

excluding the internal components of the electrical sensor assemblies to avoid damage as a result of an in-flight jam.

Pitch	Roll
Nose up 125 lbf .....	Nose left 50 lbf.
Nose down 125 lbf ....	Nose right 50 lbf.

### 3. High Intensity Radiated Fields (HIRF) Protection

a. *Protection from Unwanted Effects of High Intensity Radiated Fields.* Each electrical and electronic system which performs critical functions must be designed and installed to ensure that the operation and operational capability of these systems to perform critical functions is not adversely affected when the airplane is exposed to high intensity radiated fields.

b. For the purposes of this special condition, the following definition applies:

*Critical Functions:* Functions whose failure would contribute to or cause a failure condition that would prevent the continued safe flight and landing of the airplane.

Issued in Renton, Washington, on October 10, 2006.

**Kalene C. Yanamura,**

*Acting 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. NM354; Notice No. 25-06-09-SC]

#### Special Conditions: Boeing Commercial Airplane Group, Boeing Model 777-200 Series Airplane; Overhead Cross Aisle Stowage Compartments

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

**ACTION:** Notice of proposed special conditions.

**SUMMARY:** The FAA proposes special conditions for the Boeing Model 777-200 series airplanes. This airplane, modified by Boeing Commercial Airplane Group, will have novel or unusual design features associated with overhead cross aisle stowage compartments. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for these design features. These proposed special conditions contain the

additional safety standards the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**DATES:** We must receive your comments on or before November 7, 2006.

**ADDRESSES:** You may mail or deliver comments on these special conditions in duplicate to: Federal Aviation Administration, Transport Airplane Directorate, Attn: Rules Docket (ANM-113), Docket No. NM354, 1601 Lind Avenue, SW., Renton, Washington 98057-3356. You must mark your comments: Docket No. NM354.

**FOR FURTHER INFORMATION CONTACT:** Jayson Claar, FAA, Airframe/Cabin Branch, ANM-115, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2194; 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 ask that you send us two copies of written comments.

We will file in the docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning these special conditions. You may inspect the docket before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this preamble between 7:30 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

We will consider all comments we receive on or before the closing date for comments. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change these special conditions based on the comments we receive.

If you want the FAA to acknowledge receipt of your comments on these proposed special conditions, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

##### Background

On April 20, 2005, Boeing Commercial Airplane Group, Seattle, Washington, applied for a supplemental type certificate to permit installation of

overhead cross aisle stowage compartments in Boeing 777-200 series airplanes. The Boeing Model 777-200 series airplanes are large twin engine airplanes with four pairs of Type A exits, a passenger capacity of 440, and a range of 5000 miles. (The Boeing 777-200 airplanes can be configured with various passenger capacities and range).

The regulations do not address the novel and unusual design features associated with the installation of overhead cross aisle stowage compartments installed on the Boeing Model 777-200, making these special conditions necessary. Generally, the requirements for overhead stowage compartments are similar to stowage compartments in remote crew rest compartments (i.e., located on lower lobe, main deck or overhead) already in use on Boeing Model 777-200 and -747 series airplanes. Remote crew rest compartments have been previously installed and certified in the main passenger cabin area, above the main passenger area, and below the passenger cabin area adjacent to the cargo compartment of the Boeing Model 777-200, and -300 series airplanes.

##### Type Certification Basis

Under the provisions of § 21.101, Boeing Commercial Airplane Group must show that the Boeing Model 777-200, as changed, continues to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. T00001SE 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 Type Certificate No. T00001SE for the Boeing Model 777-200 series airplanes include Title 14 Code of Federal Regulations (CFR), part 25, as amended by Amendments 25-1 through 25-82, except for § 25.571(e)(1) which remains at Amendment 25-71, with exceptions. Refer to Type Certificate No. T00001SE, as applicable, for a complete description of the certification basis for this model, including certain special conditions that are not relevant to these proposed special conditions.

If the Administrator finds the applicable airworthiness regulations (part 25 as amended) do not contain adequate or appropriate safety standards for the Boeing Model 777-200 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 Boeing Model 777–200 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 § 11.19, under § 11.38 and they 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 applicant apply for a supplemental type certificate to modify any other model included on the same type certificate to incorporate the same or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

#### **Novel or Unusual Design Features**

The Boeing Model 777–200 will incorporate the following novel or unusual design features: the installation of powered lift-enabled stowage compartments that rise into the overhead area and lower into the emergency exit cross aisle.

The overhead cross aisle stowage compartments are configured to allow stowage of galley type standard containers as well as coats, bags, and other items typically stowed in closets or bins. These stowage compartments will be located above the emergency exit cross aisle at Doors 2 and 4 of Boeing Model 777–200 series airplanes.

Each stowage compartment is accessed from the main deck by a powered lift that lowers and raises the stowage compartment between the overhead and the main deck. In addition, the lift can be hand cranked up and down in the event of a power or lift motor failure. A smoke detection system will be provided in the overhead cross aisle stowage compartments.

#### **Discussion of the Proposed Special Conditions**

In general, the requirements listed in these proposed special conditions for overhead cross aisle stowage compartments are similar to those previously approved for overhead crew rest compartments in earlier certification programs, such as for the Boeing Model 777–200 and Model 747 series airplanes. These proposed special conditions establish compartment access, power lift, electrical power, smoke/fire detection, fire extinguisher, fire containment, smoke penetration, and compartment design criteria for the overhead cross aisle stowage compartments. The overhead stowage compartments are not a direct analogy to stowage compartments in remote crew rest compartments installed and

certified for Boeing Model 777 series airplanes, but the safety issues raised are similar. Features similar to those considered in the development of previous special conditions for fire protection will be included here also. The proposed requirements would provide an equivalent level of safety to that provided by other Boeing Model 777–200 series airplanes with similar overhead compartments.

#### *Operational Evaluations and Approval*

The FAA's Aircraft Certification Service will administer these proposed special conditions, which specify requirements for design approvals (that is, type design changes and supplemental type certificates) of overhead cross aisle stowage compartments.

The Aircraft Evaluation Group of the FAA's Flight Standards Service must evaluate and approve the operational use of overhead cross aisle stowage compartments prior to use. The Aircraft Evaluation Group must receive all instructions for continued airworthiness, including service bulletins, prior to the FAA accepting and issuing approval of the modification.

#### *Proposed Special Condition No. 1, Compartment Access and Placards*

Appropriate placards, or other means, are required to address door access and locking to prohibit passenger access and operation of the overhead storage compartment. There must also be a means to preclude anyone from being trapped inside the stowage compartment.

#### *Proposed Special Condition No. 2, Power Lift*

The power lift must be designed so the overhead stowage compartment will not jam in the down position, even if lowered on top of a hard structure. The lift must operate at a speed that allows anyone underneath the compartment to move clear without injury. The lift controls must be placed clear of the compartment door and must be pressed continuously for lift operation. Training on operation procedures must be added to appropriate manuals.

#### *Proposed Special Condition No. 3, Manual Lift*

There must be a means to manually operate the lift that is independent of the electrical drive system and is capable of overcoming jamming in the drive and lift mechanisms. The lift must be operable by a range of occupants, including a fifth percentile female. The manual lift must be capable of lowering

the overhead stowage compartment quickly to the main deck to fight a fire. The manual lift system must be capable of raising the compartment quickly so the cross aisle is not blocked in an emergency. Training on manual operation must be added to appropriate manuals.

#### *Proposed Special Condition No. 4, Handheld Fire Extinguisher*

A handheld fire extinguisher appropriate to fight the kinds of fire likely to occur in the overhead stowage compartment must be provided. This handheld fire extinguisher must be adjacent to the overhead compartment. This extinguisher must be in addition to those required for the passenger cabin.

#### *Proposed Special Condition No. 5, Fire Containment*

This special condition requires either the installation of a manually activated fire extinguishing system that is accessible from outside the overhead stowage compartment, or a demonstration that the crew could satisfactorily perform the function of extinguishing a fire under the prescribed conditions. A manually activated built-in fire extinguishing system would be required only if a crewmember could not successfully locate and get access to the fire during a demonstration where the crewmember is responding to the alarm.

#### *Proposed Special Condition No. 6, Smoke Penetration*

The design of the compartment must provide means to exclude hazardous quantities of smoke or extinguishing agent originating in the compartment or drive motor from entering other occupied areas. The means must take into account the time period during which the compartment may be accessed to manually fight a fire, if applicable.

During the one-minute smoke detection time (see Special Condition No. 7), penetration of a small quantity of smoke (one that would dissipate within 3 minutes under normal ventilation conditions) from this overhead stowage compartment design into an occupied area on this airplane configuration would be acceptable based on the limitations placed in this and other associated special conditions. These special conditions place sufficient restrictions in the quantity and type of material allowed in the overhead stowage compartment that threat from a fire in this remote area would be equivalent to that experienced on the main cabin.

*Proposed Special Condition No. 7,  
Compartment Design Criteria*

The material used to construct the overhead stowage compartment must meet the flammability requirements for compartment interiors in § 25.853 and be fire resistant. Depending on the size of the compartment, certain fire protection features of Class B cargo compartments are also required. Enclosed stowage compartments equal to or exceeding 25 ft<sup>3</sup> in interior volume must be provided with a smoke or fire detection system to ensure that a fire can be detected within a one-minute detection time. This is the same requirement as has been applied to remote crew rest compartments.

Enclosed stowage compartments equal to or greater than 57 ft<sup>3</sup> in interior volume but less than or equal to 200 ft<sup>3</sup>, must have a liner that meets the requirements of § 25.855 for a Class B cargo compartment. The overhead stowage compartment may not be greater than 200 ft<sup>3</sup> in interior volume. The in-flight accessibility of very large enclosed stowage compartments and the subsequent impact on the crewmember's ability to effectively reach any part of the compartment with the contents of a handheld fire extinguisher would require additional fire protection considerations similar to those required for inaccessible compartments such as Class C cargo compartments.

The overhead stowage compartment smoke or fire detection and fire suppression systems (including airflow management features which prevent hazardous quantities of smoke or fire extinguishing agent from entering any other compartment occupied by crewmembers or passengers) is considered complex in terms of paragraph 6d of Advisory Circular (AC) 25.1309-1A, "System Design and Analysis." The FAA considers failure of the overhead stowage compartment fire protection system (that is, smoke or fire detection and fire suppression systems) in conjunction with an overhead stowage fire to be a catastrophic event. Based on the "Depth of Analysis Flowchart" shown in Figure 2 of AC 25.1309-1A, the depth of analysis should include both qualitative and quantitative assessments (reference paragraphs 8d, 9, and 10 of AC 25.1309-1A).

The requirements to enable crewmember(s) quick access to the overhead stowage compartment and to locate a fire source inherently places limits on the amount of baggage stowed and the size of the overhead stowage compartment. The overhead stowage

compartment is limited to stowage of galley type standard containers as well as coats, bags, and other items typically stowed in closets or bins. It is not intended to be used for the stowage of other items. The design of such a system to include other items may require additional special conditions to ensure safe operation.

#### **Applicability**

These special conditions are applicable to the Boeing Model 777-200 series airplanes with overhead cross aisle stowage compartments. Should Boeing Commercial Airplane Group apply later for a change to the type certificate to include another model included on Type Certificate No. T00001SE, incorporating the same novel or unusual design feature, the special conditions would apply to that model as well under the provisions of § 21.101.

The Boeing Model 777-200 series airplane is scheduled for imminent delivery. Special conditions for other types of stowage compartments in remote areas of airplanes have been subject to the notice and public comment procedure in several prior instances. Therefore, because a delay would significantly affect the applicant's installation of the overhead cross aisle stowage compartment and certification of the airplane, we are shortening the public comment period to 20 days.

#### **Conclusion**

This action affects only certain novel or unusual design features on the Boeing Model 777-200 series airplanes. It is not a rule of general applicability and affects only the applicant who applied to the FAA for approval of these features on the airplane.

#### **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 Proposed Special Conditions**

Accordingly, the Federal Aviation Administration (FAA) proposes the following special conditions as part of the type certification basis for Boeing Model 777-200 series airplanes. Each overhead cross aisle stowage compartment and the adjacent area, including the structural frame, mechanical system and drive motor, must meet the following requirements:

1. *Compartment Access and Placards.* There must be a means to prohibit or prevent passengers from entering or

operating the overhead cross aisle stowage compartment. Placards prohibiting access are acceptable. For all doors installed, there must be a means to preclude anyone from being trapped inside the stowage compartment. If a latching/locking mechanism is installed, the door must be capable of being opened from the outside without the aid of special tools. The mechanism must not prevent opening from the inside of the stowage at any time.

2. *Power Lift.* There must be a means such as a load or force limiter to protect the overhead cross aisle stowage compartment electrical lift drive system from failure or jamming in the down position in the event it is lowered on top of hard structure such as a galley cart.

(a) The electrical lift controls must be placed so the operator is clear of the lift and designed such that the controls must be pressed continuously for lift operation.

(b) The electrical lift must raise and lower the stowage compartment at a slow enough rate, and stop above the floor at such a height, that anyone underneath can easily move clear without injury.

(c) Stowage compartment operation training procedures must be added to the appropriate flight attendant manuals.

3. *Manual Lift.* There must be a means in the event of failure of the aircraft's main power system, or of the electrically powered overhead cross aisle stowage compartment lift system, for manually activating the lift system.

(a) This manual lift must be independent of the electrical drive system and capable of overcoming jamming in the drive and lift mechanisms.

(b) The manual lift must be accessible and operable by a range of occupants, including a fifth percentile female.

(c) The manual lift must be capable of lowering the stowage compartment to the main deck quickly enough to fight a fire in the stowage compartment before overhead cross aisle stowage compartment fire containment is compromised.

(d) The manual lift must be capable of quickly raising the stowage compartment such that the cross aisle is not blocked in the event of an emergency.

(e) Stowage compartment firefighting training procedures must be added to the appropriate flight attendant manuals.

4. *Fire Extinguisher.* The means to manually fight a fire in the overhead cross aisle stowage compartment or involving the compartment motor must

consider the additional stowage volume and time required to manually lower the compartment after indication. The following equipment must be provided directly adjacent to each overhead cross aisle stowage compartment: at least one approved handheld fire extinguisher appropriate for the kinds of fires likely to occur within the overhead stowage compartment and fires involving the compartment motor.

5. *Fire Containment.* Fires originating within the overhead cross aisle stowage compartment or at the drive motor must be controlled without a crewmember having to access the compartment. Alternatively, the design of the access provisions must allow crewmembers equipped for firefighting to have unrestricted access to the compartment and drive motor. If the latter approach is elected it must be demonstrated that a crewmember has sufficient access to enable them to extinguish a fire. The time for a crewmember on the main deck to react to the fire alarm, (and, if applicable, to don the firefighting equipment and to open the compartment) must not exceed the

flammability and fire containment capabilities of the stowage compartment.

6. *Smoke Penetration.* There must be a means provided to exclude hazardous quantities of smoke or extinguishing agent originating in the overhead cross aisle stowage compartment or drive motor from entering any other compartment occupied by crewmembers or passengers. If access is required to comply with Special Condition 5., this means must include the time period when accessing the stowage compartment to manually fight a fire. Smoke entering any other compartment occupied by crewmembers or passengers, when access to the stowage compartment is opened to manually fight a fire, must dissipate within five minutes after the access to the stowage compartment is closed. Prior to the one minute smoke detection time (reference note 2 in paragraph (7)) penetration of a small quantity of smoke from the stowage compartment into an occupied area is acceptable. Flight tests must be conducted to show compliance with this requirement.

7. *Compartment Design Criteria.* The overhead cross aisle stowage compartment must be designed to minimize the hazards to the airplane in the event of a fire originating in the stowage compartment or drive motor.

(a) *Fire Extinguishing System.* If a built-in fire extinguishing system is used in lieu of manual firefighting, then the fire extinguishing system must be designed so no hazardous quantities of extinguishing agent will enter other compartments occupied by passengers or crew. The system must have adequate capacity to suppress any fire occurring in the stowage compartment or drive motor, considering the fire threat, volume of the compartment, and the ventilation rate.

(b) *Compartment Size.* All enclosed remote stowage compartments, including the overhead cross aisle stowage compartment, must meet the design criteria given in the table below. As indicated by the table below, enclosed stowage compartments greater than 200 ft<sup>3</sup> in interior volume are not addressed by this special condition.

STOWAGE COMPARTMENT INTERIOR VOLUMES

Fire protection features	less than 25 ft <sup>3</sup>	25 ft <sup>3</sup> to 57 ft <sup>3</sup>	57 ft <sup>3</sup> to 200 ft <sup>3</sup>
Materials of Construction <sup>1</sup> .....	Yes .....	Yes .....	Yes.
Detectors <sup>2</sup> .....	No .....	Yes .....	Yes.
Liner <sup>3</sup> .....	No .....	Yes .....	Yes.

<sup>1</sup> *Material.* The material used to construct each enclosed stowage compartment must be at least fire resistant and must meet the flammability standards established for interior components (that is, 14 CFR Part 25 Appendix F, Parts I, IV, and V) per the requirements of § 25.853. For compartments less than 25 ft<sup>3</sup> in interior volume, the design must ensure the ability to contain a fire likely to occur within the compartment under normal use.

<sup>2</sup> *Detectors.* Enclosed stowage compartments equal to or exceeding 25 ft<sup>3</sup> in interior volume must be provided with a smoke or fire detection system to ensure that a fire can be detected within one minute. Flight tests must be conducted to show compliance with this requirement. Each system (or systems) must provide:

(a) A visual indication in the flight deck within one minute after the start of a fire;  
 (b) A warning in the main passenger cabin. This warning must be readily detectable by a flight attendant, taking into consideration the positioning of flight attendants throughout the main passenger compartment during various phases of flight.

<sup>3</sup> *Liner.* If it can be shown the material used to construct the stowage compartment meets the flammability requirements of a liner for a Class B cargo compartment (that is, § 25.855 at Amendment 25-93 and Appendix F, part I, paragraph (a)(2)(ii)), in addition to the above.

<sup>1</sup> *Material requirement,* then no liner would be required for enclosed stowage compartments equal to or greater than 25 ft<sup>3</sup> in interior volume but less than 57 ft<sup>3</sup> in interior volume. For all enclosed stowage compartments equal to or greater than 57 ft<sup>3</sup> in interior volume but less than or equal to 200 ft<sup>3</sup>, a liner must be provided that meets the requirements of § 25.855 for a Class B cargo compartment.

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**Kalene C. Yanamura,**  
*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*  
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**DEPARTMENT OF COMMERCE**

**Bureau of Industry and Security**

**15 CFR Parts 732, 736, 740, 744, 752, 764, and 772**

[Docket No. 040915266-6239-03]

RIN 0694-AC94

**Revised “Knowledge” Definition, Revision of “Red Flags” Guidance and Safe Harbor**

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

**ACTION:** Proposed rule; withdrawal.

**SUMMARY:** BIS is withdrawing a proposed rule published October 2004. That rule would have revised the definition of “knowledge” in the Export Administration Regulations. It also would have updated the “red flags” guidance and would have provided a safe harbor from liability arising from knowledge under the definition of that term. In light of the public comments received on the proposed rule and BIS’s review of relevant provisions of the existing regulations, this proposed rule is being withdrawn.

**DATES:** The proposed rule is withdrawn on October 18, 2006.