

Under standard practice, the effective date of final special conditions would be 30 days after the date of publication in the **Federal Register**; however, as the certification date for the Bombardier Aerospace Model BD-100-1A10 airplane is imminent, the FAA finds that good cause exists to make these special conditions effective upon issuance.

### Conclusion

This action affects only certain novel or unusual design features on one model of airplanes. It is not a rule of general applicability, and it affects only the applicant who applied to the FAA for approval of these features on the airplane.

### List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

■ The authority citation for these special conditions is as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

### The Special Conditions

■ Accordingly, the Federal Aviation Administration (FAA) issues the following special conditions as part of the type certification basis for Bombardier Aerospace Model BD-100-1A10 airplanes. In addition to the airworthiness standards of §§ 25.562 and 25.785, the minimum acceptable standards for dynamic certification of Model BD-100-1A10 single-occupant side-facing seats are proposed as follows:

### Injury Criteria

(a) *Existing Criteria:* All injury protection criteria of § 25.562(c)(1) through (c)(6) apply to the occupant of a side-facing seat. Head Injury Criterion (HIC) assessments are required only for head contact with the seat and/or adjacent structures.

(b) *Body-to-Wall/Furnishing Contact:* The seat must be installed aft of a structure, such as an interior wall or furnishing, that will support the pelvis, upper arm, chest, and head of an occupant seated next to the structure. A conservative representation of the structure and its stiffness must be included in the tests. It is recommended, but not required, that the contact surface of this structure be covered with at least two inches of energy absorbing protective padding (foam or equivalent), such as Ensolite.

(c) *Thoracic Trauma:* The Thoracic Trauma Index (TTI) injury criterion must be substantiated by dynamic test or by rational analysis, based on a previous test or tests of a similar seat

installation. Testing must be conducted with a Side Impact Dummy (SID), as defined by 49 CFR part 572, subpart F, or its equivalent. TTI must be less than 85, as defined in 49 CFR part 572, subpart F. TTI data must be processed as defined in Federal Motor Vehicle Safety Standard (FMVSS) Part 571.214, section S6.13.5.

(d) *Pelvis:* Pelvic lateral acceleration must be shown by dynamic test or by rational analysis based on previous test(s) of a similar seat installation to not exceed 130g. Pelvic acceleration data must be processed as defined in FMVSS Part 571.214, section S6.13.5.

(e) *Shoulder Strap Loads:* Where upper torso straps (shoulder straps) are used for occupants, tension loads in individual straps must not exceed 1,750 pounds. If dual straps are used for restraining the upper torso, the total strap tension loads must not exceed 2,000 pounds.

### Test Requirements

The above performance measures must not be exceeded during the following dynamic tests:

(a) Conduct a longitudinal test per § 25.562(b)(2) with a SID, undeformed floor, no yaw, and with all lateral structural supports (armrests/walls).

Pass/fail injury assessments: TTI and pelvic acceleration.

(b) Conduct a longitudinal test per § 25.562(b)(2) with the Hybrid II ATD, deformed floor, 10 degrees yaw, and with all lateral structural supports (armrests/walls).

Pass/fail injury assessments: HIC, upper torso restraint load, restraint system retention and pelvic acceleration.

(c) Conduct a downward vertical test per § 25.562(b)(1) with a modified Hybrid II ATD with existing pass/fail criteria.

Issued in Renton, Washington, on October 6, 2003.

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 25

[Docket No. NM249; Special Conditions No. 25-250-SC]

### Special Conditions: Embraer Model ERJ-170 Series Airplanes; Electronic Flight Controls (Command Signal Integrity)

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

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Embraer Model ERJ-170 series airplanes. These airplanes will have novel or unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. These design features are associated with electronic flight control systems. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for these design features. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards. Additional special conditions will be issued for this and other novel or unusual design features of Embraer Model 170 series airplanes.

**EFFECTIVE DATES:** October 6, 2003.

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### SUPPLEMENTARY INFORMATION:

#### Background

On May 20, 1999, Embraer applied for a type certificate for its new Model ERJ-170 airplane. Two basic versions of the Model ERJ-170 are included in the application. The ERJ-170-100 airplane is a 69-78 passenger, twin-engine regional jet with a maximum takeoff weight of 81,240 pounds. The ERJ-170-200 is a derivative with a lengthened fuselage. Passenger capacity for the ERJ-170-200 is increased to 86, and maximum takeoff weight is increased to 85,960 pounds.

#### Type Certification Basis

Under the provisions of 14 CFR 21.17, Embraer must show that the Model ERJ-