

airplane networks, data bases, and servers. Therefore, these special conditions and a means of compliance are provided to ensure that the security (i.e., confidentiality, integrity, and availability) of airplane systems is not compromised by unauthorized wired or wireless electronic connections.

#### Discussion of Comments

Notice of proposed special conditions No. 25-09-09-SC for the Boeing Model 747-8/-8F airplanes was published in the **Federal Register** on October 2, 2009 (74 FR 50926). No comments were received.

#### Applicability

As discussed above, these special conditions are applicable to Boeing Model 747-8/-8F airplanes. Should Boeing apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design features, these special conditions would apply to that model as well under the provisions of § 21.101.

#### Conclusion

This action affects only certain novel or unusual design features of the Boeing Model 747-8/-8F airplane. It is not a rule of general applicability.

#### 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 Model 747-8/-8F airplanes.

1. The applicant must ensure electronic system security protection for the aircraft control domain and airline information domain 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 from external sources 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.

Issued in Renton, Washington, on January 5, 2010.

**Ali Bahrami,**

*Manager, Transport Airplane Directorate,  
Aircraft Certification Service.*

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**BILLING CODE 4910-13-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 25

**[Docket No. NM414; Special Conditions No. 25-402-SC]**

#### Special Conditions: Boeing Model 747-8/-8F Series Airplanes; Design Roll Maneuver Requirement

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Boeing Model 747-8/-8F airplane. This airplane will have novel or unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. These design features include an electronic flight control system that provides roll control of the airplane through pilot inputs to the flight computers. 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. Additional special conditions will be issued for other novel or unusual design features of the Boeing 747-8/-8F airplanes.

**DATES:** *Effective Date:* February 16, 2010.

**FOR FURTHER INFORMATION CONTACT:** Todd Martin, FAA, Airframe and Cabin Safety Branch, ANM-115, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1178; facsimile (425) 227-1232.

**SUPPLEMENTARY INFORMATION:** On November 4, 2005, The Boeing Company, PO Box 3707, Seattle, WA 98124, applied for an amendment to Type Certificate Number A20WE to include the new Model 747-8 series passenger airplane and the new Model 747-8F freighter airplane. The Model 747-8 and the Model 747-8F are derivatives of the 747-400 and the 747-400F, respectively. Both the Model 747-8 and the Model 747-8F are four-engine

jet transport airplanes that will have a maximum takeoff weight of 975,000 pounds and new General Electric GENx-2B67 engines. The Model 747-8 will have two flight crew and the capacity to carry 660 passengers.

#### Type Certification Basis

Under the provisions of Title 14, Code of Federal Regulations (14 CFR) 21.101, Boeing must show that the Model 747-8 and 747-8F (hereafter referred as 747-8/-8F series) meet the applicable provisions of part 25, as amended by Amendments 25-1 through 25-117, except for earlier amendments as agreed upon by the FAA. These regulations will be incorporated into Type Certificate No. A20WE after type certification approval of the 747-8/-8F.

In addition, the certification basis includes other regulations, special conditions and exemptions that are not relevant to these special conditions. Type Certificate No. A20WE will be updated to include a complete description of the certification basis for these airplanes.

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 747-8/-8F 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 747-8/-8F series 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 under § 11.38, and become part of the type certification basis under § 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 or series that incorporates the same or similar novel or unusual design feature, or should any other model or series already included on the same type certificate be modified to incorporate the same or similar novel or unusual design feature, the special conditions would also apply to the other model or series under § 21.101.

#### New or Unusual Design Features

The Boeing Model 747-8/-8F will incorporate the following novel or unusual design features: An electronic flight control system that provides roll control of the airplane through pilot inputs to the flight computers.

## Discussion

The 747-8/-8F is equipped with an electronic flight control system that provides roll control of the airplane through pilot inputs to the flight computers. Current part 25 airworthiness regulations account for "control laws," for which aileron deflection is proportional to control wheel deflection. They do not address any nonlinearities<sup>1</sup> or other effects on aileron and spoiler actuation that may be caused by electronic flight controls. Therefore, the FAA considers the flight control system to be a novel and unusual feature compared to those envisioned when current regulations were adopted. Since this type of system may affect flight loads, and therefore the structural capability of the airplane, special conditions are needed to address these effects.

These special conditions differ from current requirements in that the special conditions require that the roll maneuver result from defined movements of the cockpit roll control as opposed to defined aileron deflections. Also, these special conditions require an additional load condition at design maneuvering speed ( $V_A$ ), in which the cockpit roll control is returned to neutral following the initial roll input.

These special conditions differ from similar special conditions applied to previous designs. These special conditions are limited to the roll axis only, whereas previous special conditions also included pitch and yaw axes. A special condition is no longer needed for the yaw axis because § 25.351 was revised at Amendment 25-91 to take into account effects of an electronic flight control system. No special condition is needed for the pitch axis because the current requirement (§ 25.331(c)) is adequate.

## Discussion of Comments

Notice of proposed special conditions No. 25-09-10-SC for the Boeing Model 747-8/-8F airplanes was published in the **Federal Register** on October 8, 2009 (74 FR 51813). No comments were received.

## Applicability

As discussed above, these special conditions are applicable to the Boeing Model 747-8/-8F airplanes. Should Boeing apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design features, these special conditions would apply to that model as well under the provisions of § 21.101.

<sup>1</sup> A nonlinearity is a situation where output does not change in the same proportion as input.

## Conclusion

This action affects only certain novel or unusual design features of the Boeing Model 747-8/-8F airplanes. It is not a rule of general applicability.

## 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 Model 747-8/-8F airplanes.

In lieu of compliance with § 25.349(a), the Boeing Model 747-8/-8F must comply with the following special conditions.

The following conditions, speeds, and cockpit roll control motions (except as the motions may be limited by pilot effort) must be considered in combination with an airplane load factor of zero, and separately, two-thirds of the positive maneuvering factor used in design. In determining the resulting control surface deflections, the torsional flexibility of the wing must be considered in accordance with § 25.301(b):

(a) Conditions corresponding to steady rolling velocities must be investigated. In addition, conditions corresponding to maximum angular acceleration must be investigated. For the angular acceleration conditions, zero rolling velocity may be assumed in the absence of a rational time history investigation of the maneuver.

(b) At  $V_A$ , sudden movement of the cockpit roll control up to the limit is assumed. The position of the cockpit roll control must be maintained until a steady roll rate is achieved and then must be returned suddenly to the neutral position.

(c) At  $V_C$ , the cockpit roll control must be moved suddenly and maintained so as to achieve a roll rate not less than that obtained in paragraph (b).

(d) At  $V_D$ , the cockpit roll control must be moved suddenly and maintained so as to achieve a roll rate not less than one third of that obtained in paragraph (b).

Issued in Renton, Washington, on January 5, 2010.

**Ali Bahrami,**

*Manager, Transport Airplane Directorate, Aircraft Certification Service.*

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## DEPARTMENT OF COMMERCE

### Bureau of Industry and Security

#### 15 CFR Part 748

[Docket No. 0908111226-91431-01]

RIN 0694-AE70

#### Addition to the List of Validated End-Users in the People's Republic of China (PRC)

**AGENCY:** Bureau of Industry and Security, Commerce.

**ACTION:** Final rule.

**SUMMARY:** In this final rule, the Bureau of Industry and Security (BIS) amends the Export Administration Regulations (EAR) to add an entity to the list of validated end-users for the People's Republic of China (PRC) approved to receive exports, reexports and transfers of certain items under Authorization Validated End-User (VEU). Specifically, this rule amends the EAR to add one additional validated end-user and identifies eligible items for export and reexport and transfer (in-country) to one facility in the PRC. In a final rule published in the **Federal Register** on June 19, 2007, BIS revised and clarified U.S. export control policy for the PRC, establishing Authorization VEU and identifying the PRC as the initial eligible destination.

**DATES:** This rule is effective January 15, 2010. Although there is no formal comment period, public comments on this regulation are welcome on a continuing basis.

**ADDRESSES:** You may submit comments, identified by RIN 0694-AE70, by any of the following methods:

*E-mail:* [publiccomments@bis.doc.gov](mailto:publiccomments@bis.doc.gov)  
Include "RIN 0694-AE70" in the subject line of the message.

*Fax:* (202) 482-3355. Please alert the Regulatory Policy Division, by calling (202) 482-2440, if you are faxing comments.

*Mail or Hand Delivery/Courier:* Sheila Quarterman, U.S. Department of Commerce, Bureau of Industry and Security, Regulatory Policy Division, 14th Street & Pennsylvania Avenue, NW., Room 2705, Washington, DC 20230, *Attn:* RIN 0694-AE70.