

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 an exemption from §§ 25.785(j), 25.807(d),
25.807(g)(1), 25.807(i)(1), 25.809(a),
25.810(a)(1), 25.812(e), 25.813(b), 25.857(e)
and 25.1447(c)(1) of Title 14, Code of Federal
Regulations

Regulatory Docket No. FAA-2007-0041

PARTIAL GRANT OF EXEMPTION

By letter dated July 8, 2008, from Mark Hamm, Manager, Puget Sound Certification Office, The Boeing Company, PO Box 3707, Seattle, Washington, 98124, petitioned for reconsideration of exemption 9696 which provided relief from §§ 25.785(j), 25.807(d), 25.807(g)(1), 25.807(i)(1), 25.809(a), 25.810(a)(1), 25.812(e), 25.813(b), 25.857(e), and 25.1447(c)(1) of Title 14, Code of Federal Regulations (14 CFR). That exemption allowed the carriage of up to four non-crewmembers (commonly referred to as supernumeraries) in the flight deck on Boeing Model 767-300 airplanes converted from passenger to freighter airplanes. Exemption 9696 also allowed the non-crewmembers 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). The petitioner now requests that the exemption be revised to allow the maximum number (four) of supernumeraries allowed on the aircraft access into the cargo compartment during flight, regardless of the type of cargo (animal only, cargo only or mixed cargo) in the compartment.

The petitioner has previously been granted 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 25.807(d) and (g)(1), at Amendment 25-114, requires that for a passenger seating configuration of 1 to 9 seats, if overwing exits are not provided, there must be at least one exit in each side that meets the minimum dimensions of a Type III exit,

and that the number of passenger seats permitted is based on the smaller of the two exits.

Section 25.807(i)(1), at Amendment 25-114, requires that for airplanes that have a passenger seating configuration of nine or fewer seats there must be at least one ditching emergency exit above the waterline in each side of the airplane, meeting at least the dimensions of a Type IV exit.

Section 25.809(a), at Amendment 25-116, requires, in pertinent part, that each emergency exit must have means to permit viewing of the conditions outside the exit when the exit is closed. The viewing means may be on or adjacent to the exit provided no obstructions exist between the exit and the viewing means. Means must also be provided to permit viewing of the likely areas of evacuee ground contact. The likely areas of evacuee ground contact must be viewable during all lighting conditions with the landing gear extended as well as in all conditions of landing gear collapse.

Section 25.810(a)(1), at Amendment 25-114, requires, in pertinent part, that each non-overwing emergency exit more than 6 feet from the ground have an approved means to assist occupants in descending to the ground. For passenger exits, this must be a self-supporting, automatically deployed and erected slide at each applicable exit.

Section 25.812(e), at Amendment 25-116, requires, in pertinent part, that floor proximity emergency escape path markings must provide emergency evacuation guidance for passengers.

Section 25.813(b), at Amendment 25-116, requires, in pertinent part, that adequate space to allow crewmember(s) to assist in the evacuation of passengers must be provided as follows:

(1) Each assist space must be a rectangle on the floor, of sufficient size to enable a crewmember, standing erect, to effectively assist evacuees. The assist space must not reduce the unobstructed width of the passageway below that required for the exit.

(6) There must be a handle, or handles, at each assist space, located to enable the crewmember to steady himself or herself:

(i) While manually activating the assist means (where applicable) and,

(ii) While assisting passengers during an evacuation.

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 25-116 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.

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:

Only the pertinent parts of the petition and the supplemental information are quoted below. Boeing's complete petition for an amended exemption and the supplemental information letter can be found under docket number FAA-2007-0041 at www.regulations.gov. In order to better understand the existing jet cargo fleet operations from a mixed cargo perspective, Boeing conducted a survey of a number of freighter operators. The survey requested responses from a sample set of worldwide operators (inclusive of US operators), to better understand the nature of their cargo operations.

The summary of responses from the operators is as follows:

Mixed Cargo Flights are the Norm in the industry

All airlines which accepted live animals for carriage on scheduled flights, advised us that they routinely carry large live animals requiring care/attention during flight in combination with other cargo. One operator reported that they have \approx 30 flights per month of this type. On some routes, such as into and out of Calgary, Alberta, Canada, 100% of the cargo flights for one operator are of the mixed type. One of the queried operators stated that "...100% of live animal flights have other cargo in the same compartment." Two other operators stated that "99% of cargo flights with live animals carry other cargo in the same compartment." Another operator advised that depending on the season, the frequency of carrying mixed cargo varies from "every flight" to "once every fourteen days." Clearly, cargo operators carry mixed cargo on a regular basis and such capability/flexibility is needed by the shippers of large, live animals.

Not allowing Access for Mixed Cargo on the 767-300BCF will Create a Hardship

All airlines which accepted live animals for carriage on scheduled flights responded that if mixed cargo access were not allowed it would create financial hardship for their operations. Most stated that it would effectively stop large, live animal shipment by air on scheduled flights. Two airlines stated that the cost of shipping horses by air would skyrocket if mixed cargo were not allowed because the horse shipper would, in effect, have to pay for

the empty pallet positions not filled because mixed cargo access would not be allowed.

Not allowing access for mixed cargo operations would necessarily drive cargo operators to ship horses (and other large live animals) exclusively on dedicated/chartered flights. Such flights would have to be scheduled far in advance and they would likely be infrequent due to limited traffic, creating cost and schedule hardship to horse shippers due to the relative infrequent flights. Race horses are typically shipped by air and are shipped a day or two prior to their races because horses are prone to jet lag and their performance suffers as a result. Infrequent dedicated/chartered flights for horse carriage would be a hardship to the horse racing industry.

Not allowing mixed cargo access will very likely create an additional and extreme hardship to the US cargo fleet, one that places them at a competitive disadvantage to their foreign counterparts. Airlines not under US jurisdiction will most likely pursue certifying mixed cargo access through their own regulatory authorities. If they succeed, and most probably will, US carriers will be at a severe disadvantage. The foreign carriers will be able to economically ship smaller quantities of horses on a particular flight while US carriers will not be able to do likewise. They will have no choice but to ship much larger quantities of horses much less frequently in order to fill their main deck cargo compartments.

Additional Supporting Information

With minor exception, all large live animals being shipped by air need persons (grooms/handlers) on board for their care/attention during flight and to also ensure that the animals will not compromise safe flight.

Large animals may need special attention in flight for their safety and well being. Handlers need to have the ability in flight to calm horses down so they will not try to jump and hurt themselves. Whales or other large marine animals need handlers capable of keeping them in a wet environment while in flight. Large animals in these categories represent a high value. From the shippers' side as well as from the airlines' perspective, having grooms/handlers on board and being able to attend to them during flight is a must. It is also imperative that a sufficient quantity of grooms be allowed inside the compartment at the same time. During flight these grooms assist in maintaining a safe environment and help to adequately protect the animal owners' investments.

The quantities of large animals (horses) typically being carried in mixed cargo operations varies from one or two stalls holding two to six horses all the way up to the main deck being almost completely full with these stalls. If the number of horse stalls does not completely fill the main deck compartment,

other cargo is routinely loaded into the available pallet positions as long as the combination of large animals and other cargo is in accordance with IATA [International Air Transport Association] guidelines. Most respondents advised that they follow IATA guidelines for live animal carriage, meaning that they separate the live animals from certain dangerous goods that may be harmful to the large animals (horses) if they were placed too close.

In order to safely transport large live animals by air, cargo airplane operators (in combination with the shippers) need the flexibility to determine for themselves the proper number of grooms/handlers to accompany the large animals without being unduly restricted by an AFM limitation that limits main deck access to a few individuals. Although a main deck compartment may not be fully loaded with large animals on a particular flight, it may be the decision of the carrier (in combination with the shipper) that the number of grooms that should accompany the large animals (horses) is the same as the maximum number of supernumeraries allowed to be carried on that model.

Boeing proposes that considering the actual use of the aircraft as included above, significant confusion in procedures is introduced by delineating specific cargo "types" or categories for only the 767-300BCF aircraft. Prior exemptions for cargo operations and multiple aircraft types have not included such differentiation of cargo types. Implementation of distinctive operational procedures for a single aircraft type for airlines operating mixed cargo fleets will cause confusion and a decrease in safety for operations of those fleets.

Additionally, further hardship will be created in the industry and to the Boeing Company if these cargo categories and limitations on the number of supernumeraries allowed access to the cargo compartment are not aligned with the precedence of prior exemptions. The limitations in Exemption 9696 will potentially create a large advantage for our competitor due to the difference in capabilities afforded to them by their previously granted exemption, which does not include either of these types of limitations. The potential market loss for Boeing would be in the hundreds of millions of dollars in revenue and the potential impact to the airlines would be significant due to the fact that they require cargo compartment access for all cargo types and would in fact be driven to a sole source provider without the capability to competitively bid the cost of their aircraft conversions. Boeing contends that competition in bidding cargo aircraft conversions reduces the overall cost to the industry and therefore it benefits the interests of the public overall.

Petition for Reconsideration of Exemption No. 9696:

Boeing is seeking the following revisions to the existing Exemption 9696:

Elimination of "types of cargo operations":

Boeing requests revision to the FAA's analysis/summary to additionally recognize mixed cargo as a typical type of operation needed by airlines requiring access to the class E cargo compartment during flight. Boeing additionally and specifically requests revision to the "Conditions and Limitations" section 2 under the FAA's decision section of Exemption 9696, that section 2(b) - be deleted. Additionally, Boeing requests revision to Section 9 "Placards" to delete the paragraph referring to numerical limitations by type of cargo.

This change would eliminate the differentiation of types of cargo operations and the associated, specific, numerical limitations on the number of supernumeraries allowed access to the main deck for types of cargo operations. It is noted that the maximum number of supernumeraries accessing the main deck would be constrained by the requirements of the "Conditions and Limitations" section of Exemption 9696.

Evaluation of Public Interest

Based upon the responses of Boeing's customers/operators and the original request to provide an exemption for in-flight Main Deck access for mixed cargo operations, Boeing would like the FAA to consider their position on the following grounds:

It is not economical to dispatch a cargo airplane with less than a full load. Operators of the 767-300BCF wish to routinely transport types of cargo that require care and/or inspection during flight (e.g., large live animals and/or hazardous materials). The effect of the current AFM limitations prohibiting supernumerary access into the main deck cargo compartment during flight limits the type of cargo that can be carried, creating hardships for these operators. If access is not allowed for mixed cargo operations, shipping rates would necessarily be higher due to the inefficiency of partially loaded cargo compartments. Whole categories of live animal carriage commerce such as medical evacuation, shipment of horses for race, show, sale or breeding may be regulated out of existence by this regulation. The public interest is served by allowing live animal carriage commerce to continue to exist in a viable form.

As stated above, cargo operators routinely carry all types of cargo including mixed cargo and approving main deck access for such operations of a 767-300BCF will improve cargo carrying efficiency. Additionally, common operating requirements and common FAA Exemption allowances for manufacturers will tend to reduce the airlines' operating and asset costs through market competition. This will tend to reduce overall airfreight rates, as competitive pricing structures among freight operators will be promoted; the public interest is served by lower freight rates and competitive pricing.

Federal Register publication

A summary of this petition was not published in the *Federal Register*. This exemption does not set a precedent and any delay in acting on this petition would be detrimental to The Boeing Company.

The FAA's analysis

The FAA considers the petitioner's proposal to amend Exemption No. 9696 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 was not granted.
- The FAA has granted several exemptions for the carriage of supernumeraries with access into the Class E cargo compartment in-flight to attend to cargo on freighter airplanes.

Exemption No. 9696 granted The Boeing Company relief from §§ 25.785(j), 25.807(d), 25.807(g)(1), 25.807(i)(1), 25.809(a), 25.810(a)(1), 25.812(e), 25.813(b), 25.857(e), and 25.1447(c)(1). The exemption from those regulations still applies to the Boeing Model 767-300 airplanes converted from a passenger to a freighter configuration.

The original petition for exemption granted access to the Class E cargo compartment, but was limited to two types of operation. They are:

- Operations for the carriage of live animals and material to support the safe transport of the animals, no other cargo. The maximum number of supernumeraries allowed in the cargo compartment in-flight is 4.
- Operations for cargo only, no live animal carriage. The maximum number of supernumeraries allowed in the cargo compartment in-flight is 3.

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 and the number of supernumeraries involved. We have been reviewing the operational need for access into 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 access into 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.
3. Carriage of live animals, requiring care/attention during flight, and cargo.

In the first type of operation we understand that the industry standard for the carriage of horses is one supernumerary for every three or four horses. Considering the size of the 767-300BCF airplane there could be many horses in the main deck cargo compartment. As a result of the large number of horses or other large animals a large number of supernumeraries (groom/handler) would be needed. In the past, under certain conditions, we have granted exemptions for large numbers of supernumeraries with access into the main deck Class E cargo. These conditions have included limiting the permitted cargo to large live animals and associated cargo only. We have considered that live animals are less flammable than other cargo, therefore, we have allowed less restrictive access to the cargo compartment. Exemption 9696 allows a maximum of 4 supernumeraries access into the main deck Class E cargo compartment in-flight for the care/handling of live animals. This limitation remains the same.

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). During flight this number of supernumeraries should be capable of addressing the access needs for the hazardous materials and valuable or perishable goods. The petitioner queried a number of freighter operators and all but one agreed that three supernumeraries with access into the Class E cargo compartment was 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 (3) supernumeraries. Therefore, the petitioner requested four supernumeraries be allowed to access the main deck 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. Exemption 9696 allows a maximum of three supernumeraries access into the main deck Class E cargo compartment in-flight for the care of cargo only. This limitation remains the same.

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 four 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 four 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. 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, if Class E cargo compartment access is approved for four or more supernumeraries for this type of operation, a portable system (e.g., smoke hood, full face mask oxygen system) must also be carried by each supernumerary.

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 an exemption from 14 CFR 25.785(j), 25.807(d), 25.807(g)(1), 25.807(i)(1), 25.809(a), 25.810(a)(1), 25.812(e), 25.813(b), 25.857(e), and 25.1447(c)(1). The petition is granted to the extent necessary to allow type certification of Boeing Model 767-300 series airplanes converted from passenger to freighter with provisions for the carriage of supernumeraries. The limitations are repeated from the original exemption and have been modified as necessary to account for the addition of the mixed cargo/live animal operation. This exemption is subject to the conditions and limitations below.

The FAA considers there are two categories of operations that will occur in service:

- I. The airplane does not carry cargo that requires special attention during any operation. Therefore, supernumeraries do not need to access the Class E cargo compartment in flight during any operation. The following limitations apply: 1, 3.a, 3.b, 4.a, 4.b, 5, 6.b, 6.c, 7 (for lavatory only), 8, 10, and 11. Limitations 1 and 5, the pre-flight briefings required by 6 and 7 (as appropriate), and 8 must be documented in the Limitations Section of the Airplane Flight Manual (AFM). Access to the cargo compartment is prohibited during taxi, takeoff, flight and landing. A placard to identify this prohibited access is required to be located outside the cargo compartment in a conspicuous location, either on or adjacent to the smoke barrier door/curtain. This placard must be documented in the Limitations Section of the AFM.
- II. The airplane does carry cargo that needs special attention during flight, therefore requiring supernumerary access to the Class E cargo compartment during flight. For those operations, limitations 1 through 12 apply, except limitation 1.e. Limitations 1, 2, 5, 8.a, 9, and the pre-flight briefings required by 6, 7, 8.a, and 9, must be documented in the Limitations Section of the AFM. Access to the cargo compartment is prohibited during taxi, takeoff, and landing.

The Conditions and Limitations are:

1. Supernumeraries:

- a. A maximum of four supernumeraries may occupy the modified flight deck. The total occupancy of the airplane is limited to six persons, including the flightcrew (two on-duty flightcrew members, and up to four off-duty flightcrew members, observers or supernumeraries).
- b. The supernumeraries are limited to the categories specified in §§ 121.583(a)(1) through 121.583(a)(7).
- c. 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.
- d. The operator must determine that each supernumerary is physically capable and trained to accomplish the necessary emergency procedures.
- e. Supernumeraries are prohibited from being in the cargo area behind the smoke barrier during taxi, takeoff, landing, and flight. The pre-flight briefing must inform supernumeraries of this requirement.

2. Main Deck Class E Cargo Compartment Access Limitations:

- a. Supernumeraries are prohibited from being in the cargo area behind the smoke barrier during taxi, takeoff, 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 in-flight is 4.
 - Cargo only, no live animal requiring care/attention during flight. The maximum number of supernumeraries allowed in the cargo compartment in-flight is 3.
 - Carriage of live animals, requiring care/attention during flight, and cargo. The maximum number of supernumeraries allowed in the cargo compartment is 4.

3. Supernumeraries Supplemental Oxygen and Protection from Smoke Inhalation:

Locations and Use:

- a. Supplemental oxygen equipment with a mask connected to it must be located so each occupant can put on the mask and activate oxygen flow while seated.
- b. A portable oxygen bottle with one mask connected to it must be available in the lavatory.
- c. 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. These portable units must be located outside the cargo compartment (e.g., in the common area).
- d. Each supernumerary must carry a portable oxygen unit with a mask connected to it whenever he or she is in the cargo compartment during flight.
- e. If Class E cargo compartment access is approved for four supernumeraries for the mixed cargo and live animals type of operation, a portable system (e.g., smoke hood, full face mask oxygen system, etc.) that affords protection from smoke inhalation must be carried at all times when accessing the cargo compartment. Note that a single system that meets both protection from smoke inhalation and hypoxia could be used (e.g., a full face mask with oxygen bottle).

4. Design Requirements:

- a. The oxygen units must provide an indication to the user when oxygen is flowing.
- b. 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 supernumerary to return to his or her seat where oxygen for the remainder of the decompression is readily accessible.
- c. The portable oxygen unit must meet the performance requirements of § 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.
- d. 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 and is approved for use up to at least 40,000 feet cabin altitude, 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 petitioner uses this means of compliance and the bottle has more than one setting for flow rate, the supernumeraries must be trained to use the 4 liters per minute NTPD setting.

5. Training:

The supernumeraries must be trained in the use of the oxygen/protection from smoke inhalation units. The supernumeraries must also be trained in making the determination whether oxygen is being delivered to the dispensing units.

6. Decompression Alert:

- a. Based on the petitioner's proposal, an automatically activated aural decompression alert must be provided and immediately recognizable in accessible areas of the Class E cargo compartment to notify supernumeraries when to don the portable oxygen units, return to their seats, and ensure that the smoke barrier is secured (i.e., the door or curtain is closed). As a backup to the automated alert system, the flightcrew must be able to manually activate the alert. The pre-flight briefing must include training in what the alert means and the response to the alert (i.e., procedures for donning the mask and activating the flow of oxygen).
- b. Based on the petitioner's proposal, an automatically activated visual decompression alert must be provided and immediately recognizable in the lavatory to notify supernumeraries when to don oxygen masks. The pre-flight briefing must include training in what the visual alert means and the response to the alert (i.e., procedures for donning the masks and activating the flow of oxygen.)
- c. Based on the petitioner's proposal, an automatically activated high cabin altitude warning in the flight deck must be provided to notify the supernumeraries in the supernumerary seating area to return to their seats and don oxygen masks. Each supernumerary, while seated, must have a direct view of the flight crew so they are able to observe the flight crew donning their oxygen masks. 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 mask and activating the flow of oxygen).

7. Turbulence, Smoke, and/or Fire Alert:

Based on the petitioner's proposal, a flightcrew member operated visual alert, which is recognized in the lavatory and in accessible areas in the main deck Class E cargo compartment must be installed to indicate, during turbulence/ predicted turbulence, fire or smoke in a Class E cargo compartment, that persons must return to their seats, and ensure that the smoke barrier is secured (i.e., the door/curtain is closed).

Appropriate procedures and limitations must be established to ensure that, at the onset of a turbulence, fire or smoke event, the flightcrew member alerts the supernumeraries to return to their seats and secure the smoke barrier. The pre-flight briefing must explain these alerts to the supernumeraries.

8. Supernumerary Emergency Exit:

- a. Based on the petitioner's proposal, appropriate procedures and limitations must be established to ensure that, the flightcrew will make the determination of which exit(s) are to be used in the event an evacuation becomes necessary. During the evacuation command, the flightcrew alerts the supernumeraries which exit(s) are acceptable for use. The pre-flight briefing must explain these commands to the supernumeraries. The existing design of the Door 1L viewing porthole is to be retained.
- b. For the forward left hand entry door, emergency lighting must provide adequate illumination at the ground end of the assist means, where an evacuee would normally make first contact with the ground, with the airplane in each of the attitudes corresponding to the collapse of one or more legs of the landing gear.
- c. For the forward left hand entry door, six descent devices (commonly known as inertia reels) and six harnesses for use with the descent devices must be provided for supernumeraries use.

9. Placards:

Placard(s) are to be located outside the cargo compartment in a conspicuous location, either on or adjacent to the smoke barrier door/curtain. The placards must indicate the following:

- Occupancy of the Class E cargo compartment is prohibited during taxi, take-off, and landing.
- Access is limited to the care and handling of animals and hazardous/perishable cargo only.
- Access is limited to a maximum of three persons unless transporting live animals and associated material. Access is limited to four persons when transporting live animals.
- The smoke barrier must be secured (i.e., the door/curtain must be closed) except when entering or leaving the cargo compartment.
- A portable oxygen bottle (with mask attached) must be carried at all times when in the cargo compartment.

- A portable smoke inhalation protection device must be carried at all times for mixed cargo operation for configurations with four supernumeraries.
- Smoking is not allowed within the cargo compartment.
- The compartment must not be entered in case of fire/smoke being detected inside any Class E cargo compartment.

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

10. Alerting Requirements:

- Must be distinctive and effective. Alerts must distinguish between decompression and turbulence/smoke/fire.
- 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. Public Address System:

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

12. Flight Tests:

Flight tests must be conducted 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: Based on the results of these tests, the occupancy of the main deck Class E cargo compartment may be limited to less than the maximum allowed in condition 2.

Issued in Renton, Washington, on November 14, 2008.

Signed by Stephen P. Boyd

Stephen P. Boyd
Acting Manager
Transport Airplane Directorate
Aircraft Certification Service