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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2006-24439; Directorate Identifier 2006-NM-039-AD; Amendment 39-14741; AD 2006-18-03]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model EMB-145XR Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain EMBRAER Model EMB-145XR airplanes. This AD requires modification of the flap system interface wiring. This AD results from a finding that the aural and visual warnings, which should be activated when the flaps are set to 22 degrees during takeoff, were not enabled during the manufacture of certain Model EMB-145XR airplanes. We are issuing this AD to prevent overrunning the runway during takeoff.

**DATES:** This AD becomes effective October 4, 2006.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of October 4, 2006.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, Room PL-401, Washington, DC.

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

**FOR FURTHER INFORMATION CONTACT:** Dan Rodina, Aerospace Engineer, International Branch, ANM-116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2125; fax (425) 227-1149.

## **SUPPLEMENTARY INFORMATION:**

### **Examining the Docket**

You may examine the airworthiness directive (AD) docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the street address stated in the ADDRESSES section.

### **Discussion**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to certain EMBRAER Model EMB-145XR airplanes. That NPRM was published in the Federal Register on April 13, 2006 (71 FR 19138). That NPRM proposed to require modification of the flap system interface wiring.

### **Comments**

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

### **Support for NPRM**

The Air Line Pilots Association supports the NPRM.

### **Request To Withdraw NPRM**

EMBRAER requests that we withdraw the NPRM. EMBRAER states that, according to section 39.5 of the Federal Aviation Regulations (14 CFR 39.5), an AD is issued when an unsafe condition exists in a product and is likely to exist or develop in other products of the same type design. However, EMBRAER asserts that the missing aural and visual takeoff warnings for flaps selected to 22 degrees do not cause an unsafe condition. EMBRAER states that its analysis has shown that erroneously selecting the flaps to 22 degrees would not affect the controllability, stall, or maneuver margins of Model EMB-145XR airplanes. Also, EMBRAER states that the approved airplane flight manual prohibits takeoff with flaps selected to 22 degrees. Its analysis has also shown that airplane performance would be an issue during climb only when associated with an engine shutdown. EMBRAER maintains that this combined failure is remote or extremely improbable and would lead to a catastrophic event only if limited by the climb gradient or an obstacle. EMBRAER states that the effect of this failure is similar to the inability to retract flaps.

We do not agree to withdraw the NPRM, since we have determined that an unsafe condition does exist. An erroneous flap selection (set to 22 degrees instead of 18) in combination with engine failure during takeoff could result in an overrun of the runway. In its comment, EMBRAER considers only a combined failure (wrong flap configuration plus an engine failure). Such consideration is unacceptable since the human failure rate for a given operation depends on a large number of factors. No adequate models exist that will enable the failure rate of a given human, carrying out a given operation, to be accurately predicted. Furthermore, the Departamento de Aviação Civil (DAC), which is the airworthiness authority for Brazil, issued Brazilian airworthiness directive 2006-02-01, effective February 24, 2006, to address this same unsafe condition and ensure the continued airworthiness of these airplanes in Brazil. We have not revised this AD in this regard.

## **Request To Require Additional Action**

ExpressJet Airlines and a private citizen both request that EMBRAER provide an engine indication and crew alerting system (EICAS) message, in addition to the aural and visual takeoff warnings proposed in the NPRM. To accomplish this request, ExpressJet Airlines proposes that EMBRAER revise Service Bulletin 145-31-0049 to provide procedures for updating the IC-600 configuration files. The commenter states that this change would allow the EICAS visual warning, "No Takeoff Config," to be displayed. As justification, the commenter states that this change would provide indications consistent with other takeoff related warnings such as pitch trim settings.

The private citizen specifically requests that the manufacturer provide an EICAS configuration file with the "FLAPS 22 AVAIL" parameter set to "UNAVAILABLE." As justification, the commenter states if the modification is accomplished as proposed in the NPRM, the warnings associated with an attempted takeoff in a prohibited condition will be inconsistent. The commenter points out that if takeoff is attempted with the flaps set to 0 degrees or to 45 degrees, the flightcrew will receive an aural warning, a master warning light, and an EICAS message. The commenter asserts that the manufacturer cannot justify omission of the EICAS message, and that including an EICAS message would add less than 1 work hour to the proposed modification.

We do not agree. We have determined that the addition of the aural and visual takeoff warnings is adequate for addressing the unsafe condition of this AD. We have not revised this AD in this regard.

## **Conclusion**

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD as proposed.

## **Costs of Compliance**

This AD affects about 97 airplanes of U.S. registry. The actions required by this AD take about 5 work hours per airplane, at an average labor rate of \$80 per work hour. Required parts cost about \$60 per airplane. Based on these figures, the estimated cost of the AD for U.S. operators is \$44,620, or \$460 per airplane.

## **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 this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under 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):

# AIRWORTHINESS DIRECTIVE

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)  
[www.gpoaccess.gov/fr/advanced.html](http://www.gpoaccess.gov/fr/advanced.html)

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**



**2006-18-03 Empresa Brasileira de Aeronautica S.A. (EMBRAER):** Amendment 39-14741.  
Docket No. FAA-2006-24439; Directorate Identifier 2006-NM-039-AD.

## Effective Date

(a) This AD becomes effective October 4, 2006.

## Affected ADs

(b) None.

## Applicability

(c) This AD applies to EMBRAER Model EMB-145XR airplanes, certificated in any category; as identified in EMBRAER Service Bulletin 145-27-0113, dated December 6, 2005.

## Unsafe Condition

(d) This AD results from a finding that the aural and visual warnings, which should be activated when the flaps are set to 22 degrees during takeoff, were not enabled during the manufacture of certain Model EMB-145XR airplanes. We are issuing this AD to prevent overrunning the runway during takeoff.

## 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.

## Modification

(f) Within 2,500 flight hours after the effective date of this AD, modify the flap system interface wiring, by accomplishing all of the actions specified in the Accomplishment Instructions of EMBRAER Service Bulletin 145-27-0113, dated December 6, 2005.

## Alternative Methods of Compliance (AMOCs)

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

(2) Before using any AMOC approved in accordance with § 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

## **Material Incorporated by Reference**

(h) You must use EMBRAER Service Bulletin 145-27-0113, dated December 6, 2005, 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 Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., Room PL-401, Nassif Building, Washington, DC; on the Internet at <http://dms.dot.gov>; or at the National Archives and Records Administration (NARA). For information on the availability of this material at the NARA, call (202) 741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on August 17, 2006.

Kalene C. Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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