



[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA-2014-0302; Notice No. 25-551-SC]

Special Conditions: The Boeing Company, Models 737-700, -700C, -800, -900ER, -7, -8, and -9 Series Airplanes; Isolation or Airplane Electronic System Security Protection from Unauthorized Internal Access

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for Boeing Models 737-

700, -700C, -800, -900ER, -7, -8, and -9 series airplanes. These airplanes will have a novel or unusual design feature associated with connectivity of the passenger service computer systems to the airplane critical systems and data networks. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. 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 a date 45 days after date of publication in the Federal Register]**.

ADDRESSES: Send comments identified by docket number FAA-2014-0302 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 January 27, 2012, The Boeing Company applied for an amendment to Type Certificate No. A16WE to include new minor models, 737-7, -8, and -9. The Models 737-7, -8, and -9, which are derivatives of the 737-700, -800, -900ER currently approved under Type Certificate No. A16WE, are passenger series airplanes designed to substantially reduce fuel burn and community noise. In addition, the design will include a new CFM LEAP-1B engine with a 68.4-inch diameter fan, 8-inch longer nose gear to accommodate the larger engine, a relofted tailcone (which requires the elevator to be trimmed and the elevator tab to be relocated outboard

to accommodate the new contours), new horizontal stabilizer strakelets, a retractable auxiliary power unit (APU) inlet door, fly-by-wire spoilers, strengthened flight deck bulkhead, and a new winglet design.

Type Certification Basis

Under the provisions of Title 14, Code of Federal Regulations (14 CFR) 21.101, The Boeing Company must show that the Models 737-700, -700C, -800, -900ER, -7, -8, and -9 series airplanes meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. A16WE or the applicable regulations in effect on the date of application for the change to the type certificate. The regulations incorporated by reference in the type certificate are commonly referred to as the “original type certification basis.” In addition the certification basis includes certain special conditions, exemptions, or later amended sections of the applicable part that are not relevant to these special conditions.

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 737-700, -700C, -800, -900ER, -7, -8, and -9 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, or should any other model already included on the same type certificate be modified to incorporate the same 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 737-700, -700C, -800, -900ER, -7, -8, and -9 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 Boeing Models 737-700, -700C, -800, -900ER, -7, -8, and -9 series airplanes 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);
- Operation and administrative support (operator information services domain); and
- Passenger information and entertainment systems (passenger entertainment domain), and the capability to allow access to or by external network sources.

Discussion

The proposed integrated network configuration on the Models 737-700, -700C, -800, -900ER, -7, -8, and -9 may allow increased connectivity with external network sources and will have more interconnected networks and systems, such as passenger entertainment and information services, than previous 737 airplane models. This may allow the exploitation of network security vulnerabilities resulting in intentional or unintentional destruction, disruption, degradation, or exploitation of data and systems critical to the safety and

maintenance of the airplane, which could result in unsafe conditions for the airplane and its occupants.

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 (i.e., confidentiality, integrity, and availability) of airplane systems are not compromised by unauthorized wired or wireless electronic connections between airplane operation systems and networks and the passenger domain.

Applicability

As discussed above, these special conditions are applicable to the Models 737-700, -700C, -800, -900ER, -7, -8, and -9 series airplanes. Should The Boeing Company 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 certain 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, 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 The Boeing Company Models 737-700, -700C, -800, -900ER, -7, -8, and -9 series airplanes.

Isolation or Airplane Electronic System Security Protection from Unauthorized Internal Access

1. The applicant must ensure that the design provides isolation from, or airplane electronic system security protection against, access by unauthorized sources internal to the airplane. The design must prevent inadvertent and malicious changes to, and all adverse impacts upon, airplane equipment, systems, networks, or other assets required for safe flight and operations.
2. The applicant must establish appropriate procedures to allow the operator to ensure that continued airworthiness of the airplane 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 May 5, 2014.

Jeffrey E. Duven
Manager, Transport Airplane Directorate
Aircraft Certification Service

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