



[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA-2015-6363; Special Conditions No. 25-637-SC]

Special Conditions: Bombardier Inc. Model BD-700-2A12 and BD-700-2A13

Airplanes; Hydrophobic Coatings in Lieu of Windshield Wipers

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for the Bombardier Inc. (Bombardier) Model BD-700-2A12 and BD-700-2A13 airplanes. These airplanes will have a novel or unusual feature when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. This design feature is hydrophobic coatings in lieu of windshield wipers. 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.

DATES: This action is effective on Bombardier on **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. We must receive your comments by **[INSERT DATE 45 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Send comments identified by docket number FAA-2015-6363 using any of the following methods:

- *Federal eRegulations Portal:* Go to <http://www.regulations.gov/> and follow the online instructions for sending your comments electronically.
- *Mail:* Send comments to Docket Operations, M-30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE., Room W12-140, West Building Ground Floor, Washington, DC, 20590-0001.
- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *Fax:* Fax comments to Docket Operations at 202-493-2251.

Privacy: The FAA will post all comments it receives, without change, to <http://www.regulations.gov/>, including any personal information the commenter provides. Using the search function of the docket Web site, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the **Federal Register** published on April 11, 2000 (65 FR 19477-19478), as well as at <http://DocketsInfo.dot.gov/>.

Docket: Background documents or comments received may be read at <http://www.regulations.gov/> at any time. Follow the online instructions for accessing the docket or go to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Bob Hettman, FAA, Propulsion and Mechanical Systems Branch, ANM-112, Transport Airplane Directorate, Aircraft Certification

Service, 1601 Lind Avenue SW., Renton, Washington, 98057-3356; telephone 425-227-2683; facsimile 425-227-1232.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

We will consider all comments we receive on or before the closing date for comments. We may change these special conditions based on the comments we receive.

Background

On May 30, 2012, Bombardier applied for an amendment to type certificate no. T00003NY to include the new Model BD-700-2A12 and BD-700-2A13 airplanes. These airplanes are derivatives of the Model BD-700 series of airplanes currently approved under type certificate no. T00003NY, and are marketed as the Bombardier Global 7000 (Model BD-700-2A12) and Global 8000 (Model BD-700-2A13). These airplanes are ultra-long-range, executive-interior business jets.

Type Certification Basis

Under the provisions of Title 14, Code of Federal Regulations (14 CFR) 21.101, Bombardier must show that the Model BD-700-2A12 and BD-700-2A13 airplanes meet the applicable provisions of the regulations listed in type certificate no. T00003NY, or the applicable regulations in effect on the date of application for the change, except for earlier amendments as agreed upon by the FAA.

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 BD-700-2A12 and BD-700-2A13 airplanes because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

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, or should any other model already included on the same type certificate be modified to incorporate the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Model BD-700-2A12 and BD-700-2A13 airplanes 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.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type-certification basis under § 21.101.

Novel or Unusual Design Features

The Bombardier Model BD-700-2A12 and BD-700-2A13 airplanes will have a novel or unusual design feature associated with flightdeck design, which incorporates a hydrophobic windshield coating to provide adequate pilot compartment view in the presence of precipitation. Sole reliance on such a coating, without windshield wipers, constitutes a novel or unusual design feature for which the applicable airworthiness regulations do not contain adequate or appropriate safety standards.

Discussion

14 CFR 25.773(b)(1) requires a means to maintain a sufficiently clear portion of the windshield for both pilots to have an extensive view along the flight path during precipitation conditions. The regulations require this means to maintain such an area during precipitation in heavy rain at speeds up to $1.5 V_{SR1}$. Hydrophobic windshield coatings may depend to some degree on airflow to maintain a clear vision area. The heavy rain and high speed conditions specified in the current rule do not necessarily represent the limiting condition for this new technology. For example, airflow over the windshield, which may be necessary to remove moisture from the windshield, may not be adequate to maintain a sufficiently clear area of the windshield in low-speed flight or during surface operations. Alternatively, airflow over the windshield may be disturbed during such critical times as the approach to land, where the airplane is at a higher-than-normal pitch attitude. In these cases, areas of airflow disturbance or separation on the windshield could cause a failure to maintain a clear vision area on the windshield.

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.

Applicability

As discussed above, these special conditions are applicable to the Model BD-700-2A12 and BD-700-2A13 airplanes. Should Bombardier apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to the other model as well.

Conclusion

This action affects only certain novel or unusual design features on two model series of airplanes. It is not a rule of general applicability.

The substance of these special conditions has been subjected to the notice and comment period in several prior instances and has been derived without substantive change from those previously issued. It is unlikely that prior public comment would result in a significant change from the substance contained herein. Therefore, the FAA has determined that prior public notice and comment are unnecessary, and good cause exists for adopting these special conditions upon publication in the **Federal Register**. The FAA is requesting comments to allow interested persons to submit views that may not have been submitted in response to the prior opportunities for comment described above.

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, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Bombardier Model BD-700-2A12 and BD-700-2A13 airplanes.

1. In addition to meeting the requirements of § 25.773(b)(1), the airplane must have a means to maintain a clear portion of the windshield, during precipitation conditions, such that both pilots to have a sufficiently extensive view along the ground or flight path in taxi and flight. This means must be designed to function,

without continuous attention on the part of the crew, in conditions from light misting precipitation to heavy rain, at speeds from fully stopped in still air to $1.5 V_{SR1}$ with lift and drag devices retracted, and in icing conditions specified in § 25.1419 if certification for flight in icing conditions is requested.

2. The precipitation removal system must comply with § 25.773.
3. Instructions to maintain the precipitation-removal system must comply with § 25.1529.
4. The materials used in the precipitation removal system must comply with § 25.603.

Issued in Renton, Washington, on August 23, 2016.

John P. Piccola, Jr.
Acting Manager, Transport Airplane Directorate
Aircraft Certification Service
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