

UNITED STATES OF AMERICA  
DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
RENTON, WASHINGTON 98057-3356

In the matter of the petition of

**Embraer**

for an exemption from §§ 26.11, 26.33,  
26.35, 26.43, 26.45, and 26.49 of Title 14,  
Code of Federal Regulations

**Regulatory Docket No. FAA-2009-1247**

**GRANT OF EXEMPTION**

By a submission to the Department of Transportation's Federal Docket Management System (FDMS) dated December 23, 2009, Mr. Sergio Augusto Viana de Carvalho of Embraer – Airworthiness Manager, S.J. dos Campos - SP, Brazil, petitioned the Federal Aviation Administration (FAA) for an exemption from the requirements of Title 14, Code of Federal Regulations (14 CFR) part 26. This exemption is requested for Embraer Model EMB-135BJ airplanes manufactured by Embraer. Part 26, subpart B, requires developing instructions for continued airworthiness (ICA) applicable to an airplane's electrical wiring interconnection system (EWIS). Part 26, subpart D, requirements are related to airplane fuel tank flammability. Part 26, subpart E, requirements are related to developing damage tolerance data for repairs and alterations.

**The petitioner requests relief from the following regulations:**

**§ 26.11 Electrical wiring interconnection systems (EWIS) maintenance program**, which requires development of instructions for continued airworthiness (ICA) applicable to an airplane's electrical wiring interconnection systems (EWIS).

**§ 26.33 Holders of type certificates: Fuel tank flammability**, which requires flammability exposure analyses and the establishment of airworthiness limitations for fuel tanks. For fuel tanks determined to be highly flammable, service instructions to make design changes to reduce the flammability or mitigate the effects of an ignition of fuel vapors, and associated ICAs for Continued Airworthiness, must be developed.

**§ 26.35 Changes to type certificates affecting fuel tank flammability**, which requires flammability exposure analyses, assessments to determine if critical design configuration control limitations are compromised, and the development of design changes and service instructions.

**§ 26.43 Holders of and applicants for type certificates—Repairs**, which requires development of damage tolerance data for repairs.

**§ 26.45 Holders of type certificates—Alterations and repairs to alterations**, which requires development of damage tolerance data for repairs and alterations.

**§ 26.49 Compliance plan**, which requires development of a compliance plan for §§ 26.43, 26.45, and 26.47.

**The petitioner supports its request with the following.** This information is quoted from Mr. Sergio Augusto Viana de Carvalho’s December 23<sup>rd</sup> petition letter, with minor revisions for clarity. The complete petition may be found in public docket FAA-2009-1247.

#### **Reasons Why the Exemption Would Not Adversely Affect Public Safety**

14 CFR part 26 Subpart B, D and E apply to certain transport category airplanes that as a result of the original certification, or later increase in capacity, have (1) a maximum type-certificated passenger capacity of 30 or more or (2) a maximum payload capacity of 7,500 pounds or more. Although the EMB-135 BJ falls off the threshold criteria for 14 CFR part 26 rules, it is required to comply since it is a derivative airplane from the regional model EMB-135, which falls within the threshold criteria. Additionally, the EMB-135BJ is included on Type Certificate T00011AT, which refers to all EMB-135/EMB-145 FAA- approved models.

As described in the rule preambles, the criteria “as a result of the original certification” was included to address possible manipulation of passenger and payload capacities, in order to avoid compliance with these regulations. However, this is not the case for the EMB-135BJ since it was designed, specifically for the executive market and was approved before the part 26 issuance. These considerations point to the fact that the EMB-135 BJ is not a model intended to be affected by part 26 rules.

#### **Reason the Exemption Would Benefit the Public Interest**

Embraer understands this exemption will benefit the public interest since the FAA will not spend resources to address the compliance demonstration of an airplane not originally intended to be affected by 14 CFR part 26 rules. Based on that, this exemption will not adversely affect the safety level expected by the FAA.

### **Federal Register publication**

A summary of the petition was published in the *Federal Register* on March 25, 2010 (75 FR 10553). No comments were received regarding the exemption request.

### **The FAA's analysis**

The FAA has developed criteria to consider when deciding whether to grant or deny a design approval holder's (DAH) petition for exemption from part 26 requirements. These criteria were meant as a general guide to making decisions about such requests and were not developed for any specific request. The FAA uses these criteria as a starting point for making its decision. However, other factors may also be considered before a final decision is made on any particular exemption request.

The criteria are illustrated in the table that follows.

**Table 1**

**Criteria for Considering Eligibility for Exemption  
from §§ 26.11, 26.33, 26.35, 26.43, 26.45, 26.47, or 26.49**

<b>Item</b>	<b>If the airworthiness authority for the state of design is</b>	<b>And</b>	<b>And<sup>4</sup></b>	<b>And</b>	<b>And</b>	<b>Then</b>
1	The FAA	No airplanes are operating under part 121 and it is unlikely that any will do so in the future <sup>3</sup>	No airplanes are operating under part 125 and it is unlikely that any will do so in the future <sup>3</sup>	No airplanes are operating under part 129 (N-registered) and it is unlikely that any will do so in the future <sup>3</sup>	No airplanes are being operated by a foreign air carrier and it is unlikely that any will do so in the future <sup>3</sup>	The DAH may be eligible for an exemption
2	The FAA	Airplanes are operating under part 121 but no airplanes will be operated under part 121 after the operational-rule compliance date <sup>1</sup> and it is unlikely that any will return to such service in the future <sup>3</sup>	Airplanes are operating under part 125 but no airplanes will be operated under part 125 after the operational-rule compliance date <sup>1</sup> and it is unlikely that any will return to such service in the future <sup>3</sup>	Airplanes are operating under part 129 (N-registered) but no airplanes will be operated under part 129 (N-registered) after the operational-rule compliance date <sup>1</sup> and it is unlikely that any will return to such service in the future <sup>3</sup>	Airplanes are being operated by a foreign air carrier but no airplanes will be operated by a foreign air carrier after the operational-rule compliance date <sup>1</sup> and it is unlikely that any will return to such service in the future <sup>3</sup>	The DAH may be eligible for an exemption
3	Not the FAA	No airplanes are operating under part 121 and it is unlikely that any will do so in the future <sup>3</sup>	No airplanes are operating under part 125 and it is unlikely that any will do so in the future <sup>3</sup>	No airplanes are operating under part 129 (N-registered) and it is unlikely that any will do so in the future <sup>3</sup>		The DAH may be eligible for an exemption
4	Not the FAA	Airplanes are operating under part 121 but no airplanes will be operated under part 121 after the operational-rule compliance date <sup>2</sup> and it is unlikely that any will return to such service in the future <sup>3</sup>	Airplanes are operating under part 125 but no airplanes will be operated under part 125 after the operational-rule compliance date <sup>2</sup> and it is unlikely that any will return to such service in the future <sup>3</sup>	Airplanes are operating under part 129 (N-registered) but no airplanes will be operated under part 129 (N-registered) after the operational-rule compliance date <sup>2</sup> and it is unlikely that any will return to such service in the future <sup>3</sup>		The DAH may be eligible for an exemption

<sup>1</sup> The design-approval holder must demonstrate that these airplanes will not be operating under part 121, 125, or 129, or operated by a foreign air carrier, after the operational-rule compliance date by obtaining documentation of such from the current owners/operators of the airplanes.

<sup>2</sup> The design-approval holder must demonstrate that these airplanes will not be operating under part 121, 125, or 129 after the operational-rule compliance date by obtaining documentation of such from the current owners/operators of the airplanes.

<sup>3</sup> Arguments for the likelihood of an airplane not entering into air-carrier service in the future should center on the airplane's age and/or current configuration.

<sup>4</sup> This criterion only applies to the fuel tank flammability rules (i.e., §§ 26.33 and 26.35).

The determination of whether an airplane is operating under part 121, 125, or N-registered 129 is based on whether that particular airplane is listed on an air carrier's Operations Specifications.

The rationale behind the criteria contained in the table above is this: The rules require DAHs to develop data for use by operators. If there are no operators for a particular airplane who are required by the rules to use such data, it would be a poor use of resources for the DAH to develop it. Therefore, it would benefit both the DAH and the public as a whole to spend resources on more important safety issues rather than on developing data that will not be used. In addition, granting such an exemption would not adversely affect safety because there are no airplanes that would be required to incorporate the data, nor is it likely that there will be any in the future.

The FAA is not the airworthiness authority for the state of design for the Embraer Model EMB-135BJ airplane. However, FAA's data indicates that several airplanes of this model are N-registered and are being operated under part 129 by a single operator. Other than those, no other airplane of the subject model is operating under part 121, 125, or N-registered 129.

The FAA has reviewed the usage of these several N-registered 129 airplanes and considers them anomalies. They are not utilized as air carriers, but would be considered 14 CFR part 135 air taxi operations if they were located within the United States. For business reasons, however, the operator has a need to maintain these airplanes under N-registry. As business jets, this model is not normally operated as an air carrier. The characteristics of the airplane and internal layouts are not generally acceptable for commercial carriage.

Although the Embraer Model EMB-135BJ airplane does not meet the baseline exemption criteria noted above for part 26, the FAA has reviewed Embraer's request and determined that granting this exemption would not have an adverse effect on public safety and would be in the public interest based on the following information:

The FAA considers the Embraer Model EMB-135BJ airplane to be an anomaly in terms of §§ 26.11, 26.33, 26.35, 26.43, 26.45, and 26.49. In these regulations, the applicability language was specifically written so the requirements would apply to type certificates (TC) for airplanes exceeding the capacity criteria of 30 passengers or 7,500 pounds maximum payload, including all airplanes specified on those TCs. As explained in the regulatory preambles, this was intended to prevent DAHs from being able to avoid compliance with these requirements by manipulating the capacity of their airplanes. At the same time, these regulations were generally not intended to apply to airplanes that were below the capacity criteria. In the case of the Embraer Model EMB-135BJ airplane, although it does not meet the passenger or payload criteria, because it is on the same TC as other airplanes that do meet the criteria, the regulations apply to this model. However, this model is comparable to other types of business jets produced by other companies that are not subject to the regulations, and are operated almost exclusively in private use. The FAA was not aware of these facts during the part 26 rulemaking. If we had been aware of this situation, this airplane model would have been explicitly excluded from these regulations.

## **Additional information**

This exemption grants relief to Embraer from having to meet the airworthiness requirements of §§ 26.11, 26.33, 26.35, 26.43, 26.45, and 26.49. This exemption does not grant relief from the related operational requirements contained in §§ 121.1109, 121.1111, 121.1117, 125.509, 129.109, 129.111, or 129.117. Should a person choose to operate an Embraer Model EMB-135BJ airplane under part 121, 125, or 129 beyond the operational compliance deadlines as stated in §§ 121.1109, 121.1111, 121.1117, 125.509, 129.109, 129.111, or 129.117, that person will be required to comply with those operational requirements.

In addition, this exemption does not provide any relief from part 25 requirements determined to be applicable when developing a certification basis in accordance with § 21.101.

Also, as a reminder, the Embraer Model EMB-135BJ airplane is certified to the damage tolerance requirements of § 25.571, *Damage-Tolerance and Fatigue Evaluation of Structure*. In addition, the Embraer Model EMB-135BJ airplane is certified to the requirements of § 25.1529, *Instructions for Continued Airworthiness* (ICA) as documented on TCDS T00011AT. Embraer is responsible for the detail design data associated with this airplane model, including damage tolerance data and ICA, as required (for the baseline airplane, as well as repairs and alterations developed by Embraer) to maintain the original certification basis.

## **Holders and Applicants of Amended Type Certificates and Supplemental Type Certificates**

Section 26.11 requires an applicant for an amended TC or supplemental type certificate (STC) to evaluate whether the design change necessitates a revision to the EWIS ICA developed by the TC holder and approved by the FAA Oversight Office. Section 26.47 requires STC holders and applicants to use damage tolerance data developed by the TC holder to identify all alterations that affect fatigue critical baseline structure and fatigue critical alteration structure. Section 26.35 applies to holders of, and applicants for, approvals of certain design changes to airplanes meeting the applicability criteria of § 26.33(a); and requires certain holders of and applicants for STCs and amended TCs to conduct assessments to determine if the fuel tank system, as modified by their design changes, compromises critical design configuration control limitations (CDCCL) developed by the TC holders. Since in this case it would be Embraer applying for an amended TC, Embraer would be exempt from the requirements of §§ 26.11, 26.47, and 26.35 if the FAA grants its petition. However, if the FAA grants Embraer's petition, applicable STC holders and applicants will not be able to comply with the requirements of §§ 26.11, 26.47, and 26.35. So the FAA considered the impact on these entities when deciding if a grant of exemption should be issued, and if so, whether it should be expanded to include the applicable STC holders and applicants.

As a reminder, Embraer Model EMB-135BJ airplanes are certified to the damage tolerance requirements of § 25.571, *Damage-Tolerance and Fatigue Evaluation of Structure* and § 25.1529, *Instructions for Continued Airworthiness* as documented on TCDS T00011AT. Supplemental type certificate holders and applicants are responsible for detail design data associated with STCs installed on this airplane model, including damage tolerance data and ICAs as required (for the

baseline STC and repairs developed by the STC holder/applicant) to maintain the original certification basis.

### **The FAA's decision**

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. §§ 40113 and 44701, delegated to me by the Administrator, Embraer, is hereby granted an exemption from §§ 26.11, 26.33, 26.35, 26.43, 26.45, 26.47, and 26.49 for the Embraer Model EMB-135BJ airplane. If the type design for the EMB-135BJ is modified in the future in a manner that results in a passenger capacity of 30 or more, or a maximum payload capacity of 7,500 pounds or more, this exemption would not apply to those design changes.

In addition, since the FAA does not intend for these rules to apply to an STC holder or applicant if they do not apply to the TC holder for the airplane model being modified, this grant is extended to holders of, and applicants for, STCs or amended TCs that have modified or will modify Embraer Model EMB-135BJ airplanes as long as those design changes do not result in capacities that exceed those of the subject part 26 rules. Specifically, if any of these model airplanes are modified in a manner that results in a passenger capacity of 30 or more, or a maximum payload capacity of 7,500 pounds or more, this exemption would not apply to those design changes.

Issued in Renton, Washington, on April 19, 2010.

*Signed by Ali Bahrami*

Ali Bahrami  
Manager, Transport Airplane Directorate  
Aircraft Certification Service