

**Exemption No. 7260**

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

In the matter of the petition of

**Airbus Industrie**

for an exemption from §§ 25.785(d), 25.791, 25.807(c)(1) & (d)(1), 25.809(f)(1), 25.811(a), 25.812(g), 25.813(b), 25.857(e), and 25.1447(c) of Title 14, Code of Federal Regulations

**Regulatory Docket No. 29875**

**GRANT OF EXEMPTION**

By letter AI/EA 415.27418/99 dated December 7, 1999, Mr. Wolfgang Didszuhn, Vice President, Product Integrity, Airbus Industrie, 1 Rond-Point Maurice Bellonte, 31707 Blagnac, Cedex, France, petitioned for an exemption. This petition requests relief from the cargo-only provisions of § 25.857(e), and the passenger requirements of §§ 25.785(d), 25.791, 25.807(c)(1) & (d)(1), 25.809(f)(1), 25.811(a), 25.812(g), 25.813(b), 25.857(e), and 25.1447(c) of Title 14, Code of Federal Regulations (14 CFR) for the Model A300F4-600R airplane. This exemption, if granted, would allow carriage of four non-crewmembers (commonly referred to as supernumeraries.)

**The petitioner requests relief from the following regulations:**

Section 25.785(d) at Amendment 25-32 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 25.791 at Amendment 25-32 requires, in pertinent part, that when passenger information signs are installed to comply with the operating rules of this chapter, at least one sign notifying (using letters or symbols) when smoking is prohibited.

**ANM-00-202-E**

Section 25.807(d)(1) at Amendment 25-32 requires, in pertinent part, that airplanes that have a passenger seating configuration, excluding pilot seats, of nine seats or less, must have one exit above the waterline in each side of the airplane, meeting at least the dimensions of a Type IV exit.

Section 25.809(f)(1) at Amendment 25-34, requires that each land plane emergency exit (other than 6 feet from the ground and the landing gear extended must have an approved means to assist the occupants in descending to the ground as follows:

The assisting means for each passenger emergency exit must be a self-supporting slide or equivalent, and must be designed to meet the following requirements:

- it must be automatically deployed and deployment must begin during the interval between the time the exit opening is actuated from the inside the airplane and the time the exit is fully opened.
- it must be automatically erected within 10 seconds after deployment has begun.
- it must be of such length that the lower end is self supporting on the ground after collapse of one or more legs of the landing gear.
- capability, in 25 knots directed wind to remain usable.

Section 25.811 (a) at Amendment 25-32 requires, in pertinent part, that each passenger emergency exit, its means of access, and means of opening be conspicuously marked.

Section 25.812(g) at Amendment 25-32 requires, in pertinent part, that the means required in FAR 25.809 to assist the occupants in descending to the ground must be illuminated so that the erected assist means is visible from the airplane.

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) at Amendment 25-41 requires, in pertinent part, that oxygen dispensing units must be automatically presented to the occupants before the cabin altitude exceeds 15000ft. The total number of dispensing units and outlets must exceed the number of seats by at least 10%. The extra units must be uniformly distributed throughout the cabin as practicable, and that there be two oxygen masks in each lavatory.

### **Related Sections of the Federal Aviation Regulations (FAR)**

Section 121.583(a) contains, in pertinent part, a listing of categories of the people who may be carried aboard an airplane in part 121 service without complying with all the passenger-carrying airplane requirements of part 121.

**The petitioner's supportive information is as follows:**

1. Petition for Exemption.

In accordance with the requirements outlined in § 11.25 of Title 14, Code of Federal Regulations (14 CFR), Airbus Industrie, on behalf of their customer United Parcel Service (UPS), hereby petitions the Federal Aviation Administration (FAA) for an exemption. United Parcel Service desires to operate Airbus Model A300F4-600R aircraft in the United States. Airbus requests an exemption from parts of the requirements of §§ 25.785(d), 25.791, 25.807(c)(1) & (d)(1), 25.809(f)(1), 25.811(a), 25.812(g), 25.813(b), 25.857(e), and 25.1447(c) of 14 CFR. This exemption, if granted, would allow type certification of Airbus Model A300F4-600R (freighter) for carriage on the main deck of up to 4 non-crewmembers (persons not necessarily assigned some duty associated with the operation of the airplane). These 4 non crewmembers would be in addition to the maximum 3 flight deck occupants, for a total of 7 occupants.

"The granting of this exemption would be of public interest by allowing US airlines to compete with other freighter operators with such a configuration. Please note that this request for exemption follows from previous grants of exemption.

"First, Exemption No. 5864 (Regulatory Docket No. 27636) granted to Airbus Industrie on A300F4-600R airplanes provided substantially the same relief as sought herein, but for the facts that Exemption No. 5864 considered a design in which two Type A doors and up to 10 occupants were contemplated. In the instant case, only one Type A door is provided because of design constraints, but the maximum number of occupants is reduced to seven (7).

"As precedent for this request, we also cite Exemptions No. 5993 and No. 5993A (Regulatory Docket No. 027662) granted to The Boeing Company, which concern a similar design in which a single Type A door was also provided, and the maximum number of occupants contemplated was also seven (7).

"We note, however, that the Airbus design provides an advantage by incorporation of an automatic escape slide, instead of inertia reels and harnesses required in the Boeing design.

"2. Description of the Airplane to be Covered.

"The A300F4-600R cargo compartment arrangement for UPS configuration is as follows:

"The A300F4-600R UPS version is a freighter aircraft having all cargo main deck configuration.

"The courier area is arranged to accommodate four (4) persons.

"Except for the sections from which exemption is requested, all design criteria applicable to the carriage of passengers have been taken into account for the design of this seating arrangement.

"In particular, protection against crash and penetration of smoke and noxious gases is provided through a tight L-shaped barrier which isolates the Main Deck Cargo compartment from the zone where the supernumerary persons are seated.

"The four seats are wall-mounted on the bulkhead.

"The L-shaped barrier allows transportation of 22 containers.

"The location of the L-shaped barrier and the 22nd container leads to the deletion of the Right Hand passenger door.

"The remaining entry door on the LH of the fuselage meets the applicable requirements of Type A exit.

"The emergency egress assist means is a self-supporting slide that is automatically deployed upon opening of the door.

"The left and right hand flight deck windows will be used as emergency exits.

"The LH and RH windows are openable from the outside and are equipped with escape ropes.

"Each sliding window provides a rectangular opening of 19"x20" inches, i.e., meeting the requirements for flight crew emergency exits.

"The cockpit/courier area separation door is deleted.

"Oxygen supply in case of depressurization is ensured by fixed oxygen bottles which can supply oxygen for all the airplane's occupants for the maximum possible duration.

"The occupants are instructed that oxygen masks need to be used by a chime and lighted signs located in their direct eyescan.

"These information signs can be either manually activated by flight crew members or are automatically turned on by an altitude pressure switch.

"The front of the mask box is fitted with two half doors, one of each is activated by the removal of the mask from its housing and initiates the automatic opening of a miniature oxygen valve.

"A two way communication system between the cockpit and the courier area is installed. The communication panels are accessible from each occupant when seated with seat belt fastened.

"There are no 'No Smoking' signs and placards installed and no ashtray in the courier area as smoking is not allowed during any UPS flight. The lavatory of a recirculation type is installed but the potable water system is deleted and there is no bin for waste or a waste flap (this place shall be used as stowage).

"3. Extent of the requested regulatory relief.

"FAR 25.785(d): No handgrip is installed.

"FAR 25.791: No 'No Smoking' signs are installed.

"FAR 25.807(c)(1): Only one passenger door is installed located on the LH side of the fuselage.

"FAR 25.807(d): Only one emergency exit above the waterline meeting at least dimensions of Type IV exit.

"FAR 25.809(f)(1): Only one emergency exit (the passenger LH Type A door) is equipped with automatic deployment means complying with this paragraph.

"FAR 25.811: Only one emergency exit (the passenger LH Type A door) is equipped with emergency exit signs complying with this paragraph.

"FAR 25.812(g): Only one emergency exit (the passenger LH Type A door) is equipped with ground end illumination complying with this paragraph.

"FAR 25.857(e): Relief is sought to permit carriage of 4 persons in the supernumerary area on this freighter airplane which has a Class E cargo compartment.

"FAR 25.1447(c)(1): There is no automatic presentation of oxygen masks. The occupants will take hold of the mask upon instructions via lighted signs and chime controlled by the flight crew.

"FAR 25.1447(c)(3): Only one oxygen mask is stored in the lavatory. It can be connected to the fixed oxygen distribution system.

4. Supporting arguments.

"The carriage of non-flight crew members is allowed by the FAR 121.583 without complying with the passenger carrying requirements. The carriage will be limited by the Airplane Flight Manual to persons as defined in FAR 121.583(a)(1) to (a)(7).

"There will be further limitations that the operator must adequately instruct the occupants on smoking, use of seat belts, location and operation of emergency exit, use of oxygen and emergency oxygen equipment, and for extended overwater operations, location and operation of life preservers.

"In particular, the occupants will be appropriately briefed on the evacuation procedures, and the operator will determine that the occupants are physically able to use the escape means provided.

"The UPS fleet of Boeing 767-300F airplanes has a similar emergency exits design with two ropes inside the cockpit and one inertia reel in the L1 passenger door (instead of a slide on A300-600F). This design has been substantiated to the FAA satisfaction as providing an adequate escape method for up to 7 occupants (two crew members plus 5 supernumeraries) (Exemptions No. 5993 and No. 5993A). Therefore, Airbus Industrie's proposal with 2 escape ropes inside the cockpit plus an escape slide on the passenger door is considered an acceptable means of evacuation for the accommodation of up to 4 supernumeraries.

##### 5. Actions taken by Airbus Industrie to provide an Equivalent Level of Safety.

"Compliance with FAR 121.583(b)(1), (2) and (3) will be demonstrated as follows:

"(1) Each person has unobstructed access from his seat to the pilot compartment or to an emergency exit.

"(2) The pilot in command has a means of notifying each person when safety belts must be fastened.

"(3) The airplane has an approved seat with an approved safety belt for each person. The seat must be located so that the occupant is not in any position to interfere with the flight crewmembers performing their duties.

"Compliance with FAR 25.809(b)--each emergency exit, including cockpit windows will be openable from the inside and the outside.

"Compliance with FAR 25.803(c)--maximum seating capacity, including the number of crew members, can be evacuated from the airplane to the ground within 90 seconds. This will be demonstrated in the required conditions through one cockpit window.

"Demonstration of compliance with FAR 25.803(c) will be shown by a combination of tests and analysis, which has already been accepted by DGAC as an Acceptable Means of Compliance with FAR 25.803(c).

"The evacuation analysis will use data collected from previous evacuation demonstrations performed on A330, involving 7 persons aged 33 to 61. The video record will be presented to the FAA.

"Additional emergency lighting is installed in the courier area to ease the evacuation.

"The oxygen masks provided are quick donning masks with regulator and are immediately available to seated occupants.

"The lights to use the oxygen masks will be automatically illuminated when cabin altitude exceeds 14,000 feet in normal operations and 15,000 feet in high elevation airfield operations.

"The flight crew will be provided with manual means to illuminate the signs in the event of failure of the automatic system.

"A two-way communication system is installed.

"The 10% additional dispensing units are required for use by cabin attendants moving along the aisle and passenger awkwardness to reach one mask. None of these factors applies to the considered configuration.

"The requirement to have handgrips installed is justified for the use of cabin attendants who need to frequently walk along the aisle. This is not applicable to the considered configuration. For the considered category of occupants, the recommendations to remain seated with seat belt fastened, as far as practicable, will be made in order to limit moving around the necessary minimum."

A summary of the petition appeared in the Federal Register on March 1, 2000 (65 FR 11106). No comments were received.

**The FAA's analysis/summary is as follows:**

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.

As noted by the petitioner, the FAA has previously granted exemptions for carriage of persons in addition to crew on freighter airplanes, provided certain conditions are met. These conditions have varied, depending on the airplane design and the number of persons involved.

In all cases, there must be suitable means of preventing smoke penetration into areas that are occupied. In addition, due to the nature with which the fire is controlled, it is necessary to limit persons on board the airplane to those that have been found physically fit by the operator and have been briefed on the use of emergency equipment. The Airbus design accounts for these considerations by providing a solid barrier, and proposing limitations on the occupants. These are consistent with previous approvals.

For the A300F4-600R, a positive feature of the design is the retention of the left side passenger entry door, with escape slide. This exit has the dimensions (42"X72") of Type A exits and incorporates an automatic, inflatable escape slide to facilitate egress. The FAA considers that an assist space is not necessary in this case due to the higher level of training and awareness of the occupants. Additional exits are provided in the form of flight deck window exits, which were originally intended for use by the flight crew only. The FAA has previously accepted the use of flight crew exits for carriage of supernumeraries, however demonstrations of the suitability of

the exit and assist means are required. The use of ropes for flight crew is standard practice for narrow-body airplanes, and the use of inertia reels is standard for the largest transports. The intermediate size of the Airbus Model A300, which is similar to the Boeing Model 767, has included both ropes and inertia reels. The FAA will require that an actual demonstration using ropes be performed by persons representative of supernumeraries that will be permitted on board.

The requirement for a handhold to enable passengers or flight attendants to steady themselves while using aisles in moderately rough air is geared toward airplanes that may have fairly long distances between seats and areas of the cabin where persons may be in flight. On the A300F4-600R, the occupied area is very small, and it is possible to return to each seat very quickly. In addition, the occupants would be seated for the majority of the flight, as noted by the petitioner. Therefore the FAA concurs that a handhold is not necessary.

With respect to emergency lighting and exit marking, the FAA agrees that the need for a specific exit sign is only valid for the entry door. In addition, the means of opening the window exits are marked, and the supernumeraries will receive instruction on their use. Therefore, markings such as would be required for typical passenger operation (where an essentially naïve person would be expected to be able to operate an exit) are not necessary.

Regarding exterior lighting, the FAA agrees that the specific illumination conditions required by § 25.812 are not required. However, it should be shown that there is sufficient illumination outside the airplane for persons using the ropes to determine that it is safe to egress the airplane.

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 supernumeraries will have, it is not necessary that an equivalent system be installed. In this case, the masks are installed in a readily accessible location that is visible to the occupants, and are of the quick-donning variety. A single motion removes the mask from its stowage, which is directly comparable to passenger oxygen dispensing units. Notification that oxygen is necessary is by visual and aural signal, as opposed to automatic presentation of the masks. Since the occupants will be briefed on the location of the masks and the signals for their use, this difference is considered acceptable. As noted by the petitioner, § 25.1447(c)(1) requires that there be ten percent more masks than occupants, and § 25.1447(c)(3)(ii) requires that there be two masks in each lavatory. The FAA concurs that the rationale behind these requirements does not apply in this case, and therefore an exemption is warranted.

In conclusion, the FAA has determined that the existing regulations for type certification do not address occupants that are neither crew nor passengers, and an exemption is warranted to permit carriage of these supernumerary individuals.

In consideration of the foregoing, I find that a grant of exemption is in the public interest and will not affect the level of safety provided by the regulations. Therefore, pursuant to the authority contained in 49 U.S.C. §§ 40113 and 44701, delegated to me by the Administrator (14 CFR 11.53), Airbus Industrie is hereby granted an exemption from §§ 25.785(d), 25.791, 25.807(c)(1) & (d)(1), 25.809(f)(1), 25.811(a), 25.812(g), 25.813(b), 25.857(e), and 25.1447(c).

The petition is granted to the extent required to permit type certification of the Airbus Model A300F4-600R airplane, with provisions for the carriage of supernumeraries when the airplane is equipped with one floor level exit with escape slide, within the occupied area. The following limitations apply:

1. The airplane flight manual must contain a limitation that occupancy is restricted to four persons in addition to the crew,
2. Occupants are limited to the categories specified in § 121.583(a)(1) through (7),
3. Each occupant must be briefed by a flight crewmember on the use of the exits and emergency equipment prior to each flight,
4. The operator must determine that each occupant is physically able to accomplish the necessary emergency procedures,
5. It must be shown by actual demonstration that all occupants are able to rapidly evacuate the airplane using the flight deck window exit and escape rope,
6. It must be shown that there is adequate exterior emergency lighting to enable occupants to determine whether or not to use the flight deck window exits.

This exemption will remain in effect unless superseded or rescinded.

Issued in Renton, Washington, on. June 30, 2000.

/s/ Vi L. Lipski  
Vi L. Lipski  
Acting Manager  
Transport Airplane Directorate  
Aircraft Certification Service, ANM-100