Exemption No. 10397

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), 25.812(e), 25.813(a), and 25. 813(b) of Title 14, Code of Federal Regulations	**Regulatory Docket No. FAA-2011-0988**

PARTIAL GRANT OF EXEMPTION

By letter dated July 15, 2011, Mr. Terence Tan, Engineering Director, ST Aerospace Mobile, Inc., 2100 9th Street, Brookley Complex, Mobile, AL 36615, petitioned the Federal Aviation Administration (FAA) for exemption from the passenger requirements of §§ 25.785(j), 25.812(e), 25.813(a), and 25. 813(b) of Title 14, Code of Federal Regulations (14 CFR) for Boeing Model 757-200 passenger airplanes converted to passenger/freighter combination (combi) airplanes. The proposed exemption, if granted, would allow carriage of two non-crewmembers (commonly referred to as supernumeraries) in an area just aft and outside of the flight deck, and two non-crewmembers on the flight deck, on these combi airplanes. The maximum occupancy for these combi airplanes is six persons, including the flightcrew.

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 25.812(e), at Amendment 25-128**, requires, in pertinent part, that floor-proximity emergency-escape-path markings must provide emergency-evacuation guidance for passengers.
>
> **Section 25.813(a), at Amendment 25-128**, requires, in pertinent part, that passengers are provided an unobstructed passageway of at least 20 inches in width leading to a Type I emergency exit.

Section 25.813(b), 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.

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.

Section 25.813(c), at Amendment 25-128, requires, in pertinent part, that passenger access is provided from the nearest aisle to a Type III emergency exit. For airplanes that have a passenger seating configuration of 19 or less, there may be minor obstructions in this region, if there are compensating features to maintain the effectiveness of the exit.

The petitioner supports its request with the following information:

This section quotes the relevant information from the petitioner's request. 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-2011-0988.

ST Aerospace Mobile (STA Mobile) is the applicant for a multiple airplane Supplemental Type Certificate for conversion of Boeing 757-200 passenger airplanes into an "8 pallet/80-passenger" Combi configuration under FAA Project Number ST13005AT-T. STA Mobile expects issuance of STC by November 30, 2011.

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 aft of the 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)

ii. Granting this petition would not set a precedent

DESCRIPTION OF CONVERSION

The main deck of the Combi configuration consists of the flight deck, supernumerary area, main deck cargo compartment (MDCC) and a passenger cabin. The flight deck and supernumerary area is separated from the MDCC by a 9g Rigid Cargo Barrier (RCB) installed per STC ST02115LA at approximately STA [fuselage station] 379. The passenger cabin is separated from the MDCC by a Smoke Barrier at approximately STA 1115.

The supernumerary area will accommodate up to two supernumeraries as defined by § 121.583 (a)(1) through (a)(8). The MDCC aft of the RCB is converted into a Class C cargo compartment, equipped with a Halon 1301 fire suppression system. The MDCC will be able to hold eight 88 x 125 or 88 x 108 sized pallets. The passenger cabin will be able to accommodate up to 80 passengers and 4 flight attendants.

The Combi configuration retains Type I doors 1L and 1R, complete with escape slides or slide-rafts. A rigid 9G barrier is installed just aft of door 1L, permitting both doors 1L and 1R to be used in an emergency evacuation. There is a sliding door on the left side of the RCB to provide access to the main deck cargo compartment. Two business class supernumerary seats are installed immediately forward of the RCB.

The RCB is sealed to prevent smoke penetration. The two supernumerary seats are provided with supplemental oxygen through a salvaged passenger service unit with chemical oxygen generators and drop-down masks. Two-way communication is provided from the flight deck to each supernumerary seat through the relocation of an original flight attendant handset to the forward face of the RCB.

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

- § 25.785(j), Amendment 25-88, Seats, berths, safety belts, and harnesses
- § 25.812(e), Amendment 25-128, Emergency Lighting
- § 25.813(a) and (b), Amendment 25-128, Emergency Exit Access

The following information is provided to support this petition:

To date, STA Mobile has re-delivered forty (40) STA Mobile 757-200SF configured airplanes to Federal Express since the issuance of STC ST03562AT on April 2, 2008 and the supernumerary area layout design has accumulated a considerable satisfactory service history.

In accordance with § 121.583, all persons that may be carried on the flight deck and supernumerary area will have special training, which includes proper methods for egress from the airplane and use of emergency equipments. Limitations will be imposed on the airplane operator to find that all occupants of the supernumerary area 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, the supplemental oxygen equipment and the communication 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. Admission to the flight deck of the Combi-configured airplane will be limited to those people that meet the requirements of § 121.547, "Admission to the flight deck."

Occupancy of the flight deck and supernumerary area of the Combi-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 modification will include provisions to carry personnel as defined by § 121.547 in the supernumerary area in compliance with § 25.722(c).

The Flight Crew Operations Manual Supplement (FCOMS) will provide instructions on the recommended evacuation procedures using doors 1L or 1R and the AFMS will include a requirement for the flight crew to brief supernumeraries on use of the escape provisions and communication equipments 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 supernumerary area. The configuration of the supernumerary area with the seats' backs positioned along the perimeter of 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 supernumerary 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 supernumerary 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.

§ 25.812(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."

Justification:

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

The proximity of the two supernumeraries to the doors 1L and 1R, 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 supernumerary area provides an acceptable level of safety for the supernumeraries.

§ 25.813(a), Amendment 25-128, "Passageways between individual passenger areas and those leading to Type I, Type II, or Type C emergency exits must be unobstructed and at least 20 inches wide."

Justification:

There are two Type I emergency exits located at the supernumerary area. However, the widths of the passageways between supernumerary seats and the Type I emergency exits fall short of the required minimum 20 inches at certain points. The point of the shortest passageway width, approximately 10.9 inches, is from the supernumerary seat to the edge of Lavatory A.

STA Mobile seeks to "de-rate" the two Type I emergency exits into Type III emergency exits. As such, the minimum 20 inches requirements in accordance with § 25.813(a) will no longer be applicable. Since the supernumerary area and the passenger cabin compartment are completely isolated from each other, STA Mobile affirms that the passenger seating configuration of the supernumerary area is inaccessible from the passenger cabin compartment aft of the smoke barrier. As such, there are only 6 occupants (including the flight crew) who will have access to Door 1L and 1R.

The applicable regulation, § 25.813(c)(2)(ii) at Amendment 25-128 states that "For airplanes that have a passenger seating configuration of 19 or fewer, there may be minor obstructions in this region, if there are compensating factors to maintain the effectiveness

of the exit." The smaller passageway may be considered as a minor obstruction and the compensating factor would be the small number of supernumeraries and flight crew whom have a higher level of training and knowledge of the emergency exit layout than the typical passenger. Given that there are only two supernumeraries, there would not be any congestion in the passageways to the emergency exits during egress. In addition, the supernumeraries are in close proximity of the two Type I emergency exits. This is coupled with the fact that the supernumeraries are equipped with a higher level of knowledge of the airplane configuration than the typical passenger. Therefore, an acceptable level of safety is obtainable when the Type I emergency exits are "de-rated" as Type III emergency exits.

§ 25.813(b), Amendment 25-128, "Adequate space to allow crewmember(s) to assist in the evacuation of passengers must be provided."

Justification:

The configuration of the supernumerary area does not provide an assist space adjacent to each exit. 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 supernumerary 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.

Evaluation of Public Interest:

The presence of trained personnel on board the airplane when live or hazardous 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, which is in the public interest.

As Boeing 757-200 passenger airplanes are converted into Combi-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.

The usage of Combi-configured airplanes will optimize the space usage in flights in cases where there is a low demand in passenger flights and a high demand in cargo

transportation. This will help reduce the number of flights and in turn lead to a reduction of air pollution, 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 Combi configuration under FAA STC Project ST13005AT-T to allow the carriage of supernumeraries in the supernumerary area aft of the flight deck:

- § 25.785(j), Amendment 25-88
- § 25.812(e), Amendment 25-128
- § 25.813(a) and (b), Amendment 25-128

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 because 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. Although the proposed configuration is for that of a combi, we find that rationale used for freighters is applicable.

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 hand-holds 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 number 9487. On the proposed airplane, the FAA requires the same limitation for a crew-operated visual/aural alerting system as stated in exemption number 9487. This alerting system enables the crew to indicate, at the onset of turbulence, that supernumeraries in the cargo compartment must return to their seats. The alert must be recognized in accessible areas in the supernumerary compartment and indicate, during turbulence, that persons must return to their seats.

The petitioner requested an exemption from § 25.812(e) that requires floor-proximity emergency-escape-path marking 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 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 further requests relief from § 25.813(a) for a reduced passageway width below the required 20 inches. In the case of a combi with a supernumerary compartment separate from the passenger compartment, we have determined that an exemption to this paragraph is not necessary. Since the petitioner is re-rating this Type I exit to a Type III, and the compartment has only 6 occupants, we find that the proposed 10.9-inch passageway width between the seat and the lavatory should be reviewed during the interior compliance inspection with a direct compliance finding. In this case, the petitioner may be able to show compliance with § 25.813(c) in the 19 passengers or less section in lieu of § 25.813(a).

The petitioner's Boeing Model 757-200 airplanes have both door 1 left and door 1 right available for evacuation. These doors will be equipped with inflatable escape slides or slide/rafts. However, the configuration does not provide an assist space 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 adjacent to the door 1 left and door 1 right, 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 is not necessary in this case due to the size of the exits and the inflatable assist means provided with the number of occupants and to the higher level of training of the occupants.

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) and 25.813(b) to the extent necessary to allow type certification of Boeing Model 757-200 series airplanes with provisions for the carriage of supernumeraries. The following limitations apply and must be documented in the limitations section of the airplane flight manual:

1. A maximum of two supernumeraries may occupy the area just aft of the flight deck and two supernumeraries may be 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 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.

Issued in Renton Washington, on November 29, 2011.

/s/ Ali Bahrami

Ali Bahrami
Manager, Transport Airplane Directorate
Aircraft Certification Service