

Exemption No. 8625

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056**

In the matter of the petition of

Pemco World Air Services

for an exemption from §§ 25.855(a) and
25.857(e) of Title 14, Code of Federal
Regulations

Regulatory Docket No. FAA-2005-22869

PARTIAL GRANT OF EXEMPTION

By letter dated October 17, 2005, Mr. John Driver, Director, Product Support, Pemco World Air Services, 1943 50th Street North, Birmingham, AL, 35212, petitioned the Federal Aviation Administration (FAA) for an exemption from the requirements of §§ 25.855(a) and 25.857(e) of Title 14, Code of Federal Regulations (14 CFR). The proposed exemption, if granted, would permit Pemco World Air Services carriage of two non-crewmembers (commonly referred to as supernumeraries) on Boeing Model 737-400 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, that there be a firm handhold to enable occupants to steady themselves when moving through the aisles in moderately rough air.

Section 25.855(a), at Amendment 25-93, requires that each cargo and baggage compartment not occupied by crew or passengers meet one of the class requirements of § 25.857.

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

Section 25.1447(c)(1), at Amendment 25-87, 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.

Related Sections of the FAR:

Section 121.583(a) contains, in pertinent part, a listing of categories of persons who may be carried aboard an airplane in part 121 service without complying with all the requirements of part 121 pertaining to carriage of passengers.

The petitioner's supportive information is as follows:

“Description of the airplane

“The Boeing Model 737 is a pressurized, low wing, transport category airplane powered by two turbofan engines. It is a new technology jet airplane designed for low fuel burn and short to-medium range operations. Pemco owns STC's (SA2968SO, SA2969SO, SA2970SO and SA2971SO) that convert the passenger aircraft to Quick Change and to Pure Freighter. This exemption is being sought for the freighter configuration, which has a 9G bulkhead between fuselage station 349 and 353, that acts as both 9G cargo barrier and smoke barrier.

“The cabin area between the 9G barrier and the cockpit bulkhead remains the same as the passenger configuration. That is to say that the dual flight attendants seat remains, along with all the standard Boeing features provided for the two flight attendants.

“Equivalent Level of Safety

“Pemco considers that an equivalent level of safety to the parts of the requirements from which relief is sought is achieved by design precautions and by the introduction of AFM [airplane flight manual] instructions for the Pemco freighter converted airplane that are identical to those for the B737-200/300 airplane.

“The oxygen supply and associated instructions and warnings are identical to those for the B737-400 airplane. Oxygen supply in case of depressurization (as required in case of smoke warning in the main deck cargo compartment) is ensured by drop-down oxygen masks, which remains unchanged from the configuration delivered by Boeing. When oxygen masks need to be used, occupants are notified by a chime and by lighted signs located within view. These signs can be either manually activated by the flight crewmembers or automatically turned on by an altitude pressure switch. The masks automatically deploy as they would if the airplane remained in passenger configuration.

“The crew-non-flight-crew two-way communication system remains the same as delivered with the airplane by Boeing. Two-way communication with the cockpit is

possible through dedicated communication panels. Other emergency equipment, as required by the applicable Airworthiness Standards, is also provided. Pemco believes that an equivalent level of safety to the parts of the requirements from which relief is sought will be achieved by design precautions and by defining in the Pemco Flight Manual Supplement Limitations section the conditions under which non-flight crew persons may be carried.

“Both L1 and R1 doors and their emergency slides remain installed and active.

“Extent of the Requested Regulatory Relief

“The main purpose of this request for exemption is to permit carriage of non-crew persons on an all-freighter airplane. This is the reason for requesting exemption from sections 25.855(a) and 25.857(e). Other sections from which exemption is sought are secondary to this one. Exemption from the aforesaid sections is sought to the following extent:

“Section 25.857(e): Relief is sought to permit carriage of two non-crew persons on an all-freighter airplane, which has a class E cargo compartment.

“Supporting Arguments

“Cargo operators need a number of support personnel for safe loading and offloading of cargo. Such personnel are obviously needed both at departure and destination of a cargo flight. It is particularly important that the cargo handlers are present upon airplane arrival if perishable goods or live animals are carried. The most efficient, surest, and cheapest way to assure their attendance at the destination airport is to transport them aboard the cargo flight.

“Cargo operators may have to carry cargo such as live animals, hazardous materials, or valuable or perishable goods, that cannot be left unattended, even for the duration of a flight, and the presence of personnel qualified in their handling is necessary on the airplane on which they are carried. Safety and efficiency of the operation will therefore be enhanced.

“Cargo operators also need to have qualified personnel for operations and maintenance purposes at various locations. They will optimize their missions if they are permitted to carry their personnel aboard their cargo flights, thus saving travel on regular passenger flights.

“The Airworthiness Standards applicable to the type certification of the B737-400, as well as the current Airworthiness Standards, do consider carriage aboard commercial flights of crewmembers, including flight crewmembers and cabin attendants, who are assigned duties associated with the operation of the airplane, and passengers who have no expected ability in the use of emergency provisions and therefore need to be attended.

“The categories of occupants for which this exemption is sought are qualified aeronautical personnel. Furthermore, they are trained in the autonomous use of emergency equipment and emergency exit operation. The operator will also be required to allow access to these seats only to persons found able to perform these tasks on their own. Therefore, the assist space adjacent to the emergency exits required by Section 25.813(b), while available for assisting the passengers in evacuating, is not necessary, because the categories of personnel considered will be trained for door operation and autonomous evacuation. Both doors are equipped with self-deploying slides.

“Pemco has previously been granted Exemption No. 8057, a very similar exemption, for the B737-200/-300 and wish to have this exemption extended to cover the B737-400 as well.

“Public Interest

“Pemco presents the argument that the granting of this exemption will be in the public interest by allowing US airlines to compete with other freighter operators with such a configuration. If allowed to carry non-flightcrew persons aboard their cargo flights, the operators of the Pemco converted B737-400 airplanes will be able to operate under optimal safety conditions, to render their operation more efficient, and to realize substantial savings in carrying their personnel from one place to another. The reasons for these benefits are developed in the arguments above.

“Request for Waiver of Publication

“No new design feature is introduced and the reasons presented for exemption are similar to those for which an exemption has been previously granted for other aircraft types. [See Exemption Number 5864, 7799 and 8057]. Therefore, this request will not set a precedent, therefore Pemco requests a waiver for the publication and comment period, so that operators of Pemco cargo conversion operators can rapidly begin to reap the benefits of a more efficient operation.

“Pemco believes that good cause exists to waive the publication and comment requirements of §§ 11.85, 11.87, and 11.89. In particular, we feel that the main purpose of this petition and the reasons presented in it are identical to those for exemptions previously granted by the FAA.”

Federal Register publication

The FAA has determined that good cause exists for waiving the requirement for Federal Register publication. Any delay in acting on this petition would be detrimental to Pemco World Air Services. A summary of this petition was not published in the Federal Register, as the nature of this exemption is similar to those of previous petitions for which no public comments were received.

The FAA’s analysis/summary is as follows:

The FAA considers that it is in the public interest to issue an exemption for the following reasons:

The FAA has granted several exemptions for the carriage of supernumeraries on cargo 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 petitioner has requested relief primarily from the requirements of § 25.857(e), which permits carriage of cargo only when a Class E cargo compartment is installed on the airplane. Class E cargo compartments are usually remote from the flightdeck and encompass the entire interior of the airplane. The means of controlling a fire 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 requested an exemption from § 25.855(a), but an exemption from that regulation is not needed to allow non-crewmembers on board the petitioner's Boeing Model 737-400 airplanes which have been converted from passenger to freighter configurations. An exemption from §§ 25.785(j) and 25.1447(c)(1) is needed, however.

The FAA has previously granted exemptions for carriage of persons in addition to crew on similar airplanes, provided that certain conditions are met. The conditions (or limitations) established for those previous exemptions also apply in this case.

In all cases, there must be suitable means of preventing smoke penetration into areas that are occupied. The petitioner's design addresses this requirement by providing a bulkhead which acts as a smoke barrier. However, the petitioner has indicated that configurations may be approved that will allow supernumeraries to enter the Class E cargo compartment and, hence, open the smoke barrier. In order to provide an appropriate level of safety, a placard must indicate that the smoke barrier must be secured (i.e., the door or curtain must be closed) when occupants are not in the Class E cargo compartment. The placard must be located in a conspicuous place in the supernumerary seating area either on or next to the smoke barrier.

If access into the Class E cargo compartment is allowed, an aural or visual annunciation must be installed. If there is a fire, the annunciation would indicate that persons must return to their seats and secure the smoke barrier (i.e., close the door or curtain). The annunciation must be operated by the flightcrew and must be able to be recognized in the Class E cargo compartment. Appropriate limitations and procedures need to be established to ensure that the flightcrew signals the supernumeraries to return to their

seats and secure the smoke barrier at the outset of a fire. This annunciation needs to be explained to the supernumeraries during a pre-flight briefing.

Due to the way a fire is controlled, it is necessary to limit persons on board 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 occupants is consistent with previous approvals and is included in this approval.

The intent of the requirement for handholds is, in the event of moderate turbulence, to enable passengers to steady themselves when moving about the cabin. The supernumerary seating area must be considered in regard to this requirement, since persons may move about this area. The Class E cargo compartment must also be considered in regard to this requirement, unless supernumeraries are not allowed in it during flight. The FAA recognizes that it would be impractical to require handholds in the Class E cargo compartment. The FAA finds that an acceptable level of safety for justifying an exemption will be provided without handholds if a flightcrew operated aural or visual annunciation in the supernumerary seating area and the Class E cargo compartment indicates, at the onset of turbulence, that persons must return to their seats and fasten their safety belts. The supernumeraries must be able to hear or see the annunciation, as applicable.

The petitioner has proposed an oxygen system for the supernumeraries at their seats. This system must be sized adequately for continuous and uninterrupted use during worst-case flight duration, considering the decompression procedures used to suppress a fire in a Class E cargo compartment.

The petitioner has indicated that configurations may be approved that will allow the supernumeraries to leave their seats and enter the cargo compartment to handle animals which cannot be left unattended. However, the petitioner has not addressed the need for an oxygen source when the supernumeraries are in the Class E cargo compartment. The FAA considers that the supernumeraries should have an oxygen system that is comparable to that for 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. In order to provide an acceptable level of safety to the “immediately available” and “uniformly distributed” requirements of § 25.1447(c)(1), each occupant must carry a portable oxygen bottle with a mask connected to it while in the Class E cargo compartment. These bottles must be sized adequately for continuous and uninterrupted use during worst-case flight altitude to allow supernumeraries enough time to return to their seating area, secure the smoke barrier, and be seated.

Section 25.1447(c)(1) also requires automatic presentation of the oxygen dispensing units. For seated passengers in typical passenger airplanes, the automatic presentation of masks throughout the cabin indicates the need to don an oxygen mask. Supernumeraries on the petitioner’s Boeing Model 737-400 airplanes must have a similar indication. In order for an acceptable level of safety to be provided, there must be an aural and visual decompression signal which is automatically activated and immediately recognizable

throughout the supernumerary seating area, and—if access is allowed—in the Class E cargo compartment. Operation of this signal must be automatic with flightcrew manual action as a backup.

Supernumeraries must be trained regarding the location and use of the oxygen equipment and the signals for its use. They must also be trained in procedures for evacuating the airplane.

In conclusion, the FAA has determined that the existing regulations for type certification do not address occupants that are neither crew nor passengers. A partial exemption from certain 14 CFR part 25 requirements is warranted to permit carriage of supernumerary individuals.

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, Pemco World Air Services is hereby granted an exemption from 14 CFR 25.785(j), 25.857(e) and 25.1447(c)(1). The petition is granted to the extent required to permit type certification of Boeing Model 737-400 airplanes which have been converted from a passenger to a freighter configuration, with provisions for the carriage of supernumeraries. The following limitations apply and must be documented in the limitations section of the airplane flight manual (AFM):

1. Occupancy outside the flightdeck is restricted to a maximum of two persons.
2. Supernumeraries are limited to the categories specified in §§ 121.583(a)(1) through (7).
3. Each supernumerary must be briefed by a flightcrew member on the use of the exits and emergency equipment prior to each flight.
4. The operator must determine that each supernumerary is physically able to accomplish the necessary emergency procedures.
5. Each supernumerary must be provided with a portable oxygen source with a mask connected to it. The supernumerary must carry this portable oxygen source whenever he or she enters the Class E cargo compartment. When not in use, the portable oxygen units may be located in a common area. The supernumeraries must be trained in the use of these oxygen units. This portable oxygen equipment is not required if a limitation is placed in the AFM that prohibits the supernumeraries from being in the Class E cargo compartment during flight.
6. An aural and visual decompression signal must be provided to notify supernumeraries when to don oxygen masks. This signal must be automatically activated and be immediately recognizable throughout the supernumerary seating

area and in any accessible area in the Class E cargo compartment. This signal is not required to be recognizable in the Class E cargo compartment if a limitation is placed in the AFM that prohibits supernumeraries from being in the Class E cargo compartment during flight. The existence of this signal, and the accompanying procedures for donning a mask and activating oxygen flow, must be included in a pre-flight briefing.

7. An aural or visual annunciation must be installed to indicate that, during turbulence, persons must return to their seats. This signal must be operated by the flightcrew and be recognized in the supernumerary seating area and accessible areas in the Class E cargo compartment. This annunciation is not required to be recognizable in the Class E cargo compartment if a limitation is placed in the AFM that prohibits supernumeraries from being in the Class E cargo compartment during flight. Appropriate procedures and 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.
8. An aural or visual annunciation must be installed to indicate that, during a fire in the Class E cargo compartment, persons must return to their seats and ensure that the smoke barrier is secured (i.e., the door or curtain is closed). The annunciation must be operated by the flightcrew and must be recognized in the Class E cargo compartment.

Appropriate procedures and limitations must be established to ensure that the flightcrew signals the supernumeraries to return to their seats and secure the smoke barrier at the onset of a fire. The pre-flight briefing must explain this annunciation to the supernumeraries. The pre-flight briefing, annunciation, and associated procedures and limitations to signal the supernumeraries are not required if a limitation is placed in the AFM that prohibits supernumeraries from being in the Class E cargo compartment during flight.

9. There must be a placard which indicates that the smoke barrier must be secured (i.e., the door or curtain must be closed) when no one is in the Class E cargo compartment. The placard must be located in a conspicuous place in the supernumerary seating area, either on or next to the smoke barrier. The pre-flight briefing must inform supernumeraries of this requirement and whether or not they may enter the Class E cargo compartment.

Issued in Renton Washington, on December 5, 2005.

Signed by Kevin M. Mullin

Kevin M. Mullin

Acting Manager

Transport Airplane Directorate

Aircraft Certification Service