

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0051; Directorate Identifier 2008-NM-001-AD; Amendment 39-15352; AD 2008-03-03]

RIN 2120-AA64

Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model EMB-135 Airplanes; and Model EMB-145, -145ER, -145MR, -145LR, -145XR, -145MP, and -145EP Airplanes

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

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain EMBRAER Model EMB-135 airplanes; and Model EMB-145, -145ER, -145MR, -145LR, -145XR, -145MP, and -145EP airplanes. This AD requires inspections to detect discrepancies of the components of the elevator control system, repetitive movements of the control column to observe the normal response of the elevators, repetitive inspections to detect discrepancies of the skin of the elevators, and applicable related investigative actions and corrective actions. This AD also provides for optional terminating actions for the inspections and measurements. This AD results from a report indicating that a Model EMB-145 airplane did not rotate in response to the command from the yoke during take-off, which resulted in a rejected take-off. We are issuing this AD to detect and correct discrepancies of the elevator control system, which could result in reduced control of the elevators and consequent reduced controllability of the airplane.

DATES: This AD becomes effective February 14, 2008.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of February 14, 2008.

We must receive comments on this AD by February 29, 2008.

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://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: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Empresa Brasileira de Aeronautica S.A. (EMBRAER), P.O. Box 343-CEP 12.225, Sao Jose dos Campos-SP, Brazil.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; 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 this AD, 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.

FOR FURTHER INFORMATION CONTACT: Sanjay Ralhan, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1405; fax (425) 227-1149.

SUPPLEMENTARY INFORMATION:

Discussion

On December 13, 2005, we issued AD 2005-26-15, amendment 39-14436 (70 FR 77303, December 30, 2005). That AD applies to certain EMBRAER Model EMB-135 airplanes; and Model EMB-145, -145ER, -145MR, -145LR, -145XR, -145MP, and -145EP airplanes. That AD requires performing repetitive inspections for cracks, ruptures, or bends in certain components of the elevator control system; replacing discrepant components; and, for certain airplanes, installing a new spring cartridge and implementing new logic for the electromechanical gust lock system. That AD also requires eventual modification of the elevator gust lock system to replace the mechanical system with an electromechanical system, which will terminate the repetitive inspections. That AD resulted from reports that cracks have been found in certain components of the elevator control system in the horizontal stabilizer area of several airplanes equipped with a mechanical gust lock system. These cracks have been attributed to damage from strong wind gusts on the ground. The actions specified in that AD are intended to prevent discrepancies in the elevator control system, which could result in reduced control of the elevator and consequent reduced controllability of the airplane.

Since we issued that AD, we received a report indicating that an EMBRAER Model EMB-145 airplane did not rotate in response to the command from the yoke as expected during take-off, and the flightcrew had to perform a rejected take-off. The elevator control system did not respond to elevator inputs from the flightcrew. Investigation revealed that both elevator control rods were broken, and skin damage was found to the elevator control surface. Preliminary investigation reports reveal that the control rods broke under compression load. The reports also reveal that strong, windy conditions prevailed before the incident. The airplane's mechanical elevator gust lock system had not yet been modified into an electromechanical elevator gust lock system as required in AD 2005-26-15. Discrepancies of the elevator control system, if not corrected, could result in reduced control of the elevators and consequent reduced controllability of the airplane.

Relevant Service Information

EMBRAER has issued Alert Service Bulletin 145-27-A106, Revision 02, dated December 28, 2007. The alert service bulletin describes procedures for:

- Doing a one-time detailed visual inspection to detect discrepancies (i.e., cracks, rupture and/or bends) of the components of the elevator control system, doing a one-time movement of the control column to observe the normal response of the elevators, doing a one-time general visual inspection within touching distance to detect discrepancies (i.e., overtravel at the hinge area) of the lower skins of the elevators, and doing applicable related investigative actions (Part I). The related investigative actions include detailed visual and general visual inspections and measurements to detect discrepancies of components of the elevator control system.
- Repetitively moving the control column to observe the normal response of the elevators, repetitively doing the general visual inspection from the ground, and doing applicable related investigative actions, as described previously (Part II).
- Repetitively moving the control column to observe the normal response of the elevators, repetitively doing the general visual inspection to detect discrepancies (i.e., overtravel at the hinge areas) of the lower and upper skins of the elevators, doing applicable related investigative actions described previously, and doing applicable detailed visual and general visual inspections and measurements to detect discrepancies of components of the elevator control system (Part III).

EMBRAER Alert Service Bulletin 145-27-A106 refers to Task 05-50-26-200-802-A, "On-Ground Gale-Force Winds," dated March 28, 2006, of Chapter 5-50-26 of EMBRAER EMB145 Aircraft Maintenance Manual, as an additional source of service information for accomplishing the related investigative actions and for accomplishing detailed visual and general visual inspections and measurements to detect discrepancies of components of the elevator control system.

FAA's Determination and Requirements of This AD

These airplanes are manufactured in Brazil and are type certificated for operation in the United States under the provisions of section 21.29 of the Federal Aviation Regulations (14 CFR 21.29) and the applicable bilateral airworthiness agreement.

We are proposing this AD because we evaluated all relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Therefore, we are issuing this AD to detect and correct discrepancies of the elevator control system, which could result in reduced control of the elevators and consequent reduced controllability of the airplane. This AD requires accomplishing the actions specified in the EMBRAER alert service bulletin described previously, except as discussed under "Difference Between the AD and the Referenced Service Bulletin." This AD also requires repair and inspection reports of any discrepancy found, and provides for optional terminating actions. The required inspection reports will help determine the extent of the discrepancies in the affected fleet.

Paragraph (I) of this AD provides operators with an option to modify the elevator mechanical gust locks in accordance with paragraphs (c)(1) and (c)(2) of AD 2005-26-15 to end repetitive inspection requirements of this AD. We are currently considering superseding AD 2005-26-15 to reduce the compliance time for that modification and we might use the results of the inspection reports in our considerations.

Difference Between the AD and the Referenced Service Bulletin

The alert service bulletin does not specify instructions on how to repair certain conditions. This AD requires repairing those conditions using a method approved by the FAA or the Agência Nacional de Aviação Civil (ANAC) (or its delegated agent). In light of the type of repair that is required to address the unsafe condition, and consistent with existing bilateral airworthiness agreements, we have determined that, for this AD, a repair approved by the FAA or the ANAC is acceptable for compliance with this AD.

The Accomplishment Instructions of the alert service bulletin first defines the term "detailed inspection," but thereafter inadvertently uses the term "detailed visual inspection." This AD refers to all such inspections as "detailed inspection."

Paragraph 3.C.(1)(a) of the alert service bulletin specifies that the general visual inspection is performed by a checker. This AD requires that the inspection be done by certified maintenance personnel.

FAA's Justification and Determination of the Effective Date

We have determined that interim repetitive inspections are necessary to ensure long-term continued operational safety, in this case, to detect any discrepancy before it represents a hazard to the airplane. Because of our requirement to promote safe flight of civil aircraft and thus, the critical need to assure the proper functioning of the elevator control system and the short compliance time involved with this action, this AD must be issued immediately.

Because an unsafe condition exists that requires the immediate adoption of this AD, we find that notice and opportunity for prior public comment hereon are impracticable and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments before it becomes effective. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2008-0051; Directorate Identifier 2008-NM-001-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

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 have 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 that the regulation:

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); 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

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 Federal Aviation Administration (FAA) amends § 39.13 by adding the following new airworthiness directive (AD):



2008-03-03 Empresa Brasileira de Aeronautica S.A. (EMBRAER): Amendment 39-15352.
Docket No. FAA-2008-0051; Directorate Identifier 2008-NM-001-AD.

Effective Date

- (a) This AD becomes effective February 14, 2008.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to EMBRAER Model EMB-135BJ, -135ER, -135KE, -135KL, and -135LR airplanes; and Model EMB-145, -145ER, -145MR, -145LR, -145XR, -145MP, and -145EP airplanes; certificated in any category; as identified in EMBRAER Alert Service Bulletin 145-27-A106, Revision 02, dated December 28, 2007.

Unsafe Condition

(d) This AD results from a report indicating that an airplane did not rotate in response to the command from the yoke during take-off, which resulted in a rejected takeoff. We are issuing this AD to detect and correct discrepancies of the elevator control system, which could result in reduced control of the elevators and consequent reduced controllability of the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

Part I: One-Time Inspections and Movements

(f) Within 20 flight hours after the effective date of this AD, do a one-time detailed inspection of the components and general visual inspection of the lower skin of the elevators, and observation of the movement of the elevator control surfaces, by accomplishing all the applicable actions specified in Part I of the Accomplishment Instructions of the EMBRAER Alert Service Bulletin 145-27-A106, Revision 02, dated December 28, 2007, unless the terminating actions specified in paragraph (l) of this AD have been done.

(1) If no structural damage or abnormal operation is detected, regardless of observed wind velocity, no further action is required by this paragraph.

(2) If any structural damage or abnormal operation is detected, regardless of observed wind velocity, before further flight, do the detailed visual and general visual inspections and measurements (related investigative action) by accomplishing all the applicable actions specified in Part I of the Accomplishment Instructions of the service bulletin.

Note 1: EMBRAER Alert Service Bulletin 145-27-A106, Revision 02, dated December 28, 2007, refers to Task 05-50-26-200-802-A, dated March 28, 2006, of Chapter 5-50-26 of EMBRAER EMB 145 Aircraft Maintenance Manual, as an additional source of service information for accomplishing the corresponding inspections and measurements required by paragraphs (f)(2), (h)(2), and (j) of this AD.

(g) Actions done before the effective date of this AD in accordance with the Accomplishment Instructions of EMBRAER Alert Service Bulletin 145-27-A106, dated December 23, 2007; or Part I of the Accomplishment Instructions of EMBRAER Alert Service Bulletin 145-27-A106, Revision 01, dated December 27, 2007; are acceptable for compliance with the corresponding requirements of paragraphs (f) and (f)(2) of this AD only.

Part II: Daily Movements and Inspections

(h) Prior to first flight of the day after accomplishing all the actions required by paragraph (f) of this AD, or within 10 flight hours after the effective date of this AD, whichever occurs later, do the observation of the movements of the elevator control surfaces and general visual inspection from the ground by accomplishing all the applicable actions specified in Part II of the Accomplishment Instructions of EMBRAER Alert Service Bulletin 145-27-A106, Revision 02, dated December 28, 2007, except as required by paragraph (i) of this AD, until the terminating actions specified in paragraph (l) of this AD are done.

(1) If no structural damage or abnormal operation is detected, repeat the movement observations and inspections thereafter prior to first flight of each day of operation.

(2) If any structural damage or abnormal operation is detected, before further flight, do the related investigative actions by accomplishing all the applicable actions specified in Part II of the Accomplishment Instructions of the service bulletin. Repeat the movement observations and inspections thereafter prior to first flight of each day of operation.

(i) Where paragraph 3.C.(1)(a) of the Accomplishment Instructions of the service bulletin specifies that the general visual inspection is performed by a checker, this AD requires that the inspection be done by an authorized person identified in section 43.3 of the Federal Aviation Regulations (14 CFR 43.3).

Part III: Repetitive Inspections and Movements

(j) At the applicable times specified in Table 1 of this AD, do the actions specified in Table 1 of this AD by accomplishing all the applicable actions specified in Part III of the Accomplishment Instructions of EMBRAER Alert Service Bulletin 145-27-A106, Revision 02, dated December 28, 2007. Repeat the applicable actions thereafter at intervals not to exceed 600 flight hours until the terminating actions specified in paragraph (l) of this AD are done; except if the gust lock position and wind conditions specified in paragraph (j)(2) or (j)(3) of this AD occur within that time, the repeat inspection must be done before further flight.

Table 1 – Repetitive inspections, movements, and measurements, as applicable

For airplanes parked on the ground with the gust lock –	Do the following actions –
(1) Engaged and the airplane is exposed to winds of less than 50 knots	Within 600 flight hours after accomplishing all the actions required by paragraph (f) of this AD, do the general visual inspection of the upper and lower skins of the elevators, observation of the movements of the elevator control surface, and all applicable related investigative actions. Do all applicable related investigative actions before further flight.
(2) Engaged and the airplane is exposed to any winds of 50 knots or more	Before further flight, do the general visual inspection of the upper and lower skins of the elevators, observation of the movements of the elevator control surface, and all applicable related investigative actions.
(3) Disengaged, regardless of wind velocity	Before further flight, do the detailed visual and general visual inspections and measurements to detect discrepancies of components of the elevator control system.

Corrective Actions

(k) If any discrepancy is detected during any detailed inspection, general visual inspection, or measurement of components of the elevator control system, or applicable related investigative action required by paragraph (f)(2), (h)(2), or (j) of this AD, before further flight, repair it using a method approved by either the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the Agência Nacional de Aviação Civil (ANAC) (or its delegated agent).

Optional Terminating Action

(l) Accomplishing the actions required by paragraph (c)(1) or (c)(2), as applicable, of AD 2005-26-15, amendment 39-14436, terminates the requirements of this AD.

Reporting

(m) Submit a report of any findings of damage or discrepancy found during any inspection required by this AD to the Manager, International Branch, ANM-116, FAA, or to EMBRAER Technical Support Engineering, fax +55-12-3927-2428; e-mail structure@embraer.com.br; or Empresa Brasileira de Aeronautica S.A. (EMBRAER), P.O. Box 343-CEP 12.225, Sao Jose dos Campos-SP, Brazil; at the applicable time specified in paragraph (m)(1) or (m)(2) of this AD. The report must include the inspection results, a description of any discrepancies found, the airplane serial number, and the number of landings and flight hours on the airplane. Under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501, et seq.), the Office of Management and Budget (OMB) has approved the information collection requirements contained in this AD and has assigned OMB Control Number 2120-0056.

(1) If the inspection was done after the effective date of this AD: Submit the report within 10 days after the inspection.

(2) If the inspection was done before the effective date of this AD: Submit the report within 10 days after the effective date of this AD.

Alternative Methods of Compliance (AMOCs)

(n)(1) The Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. 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.

Related Information

(o) None.

Material Incorporated by Reference

(p) You must use EMBRAER Alert Service Bulletin 145-27-A106, Revision 02, dated December 28, 2007, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference of this document in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Empresa Brasileira de Aeronautica S.A. (EMBRAER), P.O. Box 343-CEP 12.225, Sao Jose dos Campos-SP, Brazil, for a copy of this service information. You may review copies at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or 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 Renton, Washington, on January 18, 2008.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E8-1459 Filed 1-29-08; 8:45 am]