

category airplanes that include Amendment 25–64 in the certification basis and were not considered when those airworthiness standards were promulgated. Hence, the existing regulations do not provide adequate or appropriate safety standards for occupants of side-facing seats. In order to provide a level of safety that is equivalent to that afforded occupants of forward and aft facing seats, additional airworthiness standards in the form of special conditions are necessary.

These special conditions are applicable only to single-occupant side-facing seats. They are not sufficient or intended to be used for the certification of multiple-occupant side-facing divans or sofas.

Type Certification Basis

Under the provisions of § 21.101, Learjet Inc. (subsidiary of Bombardier Aerospace) must show that the Model BD–100–1A10 airplane, as changed, continues to meet the applicable provisions of the regulations incorporated by reference in T00005NY or the applicable regulations in effect on the date of application for the change. The regulations incorporated by reference in the type certificate are commonly referred to as the “original type certification basis.” The regulations incorporated by reference in T00005NY are as follows:

14 CFR part 25, effective February 1, 1965, as amended by Amendments 25–1 through 25–98; 14 CFR part 34, effective September 10, 1990.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, 14 CFR part 25) do not contain adequate or appropriate safety standards for the Bombardier Aerospace Model BD–100–1A10 because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Bombardier Aerospace Model BD–100–1A10 must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34 and the noise certification requirements of 14 CFR part 36.

Special conditions, as defined in § 11.19, are issued in accordance with § 11.38 and become part of the type certification basis in accordance with § 21.101.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual

design feature, the special conditions would also apply to the other model.

Novel or Unusual Design Features

Bombardier Aerospace has proposed to install single-occupant side-facing seats on BD–100–1A10 airplanes. Section 25.785(b) requires that each seat “at each station designated as occupiable during takeoff and landing must be designed so that persons occupying these seats will not suffer serious injury in an emergency landing as a result of the inertia forces specified in §§ 25.561 and 25.562.” Additionally, § 25.562 requires dynamic testing of all seats that are occupied during takeoff and landing. However, side-facing seats are considered a novel design for transport category airplanes that include Amendment 25–64 in the certification basis, and were not considered when those airworthiness standards were promulgated. Hence, the existing regulations do not provide adequate or appropriate safety standards for occupants of side-facing seats. In order to provide a level of safety that is equivalent to that afforded occupants of forward and aft facing seats, additional airworthiness standards, in the form of special conditions, are necessary.

Discussion

The following special conditions are considered to provide occupants of single-occupancy side-facing seats a level of safety that is equivalent to that afforded occupants of forward and aft facing seats. These special conditions supplement 14 CFR part 25 and, more specifically, they supplement §§ 25.785 and 25.562.

Applicability

As discussed above, these special conditions are applicable to the Bombardier Aerospace Model BD–100–1A10. Should Bombardier Aerospace apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, the special conditions would apply to that model as well.

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 Proposed Special Conditions

Accordingly, the Federal Aviation Administration (FAA) proposes 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