

Exemption No. 9699

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

In the matter of the petition of

Aeronautical Engineers, Inc.

for an exemption from §§ 25.785(j), 25.812(e),
25.855(a), 25.857(e), 25.1447(c)(1), and 25.1449
of Title 14, Code of Federal Regulations

Regulatory Docket No. FAA-2008-0246

PARTIAL GRANT OF EXEMPTION

By letter dated, February 15, 2008, Mr. David McDonald, VP, Aeronautical Engineers, Inc. (AEI), 7765 NW 54th Street, Miami, FL, 33166, petitioned the Federal Aviation Administration (FAA) for an exemption from §§ 25.785(j), 25.812(e), 25.855(a), 25.857(e), 25.1447(c)(1), and 25.1449 of Title 14 Code of Federal Regulations (14 CFR) for Boeing Model 727-200 passenger airplanes converted to freighter airplanes. The proposed exemption, if granted, would allow carriage of 16 non-crewmembers (commonly referred to as supernumeraries) in the rear portion of the main deck Class E cargo compartment on these freighter airplanes. The maximum occupancy for these freighter airplanes is 19 persons, including the flightcrew.

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

Section 25.855(a), at Amendment 25-116, requires, in part, that cargo compartments must meet one of the class requirements of §25.857.

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

Section 25.1447(c)(1), at Amendment 25-116, requires, in part, that oxygen dispensing units must be automatically presented to the occupants before the cabin altitude exceeds 15,000 feet. The total number of dispensing units and outlets must exceed the number of seats by at least 10 percent. The extra units must be uniformly distributed throughout the cabin as practicable, and there must be two oxygen masks in each lavatory.

Section 25.1449 requires the crew be able to determine that there is oxygen being delivered to the dispensing unit.

Related sections of the 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 of the requirements of part 121 pertaining to carriage of passengers.

Section 121.547 contains, in pertinent part, a listing of categories of persons who may be admitted to the flight deck during operation.

The petitioner's supportive information is as follows:

“AEI holds numerous Supplemental Type Certificates for modification of transport aircraft. With regard to this petition, AEI holds STC SA1797SO, SA1798SO, and SA1368SO which allows conversion of Boeing 727 aircraft to a freighter with a Class E main deck cargo compartment. Over 200 Boeing 727 aircraft have been converted by AEI to freighters. Some operators of AEI freighters wish to carry live animals, specifically horses, which require handlers to be present in the cargo compartment. According to AEI's operators, these animals are very valuable and cannot be properly insured for air transport unless there are a sufficient number of qualified handlers on board.

“The interest of the petitioner is in providing a level of safety for the crew, supernumeraries, animals, and aircraft that will allow operators of AEI converted 727 freighters to expand their service to include international events such as the Olympics and other world events which involve a large number of race or show horses.

“The AEI 727-200 freighters presently have no provisions for a sufficient number of supernumerary seats for handlers to help in the care of the horses for long haul flights.

“This request for exemption generally follows those granted to Custom Air Transport, to FedEx for STC00453AT, and to Instone Air Services.

“Exemptions Being Petitioned

“This petition is for an exemption from 14 CFR §§ 25.785(j), 25.812(e), 25.855(a), 25.857(e), 25.1447(c)(1), and 25.1449.

“The exemption from § 25.785(j) is necessary to allow the supernumeraries to move through the animal containers to care for the animals. It is expected that these containers will provide sufficient handholds to meet § 25.785(j), however, to the extent it may not, AEI seeks exemption from this section. In addition, the intercom and return to seat lights will provide an equivalent level of safety as the flight crew will warn the supernumeraries to return to their seats when moderate turbulence is expected or encountered.

“The exemption from § 25.812(e) will allow trained supernumeraries to occupy the rear area of the cargo compartment in the immediate proximity of the aft emergency exits. Since the supernumeraries will be trained on emergency procedures, including emergency egress from the cargo area, the lack of additional lighting will not adversely affect safety. The current 727 freighter does not provide such lighting in the cargo compartment and, therefore, modification to install such will be prohibitively expensive.

“Exemption from 14 CFR 25.855(a) is also requested as this FAR requires any cargo compartment to comply with a designated classification of 25.857 which would exclude the carriage of supernumeraries in the cargo compartment.

“The exemption from § 25.857(e) will allow for the accommodation of up to 16 livestock handlers on the main deck of a 727-200 freighter in a specially designated area in the rear of the aircraft in immediate proximity to the aft emergency exit doors.

“The exemption from § 25.1447(c)(1) will mandate an equivalent level of safety for attendants leaving the vicinity of the attendants' area by requiring them to carry portable Personal Breathing Equipment (PBE). The 16 PBEs will meet the requirements of 25.1447(c)(1), excluding the requirement that the number of oxygen units must exceed the number of seats by at least ten percent. Since the supernumeraries will be trained in emergency procedures and will be carrying the PBE with them at all times, an equivalent level of safety is maintained without having an additional 10% supply cushion. All features of the Class E cargo compartment required by § 25.855 and § 25.857 will be retained and all safety requirements of part 25 as defined by the certification basis of the airplane in Type Certificate Data Sheet (TCDS) A3 WE will be complied with. However, a fire extinguisher will also be supplied to assist in cargo compartment fire suppression while supernumeraries are present. This will be utilized as a first response to fire and, if unsuccessful, fire suppression via decompression, as typical for a Class E compartment, will be retained.

“To the extent that § 25.1449 requires the crew to be able to determine if oxygen is being provided to the PBEs being utilized by the supernumeraries, AEI also seeks exemption from compliance with this FAR as it is technically and commercially infeasible to comply with the requirements of § 25.1449.

“The FAA approved Aircraft Flight Manual (AFM) will contain a supplement with the operating limitation restricting the carriage of occupants accommodated by the specially modified section of this aircraft to animal handlers who are being trained for such duties. The seats may be similarly occupied during operations in which no cargo at all is being transported, but not to be occupied during operations in which any cargo whatsoever other than live animals, and cargo for the care thereof, is being transported.

“In addition, an FAA approved training plan will be initiated to instruct the animal handlers in the prohibition against smoking, and procedures in equipment use relating to fire suppression, ditching, and emergency evacuation.

“Request for Waiver of Public Comment

“AEI requests waiver of the normal public comment process since this request is substantially similar to that already granted Custom Air Transport and because other similar petitions have already been granted to accomplish the same objectives with very similar conditions.

“Justification for Request

“1.0 Rationale

“Horses are usually transported in shipping containers that can carry as many as four horses each. The containers are designed to fit into the existing pallet positions of the 727-200 freighters, and depending on the configuration, could have up to 12 pallets. For this petition, the aft two pallets are removed to accommodate the handler seating leaving 10 pallets remaining. A typical load could be up to 40 horses on the main deck of a 727-200 and the number of qualified handlers is commensurate with the value and safety of the horses on board.

“For safety reasons, the International Air Transport Association (IATA) recommends that for up to four pallets, one experienced handler be provided for each pallet of horses. For more than four pallets of horses, it is at the discretion of the carrier and the shipper to determine the optimum requirement.

“The safe transport of large numbers of horses by air therefore requires the carriage of a commensurate number of qualified handlers on the main deck.

“The Custom Air Transport exemption already grants the relief sought here.

“2.0 Public Interest

“The carriage of an appropriate number of animal handlers aboard an aircraft to monitor and to attend to the special requirements of live animal cargo, especially race horses and show horses, serves the public interest in raising the level of safety of livestock, the airplane, the flight crew, and consequently, the public in general.

“Designing the animal handlers' station to meet the certification basis requirements as well as the some of the more recent safety requirements of 14 CFR Part 25 raises the safety level of the animal handlers to that intended for passengers.

“This exemption, therefore serves the public interest for safety reasons and also for increased airfreight deliveries of these animals internationally and consistent commercial operations among all AEI freighter operators.

“3.0 Safety

“Safety is the primary concern. All safety requirements of the original type certification of the aircraft will be complied with as defined by the aircraft Type Certification Data Sheet (TCDS) A3 WE. Any adverse effects that the exemption and the equivalent level of safety of the modification will cause are discussed below.

“4.0 Adverse Effects

“The exemption is to allow for the carriage of livestock handlers on the main deck of a 727-200 freighter. Because of the level of safety provided by 14 CFR part 25, and the restrictions placed on the carriage of handlers as specified in the FAA approved AFM supplement, there are no apparent adverse effects.

“5.0 Equivalent Level of Safety

“The modification will be designed to incorporate certain features that will ensure the animal handlers enjoy a level of safety equivalent to that enjoyed by passengers, as provided by the original certifications basis of the aircraft, and some of the updated part 25 regulations.

“5.1 Animal Handlers Seats

The animal attendant seats will be fully certified to support the weight of the handlers, as well as any equipment that will be installed on the seats, to the maximum load factors of the aircraft at the FS position of the seats, and for the emergency landing provisions of the original certification basis for the aircraft.

“5.2 Emergency Equipment

“In providing for a compensating level of safety for the main deck occupants, a fire extinguisher, PBE, first aid kit, transmitter (ELT) and any other required equipment would be provided. For emergency egress assistance, an axe will be provided to assist in the case of a jammed or stuck exit door.

“5.3 Emergency Egress, 14 CFR 25.810

- “1. Doors 2R and 2L will be reactivated to serve as emergency exits.
- “2. Approved and certified ropes will be installed at the doors to provide emergency egress from the aircraft.
- “3. Flotation for the occupants will be provided by life vests and rafts.

“5.4 Supplemental Oxygen, 14 CFR 25.1447

“Section 25.1447(c)(1) states that oxygen must be automatically presented and immediately available to the occupants, and the quantity of masks must exceed the number of seats by ten percent. AEI is seeking an exemption from the requirement for the oxygen to be automatically presented and the requirement that there be 10 more oxygen sources than seats. However, AEI would like it to be considered an equivalent level of safety due to required training and familiarization of the supernumerary handlers and the fact they will have their PBE with them at all times.

“5.4.1 Seated Handlers

“It is the plan of the modification to provide the seated handlers with PBEs with protective breathing masks to be carried with them at all times, whether seated or while attending to the animals. The handlers will be trained in the use of these oxygen units.

“5.4.2 Working Handlers

“Each handler will utilize the PBE with protective breathing masks whenever the handler is not in the vicinity of the seats.

“5.4.3 Decompression Signal

“An automatically activated decompression signal immediately recognizable throughout the cabin area will be provided to automatically notify supernumeraries when to don oxygen.

“5.5 Emergency Lighting System, 14 CFR 25.812

“An emergency lighting system will be provided to meet amendment 25-15 including the following items:

“1. Emergency lighting illumination of the seating area, passageways, door signs, instructions, etc. will be provided.

“2. Exit Identifier Signs.

“3. Exterior lighting at the base of the slide.

“Due to the proximity of the seats to the intended exits and that the occupants have a direct view of those exit doors, it is believed that EPL (escape path lighting) installation will not add to the safety level and therefore, will not be installed and an exemption from §25.812(e) is requested.

“5.6 Lighted Fasten Seat Belt Signs, 14 CFR 25.791

“Flight crew activated lighted "Fasten Seat Belt" signs will be provided that are visible while seated.

“5.7 Lighted Return to Seat Signs

“Flight crew activated 'Return to Seat' signs will be provided along the length of the aircraft.

“5.8 Flight Deck Communications, 14 CFR 25.1423

“A standard aircraft two-way intercom/public address (PA) system will be installed within reach of at least one of the supernumeraries at their seats and the PA system will be audible from anywhere within the aircraft. The PA system will be activated from either the flight deck, or from the supernumerary seating area.

“5.9 Placards

“The following placards will be provided:

“1. No Smoking Signs

“2. Door Operating Instructions

“3. Raft Operating Instructions

“4. External Door Exit Marking

“6.0 AFM Supplement

“The FAA approved Aircraft Flight Manual (AFM) will be supplemented to contain operating limitations restricting the carriage of occupants to animal handlers under specified conditions, as well as the training required for animal handlers.

“1. The AFM supplement will limit the seats to being occupied by animal handlers only. They may be similarly occupied during operations in which cargo is not being carried, but not during operations in which cargo, other than live animals and cargo necessary for their care, is being carried.

“2. The AFM supplement will have a prorated scale for the number of handlers based on less than full utilization of the aircraft to carry livestock.

“7.0 FAA Approved Training Plan

“An FAA Approved Training Plan to instruct handlers in the prohibition against smoking, emergency procedures, and equipment use relating to ditching, fire fighting, and emergency evacuation.”

The FAA requested additional information regarding the lavatory and the alerts (noted in *Italics*). AEI submitted the following information by email:

Is there a lavatory in the 727 configuration? If yes, what means to alert to return to seat in a turbulence event? Is there an automatically presented oxygen mask in the lavatory or a bottle? And if a bottle, where and what means to alert to don oxygen (light?)

“There is a lav, but it is considered part of the cockpit as there is only a curtain and no door. They carry portable ox when going to the lav. Communication there is simply by telling whoever is in there to get out.”

For the alerts, the petition mentions the intercom and return to seat lights are the alert for turbulence to indicate a return to seat action. Also the petition mentions an automatic decompression signal is the Alert to indicate to don oxygen in a decompression. Is this decompression alert aural and/or visual? Is this decompression alert distinct from the turbulence aural and visual alert?

“As for the cabin, return to seat alerts will be via the intercom and lights in the cargo compartment. A horn will be used to alert to don ox, as well as the intercom.”

Federal Register publication

The FAA has determined that good cause exists for waiving the requirement for *Federal Register* publication because the exemption, if granted, would not set a precedent, and any delay in acting on this petition would be detrimental to Aeronautical Engineers, Inc.

The FAA's analysis/summary is as follows:

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 was not granted.

- The FAA has granted several exemptions for the carriage of supernumeraries in the Class E cargo compartment freighter airplanes.

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 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, therefore, has granted certain exemptions to allow the carriage of supernumeraries on freighter airplanes without compliance with all of the part 25 standards for passengers, provided that certain other conditions are met. Those conditions have varied, depending on the airplane design, the nature of the proposals under consideration, and the number and location of persons to be carried.

The petitioner has requested relief primarily from the requirements of § 25.857(e), which permit carriage of cargo only when a Class E cargo compartment is installed on the airplane. Class E cargo compartments are usually remote from the flight deck and encompass the entire interior of the airplane. The means of controlling fires that might occur in the cargo compartment is to starve the fire of oxygen. This is accomplished by 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 has indicated the intention to retain all required attributes of a Class E cargo compartment, as addressed in §§ 25.855 and 25.857(e), with the single exception of allowing occupants to be accommodated in this cargo compartment. Hence, the FAA interprets this petition as indicating that the operator will retain the means required by § 25.857(e)(3) to control a Class E cargo compartment fire, in other words, decompression of the airplane. Accordingly, this grant is conditioned on the retention of these procedures.

The FAA has previously granted exemptions for carriage of supernumeraries in addition to crew on freighter airplanes, provided that certain other conditions are met. These conditions have varied, depending on the airplane design and the number of supernumeraries involved.

Due to the way that fire in the cargo compartment is to be controlled, it is necessary to limit supernumeraries on the airplane to those who have been found physically fit by the operator and have been briefed on the use of emergency equipment. This limitation on the supernumeraries is consistent with previous approvals and will be included in this approval.

The petitioner mentions that the request for relief is substantially similar to exemption no. 8164. In that exemption, that petitioner proposed the reactivation of doors 2L and 2R with escape slides. However, in this petition, ropes are proposed. We find that the escape slide installation is required to provide an adequate level of safety.

The petitioner requested an exemption from § 25.812(e), Amendment 25-116, that requires floor proximity emergency escape path marking in the passenger areas of the airplane. During the evaluation of this petition, the FAA determined the original certification basis for the 727-200 did not include Amendment 25-116, which codified the requirements for the floor proximity emergency escape path marking requirements. We have determined, therefore, that an exemption to this regulation is not required. We find that the proposed emergency lighting discussed in section 5.5 of the petitioner's letter provides an adequate level of safety.

The petitioner requested relief to allow remotely located supernumerary seating at the aft portion of the main deck Class E cargo compartment, without benefit of immediately available flightcrew or flight attendants. The petition also addressed the carriage of supernumeraries to attend to live animals. Any operations that include the carriage of any cargo other than live animals, either exclusively or in combination with live animals, is beyond the scope of this evaluation, and must be considered separately. However, cargo necessary for care of the animals may be carried. Additionally, supernumeraries may be on board the return flight to their initial departure location without live animals being carried. Limiting the cargo to live animals and the cargo needed for their care will minimize the risk of a fire in the Class E cargo compartment and provide an adequate level of safety, in conjunction with the other limitations, for the carriage of supernumeraries on the airplane.

The FAA also considers that smoking should be prohibited within the cargo compartment and that a placard indicating this prohibition, as specified in § 25.853(c) at Amendment 25-15, must be displayed in a conspicuous location.

The petitioner indicated that flightcrew activated and lighted "Fasten Seat Belt" signs that are visible to persons sitting in the supernumerary seats will be provided. A requirement for these signs is not included in the certification basis of the 727-200 airplane; however, these signs are required by § 121.317. Since type certification of the 727-200 airplane, part 25 has been amended to include a requirement for installation of these signs. The FAA considers these signs a required condition of this exemption.

The petitioner has proposed to install a standard aircraft two-way intercom/public address (PA) system that will be installed within reach of at least one of the supernumeraries at their seats and the PA system will be audible from anywhere in the aircraft. Also the PA system will be activated from either the flight deck, or from the supernumerary seating area. A functioning two-way interphone/PA (intercom) system is considered essential as the supernumerary seats are remotely located from the flight deck. A functioning PA system is considered essential for initiating and directing emergency evacuations and for providing pre- and post-impact instructions. This system is a required condition of this exemption.

The FAA considers that a flightcrew operated aural or visual annunciation, which would be recognized in the cargo compartment, must be installed to indicate during turbulence

that persons must return to their seats. The petitioner proposed installing “Return to Seat” signs along the length of the cargo compartment to address this issue. These signs will be required as a condition to this exemption.

The FAA considers that supernumeraries should have a supplemental oxygen system that is comparable to that required for passengers by part 25. However, taking into account the extra knowledge and training that supernumeraries will have, the FAA does not find that an equivalent system needs to be provided. The petitioner proposed that each of the 16 supernumeraries carry a portable PBE meeting the requirements of § 25.1447(c)(1), excluding the requirement that the number of units exceed the number of seats by 10%. The intent of these additional masks are 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.

Additionally, the petitioner proposed installing an automatically activated decompression alert which would be immediately recognizable throughout the main deck Class E cargo compartment. This design is intended to address the “immediately available,” “automatically presented,” and “uniformly distributed” requirements of § 25.1447(c)(1). The FAA considers that a manual backup for operation of the decompression alert must be provided, that the oxygen units must be sized adequately for continuous and uninterrupted use during worst-case flight duration following a decompression, and that supernumeraries must be trained about the location and use of these oxygen units. The supernumeraries must be trained to re-secure the portable units to their seats upon returning to their seats.

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. 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 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.

Paragraph 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 precludes this situation. Therefore, the petitioner’s proposal to carry a portable bottle with one oxygen mask attached to it is acceptable. The petitioner

proposes the flight crew directly alert the lavatory occupant to don the oxygen mask. The combination of the occupant carrying the oxygen unit, the direct alert, and the supernumerary training compensate for the oxygen mask in the lavatory not being installed and automatically presented.

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 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 Acting Administrator, Aeronautical Engineers, Inc. is hereby granted an exemption from 14 CFR 25.785(j), 25.812(e), 25.855(a), 25.857(e), and 25.1447(c)(1) to the extent necessary to allow type certification of Boeing Model 727-200 series airplanes with provisions for the carriage of supernumeraries. The following limitations apply and limitations number 1, 3.d. (if applicable), 4-7, and 12 must be documented in the Limitations Section of the Airplane Flight Manual:

1. Supernumeraries:

- a. A maximum of 16 supernumeraries may occupy the aft portion of the main deck Class E cargo compartment. The total maximum occupancy of the airplane is limited to 19 persons, including the flightcrew (3 on-duty flightcrew members, and up to 16 supernumeraries).
- b. The supernumeraries are limited to the categories specified in §§ 121.583(a)(4)(ii) and 121.583(a)(5), applicable only to persons referenced in § 121.583(a)(4)(ii).
- 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 able and trained to accomplish the necessary emergency procedures.

2. Supernumeraries Supplemental Oxygen:

Locations and Use: A supplemental oxygen equipment unit with a mask connected to it must be located so each occupant can put on the mask and activate oxygen flow while seated and while moving about the main deck Class E cargo compartment.

3. Design Requirements for Supernumeraries Supplemental Oxygen:

- 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 units 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 bottles have more than one setting for flow rate, the supernumeraries must be trained to use the 4 liters per minute NTPD setting.

4. Training Requirements for Supernumeraries Supplemental Oxygen:

The supernumeraries must be trained in the use of the oxygen units and to secure them when they occupy their seats. The supernumeraries must also be trained in making the determination whether oxygen is being delivered to the dispensing units. The training must identify that the units must be carried whenever the supernumerary leaves his or her seat (e.g., tending to the live animals, using the lavatory, etc.)

5. Decompression Alert:

An automatically activated aural and visual decompression alert must be provided and immediately recognizable throughout the main deck Class E cargo compartment to notify supernumeraries when to don oxygen masks. 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 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).

6. Turbulence Alert:

A flightcrew member operated aural or visual alert, which is recognized in the main deck Class E cargo compartment must be installed to indicate, during turbulence/ predicted turbulence, that persons must return to their seats. Appropriate procedures and limitations must be established to ensure that, at the onset of turbulence, the

flightcrew member alerts the supernumeraries to return to their seats. These procedures must include occupants in the lavatory. The pre-flight briefing must explain these alerts to the supernumeraries.

7. Placards:

Placard(s) are to be located inside and outside of the cargo compartment in a conspicuous location, either on or adjacent to both sides of the smoke barrier door. The placard(s) must indicate the following:

- The smoke barrier must be secured (i.e., the door must be closed)
- Smoking is not allowed within the cargo compartment

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

8. Alerting requirements:

- Must be distinctive and effective. Alerts must distinguish between decompression and turbulence.
- 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.
- Flightcrew activated and lighted “Fasten Seat Belt” signs are required and must be visible to persons sitting in the supernumerary seats.
- Flightcrew activated and lighted “Return to Seat” signs along the length of the cargo compartment are required and must be visible throughout the accessible areas of the Class E cargo compartment.

9. Public Address System:

A public address (PA) system must be installed. It must be audible throughout the occupiable compartments of the airplane, and activated from either the flight deck or from the supernumerary seating area. The public address system must comply with § 25.1423 at Amendment 25-79.

10. An interphone system must be installed that provides two-way communication between the supernumerary seating area and the flight deck and is within reach of at

least one of the supernumeraries at his/her seat. This system must be independent of the public address system except for handsets, headsets, microphones, selector switches, and signaling devices.

11. In providing for a compensating level of safety for the main deck occupants, escape slides at doors 2L and 2R, a fire extinguisher, first aid kit, and any other required equipment will be provided in accordance with the relevant provisions of 14 CFR part 25. For emergency egress assistance, an axe will be provided to assist in the case of a jammed or stuck exit door as required by § 121.309(e).
12. Operations are limited to the carriage of live animal cargo and cargo which is needed to care for the animals. Supernumeraries may be on board the return flight to their initial departure location without live animal cargo provided no other cargo is being carried; however, the other conditions of this exemption are still applicable to this flight.

Issued in Renton Washington, on May 29, 2008.

/s/

Ali Bahrami
Manager, Transport Airplane Directorate
Aircraft Certification Service