced Embraer SB for the Model EMB-505 has a similar note. The point is that the unsafe condition originated during the manufacturing process of the seat assembly. If an affected seat is replaced with a different seat during subsequent maintenance, then the unsafe condition is no longer a factor as the new seat should be assembled according to correct instructions. For this reason, the FAA will not add the word 'reinstall' to the final rule based on this comment. However, in order to better reflect the wording in the service information, we will add the words "with another one" after the word "replaced" and before the phrase "during routine maintenance."

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the change described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

Related Service Information Under 1 CFR Part 51

We reviewed Embraer S.A. Service Bulletin (SB) No.: 500-25-0016, dated December 8, 2015; and Embraer S.A. SB No.: 505-25-0020, dated December 8, 2015. The service information describes procedures for inspection of the passenger seat attachment fittings and correction to the fittings if necessary on the applicable airplane models. This service information 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 of the AD.

Costs of Compliance

We estimate that this AD will affect 203 products of U.S. registry. We also estimate that it would take about 4 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour.

Based on these figures, we estimate the cost of this AD on U.S. operators to be \$69,020, or \$340 per product.

In addition, we estimate that any necessary follow-on actions would take about 6 work-hours for a cost of \$510 per product. We have no way of determining the number of products that may need these actions.

According to the manufacturer, all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

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.

We are 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

We determined that 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 this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-8160; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains the NPRM, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

List of Subjects in 14 CFR Part 39

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

Adoption of 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 AD:



2016-22-02 Embraer S.A.: Amendment 39-18691; Docket No. FAA-2016-8160; Directorate Identifier 2016-CE-019-AD.

(a) Effective Date

This airworthiness directive (AD) becomes effective December 1, 2016.

(b) Affected Ads

None.

(c) Applicability

(1) This AD applies to Embraer S.A. Model EMB-500 airplanes, serial numbers 50000322, 50000324 through 50000328, 50000330 through 50000344, 50000346 through 50000350, and 50000353, certificated in any category; and Embraer S.A. Model EMB-505 airplanes, serial numbers 50500004 through 50500215, 50500217 through 50500245, 50500247 through 50500255, 50500257 through 50500259, 50500261 through 50500263, 50500265, and 50500267, certificated in any category.

(2) The airplanes identified in paragraph (c)(1) of this AD had passenger seats installed at manufacturer as listed in Embraer S.A. Service Bulletin (SB) No.: 500-25-0016, dated December 8, 2015; or Embraer S.A. SB No.: 505-25-0020, dated December 8, 2015. Since these are line replaceable units and the unsafe condition of this AD was originated during manufacturing, any passenger seat replaced with another one during routine maintenance is not affected by the actions of this AD.

(d) Subject

Air Transport Association of America (ATA) Code 25: Equipment/Furnishing.

(e) Reason

This AD was prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as incorrect installation of passenger seat attachment fittings. We are issuing this proposed AD to detect and correct improperly installed seat attachment fittings, which could result in seat damage causing injury to occupants during an emergency landing condition.

(f) Actions and Compliance

Unless already done, do the following actions in paragraphs (f)(1) and (2) of this AD following the Accomplishment Instructions in Embraer S.A. Service Bulletin (SB) No.: 500-25-0016, dated December 8, 2015; or Embraer S.A. SB No.: 505-25-0020, dated December 8, 2015, as applicable:

(1) Within the next 30 months after December 1, 2016 (the effective date of this AD), inspect each applicable passenger seat for the correct installation of attachment fittings.

(2) If any discrepancy is found during the inspection required in paragraph (f)(1) of this AD, before further flight, correct the discrepancy following the applicable service information or using FAA-approved procedures.

(g) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, Standards Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Jim Rutherford, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4165; fax: (816) 329-4090; email: jim.rutherford@faa.gov. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, only use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(3) Reporting Requirements: For any reporting requirement in this AD, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW., Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

(h) Related Information

Refer to MCAI Agência Nacional de Aviação Civil (ANAC) AD No.: 2016-05-01, dated May 27, 2016, for related information. You may examine the MCAI in the AD docket on the Internet at: <https://www.regulations.gov/document?D=FAA-2016-8160-0001>.

(i) 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 the AD specifies otherwise.

(i) Embraer S.A. Service Bulletin (SB) No.: 500-25-0016, dated December 8, 2015.

(ii) Embraer S.A. SB No.: 505-25-0020, dated December 8, 2015.

(3) For Embraer S.A. service information identified in this AD, contact Embraer-S.A., Phenom Maintenance Support, Avenida Brigadeiro Faria Lima, 2170, São José dos Campos-SP-12227-901, P.O. Box 36/2, Brasil; phone: +55 12 3927 1000; fax: +55 12 3927-2619; email: phenom.reliability@embraer.com.br; Internet: <http://www.embraer.com.br/en-US/Pages/home.aspx>.

(4) You may view this service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call

(816) 329-4148. In addition, you can access this service information on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-8160.

(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, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Kansas City, Missouri, on October 17, 2016.

Pat Mullen,
Acting Manager, Small Airplane Directorate,
Aircraft Certification Service.