[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA-2014-0698; Notice No. 25-567-SC]

Special Conditions: Bombardier Aerospace, Models BD-500-1A10 and BD-500-1A11 Series Airplanes; Airplane Electronic System Security Protection from Unauthorized External Access

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for the Bombardier Aerospace Models BD-500-1A10 and BD-500-1A11 series airplanes. These airplanes will have novel or unusual design features, specifically, digital systems architecture composed of several connected networks that may allow access to or by external computer systems and networks and may result in security vulnerabilities to the airplanes' 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.

DATES: The effective date of these special conditions is **[insert date of publication in the Federal Register].** We must receive your comments by **[insert date 45 days after date of publication in the Federal Register].**

ADDRESSES: Send comments identified by docket number FAA-2014-0698 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, D.C., 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, D.C., 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 the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE, Washington, D.C., between 9 a.m. and 5 p.m., Monday through Friday, except federal holidays.

FOR FURTHER INFORMATION CONTACT: Varun Khanna, FAA, Airplane and Flight Crew Interface, ANM-111, Transport Airplane Directorate, Aircraft Certification Service, 1601

Lind Avenue SW, Renton, Washington, 98057-3356; telephone 425-227-1298; facsimile 425-227-1149.

SUPPLEMENTARY INFORMATION:

The FAA has determined that notice of, and opportunity for prior public comment on, these special conditions is impracticable because these procedures would significantly delay issuance of the design approval and thus delivery of the affected aircraft. In addition, the substance of these special conditions has been subject to the public comment process in several prior instances with no substantive comments received. The FAA therefore finds that good cause exists for making these special conditions effective upon publication in the Federal Register.

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 by the closing date for comments. We may change these special conditions based on the comments we receive.

Background

On December 10, 2009, Bombardier Aerospace applied for a type certificate for their new Models BD-500-1A10 and BD-500-1A11 series airplanes (hereafter collectively referred to as "CSeries"). The CSeries airplanes are swept-wing monoplanes with an aluminum alloy fuselage sized for 5-abreast seating. Passenger capacity is designated as 110 for the Model BD-500-1A10 and 125 for the Model BD-500-1A11. Maximum takeoff weight is 131,000 pounds for the Model BD-500-1A10 and 144,000 pounds for the Model BD-500-1A11.

Type Certification Basis

Under the provisions of Title 14, Code of Federal Regulations (14 CFR) 21.17, Bombardier Aerospace must show that the CSeries airplanes meet the applicable provisions of 14 CFR part 25 as amended by Amendments 25-1 through 25-129.

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 CSeries 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 or similar novel or unusual design feature, the special conditions would also apply to the other model.

In addition to the applicable airworthiness regulations and special conditions, the CSeries 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, and the FAA must issue a finding of regulatory adequacy under section 611 of Public Law 92-574, the "Noise Control Act of 1972."

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 § 21.17(a)(2).

Novel or Unusual Design Features

The CSeries will incorporate the following novel or unusual design features: Digital systems architecture composed of several connected networks. This network architecture and network configuration may be used for or interfaced with a diverse set of functions, including:

- Flight safety related control, communication, and navigation systems (aircraft control domain);
- Operator business and administrative support (operator information domain); and
- Passenger information and entertainment systems (passenger entertainment domain), and will have the capability to allow access to or by external network sources.

Discussion

The CSeries digital systems network architecture is novel or unusual for commercial transport airplanes as it allows connection to airplane electronic systems and networks, and access from aircraft external sources (e.g., operator networks, wireless devices, Internet connectivity, service provider satellite communications, electronic flight bags, etc.), to the previously isolated airplane electronic assets. Airplane electronic assets include electronic equipment and systems, instruments, networks, servers, software and electronic components, field-loadable software and hardware applications, databases, etc. This proposed design may result in network security vulnerabilities from intentional or unintentional corruption of data and systems required for the safety, operations, and maintenance of the airplane.

The existing regulations and guidance material did not anticipate these types of system architectures or access to airplane systems. Furthermore, 14 CFR regulations and current system safety assessment policy and techniques do not address potential security vulnerabilities that could be caused by unauthorized access to airplane data busses and servers. Therefore, these special conditions are issued to ensure that the security, integrity, and availability of airplane systems are not compromised by certain wired or wireless electronic connections between airplane data busses and networks.

Applicability

As discussed above, these special conditions are applicable to the Model No. BD-500-1A10 and BD-500-1A11. 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 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, because a delay would significantly affect the certification of the airplane, which is imminent, the FAA has determined that prior public notice and comment are unnecessary and impracticable, and good cause exists for adopting these special conditions upon issuance. 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 BD-500-1A10 and BD-500-1A1 series airplanes.

Airplane Electronic System Security Protection from Unauthorized External Access

1. The applicant must ensure that the airplanes' electronic systems are protected from access by unauthorized sources external to the airplane, including those possibly caused by maintenance activity.

2. The applicant must ensure that electronic system security threats are identified and assessed, and that effective electronic system security protection strategies are implemented to protect the airplane from all adverse impacts on safety, functionality, and continued airworthiness.

3. The applicant must establish appropriate procedures to allow the operator to ensure that continued airworthiness of the aircraft is maintained, including all post type certification modifications that may have an impact on the approved electronic system security safeguards.

Issued in Renton, Washington, on September 3, 2014.

Michael Kaszycki
Acting Manager, Transport Airplane Directorate
Aircraft Certification Service

[FR Doc. 2014-21789 Filed 09/11/2014 at 8:45 am; Publication Date: 09/12/2014]