U.S. Department of Transportation

Federal Aviation Administration

Transport Airplane Directorate
Aircraft Certification Service

1601 Lind Avenue, S. W.
Renton, Washington 98057-3356

OCT 16 2008

Mr. Mark Hamm
Manager, Puget Sound Certification Office
M/C 0R-80
The Boeing Company
P.O. Box 3707
Seattle, WA 98124-2207

Subject: Second Correction to Grant of Exemption No. 9696

Dear Mr. Hamm:

The enclosed second correction to Exemption No. 9696 corrects technical errors in the exemption limitations that are required to be included in the Limitations Section of the Airplane Flight Manual. The revised text is notated by revisions bars in the left margin on pages 18, 19, and 21. Please file this with the original signed Grant of Exemption. Please discard the first correction document dated May 22, 2008. This second correction supersedes that document.

This correction will also appear in the public docket FAA-2007-0041, the Regulatory Guidance Library (RGL), and the Automated Exemption System (AES).

Sincerely,

Franklin Tiangsing
Manager, Airframe/Cabin Safety Branch
Transport Airplane Directorate

SECOND CORRECTED COPY

This is an additional correction to the Grant of Exemption, Exemption No. 9696, dated May 14, 2008. The changes in this document correct technical errors in the required exemption limitations that must be included in the Limitations Section of the Airplane Flight Manual. The corrections appear on pages 18, 19, and 21. We have made these changes in our records as of October 16, 2008. Please file this with the original signed Grant of Exemption. This copy supersedes the corrected copy issued May 22, 2008.

Exemption No. 9696

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**

GRANT OF EXEMPTION

By letters dated October 5, 2007, from J. B. Indovina, Manager, Puget Sound Certification Office, and February 18, 2008, from D. B. Marcrander, Manager, Lead Project Administrator, Puget Sound, The Boeing Company, PO Box 3707, Seattle, Washington, 98124, petitioned 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 (14 CFR). On April 3, 2008, Boeing sent supplemental information in support of the petition for an exemption. The proposed exemption, if granted, would allow 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. This exemption would allow 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 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 25.807(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:

"Boeing Commercial Airplanes is currently engaged in the development of a modification of a 767-300 Passenger airplane to a 767-300 "Boeing Converted Freighter" (BCF) configuration. This modification results in the conversion of the main deck of the airplane from a passenger cabin to a Class E cargo compartment (as is defined in 14 CFR 25.857(e)), and an interior reconfiguration of the flight deck of the airplane to allow carriage of up to 6 persons.

"The 767-300 BCF will provide air cargo transportation in the same manner as other freight/cargo airplanes in its class (e.g. the 767-300F). 767-300 BCF operations will include the transportation of cargo that can require additional persons on the airplane for cargo handling and management. The carriage of such persons (supernumeraries) is defined in 14 CFR 121.583. This petition for exemption seeks relief to allow supernumerary carriage and supernumerary access to the main deck Class E cargo compartment while in flight.

"As part of the 767-300 BCF Passenger to Freighter modification, Boeing will convert the flight deck layout to match the Model 767-300F production freighter configuration.

"The flight deck reconfiguration includes the deletion of the flight deck partition and installation of a rigid cargo barrier with three supernumerary seats mounted on its forward face. One floor mounted supernumerary / FAA observer seat is retained from the passenger airplane along with the two flight crew seats. In total, there is a maximum capacity of six persons: two flight crew plus four supernumeraries.

"Boeing is pursuing an Amended Type Certificate to convert Boeing Model 767-300 Series Passenger airplanes into Boeing Converted Freighters under BDCO Project PS05-0037. After the approval of the Amended Type Certificate the 767-300 BCF certification basis will be added to Type Certificate Data Sheet A1NM. The conversion from passenger to freighter will change the flight deck occupancy from a maximum of four persons to a maximum of six persons. As the Boeing Converted Freighter modification removes most of the passenger carriage and egress capabilities of the airplane, exemption from certain regulations regarding these capabilities must be sought in order to preserve both the economic advantages of the freighter configuration and the essential safety provisions for the airplane occupants."

"1. The 767-300 Boeing Converted Freighter (BCF) airplane will be equipped with a solid 9g cargo barrier installed forward of and opposite to Door 1 Left. Door 1 Right will be deactivated, with Door 1 Left as the primary emergency exit. Further, the limited number of personnel that may be carried on the flight deck and the availability of the existing flight deck windows for emergency egress insure adequate levels of safety for the flight deck occupants.

"2. The flight deck of the Model 767-300 BCF is equipped with openable No. 2 left and right flight deck windows previously certified as flight crew emergency exits. The right hand window will be modified to add capability to be opened from outside of the airplane, and its means of opening will be marked on the exterior airplane fuselage. The ropes / lanyards installed at the windows will be retained as the emergency egress assist means for these exits.

"3. The 767-300 BCF airplanes will be modified to include an exterior light on the left side of the lower forward fuselage. The light is identical to the 767-300F emergency exit light used for the emergency exit door of 767-300F Package Freighter, and is installed to illuminate the ground under the Boeing Converted Freighter.

"4. The occupancy of the 767-300 BCF is limited to a maximum of 6 persons, four of whom may be "supernumerary" occupants as defined by §121.583 (a)(1) through (a)(8). Limitations will be imposed on the aircraft operator to find that all occupants are physically able to use the escape means provided.

"5. In the small spaces of the occupied portions of the airplane, the crew will easily be able to provide any instructions or assistance needed by the supernumerary occupants. Additionally there are no flight attendants to require assist space. Therefore the lack of assist space adjacent to the emergency exits will not lower the level of safety in an emergency egress situation.

"6. It is the intent of the operator to use the supernumerary capability of the airplane to ferry up to four non-crew occupants. When supernumerary occupants are carried, they will be briefed prior to each flight as to the location and use of the emergency egress assist means and procedures.

"7. The oxygen system on the 767-300 BCF will be the same as the previously certified 767-300F system, and will serve the two flight crewmembers and the four non-operating occupants. This system has a demonstrated capacity sufficient to meet or exceed the requirements defined by §25.1439(b)(5), §121.329(b)(l), and §121.333(b) for all six occupants.

"8. All occupants in the 767-300 BCF flight deck will have available the same quick-donning flight crew-type oxygen masks as those previously used and certified on the 767-300F, which are not automatically presented. The location of the supernumeraries with the flight crew, and the crew's high level of training, will allow the crew to easily command non-operating occupants to don the masks, and verify their proper usage. In addition, the crew has a public address system which can be heard throughout the flight deck, galley, and lavatory. This combination provides an acceptable level of safety with regard to the requirements defined by §25.1447(c)(1) for automatic mask presentation.

"The flight deck will be outfitted with a portable walk around oxygen bottle for use by supernumeraries when accessing the main deck Class E cargo compartment. The bottle will be equipped with a supplemental passenger oxygen mask and will supply at least 3.6 liters of oxygen per minute at a 40,000 ft. cabin altitude for not less than 25 minutes. The Class E cargo compartment will not have human occupants for taxi, takeoff or landing.

"The lavatory will also be outfitted with a portable oxygen bottle for use by a lavatory occupant during a decompression event. The bottle will be equipped with a supplemental passenger oxygen mask and will supply at least 3.6 liters of oxygen per minute at a 40,000 ft. cabin altitude for not less than 25 minutes. The lavatory area will not be utilized for taxi, takeoff or landing.

"9. Evacuation of all occupants through a flight deck window was demonstrated as described in a separate letter, dated January 14, 1987, to the FAA Seattle Aircraft Certification Office (SACO). The demonstration showed 2 women and 5 men of aged from 29 to 52 years and of varying physical stature able to evacuate the flight deck through a window assisted by a rope in 73 seconds. By comparison, the 767-300 BCF will have a maximum occupancy of six persons.

"10. The flight deck window evacuation procedure, specifically a recommended body-positioning sequence, will be added to the Airplane Flight Manual Supplement of the airplane. Procedures for use of the inertial descent devices and harnesses will also be included in the AFM, and will be posted near Door 1 Left, as well.

"<u>In-flight Access to Main Deck Class E Compartment</u>

"Class E compartment accessibility -This petition requests supernumerary access to main deck Class E compartment during flight.

"Class E compartment level of occupancy - There is one supernumerary allowed access to the Class E compartment at a time since there is only one portable oxygen bottle available for this purpose.
"Oral communication ability - There is a Public Address system with speakers in the flight deck and lavatory. There is no oral communication between the flight deck and the supernumerary in the Class E compartment.
"Aural and/or visual warning ability - There is a flight crew operated visual signal to alert the supernumerary in the Class E compartment to return to his/her seat. This is used for smoke/fire and/or turbulence. In the case of smoke/fire this alerting is used in advance of the depressurization aural warning.
"Decompression warning - There is an automatically activated aural alerting system, (horns), in the Class E compartment and in the flight deck to direct occupants to don oxygen masks. These horns are activated by the 10,000 ft. cabin altitude switch. The lavatory has a red light to alert the occupant to don the oxygen mask. The Class E compartment aural warning horns and the lavatory red light are also activated by the flightcrew operated Depressurization switch in response to a fire.
"Oxygen availability – There are pull down flight crew type oxygen masks for all six occupants.
"There is portable oxygen for Class E cargo compartment access and portable oxygen in the lavatory.
"Handholds - As it would be impractical to require handholds throughout the Class E cargo compartment, an acceptable level of safety is provided with a flightcrew operated visual annunciation in the Class E compartment which indicates that persons must return to their seats.

"Emergency Exits:

"The flight compartment on the 767-300 BCF is equipped with a crew entry door on the left-hand side of the fuselage. For the purposes of this certification project, this entry door will be derated to meet the applicable requirements of a Type I exit. Additionally, it provides an unobstructed opening of 42 inches wide by 74 inches high and is floor level. However, the right-hand exit (i.e., the sliding flight deck window) does not meet the minimum dimensions of a Type III exit, which is why an exemption from 14 CFR 25.807(d) & (g)(1) is required. Boeing plans to use the same rationale that was used to obtain the same exemption that was granted on the Model 767-300F production freighter.

"The flight deck of the Boeing 767 is equipped with openable No. 2 left and right flight deck windows which have been certified as flight crew emergency exits. For the 767-300 BCF, the No. 2 right hand flight deck window will be modified to add capability to be opened from outside the airplane, and its means of opening will be marked on the right hand exterior airplane fuselage. The ropes / lanyards installed at the windows will be retained as the emergency egress assist means for these exits. The airplanes will be modified to include an exterior light on the left hand side of the lower forward fuselage. The left hand light is identical to the emergency exit light used for the emergency exit door of the 767-300F.

"Emergency Egress:

"The 767-300 BCF conversion includes deactivation of all existing passenger doors except for the forward left side passenger door (1L). The forward left side passenger door (1L) will be used both as a service door and as an emergency exit. The existing flight deck window exits as well as the forward left side passenger door (1L) are all above the waterline of the airplane in a ditching situation.

"It is Boeing's position that the combined presence of the forward left side passenger door (1L) and the two window exits, all equipped with assist means appropriate to their use, provide a level of safety for this airplane and its intended use that is equivalent to that provided for other airplanes and/or uses meeting the provisions of 25.807(g)(1) and (i)(l).

"Viewing of the Conditions Outside the Exit:

The Model 767-300BCF will be equipped with inertial reel descent devices as the assist means at the forward left side passenger door (1L). The ropes/lanyards at both right and left hand sliding cockpit windows will be retained from the Boeing 767-300 passenger model. Section 25.809(a) Amdt. 25-116 requires that each emergency exit must have means to permit viewing of the conditions outside the exit when the exit is closed, including viewing of the likely areas of evacuee ground contact. The door 1L porthole with downward-looking prism and the flight deck windows will permit viewing of the conditions outside the exit when the exit is closed. Once the airplane has come to a stop, viewing of the likely areas of evacuee ground contact, however, will not be possible since these are directly beneath the aircraft. One significant reason for the requirements of 14 CFR 25.809(a) at Amdt. 25-116 is to prevent the deployment of an escape slide into a fire or other hazard, since this deployment is irreversible, and door re-closure is necessarily impeded by the deployed slide due to its interface with floor structure immediately inboard of the door sill. In most cases, the presence of a fire in the vicinity of the left-hand flight deck window and Door 1L would be readily and easily recognizable by the flight deck crew as the airplane slows to a stop. In these cases, the flight deck crew would command evacuation from the right-hand flight deck window. However, if a fire is detected beneath the left-hand emergency exit of the 767-300BCF after that door or the left-hand flight deck window is opened, the door or window may be easily closed again because the passenger escape slide would not be in the way of the door mechanism as it is not installed on the 767-300BCF. This provides an acceptable level of safety with respect to the requirements of 14 CFR 25.809(a) at Amdt. 25-116.

"Egress Assist Means:

"The 767-300 BCF will be equipped with inertial descent devices as assist means at the forward left side passenger door (1L). Inertial reel descent devices at exit doors have been shown to be as safe and effective as automatically erected slides for

evacuating small numbers of occupants. Demonstrations and actual emergencies in which slides have been used to rapidly evacuate airplanes typically have resulted in injuries to the evacuees. The use of reels with a small number of occupants has the potential to mitigate injury during evacuation. Also, the use of reels, or reels plus harnesses, is a simple, intuitively obvious process, is not strenuous, and does not require specific positioning or movements by the evacuees.

"The right-hand cockpit window will be modified to be externally operable, and the ropes/lanyards at both windows retained from the 767-300 passenger model. The proximity of the ropes installed at the flight deck windows to the flight crew, who will be able to insure proper use by all occupants, provides a significant offsetting consideration in lieu of automatically erected means.

"In Exemption 4808A for the 757-200 Package Freighter (PF), the FAA concurred that safe evacuation of 2 crewmembers and 5 non-crewmembers could be effected using the exits and egress means provided aboard that airplane, which included one door of Type II size equipped with inertial descent devices, and one internally operable window and one window operable both internally and externally, both equipped with ropes.

"This evacuation capability was substantiated by the evacuation demonstration successfully conducted for 757-200PF certification on January 14, 1987. The demonstration was conducted on a passenger Model 757-200 airplane modified to represent the 757-200PF in the applicable areas. The evacuation demonstration involved five males and two females ranging in age from 29 to 52 and of varying physical stature. The right-hand number two window was chosen for demonstration because it was selected as the most critical evacuation route from the flight compartment. For this test, the co-pilot and the pilot had their seats in the forward position, seat belts fastened, and the right-hand number two window closed and latched. At the signal for evacuation, the co-pilot unfastened his seat belt, moved the seat aft, opened right-hand number two window, and deployed the escape rope. After the escape rope was deployed, the co-pilot evacuated from the airplane. After the co-pilot reached the ground the five supernumeraries and the pilot evacuated the airplane. The evacuation was completed in approximately 73 seconds. By comparison, the Boeing 767-300 BCF will have a maximum occupancy of six persons.

"The flight deck window evacuation procedure, specifically a recommended body positioning sequence, will be added to the Airplane Flight Manual Supplement (AFMS) of the airplane. Procedures for use of the inertia descent devices and harnesses will also be included in the AFMS, and will be posted near the door IL, as well.

"Emergency Egress Lighting & Signage:

"The forward left side passenger door (IL) emergency exit signage includes downward directed illumination of the floor at the door threshold. Emergency egress path marking lights will not be installed, as the proximity of the occupants to the flight deck windows and the forward left side passenger door provides an acceptable level of safety with regard to the requirements of 14 CFR 25.812(e).

"Flight Attendant's Assist Space

"In the small spaces of the occupied portions of the airplane, the crew will easily be able to provide any instructions or assistance needed by the supernumerary occupants. Additionally, there are no flight attendants who would normally utilize the required assist space. Therefore, the lack of assist space adjacent to the emergency exits will not lower the level of safety in an emergency egress situation. In addition, supernumeraries will be briefed prior to each flight as to the location and use of the emergency egress assist means and procedures.

"Oxygen System and Capacity

"The oxygen system on the Boeing 767-300 BCF will be similar to the previously certified 767-300F system, and will serve the two fight crewmembers and the four non-operating occupants. The system has a demonstrated capacity sufficient to meet or exceed the requirements defined by §25.1439(b)(5), §121.329(b)(1), and §121.333(b) for all six occupants.

"All occupants in the Boeing 767-300 BCF flight deck will have available the same quick-donning flight crew-type oxygen masks, which are not automatically presented. The location of the supernumeraries with the flight crew, and the crew's high level of training, will allow the crew to easily command non-operating occupants to don the masks, and verify their proper usage. In addition, the crew has a public address system which can be heard throughout the flight deck, galley and lavatory. This combination of [sic] provides an acceptable level of safety with regard to the requirements defined by §25.1447(c)(1) for automatic mask presentation.

"For purposes of evaluation of the reserve oxygen available with a common system for passenger and crew, all six occupants were considered to be crew. The minimal undiluted oxygen supply to the flight deck is sufficient for all six occupants during emergency descent in response to a rapid depressurization; or in a detection event, for smoke detection, descent phases, and 30 minutes of depressurized flight at 25,000 feet cabin altitude for the purpose of fire suppression.

"In comparison, the 767-300F has been certified with a 110 cubic foot gaseous oxygen capacity, which provides sufficient oxygen for the above described situations for seven occupants. The Boeing 767-300 BCF will use a similar oxygen system as

the 767-300F, retaining the same 110 cubic foot oxygen capacity, for only six persons.

"Each oxygen dispensing outlet to be used in the flight deck includes shutoff capability. The proximity of the non-operating occupants to the flight crew will allow the pilot and/or first officer to command shutoff of these outlets. Incorporation of additional capability to shut off the oxygen flow to non-operating occupants in order to preserve supplies for the operating crew would not enhance safety aboard the Boeing 767-300 BCF beyond that afforded by the current system in use on 767-300F.

"The portable oxygen bottle used in the lavatory utilizes a separate oxygen canister, and is not part of the gaseous system that serves the flight deck. Therefore, use of this system will not affect the crew oxygen capacity.

"Boeing is petitioning for relief to allow the supernumeraries to enter the Class E cargo compartment in flight to tend to animals or hazardous cargo. In order to provide an acceptable level of safety to the "immediately available" requirement of § 25.1447(c)(1), each supernumerary will carry on his or her person a portable oxygen bottle with a mask connected to it while in the Class E cargo compartment.

"Section 25.1447(c)(l) 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, supernumeraries in the Class E cargo compartment will not have this indication. To provide an acceptable level of safety, an automatically activated aural decompression signal will be immediately recognizable throughout accessible areas in the Class E cargo compartment. Operation of this signal will be automatic at 10,000 ft. cabin altitude or with flightcrew action for Class E depressurization.

"Instructions to Occupants:

"The occupancy of the Boeing 767-300 BCF is limited to a total of 6 persons, four of whom may be "supernumerary" occupants as defined by § 121.583(a)(1) through (a)(7). Boeing will include a flight deck evacuation procedure in the Airplane Flight Manual Supplement for the use of ropes / lanyards when exiting the airplane through the flight deck windows. The Supplement will also include the requirements for the specific techniques for emergency egress to be briefed to non-crew occupants before each flight. The Operations Manual will include limitations upon the Operator to find that all occupants are physically able to use the egress assist means provided. The Operations Manual will also contain illustrated sequences showing the recommended evacuation procedures for emergency egress through either the window exits or crew entry door using an inertial reel and harness, which will be required to be briefed to all non-crew occupants prior to each flight."

"Request to operate under this exemption outside the United States.

"Per the requirements of § 11.83, Boeing requests that the relief granted by this exemption remain in effect for operations outside of the United States. The reason for this use is that, as a long range freighter aircraft it is reasonable to expect that the 767-300 BCFs will be used for international flights including flights between points outside of the United States.

"Request for Waiver of Publication

"Boeing proposes that good cause exists to waive the publication and comment requirements of §§ 11.85, 11.87, and 11.89. In particular, Boeing proposes that the intent of this petition, the reasons presented, and the relief requested are identical to those of exemptions previously granted by the FAA. In response to the criteria found in 14 CFR 11.87, Boeing justifies its request as follows:

"(a) Granting Boeing's petition would not set a precedent. No new design feature is introduced and the reasons presented for exemption are similar to those for which an exemption has been previously granted.

"(b) The relief requested is identical to exemptions granted previously. (See Exemption Numbers 4808/4808A, 7469, and 8258.)

"(c) This petition, if delayed, would adversely affect the 767-300 BCF program. The redelivery of the first airplane is scheduled for June 17, 2008. Prompt action on this petition would be greatly appreciated.

"(d) Boeing has filed its petition in a timely manner. 14 CFR 11.63(d) reads: (d) Submit your petition for exemption 120 days before you need the exemption to take effect.

"Accordingly, Boeing requests a waiver for the publication and comment period, so that operators of Boeing 767-300 BCF airplanes can return to revenue operations without delay."

"Public Interest:

"The grant of this exemption will improve the utility of the airplane for the operator by ensuring needed cargo management personnel will be available in flight and at each flight destination. The presence of trained personnel when cargo is carried aboard the aircraft will preserve proper flight safety, and is therefore in the public interest.

"These capabilities will improve cargo carrying efficiency and 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.

"As 767-300 Passenger airplanes are moved into cargo service, passenger airline operators will replace them with airplanes meeting newer safety requirements, which will serve to elevate safety levels across operating fleets. An overall elevation of safety is in the public interest."

The FAA requested additional information from Boeing regarding the decompression alerts and supplemental oxygen equipment. The FAA's questions, Boeing's answers, and a copy of Boeing's complete petition can be found under docket number FAA-2007-0041 at www.regulations.gov.

Federal Register publication

A summary of the petition was published in the Federal Register on March 7, 2008 (73 FR 12499). No comments were received.

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 flightdeck 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 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 flightdeck.

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 previously granted exemptions for in-flight access of 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 main deck Class E cargo compartment into two types of operations. They are:

1. Carriage of live animals and associated material only, no other cargo.

2. Cargo only, no live animal carriage.

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 767-300 airplane there could be many horses in the Class E cargo compartment. In considering this type of operation, we have considered that live animals are less flammable than other cargo. Therefore, we have allowed less restrictive access to the cargo compartment.

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 need to have access to hazardous materials and valuable or perishable goods during flight.

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 requirement of § 25.785(j), at Amendment 25-88, for handholds, 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 return to their seats. The visual alert must be recognized in accessible areas in 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 emergency exit provided on the right side of the airplane—the right flight deck window—does not meet the minimum size for a Type III exit as required by

§ 25.807(g)(1). Boeing has tested the usability of such a right flightdeck window. Results indicate that the window can be used for an exit—with the evacuation means provided—for a maximum of seven people in the flightdeck of the Boeing Model 757-200PF. Also, the four non-crewmembers of the airplane will have a higher level of training and be physically more capable of evacuating the airplane by using the smaller exit opening provided on the right side of the airplane than would typical passengers.

The emergency exit provided on the right side of the airplane—the right flight deck window—also does not meet the minimum size for a Type IV exit as required by § 25.807(i)(1) for a ditching exit. As discussed above, the utility of the right flightdeck window and its usability with the evacuation means provided has been demonstrated for a maximum occupancy of seven persons on the flight deck of the Boeing Model 757-200PF. This demonstration would also apply to evacuating the airplane for ditching. Furthermore, the four non-crewmembers of the airplane will have a higher level of training and be physically more capable of evacuating the airplane by using the reduced exit opening on the right side of the airplane than would typical passengers. If life-rafts must be installed for flights over water, they must be of a design that can be launched out the right flightdeck window, as required by § 25.1411(d)(2).

The door 1L viewing porthole with downward looking prism provides a general downward looking view, but will not permit viewing of the likely areas of evacuee ground contact. We clarify that a fire is a significant reason, but not the only reason, for the requirement. Acute changes in terrain are also an issue, as is hazardous debris, etc. We agree in this specific case with the petitioner's rationale that in most cases the presence of a fire in the vicinity of the left-hand flight deck window and Door 1L would be recognizable by the flight deck crew in the case where an evacuation is necessary. The petitioner proposed that the flight deck crew would command evacuation from the right-hand flight deck window. Because the assist means is an inertia reel, the evacuee has a bit more control over the landing zone as compared to being expelled off the end of an escape slide. We find that the existing door 1L porthole combined with the inertia reel assist means, six person occupancy, and additional crew procedures proposed by the petitioner will provide an acceptable level of safety.

The petitioner has requested relief from the requirements of § 25.810(a)(1), which requires the passenger emergency exits to be equipped with a self-supporting slide or equivalent assist means. Boeing has proposed to install descent devices (commonly known as inertia reels) at the door 1L emergency exit and retain the existing escape ropes installed for the flight deck window exits on the left and right side.

The issue of whether inertia reels with harnesses for trained supernumeraries provide an acceptable alternative to the escape slides required by part 25 for passengers is discussed in some length in Exemptions No. 4808 and 4808A. (The FAA granted those exemptions to the Boeing Commercial Airplane Group in 1987 and 1997,

respectively.) This issue is also discussed in Exemption No. 5993A, which the FAA granted in 1995 to the Boeing Commercial Airplane Group for Boeing 767-300PF airplanes.

The FAA recognizes that supernumeraries, as opposed to passengers, may be selected and trained appropriately in the use of escape ropes and inertia reels and harnesses. We consider that the petitioner's proposed installation of inertia reels and harnesses at the emergency exit door 1L and retention of the existing escape ropes installed for the flight deck window exits on the left and right side provides an adequate level of safety to supernumeraries for the petitioner's airplane configuration.

The intent of § 25.812(e) is to provide floor proximity emergency escape path marking in the passenger areas of the airplane. The configuration of the Boeing Model 767-300 series airplanes converted from passenger to freighter will not provide such marking, as required by § 25.812(e). However, both of the exits are close to the supernumeraries, and supernumeraries have a higher level of training and knowledge of the airplane configuration than does the typical passenger. The FAA finds that the configuration provides an acceptable level of safety.

With respect to the lack of an assist space adjacent to each exit as required by § 25.813(b) Amendment 25-116, the FAA has determined that the four supernumeraries will have a higher level of training than would a typical passenger, and will, therefore, have less need for crew assistance. Additionally, the flightcrew can easily provide instructions and some physical assistance to non-crewmembers, if needed, because the non-crewmembers would be seated in relatively small confines within easy access of the flight deck.

To comply with §§ 25.855(h)(2) and 25.857(e)(4), there must be suitable means of preventing smoke penetration into areas that are occupied. 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. To gain access, the supernumeraries would open the smoke barrier between the cargo compartment and the supernumerary compartment. To provide an appropriate level of safety, the petitioner must install a placard indicating that the smoke barrier is to be secured (i.e., the door or curtain must be closed) except when entering or exiting the cargo compartment. The placard must be located in a conspicuous place, either on or next to the smoke barrier door.

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. The amount of smoke that would enter into the supernumerary compartment and flightdeck 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 source must be considered when demonstrating compliance with § 25.855(h)(2).

The petitioner has proposed a visual alert to indicate that persons must return to their seats and secure the smoke barrier (i.e., close the door or curtain) 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 crew-operated visual alert system. This visual alert system enables the crew to indicate, at the onset of smoke/fire, that supernumeraries in the cargo compartment return to their seats. The visual alert must be recognized in accessible areas in 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 one supernumerary to enter the Class E cargo compartment to tend to animals or hazardous cargo. Provided the appropriate portable oxygen bottles and masks that are connected to the oxygen bottles are available for use by the supernumeraries entering the cargo compartment, the FAA is not limiting the access to only one supernumerary person at a time. This allows for the maximum flexibility in operation of the airplane. 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 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 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.

The petitioner indicates that supernumeraries, while seated in the flightdeck, will have quick-donning crew-type oxygen masks available, which are not automatically presented. Since the supernumeraries' seats are located with a direct view of the flightcrew, the cabin high altitude warning and observation of the flightcrew donning their oxygen equipment together provide an acceptable alert for the supernumeraries to don their equipment.

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 ft. cabin altitude for not less

than 25 minutes. The FAA determined that the proposed equipment with additional specifications provides an acceptable level of safety. The portable oxygen device(s) must meet the requirements for flightcrew oxygen masks (§ 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. FAA Technical Standard Order TSO-C64a, or later, provides one acceptable means of compliance. This Order means requires the use of a continuous flow passenger oxygen mask that 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 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) requires at least two oxygen dispensing units connected to oxygen terminals in each lavatory and that the oxygen masks be automatically presented. Two oxygen masks are intended for situations where an individual needs assistance in the lavatory. The physical abilities required of the supernumeraries to follow emergency procedures preclude this situation. Therefore, the petitioner's proposal to install a portable bottle with one oxygen mask attached is acceptable. The petitioner proposes the installation of an automatically activated visual alert for the supernumerary to don the oxygen mask. The combination of the visual alert along with the supernumerary training compensate for the oxygen mask in the lavatory not being automatically presented.

Section 25.1447(c)(1) also requires 10% extra oxygen masks. The intent of these masks is for use by lap children or flight attendants. Since neither will be on-board the aircraft the installation of 10% extra oxygen masks is not required.

Supernumeraries must be trained about the location and use of the 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 decompression alert is not required to be recognizable in the Class E compartment if an 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.

Based on the information from the petitioner regarding the decompression alerts and supplemental oxygen equipment, we have the following response:

Aural Alert Intensity: We are in basic technical agreement with the petitioner's proposal provided the petitioner accounts for operational conditions. 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.

Probability of decompression, time to recognize a decompression, time to don the oxygen mask, time to return to the flightdeck, and maximum cabin altitude when the occupant has reached their seat: The FAA agrees with the petitioner that there is no agreed specific probability of occurrence for a decompression event. We do not concur with the petitioner's statement that the FAA considers the probability of a decompression event to be less than 1 x 10-4 per flight hour. We do not assign probabilities in such a case. The FAA considers the estimated times proposed for decompression recognition, equipment donning, and return to seat as reasonable. The maximum cabin altitude when the occupant has reached their seat in the event of smoke or fire should be acceptable.

Adequacy of oxygen equipment: The oxygen units for the supernumeraries must meet the requirements in the analysis, above, and the limitations in the decision, below.

Note that this exemption does not provide relief, beyond that explicitly stated, from applicable airworthiness requirements. This exemption discusses specific regulations that must be met for approval of the proposed design but does not discuss all the applicable regulations.

The FAA's decision

In consideration of the foregoing, I find that a 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. This exemption is subject to the conditions and limitations below.

The FAA considers there are two types 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 two types of operation. They are:

- Operations for 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.

3. Supernumeraries Supplemental Oxygen:

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.

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 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.

- 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 that the maximum allowed in condition 2.

Issued in Renton Washington, on May 14, 2008.
/s/
Ali Bahrami
Manager, Transport Airplane Directorate
Aircraft Certification Service