CORRECTED COPY

This is a correction to Exemption No. 11060, dated September 23, 2014. The partial grant of exemption is corrected to exclude a grant of exemption from § 25.1445(a)(2), because the petitioner's design is compliant with this requirement as explained in the FAA analysis.

Exemption No. 11060

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

In the matter of the petition of **ST Aerospace Mobile, Inc** for an exemption from §§ 25.785(j), 25.807(g)(1), 25.807(i)(1), 25.810(a)(1), 25.812(e), 25.813(b)(1), 25.813(b)(6), 25.1445(a)(2), and 25.1447(c)(1) of Title 14, Code of Federal Regulations	**Regulatory Docket No. FAA-2014-0351**

PARTIAL GRANT OF EXEMPTION

By letter dated May 9, 2014, Mr. Kumaresan Subramaniam, Engineering Director, ST Aerospace Mobile, Inc., 2100 9th Street, Brookley Complex, Mobile, Alabama, 36615, petitioned the Federal Aviation Administration (FAA) for exemption from the requirements of §§ 25.785(j), 25.807(g)(1) and (i)(1), 25.812(e), 25.813(b)(1) and (6), 25.1445(a)(2), and 25.1447(c)(1) of Title 14, Code of Federal Regulations (14 CFR). It was confirmed via telephone conversation on August 15, 2014, that the petitioner also intended to request relief from the requirements of § 25.810(a)(1). The requested exemption, if granted, would permit relief from the requirements of these regulations to allow carriage of non-crewmembers (commonly referred to as supernumeraries) within the flight deck area on Boeing Model 757-200 airplanes which have been converted from a passenger to freighter configuration.

The petitioner requests relief from the following regulations:

> **Section 25.785(j), at Amendment 25-88**, requires, in pertinent part, handholds to enable passengers to steady themselves when moving about the cabin, in the event the airplane encounters moderately rough air.
>
> **Section 25.807(g)(1), at Amendment 25-114**, requires that, if overwing exits are not provided, airplanes having a passenger seating configuration of 1 to 9 seats must be fitted with an emergency exit having at least the dimensions of a Type III exit in each side of the fuselage.
>
> **Section 25.807(i)(1), at Amendment 25-114**, requires that airplanes having a passenger seating configuration of nine or fewer seats, excluding pilot seats, must have at least one exit above the waterline in each side of the airplane, meeting at least the dimensions of a Type IV exit.

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 25-128, requires, in pertinent part, that floor proximity emergency escape-path markings must provide emergency evacuation guidance for passengers when all sources of illumination more than 4 feet above the cabin aisle floor are totally obscured.

Section 25.813(b)(1), at Amendment 25-128, requires, in pertinent part, that each passenger emergency floor-level exit, equipped with an assist means, have an assist space next to that exit.

Section 25.813(b)(6), at Amendment 25-128, requires a handle at each assist space to enable crewmembers to steady themselves when assisting in an evacuation.

Section 25.1445(a)(2), at Amendment 25-00, requires that when crew and passengers share a common oxygen supply source, the distribution system must have a means to separately reserve the minimum supply required by the flightcrew on duty.

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. 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.

Related sections of 14 CFR

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 having to comply 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 supports its request with the following information:

This section quotes the relevant information from the petitioner's request, with minor edits for clarity. The complete petition is available at the Department of Transportation's Federal Docket Management System, on the Internet at http://regulations.gov, in Docket No. FAA-2014-0351.

ST Aerospace Mobile (STA Mobile) is the applicant for a multiple airplane Supplemental Type Certificate for conversion of Boeing 757-200 passenger airplanes to a 15-Unit Load Device (ULD) position (15-P) freighter configuration under FAA Project Number ST14446AT-T. STA Mobile expects issuance of STC by October 15, 2014.

The purpose of this letter is to petition for an exemption from the requirements of certain sections of Title 14, Code of Federal Regulations (14 CFR), Part 25, to allow carriage of non-crewmembers, or 'supernumerary' personnel, in a compartment within the reconfigured flight deck on the converted airplanes. Supernumeraries will be restricted to those persons complying with § 121.583 (a)(1) through (a)(8).

STA Mobile requests that the publication and comment procedures be waived in accordance with § 11.29 and § 11.87 for the following reasons:

i. Similar exemptions have been issued by the FAA for STC ST03562AT (STA Mobile 757-200SF), Boeing 757-200PF & STC ST01529SE (Precision Conversions' 757-200PCF)

ii. Granting this petition would not set a precedent

DESCRIPTION OF CONVERSION

The main features of the intended conversion from the passenger aircraft configuration include:

a) Installation of a side-opening main deck cargo door (MDCD) and its surround structure. The MDCD design is based on that used in the STA Mobile 757-200 Combi Freighter (STC ST03952AT) construction.

b) Installation of a 9g rigid cargo barrier (RCB) at approximately STA 335, identical to that in the Boeing 757-200PF "package freighter ('PF')" design, providing separation between the flight deck and the main deck cargo compartment.

c) Installation of a vendor-developed main deck cargo loading system (CLS) to accommodate 15 industry-standard 88 x 125 contoured ULDs, such as the International Air Transport Association (IATA) SAA container, on the main deck, using a floor track system based on, and modified from, the incoming passenger aircraft main deck seat track installation, similar to the Boeing 757-200PF "package freighter" design.

d) Accommodation for six in the flight deck, with two pilots and two observers being accommodated within the original flight deck layout of the incoming passenger configuration aircraft (with observers on bulkhead-mounted seats), and two supernumerary personnel located just forward of the RCB, identical to the Boeing 757-200PF package freighter configuration.

e) Installation of a new crew entry door (CED), identical to that of the Boeing 757-200PF, centered at approximately STA 311 on the left-hand side of the fuselage forward of the RCB, in place of the forward passenger and service doors existing on the incoming passenger configuration aircraft.

f) Structural modifications related to the installation of the MDCD, CED, RCB, and CLS, including, but not necessarily limited to, the floor and fuselage monocoque (skinframe-stringer) structures.

g) Systems modifications related to the air conditioning, communications, electrical power, fire protection, flight controls, hydraulics, indicating and recording, lighting, pitot-static (navigation), oxygen, as well as water and waste handling, based on the 14-P special freighter design, to enable the main deck cargo compartment to meet the Class E cargo compartment classification requirements, with a one-minute smoke detection system.

h) Interior modifications and installations related to side-wall and ceiling liners, new flight deck lavatory and emergency equipment.

i) Retention of all certificated flight performance as well as weight and balance limitations (maximum taxi weight, maximum take-off weight, maximum zero fuel weight, maximum landing weight and center of gravity range) of the incoming passenger configuration aircraft.

j) Damage tolerance based on structural maintenance inspections featuring a minimum of 20,000 cycles since modification for initial threshold for new structures, and no less than 3,000 cycles between inspections using detail visual inspection as basis, for modified, new and affected structures, to be listed as Airworthiness Limitation Items in the Maintenance Planning Data document and its supplement.

This petition seeks relief from the requirements of the following sections of 14 CFR, for the 15P conversion:

- § 25.785(j), Amendment 25-88, Seats, berths, safety belts, and harnesses
- § 25.807(g)(1) and (i)(1), Amendment 25-114, Emergency Exits
- § 25.812(e), Amendment 25-128, Emergency Lighting
- § 25.813(b)(1) and (6), Amendment 25-128, Emergency Exit Access
- § 25.1445(a)(2), Amendment 25-0, Equipment Standards for the Oxygen Distributing System
- § 25.1447(c)(1), Amendment 25-116, Equipment Standards for Oxygen Dispensing Units

The following information is provided to support this petition:

To date, there have been many passenger-to-freighter conversions being carried out by the industry and the reconfigured flight deck layout design has accumulated a considerable satisfactory service history.

In accordance with § 121.583, all persons that may be carried on the flight deck will have special training, which includes proper methods for egress from the airplane and use of emergency equipment. Limitations will be imposed on the airplane operator to find that all occupants are physically able to use the escape means provided. When supernumeraries are carried, they will be briefed prior to each flight as to the location and use of the emergency egress equipment and the supplemental oxygen equipment. Supernumeraries are also prohibited from being in the cargo area during any flight operation. These limitations will be included as part of the Airplane Flight Manual Supplement (AFMS) similar to that of STC ST03562AT.

The RCB sliding door will be closed and locked prior to taxi and will not be opened again for access to the cargo area until the airplane has parked at its destination. Steps will also be taken to ensure that no one is in the cargo area prior to the locking of the sliding door before taxi.

Occupancy of the flight deck area of the 15P-configured airplane is limited to a total of six (6) persons, which will consist of supernumeraries as defined by § 121.583 (a)(1) through (a)(8), and personnel permitted on the flight deck as defined by § 121.547. This limitation will be included in the AFMS similar to that of STC ST03562AT.

The AFMS will include a requirement for the flight crew to brief supernumeraries on the use of the escape provisions prior to each flight.

§ 25.785(j), Amendment 25-88, "If the seat backs do not provide a firm handhold, there must be a handgrip or rail along each aisle to enable persons to steady themselves while using the aisles in moderately rough air."

Justification:

Hand holds are not available in the flight deck area due to the space constraint. The configuration of the flight deck area with the supernumerary seats' backs attached on the RCB does not permit using the seat back as the traditional handhold. The lack of handhold is identical to that of STA Mobile 757-200SF supernumerary area configuration.

A Petition for Exemption was submitted by STA Mobile in connection with the STA Mobile 757-200SF with regards to the equivalent § 25.785(d) at Amendment 25-32, and this resulted in FAA Grant of Exemption No. 9487.

The flight crew area is limited to the use of operator assigned supernumeraries or flight crew (not public passenger) as described by § 121.583 (a)(1) through (a)(8) and/or § 121.547 whom have higher level of training and knowledge of the flight deck area layout. There will also be a recommendation to supernumeraries to remain seated with their seat belts fastened. Therefore, an acceptable level of safety is provided.

§ 25.807(g)(1) and (i)(1), Amendment 25-114, "25.807(g)(1): For a passenger seating configuration of 1 to 9 seats, there must be at least one Type IV or larger overwing exit in each side of the fuselage or, if overwing exits are not provided, at least one exit in each side that meets the minimum dimensions of a Type III exit.

25.807(i)(1): Ditching emergency exits for passengers. Whether or not ditching certification is requested, ditching emergency exits must be provided in accordance with the following requirements, unless the emergency exits required by paragraph (g) of this section already meet them:

(1) For airplanes that have a passenger seating configuration of nine or fewer seats, excluding pilot seats, one exit above the waterline in each side of the airplane, meeting at least the dimensions of a Type IV exit."

Justification:

Flight deck is equipped with a left hand crew entry door (22″ x 56″), with a step-up inside the aircraft of 10 inches. This meets the size requirement of a Type III door for the LH side of the aircraft. The RH side of the aircraft does not have a Type III door. However, the right hand flight deck window will be modified to be openable from the outside to serve as a flight crew emergency exit. Both exits are above the waterline, and will be

equipped with ropes to serve as escape means. Recommended evacuation procedures will be briefed to the supernumeraries prior to each flight. Since the supernumeraries have a higher level of training and knowledge of the airplane configuration than a typical passenger, an acceptable level of safety is provided.

The same exemption was granted to the Boeing Package Freighter certified under TCDS A2NM, using Exemption No. 4808, and to Precision Conversions' PCF (STC ST01529SE), using Exemption No. 8258, using the same justifications.

§ 25.812(e), Amendment 25-128, "Floor proximity emergency escape path marking must provide emergency evacuation guidance for passengers when all sources of illumination more than 4 feet above the cabin aisle floor are totally obscured. In the dark of the night, the floor proximity emergency escape path marking must enable each passenger to--

(1) After leaving the passenger seat, visually identify the emergency escape path along the cabin aisle floor to the first exits or pair of exits forward and aft of the seat; and
(2) Readily identify each exit from the emergency escape path by reference only to markings and visual features not more than 4 feet above the cabin floor."

Justification:

… the configuration of the converted Boeing Model 757-200 in the flight deck area does not provide floor proximity emergency lightings, as required by § 25.812(e).

The proximity of the two supernumeraries to the emergency exits, via the left hand Crew Entry Door and the right hand flight deck window, provides a level of safety that would not be enhanced by the installation of floor proximity emergency lightings. In addition, supernumeraries have a higher level of training and knowledge of the emergency exit layout than the typical passenger. Hence, the configuration of the flight deck area provides an acceptable level of safety for the supernumeraries.

The absence of floor proximity emergency exit path marking is identical to the configuration of STA Mobile 757-200SF. A Petition for Exemption was submitted by STA Mobile for STA Mobile 757-200SF and resulted in FAA Partial Grant of Exemption (No. 9487). In Exemption No. 9487, the FAA had granted the exemption based on the same justifications described above. The same exemption was granted to Precision Conversions' PCF (STC ST01529SE), using Exemption No. 8258, based on the same justifications.

§ 25.813(b), Amendment 25-128, "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."

Justification:

The configuration of the flight area does not provide an assist space adjacent to each exit, due to the space constraint within the flight deck. However, since the supernumeraries will have a higher level of training than a typical passenger, they will have no need for crew assistance. In addition, in the relatively small confines of the flight deck area, the flight crew can easily provide instructions and some physical assistance to the supernumeraries, if needed.

The absence of an assist space adjacent to each exit is identical to the configuration of STA Mobile 757-200SF. A Petition for Exemption was submitted by STA Mobile for STA Mobile 757- 200SF and resulted in FAA Partial Grant of Exemption (No. 9487). In Exemption No. 9487, the FAA had granted the exemption based on the same justifications described above. The same exemption was granted to the Boeing Package Freighter certified under TCDS A2NM, using Exemption No. 4808, and to Precision Conversions' PCF (STC ST01529SE), using Exemption No. 8258.

§ 25.1445(a)(2), Amendment 25-0, "When oxygen is supplied to both crew and passengers, the distribution system must be designed for either--

(1) A source of supply for the flight crew on duty and a separate source for the passengers and other crewmembers; or

(2) A common source of supply with means to separately reserve the minimum supply required by the flight crew on duty."

Justification:

There is no means to separate the means of oxygen to reserve the minimum supply required by the flight crew as the supernumeraries occupy the same flight deck area as the flight crew. Since the two supernumeraries are co-located within the enlarged cockpit, they can communicate directly and receive instructions from the flight crew. Moreover, the common oxygen cylinder is able to supply sufficient supplemental emergency oxygen for up to six occupants for an ETOPS duration of up to 120 minutes

The absence of the ability to separate the oxygen supply for the flight crew use is identical to that on the Boeing 757-200 Package Freighter certified under TCDS A2NM and the Precision Conversions' PCF (STC ST01529SE). In Exemption No. 8258, the FAA had granted the exemption based on the same justifications described above.

§ 25.1447(c)(1), Amendment 25-116, "There must be an oxygen dispensing unit connected to oxygen supply terminals immediately available to each occupant wherever seated, and at least two oxygen dispensing units connected to oxygen terminals in each lavatory. The total number of dispensing units and outlets in the cabin must exceed the number of seats by at least 10 percent. The extra units must be as uniformly distributed throughout the cabin as practicable. If certification for operation above 30,000 feet is requested, the dispensing units providing the required oxygen flow must be automatically presented to the occupants before the cabin pressure altitude exceeds 15,000 feet. The

crew must be provided with a manual means of making the dispensing units immediately available in the event of failure of the automatic system."

Justification:

The two supernumeraries will have two quick-donning type masks similar to the flight crew that are not automatically presented. However, the high level of training of the supernumeraries and the aural warning system will allow the flight crew to command the supernumeraries to don the masks, providing an adequate level of safety to all occupants. The lavatory will also be outfitted with a portable walk around oxygen bottle equipped with an oxygen mask. This area will not be utilized for takeoff and landing.

The absence of the automatic presentation of the dispensing units for oxygen use is identical to the configuration of STA Mobile 757-200SF. A Petition for Exemption was submitted by STA Mobile for STA Mobile 757-200SF and resulted in FAA Partial Grant of Exemption (No. 9487). In Exemption No. 9487, the FAA had granted the exemption based on the same justifications described above. The same exemption was granted to Precision Conversions' PCF (STC ST01529SE), using Exemption No. 8258, based on the same justifications.

Evaluation of Public Interest:

The presence of trained personnel on board the airplane when cargo is carried will enhance flight safety, which is in the public interest.

Granting this exemption will enhance the utility of the airplane for the operator by ensuring that needed cargo management personnel will be available at each flight destination. This will reduce shipping costs and transit time, which is in the public interest.

As Boeing 757-200 passenger airplanes are converted into 15P-configured airplanes, airlines will replace them with new passenger airplanes which meet newer 14 CFR Part 25 Amendments. Over time, this will have the effect of raising the safety level of the passenger airline fleets, which is in the public interest.

Petition for Exemption:

Based on the information provided, STA Mobile, hereby petitions for exemption from the following sections of 14 CFR Part 25 for Boeing 757-200 passenger airplanes converted to a 15P configuration under FAA STC Project ST14446AT-T to allow the carriage of supernumeraries in the flight deck area:

- § 25.785(j), Amendment 25-88, Seats, berths, safety belts, and harnesses
- § 25.807(g)(1) and (i)(1), Amendment 25-114, Emergency Exits
- § 25.812(e), Amendment 25-128, Emergency Lighting
- § 25.813(b)(1) and (6), Amendment 25-128, Emergency Exit Access
- § 25.1445(a)(2), Amendment 25-0, Equipment Standards for the Oxygen Distributing System

- § 25.1447(c)(1), Amendment 25-116, Equipment Standards for Oxygen Dispensing Units

STA Mobile respectfully requests favorable FAA consideration of this petition.

Federal Register publication

The FAA has determined that good cause exists for waiving the requirement for *Federal Register* publication for public comment because the request is identical in all material respects to previously granted exemptions; the exemption, if granted, would not set a precedent; and any delay in acting on this petition would be detrimental to ST Aerospace Mobile, Inc.

The FAA's analysis

The FAA considers the petitioner's proposal to be in the public interest for the following reasons:

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

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 for passengers and crewmembers. 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 handhold requirement of § 25.785(j), at Amendment 25-88, is to ensure that occupants have a means to steady themselves in moderately rough air while traversing the main aisles of typical passenger airplanes. The petitioner states that the lack-of-handhold issue is identical to that of the ST Aerospace Mobile, Inc., 757-200SF supernumerary-area configuration for which the FAA granted relief via Exemption No. 9487. On the proposed airplane, the FAA requires the same limitation for a crew-operated visual/aural alerting system as stated in Exemption No. 9487. This alerting system enables the crew to indicate, at the onset of turbulence, that supernumeraries must return to their seats. The alert must be recognized in accessible areas in the supernumerary compartment and lavatory and indicate, during turbulence, those persons must return to their seats.

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). The Boeing Company has tested the usability of such a right flight deck 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 flight deck 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 flight deck 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. It should be noted that, if life-rafts must be installed for flights over water, they must be of a design that can be launched out of the right flight deck window.

As stated above, because of their training and physical capabilities, as well as other factors, flight crewmembers are different than typical passengers, and as such, the means required by part 25 to enable flight crewmembers to reach the ground are different from those required for passengers. As an example, ropes are allowed as the sole means of escape for flight crewmembers, but slides or equivalent means are required for passengers.

Although supernumeraries must be considered "passengers" by default (because they are not crewmembers) under part 25, the FAA recognizes that supernumeraries normally have unique training to perform their roles on an airplane. As indicated above, the FAA has previously granted exemptions to allow the carriage of supernumeraries on cargo airplanes without complying with all of the part 25 requirements applicable to passengers.

The petitioner has proposed to not install an assist means at the crew entry door. We have reviewed figure 2 in the information submitted by the petitioner, and confirmed with a phone call with the petitioner on August 15, 2014, that the intent of the petitioner is to also request relief from the requirements of § 25.810(a)(1). This section requires the passenger emergency exits to be equipped with a self-supporting slide or equivalent assist means. ST Aerospace Mobile, Inc. has proposed to install descent devices (commonly known as inertia reels) at the crew entry door emergency exit.

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 767-300F 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 crew entry door 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 petitioner requested an exemption from § 25.812(e) that requires floor-proximity emergency escape-path markings in the passenger areas of the airplane. During the evaluation of this petition, the FAA determined that the original certification basis for the 757- 200 did not include Amendment 25-58, which codified the requirements for the floor-proximity emergency escape-path marking requirements. The petitioner has volunteered to step up to this amendment level of § 25.812 and then request an exemption from that requirement. The FAA has elected to revert the petitioner’s certification basis to Amendment 25-32 for § 25.812, which does not include the floor-proximity emergency escape-path marking requirements rather than grant an exemption from that requirement.

The petitioner's Boeing Model 757-200 airplanes have a crew entry door on the left and the number 2 flight deck windows, left and right, available for evacuation. However, the configuration does not provide an assist space or an assist handle next to the exit to allow a crew member to assist in the evacuation of the supernumeraries as required by § 25.813(b). With respect to the lack of an assist space and assist handle adjacent to the crew entry door on the left, the FAA has determined that the supernumeraries will have a higher level of training than a typical passenger, and will therefore have less need for crew assistance. Additionally, in the relatively small confines of the flight deck and supernumerary area, the flightcrew can easily provide instructions and some physical assistance, if needed. The FAA considers that an assist space and assist handle are not necessary in this case due to the size of the exit and the inertial reel assist means provided with the number of occupants, and to the higher level of training of the occupants.

The petitioner has requested relief from the requirements of § 25.1445(a)(2) which require that when a single source of oxygen is provided for the flightcrew and passengers, a means must be provided to separately reserve the minimum supply required by the flightcrew on duty. The petitioner has proposed a design of the system that is intended to provide oxygen to four supernumeraries and the flightcrew, as if they were all required flight crewmembers. Supplying all six occupants as if they were all flightcrew on duty in the flight deck would comply with the regulations and thus, would not require an exemption. However, the amount of oxygen must be sufficient for operational requirements for the airplane mission.

The FAA considers that the supernumeraries should have an oxygen system that is comparable to that of passengers. However, taking into account the extra knowledge and training that these persons will have, it is not necessary that an equivalent system be installed. Section 25.1447(c)(l) 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. Supernumeraries on the petitioner's Boeing Model 757 airplanes will not have this indication. In order for an acceptable level of safety to be provided, an automatically activated aural/visual decompression signal must be immediately

recognizable throughout the supernumerary seating area and the lavatory. Operation of this signal must be automatic with flightcrew manual action as a backup.

Additionally, the petitioner proposed to provide supernumeraries with a portable walk-around oxygen bottle equipped with a supplemental passenger oxygen mask when accessing the lavatory. To ensure adequate hypoxia protection during non-sedentary use, all of the oxygen units must meet the requirements for flightcrew oxygen equipment (§ 25.1443(a) or (b)), or the equipment must be shown to protect the supernumerary from hypoxia at an activity level required to return to his or her seat following a rapid decompression to 25,000 feet cabin altitude. One acceptable means of compliance is the use of a continuous-flow passenger oxygen mask that meets FAA Technical Standard Order TSO-C64a, or later revision, and is approved for use up to at least 40,000 feet cabin altitude, and is connected to an oxygen bottle that supplies a flow rate of at least 4 liters per minute NTPD (Normal Temperature and Pressure Dry) at a cabin altitude of 23,000 feet. If the oxygen bottle regulator has more than one flow rate it must be set to 4 liters per minute NTPD.

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

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

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

The FAA's decision

In consideration of the foregoing, I find that a partial grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. §§ 40113 and 44701, delegated to me by the Administrator, ST Aerospace Mobile, Inc., is hereby granted a partial exemption from 14 CFR §§ 25.785(j), 25.807(g)(1) and (i)(1), 25.810(a)(1), 25.813(b)(1) and (6), and 25.1447(c)(1) to the extent necessary to allow type certification of Boeing Model 757-200 series airplanes with provisions for the carriage of supernumeraries. The petitioner is not granted an exemption from § 25.812(e), Amendment 25-128, or from § 25.1445(a)(2), Amendment 25-00.

The following conditions apply and limitations numbers 1 through 7, 8.d, and the preflight briefings required by 7 and 9, below, must be documented in the limitations section of the airplane flight manual:

1. A maximum of four supernumeraries may occupy the area on the flight deck.

2. The supernumeraries are limited to the categories specified in §§ 121.583(a)(1) through 121.583(a)(8).

3. Supernumeraries are prohibited from being in the cargo area during any flight operation. The pre-flight briefing must inform supernumeraries of this requirement.

4. Prior to each flight, a flightcrew member must brief each supernumerary on the use of the exits, assist means, and emergency equipment.

5. The operator must determine that each supernumerary is physically able and trained to accomplish the necessary emergency procedures.

6. A flightcrew-operated aural or visual annunciation that would be recognized in the supernumerary seating area and lavatory must be installed to indicate, during turbulence, that persons must return to their seats. Appropriate procedures/limitations must be established to ensure that the flightcrew signals the supernumeraries to return to their seats at the onset of turbulence and for landing.

7. Decompression Alert:

An automatically activated aural decompression signal must be present and immediately recognizable in the lavatory to notify supernumeraries when to don 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, and cover procedures for donning the masks and activating the flow of oxygen.

8. Supernumeraries Fixed and Portable Oxygen:

a. There must be at least one fixed non-automatically presenting oxygen unit installed and located such that each occupant can don a mask and can simply activate the oxygen flow while seated. The oxygen masks must be within easy reach of the supernumeraries while seated. The unit must provide an indication to the user that oxygen is flowing.

b. There must be at least one portable oxygen unit with a mask connected to it located in the lavatory. The unit must provide an indication to the user that oxygen is flowing.

c. The oxygen units must meet the performance requirements of § 25.1443(a) or § 25.1443(b), or the equipment must be shown to protect the supernumerary from hypoxia at an activity level required to return to his or her seat following a rapid decompression to 25,000 feet cabin altitude.

d. The supernumeraries must be trained in the use of the fixed and portable oxygen units. The supernumeraries must also be trained in making the determination whether oxygen is being delivered to the dispensing units.

e. The fixed and portable oxygen units must be sized adequately for continuous and uninterrupted use during worst-case flight duration following decompression, or must be of sufficient duration to allow the supernumeraries to return to their seats where additional oxygen is readily accessible for the remainder of the decompression.

9. Placards:

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

a. Do not occupy the Class E cargo compartment during taxi, take-off, and landing and flight.

b. The smoke barrier must be secured (i.e., the doors must be closed) except when entering or leaving the cargo compartment.

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

10. Alerting Requirements:

a. Must be distinctive and effective. The alert for turbulence must be clearly distinguishable from the alerts for decompression/fire/smoke.

b. 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.

c. Aural alerts must be loud enough to be heard during all expected operational conditions including a rapid decompression where the ambient noise level will increase.

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

Issued in Renton, Washington, on September 23, 2014.

/s/

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