

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 25**

[Docket No. NM259; Special Condition No. 25-249-SC]

Special Conditions: Bombardier Aerospace Model BD-100-1A10; Side-Facing Single Occupancy Seats

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for the Bombardier Aerospace Model BD-100-1A10 airplane. This airplane as modified by Learjet Inc. (Subsidiary of Bombardier Aerospace) will have novel or unusual design features associated with side-facing single-occupant seats. 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.

EFFECTIVE DATE: October 6, 2003.

FOR FURTHER INFORMATION CONTACT: Michael Thompson, FAA, Airframe/Cabin Safety Branch, ANM-115, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington, 98055-4056; telephone (425) 227-1157; facsimile (425) 227-1149.

SUPPLEMENTARY INFORMATION:**Background**

On April 11, 2003, Learjet Inc. (subsidiary of Bombardier Aerospace) applied for a supplemental type certificate for installation of single-occupant side-facing seats on Bombardier BD-100-1A10 airplanes. Bombardier Aerospace requested that special conditions be issued for these seats and that the special conditions be listed on the type certificate data sheet of the BD-100-1A10 airplane. The Model BD-100-1A10 is a twin engine, turbofan powered, transport category airplane which is currently the subject of a type certification program.

Section 25.785(a) at Amendment 25-64 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.

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 will 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.

Comments

Notice of proposed special conditions No. 25-03-06-SC for the Bombardier Aerospace Model BD-100-1A10 airplane was published in the **Federal Register** on August 26, 2003 (68 FR 51203). No comments were received, and these special conditions are adopted as proposed.

Applicability

As discussed above, these special conditions are applicable to the Bombardier Aerospace Model BD-100-1A10 airplane. 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.