

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98057-3356

In the matter of the petition of

THE BOEING COMPANY

for exemption from §§ 25.785(j), 25.857(e),
and 25.1447(c)(1) of Title 14, Code of Federal
Regulations

Regulatory Docket No. FAA-2007-0323

PARTIAL GRANT OF EXEMPTION

By letter dated December 3, 2007, D. B. Marcrander, Lead Project Administrator, Puget Sound, The Boeing Company, PO Box 3707, Seattle, Washington, 98124, petitioned for an exemption from §§ 25.785(j), 25.857(e), and 25.1447(c)(1) of Title 14, Code of Federal Regulations (14 CFR). The proposed exemption, if granted would allow the carriage of up to 11 additional non-crewmembers (commonly referred to as supernumeraries) aft of the flight deck on Boeing Model 777F airplanes, to allow them access into the Class E main deck cargo compartment during flight for the purpose of attending to cargo types requiring care or inspection, or both (e.g., live animals and/or hazardous materials).

Boeing also submitted a letter dated June 11, 2008, that contained supplementary information supporting the petition for exemption.

The petitioner requests relief from the following regulations:

Section 25.785(j), at Amendment 25-88, states, “If the seat backs do not provide a firm hand hold, there must be a hand grip or rail along each aisle to enable occupants to steady themselves while using the aisles in moderately rough air.”

Section 25.857(e), at Amendment 25-93, requires, in pertinent part, that when a Class E cargo compartment is installed on the airplane, the airplane is used for carriage of cargo only.

Section 25.1447(c)(1), at Amendment 25-87 requires, in pertinent part, that oxygen dispensing units must be automatically presented to the occupants before the cabin altitude exceeds 15,000 feet, 10 % extra oxygen masks, and that there be two oxygen masks in each lavatory. The relief from this regulation is only requested for the occupants when they are in the cargo compartment.

Related regulations:

Section 121.583(a) contains, in pertinent part, a listing of categories of persons who may be carried aboard an airplane in part 121 service without complying with all the requirements of part 121 pertaining to carriage of passengers.

The petitioner supports its request with the following information:

The exemption, if granted, will allow for the carriage of supernumeraries and access into the main deck cargo compartment during flight to care for and/or inspect certain cargos that require such care/inspection.

The 777F is a new minor model aircraft based on the 777-200LR model. The configuration includes Class E main deck and Class C lower lobe cargo compartments with a seating area for the carriage of a basic configuration of four (4) supernumeraries with seating provisions for up to eleven (11) supernumeraries. The supernumerary seating area is aft of the flight deck. The seating area and the main deck cargo compartment will be separated by a rigid cargo barrier that includes two access doors (one L&R), which provide access to cargo inside the compartment. The supernumerary seating area consists of a two-bunk crew rest aft of the flight deck, a lavatory and galley aft of the flight deck on the flight deck bulkhead, four business class seats (alternately, provisions for nine economy class seats and two attendant-style folding seats), miscellaneous stowage compartments, and applicable emergency equipment.

A Type A-sized door with slide/raft is located on each side of the airplane forward of the rigid cargo barrier. Even though the interior configuration requires a pair of Type III-sized exits for the maximum number of persons being requested, the emergency exits being provided are those from a 777 -200LR passenger airplane. Each exit provides a clear opening of 42 inches wide by 72 inches high and is floor-level. The doors are openable from the inside and outside of the airplane.

Both doors retain the production-certified dual-lane self-supporting slide/rafts. These slide/rafts deploy and inflate automatically when the exit is opened from inside the airplane when the door is "armed".

Supernumeraries will be provided with unobstructed access to both the right hand and left hand Type A-sized doors. Due to the required briefing of these supernumerary personnel in the use of emergency equipment (including emergency exit operation and use of escape means), crew assist will not be necessary.

The 777F flight compartment left hand and right hand windows can also be used for flight compartment escape via escape rope(s), identical to the production 777-200LR passenger airplane.

All required (by 14 CFR part 25) cabin emergency equipment with markers, as appropriate, will be installed.

While seated in the supernumerary seating area, each supernumerary will be provided with an automatically presenting oxygen unit similar to those being provided to passengers on a passenger airplane. To provide an acceptable level of safety for supernumeraries performing their duties inside the main deck cargo compartment during flight, a portable oxygen bottle with integral mask will be provided for each person that can be inside the compartment at the same time. Procedures will require that each supernumerary accessing the compartment take a portable unit with them. Additionally, an aural and visual alerting system will be provided inside the main deck cargo compartment. The alerts will be audible and visible to persons throughout the length of the compartment. The alerting systems are being provided to indicate to the supernumeraries inside the compartment that need to immediately don their oxygen mask[s] and return to their seat[s]. In the case of air turbulence the alerting systems indicates to the supernumeraries to immediately return to their seat[s].

The aural and visual alerts will both activate automatically upon the following two scenarios: (1) a cabin depressurization event or, (2) smoke being detected inside the Class E compartment. The procedure to be followed for these two scenarios are identical; the person(s) inside the compartment will immediately don their oxygen mask, initiate flow to it, and immediately return to their seat[s]. Such instruction will be included in the required preflight briefing to the supernumeraries. In the event of air turbulence, the visual portion of the alerting system will be manually activated by a flight deck crewmember. The procedure to be followed for this scenario will be for the person(s) inside the compartment to immediately return to their seat[s]. Such instruction will also be included in the required pre-flight briefing to the supernumeraries. Access to the main deck cargo compartment is gained through one of two doors in the rigid cargo barrier. A placard will be conspicuously located on the forward face of each door that states:

- Access to be used only to inspect/care for cargo
- Carry portable oxygen bottle with mask when entering compartment
- No smoking in the cargo compartment
- Keep door closed except during entrance and egress
- In the event of smoke or cargo fire, do not enter cargo compartment

Handhold provisions will be provided in the supernumerary seating area. Since installation of handholds inside the main deck cargo compartment is impractical, an acceptable level of safety will be provided by the crew-operated visual alert system's ability to indicate to persons in the cargo compartment, at the onset or anticipation of turbulence, to return to their seats.

The supernumerary seating area will include the required emergency lighting systems. Floor locations will be immediately obvious to the occupants due to their proximity. The

emergency exit signs, lighting, locators and markers around the door will be retained from the production 777-200LR passenger airplane configuration.

The supernumerary area will incorporate a two-way flight deck/cabin intercom system which will meet the requirements of 14 CFR 25.1423.

The supernumerary seating area will have protection from hazardous quantities of cargo smoke, flames, or noxious gases via the rigid cargo compartment barrier, which also serves as the fire/smoke barrier.

The Airplane Flight Manual (AFM) will include the requirement for flightcrew pre-flight briefing of the supernumeraries relative to emergency equipment, including procedures of egress to the Class E cargo compartment, and of emergency procedures including the aural and visual alerting signals. The AFM will also include the flight crew procedures related to the operation of the Class E alerting systems.

The operators of the 777F will be responsible to develop an FAA-approved training plan that satisfies the AFM requirements for carriage of supernumeraries.

Public interest:

The demand for shipment of goods by air cargo continues to grow worldwide. The 777F freighter airplane is being built to support this increasing demand in a manner that is very economical to air cargo operators. The 777F configuration provides main deck cabin seating for supernumeraries (who must meet the criteria defined in §§ 121.583(a)(1) through (a)(7)). Having necessary supernumeraries immediately available for cargo handling and management reduces operational costs by not having supernumeraries take separate commercial flights to the cargo destination, which also reduces the turn-around time for the cargo carrier. This serves the overall public interest by virtue of the net cost savings for cargo shipment, resulting in lower costs for goods and material transported as air cargo, as ultimately reflected in lower consumer costs for goods transported as air cargo.

***Federal Register* publication**

A summary of the petition was published in the *Federal Register* on July 25, 2008 (73 FR 43484). The FAA received comments from FedEx Express.

FedEx Express fully supports the petition for exemption.

The FAA's analysis

By allowing the carriage of the supernumerary persons aboard cargo flights operators will be able to optimize the utility of the airplanes and the airports. The FAA considers the petitioner's proposal to be in the public interest for the following reasons:

- These supernumeraries are seen as a benefit to airplane safety and efficient operations of air cargo.
- A significant disruption of air commerce could occur if the petition were not granted.
- The FAA has granted several exemptions for the carriage of supernumeraries on freighter airplanes.

The petitioner has requested relief primarily from the requirements of § 25.857(e), which permits carriage of only cargo when a Class E cargo compartment is installed on the airplane. Class E cargo compartments are usually remote from the flight deck and encompass the entire interior of the airplane. The means of controlling fires that might occur in the cargo compartment is to starve the fire of oxygen. This is accomplished by shutting off ventilating airflow and may be enhanced by depressurizing the airplane and maintaining an altitude that will not support combustion. For this reason, only crewmembers are permitted on board such airplanes. The petitioner is requesting that supernumeraries be located in the flight deck.

The certification regulations for transport category airplanes address airplane occupants as being either "crew" or "passengers." Due to differences in training, physical capabilities, and other factors (such as familiarity with the airplane), the means required by part 25 to address emergency evacuation and emergency equipment for passengers and crewmembers differ. Because supernumeraries are not crewmembers, they must be considered "passengers" by default with respect to part 25. However, supernumeraries do hold a special status because of their training, and other factors.

The FAA has determined that, due to the way that fire in the cargo compartment is to be controlled, supernumeraries (persons) on the airplane must have been found physically fit by the operator. Supernumeraries must also have been briefed on the use of the emergency equipment. These limitations on the occupants are consistent with previous approvals and are included in this approval.

The handholds requirement of § 25.785(j), at Amendment 25-88, is to ensure that occupants have a means to steady themselves in moderately rough air while traversing the main aisles of typical passenger airplanes. On the proposed airplane, we concur with the petitioner that an acceptable level of safety will be provided by the crew-operated visual alert system. This visual alert system enables the crew to indicate, at the onset of turbulence, that supernumeraries in the cargo compartment must return to their seats. The visual alert must be recognized in the accessible areas of the Class E cargo compartment, and indicate, during turbulence, that persons must return

to their seats and secure the smoke barrier (i.e., the door or curtain must be closed). The pre-flight briefing would need to explain this alert to the supernumeraries.

To comply with §§ 25.855(h)(2) and 25.857(e)(4), there must be suitable means of preventing smoke penetration into the occupied areas. The petitioner's design accounts for this by providing a barrier, which must comply with the smoke penetration requirements for the flight deck and the supernumerary compartment. However, the petitioner has indicated that configurations may be approved that will allow supernumeraries to enter the Class E cargo compartment, which involves two open doors through the smoke barrier between the cargo and the supernumerary compartments. In order to provide an appropriate level of safety, the petitioner must install placards indicating that the doors through the smoke barrier are to be secured (i.e., the doors must be closed) except when entering or exiting the cargo compartment. The placards must be located in a conspicuous place, either on or next to the smoke barrier doors.

The FAA has a concern associated with the quantity of smoke that may enter the occupied areas in the event of a fire on the main deck Class E cargo compartment. The amount of smoke that would enter into the supernumerary compartment and flight deck when the smoke barrier is open during evacuation of the cargo compartment by the supernumeraries must not create a hazard to the occupants. This smoke must be considered when demonstrating compliance with § 25.855(h)(2). All combinations of these doors being open and closed must be considered. Flight testing is required for compliance.

The petitioner has proposed an aural and visual alert to indicate that persons must return to their seats and secure the smoke barrier (i.e., close the doors) if there is a fire. On the proposed airplane, we concur with the petitioner that an acceptable level of safety will be provided by the automatic with crew-operated backup aural and visual alert system. This aural and visual alert system enables the crew to indicate, at the onset of smoke/fire, that supernumeraries in the cargo compartment must return to their seats. The aural and visual alert must be recognized in accessible areas of the Class E cargo compartment, and indicate, during smoke/fire, that persons must return to their seats and secure the smoke barrier (i.e., the door or curtain must be closed). Appropriate procedures and limitations would need to be established to ensure that the flightcrew member alerts the supernumeraries to return to their seats and secure the smoke barrier door at the onset of a fire. The pre-flight briefing would need to explain this alert to the supernumeraries.

The petitioner indicates that configurations may be approved that will allow supernumeraries to enter the Class E cargo compartment to tend to animals or cargo. To provide an acceptable level of safety to the "immediately available" requirement of § 25.1447(c)(1) while in the Class E cargo compartment, each supernumerary must carry on his or her person a portable oxygen bottle with a mask connected to it.

Section 25.1447(c)(1) also requires automatic presentation of the oxygen dispensing units. For seated passengers in typical passenger airplanes, the automatic presentation of masks throughout the cabin indicates the need to don an oxygen mask. However, the supernumeraries in the Class E cargo compartment would not have this indication. The petitioner has proposed an

automatically activated aural and visual decompression alert system in the event of cabin decompression. We find that the proposed system provides an acceptable level of safety, as long as the automatically activated aural and visual decompression alert is present and immediately recognizable throughout the accessible areas in the Class E cargo compartment. As a backup to the automated alert system, the flightcrew must be able to manually initiate the alerts.

Additionally, the petitioner proposed to provide supernumeraries with portable walk around oxygen bottles equipped with a supplemental passenger oxygen mask when accessing the main deck Class E cargo compartment. The proposed equipment would supply at least 3.6 liters of oxygen per minute at 40,000 feet cabin altitude for not less than 25 minutes. The FAA determined that the proposed equipment with additional specifications provides an acceptable level of safety. To ensure adequate hypoxia protection during non-sedentary use, the portable oxygen device(s) must meet the requirements for flightcrew oxygen equipment (§ 25.1443(a) or (b)), or the equipment must be shown to protect the supernumerary from hypoxia at an activity level required to return to his or her seat following a rapid decompression to 25,000 feet cabin altitude. One acceptable means of compliance is the use of a continuous flow passenger oxygen mask that meets FAA Technical Standard Order TSO-C64a, or later revision, and is approved for use up to at least 40,000 feet cabin altitude, and is connected to an oxygen bottle that supplies a flow rate of at least 4 liters per minute NTPD (Normal Temperature and Pressure Dry) at a cabin altitude of 23,000 feet. If the oxygen bottle regulator has more than one flow rate it must be set to 4 liters per minute NTPD.

The portable oxygen units must still meet the intent of § 25.1449, which states that there must be a means for the crew to determine whether oxygen is being delivered to the dispensing units. The FAA has determined that it would be an acceptable means of compliance to train the supernumeraries in making this determination and to provide oxygen flow indication in the oxygen equipment.

Section 25.1447(c)(1) also requires 10% extra oxygen masks. The intent is that these masks will be used by flight attendants and children sitting on passengers' laps. Since neither will be on-board the airplane, installing 10% extra oxygen masks is not required.

Supernumeraries must be trained regarding the location and use of oxygen equipment and the alerts that indicate the need to don oxygen equipment. The oxygen units must be sized adequately for continuous and uninterrupted use during worst-case flight duration following decompression.

Configurations may be approved for carrying cargo, which would not require supernumeraries to access the Class E cargo compartment. For these configurations, an aural and visual decompression alert is not required to be recognizable in the Class E compartment if an Airplane Flight Manual (AFM) limitation is established to prohibit supernumeraries from being in the Class E cargo compartment during flight. Placards and procedures must also be changed to be consistent with the AFM limitation.

The FAA has previously granted exemptions for in-flight access of the Class E cargo compartment by supernumeraries, provided that certain other conditions are met. These

conditions have varied, depending on the airplane design, the number of persons involved, and the type of cargo permitted to be transported in the main deck Class E cargo compartment. We have been reviewing the operational need to access the Class E cargo compartment in-flight and the number of persons needed in the cargo compartment for the type of operation. We have divided the access of the cargo compartment into three different types of operations. They are:

1. Carriage of live animals requiring care/attention during flight and associated material only, no other cargo.
2. Cargo only, no live animal requiring care/attention during flight carriage.
3. Carriage of live animals requiring care/attention during flight and cargo.

All large animals being shipped by air need supernumeraries on board for their care/attention during flight because the carriage of large animals implies a potential risk due to the brute force they are capable of, which can endanger flight safety. Horses are routinely shipped by air and are one of the large animals that required care/attention during flight because of the brute force issue. Also, these horses that are shipped by air are high value animals and the owners/insurance policies require in-flight care/attention. We understand that there is an industry standard for the air transport of horses that recommends one supernumerary (groom/handler) for every three or four horses. We agree that this recommendation is appropriate to ensure safety of flight.

In the first type of operation, we understand that the industry standard for carriage of horses is one supernumerary for every three or four horses. Considering the size of the 777F airplane there could be several horses in the main deck cargo compartment. As a result of the large number of horses or other large animals an appropriate number of supernumeraries (grooms/handlers) would be required. We have granted exemptions in the past for larger number of supernumeraries with access into the main deck Class E cargo under certain conditions. These conditions have included limiting the permitted cargo to the large live animals and associated cargo only. We have considered that live animals are less flammable cargo than other cargo, therefore, we have allowed more access to the cargo compartment. The petitioner has requested a maximum of eleven supernumeraries be allowed to access the main deck Class E cargo compartment in-flight for the care/attention of live animals. We accept the proposal.

With regard to the second type of operation, we have limited access into the cargo compartment to a very small number of supernumeraries (one to three). This number of supernumeraries should be capable of addressing the access needs for the hazardous materials and valuable or perishable goods during flight. The petitioner queried a number of freighter operators and all but one agreed that three supernumeraries with access into the Class E cargo compartment were adequate for this type of operation. The one dissenter argued that the maximum number of supernumeraries being carried on board a flight should be allowed inside the compartment at the same time because there could be an emergency inside the compartment that cannot be remedied by only three supernumeraries. Therefore, the petitioner requested eleven supernumeraries be allowed access to the Class E cargo compartment in-flight for the inspection of cargo. As noted above, all but one operator agreed that allowing three supernumeraries to access the cargo compartment would be sufficient. Three supernumeraries should be capable of addressing the

access needs for the hazardous materials, valuable or perishable goods. Therefore, the maximum number of supernumeraries allowed into the Class E cargo compartment to care/attend to hazardous cargo is three.

Concerning the third type of operation, live animals requiring care/attention during flight and cargo, we understand this is the most common operation used for transporting horses. The industry standard for carriage of horses is one supernumerary for every three or four horses. The petitioner has requested a maximum of eleven supernumeraries be allowed to access the Class E cargo compartment in-flight for the care/attention of live animals and/or inspection of cargo. We accept the proposal for a maximum of eleven supernumeraries to be allowed access into the main deck Class E cargo compartment in flight for the care/attention of live animals and to inspect the cargo with the following limitation:

The addition of cargo to a live animals carriage operation causes additional risk of exposure from the smoke and fumes of a fire. As the number of supernumeraries increases, and the duration of exposure increases, we must provide for a reasonable level of protection from smoke inhalation. Several factors are considered when making a determination of the acceptable level of safety in this case. Past industry practice, the number of supernumeraries with access, the airplane configuration, cargo compartment size, limited egress paths, potential cargo present, and the duration of exposure are all relevant factors. Considering the above factors, in the general case, if Class E cargo compartment access is approved for four or more supernumeraries for this mode of operation, a portable system (e.g., smoke hood, full face mask oxygen system) that will protect against smoke inhalation must be carried by each supernumerary.

However, in the case of the Model 777F airplane, because the petitioner has proposed to provide the same alert for both decompression and smoke/fire, a single system that affords protection from both hypoxia and smoke inhalation (e.g., a full face mask and oxygen bottle) must be used instead of separate systems. This single system must be used in any of the three types of cargo operations and by every supernumerary that enters the Class E cargo compartment.

The FAA's decision

In consideration of the foregoing, I find that a partial grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. §§ 40113 and 44701, delegated to me by the Administrator, The Boeing Company is hereby granted a partial exemption from 14 CFR 25.785(j), 25.857(e), and 25.1447(c)(1). The petition is granted to the extent necessary to allow type certification of Boeing Model 777F series airplanes with provisions for the carriage of supernumeraries. The following conditions and limitations apply and numbers 1 through 5, 6.e, 9, and the preflight briefings required by 7 and 8, below, must be documented in the Limitations Section of the Airplane Flight Manual:

1. A maximum of 11 supernumeraries may occupy the area just aft of the flight deck. The total maximum occupancy of the airplane is limited to 15 persons, including the flightcrew (2 on-duty flightcrew members and 2 off-duty flightcrew members).
2. The supernumeraries are limited to the categories specified in §§ 121.583(a)(1) through 121.583(a)(7).
3. Main Deck Class E Cargo Compartment Access Limitations:
 - a. Supernumeraries are prohibited from accessing the cargo areas during taxi, take-off, and landing. The pre-flight briefing must inform supernumeraries of this requirement. Access is limited to the main deck Class E cargo compartment.
 - b. Access into the main deck Class E cargo compartment in-flight is allowed for only three types of operation. They are:
 - Carriage of live animals requiring care/attention during flight and associated material only, no other cargo. The maximum number of supernumeraries allowed in the cargo compartment is 11.
 - Cargo only, no live animal requiring care/attention during flight. The maximum number of supernumeraries allowed in the cargo compartment is 3.
 - Carriage of live animals, requiring care/attention during flight, and cargo. The maximum number of supernumeraries allowed in the cargo compartment is 11.
4. Prior to each flight, a flightcrew member must brief each supernumerary on the use of exits, including instructions to inspect the ground to determine whether a safe landing can be achieved before using an assist means, and emergency equipment.
5. The operator must determine that each supernumerary is physically able and trained to accomplish the necessary emergency procedures.
6. Supernumeraries Portable Oxygen:
 - a. There must be at least one portable oxygen unit with a mask connected to it provided for each supernumerary allowed to enter the main deck Class E cargo compartment during flight. The unit must provide an indication to the user that oxygen is flowing.
 - b. The portable oxygen unit must meet the performance requirements of § 25.1443(a) or § 25.1443(b), or the equipment must be shown to protect the supernumerary from hypoxia at an activity level required to return to his or her seat following a rapid decompression to 25,000 feet cabin altitude.

- c. The portable units must be located outside of the cargo compartment (e.g., in the common area).
- d. Each supernumerary must carry a portable emergency oxygen unit whenever he or she is in the cargo compartment during flight.
- e. The supernumeraries must be trained in the use of the oxygen units. The supernumeraries must also be trained in making the determination whether oxygen is being delivered to the dispensing units.
- f. The oxygen units must be sized adequately for continuous and uninterrupted use during worst-case flight duration following decompression, or must be of sufficient duration to allow the supernumeraries to return to their seats where additional oxygen is readily accessible for the remainder of the decompression.
- g. Additionally, since the petitioner has decided to provide the same alert for both decompression and smoke/fire, the oxygen unit must meet the protective breathing equipment (PBE) requirements in § 25.1439(b)(1), (2), and (4), and the equipment and system must be designed to prevent any inward leakage to the inside of the device and prevent any outward leakage causing significant increase in the oxygen content of the local ambient atmosphere (i.e., full face mask type.)

7. Decompression and Smoke/Fire Alert:

Based on the petitioner's proposal, an automatically activated with crew-activated manual backup aural and visual decompression and smoke/fire alert must be provided and immediately recognizable in accessible areas of the Class E cargo compartment to notify supernumeraries when to don the portable full face mask oxygen units, return to their seats and ensure that the smoke barrier is secured (i.e., the doors are closed). The pre-flight briefing must include training in the sound of the alert, the meaning of the alert, and the response to the alert (i.e., procedures for donning the masks and activating the flow of oxygen).

8. Turbulence Alert:

Based on the petitioner's proposal, a flightcrew operated visual alert, which is recognized throughout the supernumerary seating area and in accessible areas in the main deck Class E cargo compartment, must be installed to indicate, during turbulence or predicted turbulence, that persons must return to their seats. The alert must be clearly distinguishable from the decompression/fire/smoke alert, so that supernumeraries do not waste time putting on the oxygen masks before returning to their seats. Appropriate procedures and limitations must be established to ensure that the flightcrew alerts the supernumeraries to return to their seats at the onset of turbulence and prior to landing. The pre-flight briefing must explain this alert to the supernumeraries.

9. Placards:

Placards are to be located outside of the cargo compartment, in a conspicuous location either on or adjacent to the smoke barrier doors. The placards must indicate the following:

- Do not occupy the Class E cargo compartment during taxi, take-off, and landing.
- Access is limited to the care and handling of animals and cargo only.
- Access is limited to a maximum of 3 persons when hauling cargo only (no live animals requiring care and attention). Access is limited to 11 persons when transporting live animals.
- The smoke barrier must be secured (i.e., the doors must be closed) except when entering or leaving the cargo compartment.
- A portable oxygen bottle (with full face mask attached) must be carried at all times when in the cargo compartment.
- Smoking is not allowed within the cargo compartment.
- The compartment must not be entered in case of fire/smoke being detected inside a Class E cargo compartment.

The pre-flight briefing must inform supernumeraries of these requirements.

10. Alerting Requirements:

- Must be distinctive and effective. The alert for turbulence must be clearly distinguishable from the alerts for decompression/fire/smoke.
- Visual alerts must be visible from all occupant locations and orientations, during all expected operational conditions including a rapid decompression where moisture in the air may condense.
- Aural alerts must be loud enough to be heard during all expected operational conditions including a rapid decompression where the ambient noise level will increase.

11. A standard airplane public address (PA) system must be installed. It must be audible throughout the supernumeraries' seating area.

12. Flight Tests:

Flight tests are conducted in accordance with § 25.855(h) to show compliance with the provisions of § 25.857 concerning the entry of hazardous quantities of smoke into compartments occupied by the crew or passengers. The amount of time that the smoke barrier is open, as a result of the supernumeraries evacuating the main deck cargo compartment, must be accounted for in the testing.

Note 1: Based on the results of the tests in Condition 12, the occupancy of the main deck Class E cargo compartment may be limited to less than the maximum allowed in Condition 3.

Note 2: The briefings and associated procedures in limitations 7 and 8 are not required if an Airplane Flight Manual limitation is established to prohibit supernumeraries in the Class E cargo compartment during flight. If access is prohibited, placards must be revised to indicate this limitation.

Issued in Renton, Washington, on October 31, 2008.

Signed by Michael J. Kaszycki

Michael J. Kaszycki
Acting Manager
Transport Airplane Directorate
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