

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

In the matter of the petition of

**Douglas Aircraft Company  
McDonnell Douglas Corporation**

for an exemption from 14 CFR §§ 25.785(d),  
25.807(c)(1), 25.857(e), and 25.1447(c)(1)

**Regulatory Docket No. 28760**

**PARTIAL GRANT OF EXEMPTION**

By letters dated December 4, 1996, and April 3, 1997, Mr. R. B. Harris, Director Airworthiness, Douglas Aircraft Company, McDonnell Douglas Corporation, 3855 Lakewood Blvd., Long Beach, CA 90846-0001, petitioned for exemption from the requirements of 14 CFR §§ 25.785(d), 25.807(c)(1), 25.857(e), and 25.1447(c)(1) for the accommodation of up to two supernumeraries immediately aft of the cockpit, and a crew rest facility immediately aft of the smoke barrier and crash net, on MD-11 freighter aircraft equipped with a Class E cargo compartment.

**Sections of the FAR affected:**

Section 25.785(d), as amended by Amendment 25-51, requires, in pertinent part, that there be a firm handhold to enable occupants to steady themselves while using the aisles in moderately rough air.

**ANM-97-012-E**

Section 25.807(c)(1), as amended by Amendment 25-55, requires, in pertinent part, that a minimum of one Type IV emergency exit be installed for each side of the fuselage for passenger seating configurations of one through nine.

Section 25.857(e), as amended by Amendment 25-60, defines the attributes of a Class E cargo compartment, and requires that a Class E cargo compartment may not be on any aircraft other than one utilized exclusively for the carriage of cargo (i.e., occupants other than flightcrew not permitted).

Section 25.1447(c)(1), as amended by Amendment 25-41, requires, in pertinent part, that oxygen masks must be immediately available to each seated occupant, be automatically deployed prior to reaching 15,000 feet, with manual backup, and must exceed in number the quantity of seats by a minimum of ten percent, with the extra units distributed evenly throughout the cabin.

### **Related Sections of the FAR**

14 CFR § 121.583(a) contains, in pertinent part, a listing of categories of the occupants who may be carried aboard an airplane in 14 CFR part 121 service without complying with all the passenger-carrying airplane requirements of part 121. (Note: This section does not relieve the operator of the responsibility for compliance with the sections of part 25 cited above.)

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

#### Introduction

Douglas Aircraft Company (hereafter referred to as DAC), manufacturer of McDonnell Douglas (hereafter referred to as MDC) MD-11 aircraft, petitions for exemption from the requirements of §§ 25.785(d), 25.807(c)(1), 25.857(e); and 25.1447(c)(1) for MDC Model MD-11 freighter airplanes operating with Class E cargo compartments, to allow the carriage of up to two supernumeraries in a courier module on the main deck, immediately aft of the cockpit. In addition, as requested by specific customers, a palletized crew sleeping quarters will be installed on the main deck, aft of the cargo net, which may be occupied during flight but not during taxi, takeoff, or landing.

#### Nature and extent of relief sought:

Section 25.785(d): No hand holds are installed.

Section 25.807(c)(1): Relief is sought for the two oversized Type I exits provided in the forward portion of the main deck of the MD-11 freighter airplane.

Section 25.857(e): Relief is sought to permit accommodations for up to five persons during flight, and two persons during taxi, takeoff, or landing, in the Class E cargo compartment on an all-freighter airplane.

Section 25.1447(c)(1): Relief is sought from the automatic presentation requirement at the courier module only, and from the ten-percent, evenly distributed requirement, for supplemental oxygen.

Information provided in support of petition:

The MDC MD-11F is a pressurized, transport category freighter airplane powered by three turbofan engines. It is included on Type Certificate Data Sheet (TCDS) No. A22WE first issued on November 8, 1990.

In order to optimize cargo missions, a courier module accommodating two persons is provided between the flight deck and the main deck Class E cargo compartment, in the direct vicinity of the exits. Except for the sections from which exemption is requested, all design criteria applicable to the carriage of passengers have been taken into account during the design of these accommodations. In particular, protection from crash injury and from the penetration of smoke and noxious gases is provided by a 9g crash net and smoke-tight curtain which isolates the main deck cargo compartment from the zone where the supernumerary persons are seated. In addition, for some specific customers, a crew sleeping quarters is installed on a pallet behind the crash net.

Supporting Arguments:

1. Cargo operators need a number of support personnel for the safe handling of cargo during loading and off-loading. Such personnel are obviously needed both at departure and arrival 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 most cost-effective way to assure their attendance at destination airports is to transport them aboard the cargo flight.
2. Among their various missions, the cargo operator may have to carry goods such as live animals, hazardous materials, and valuable or perishable cargo. Such types of cargo cannot be left unattended, even for the duration of a flight, and the presence of the 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.
3. Cargo operators also need to have qualified personnel necessary for operation and maintenance purposes at various locations. They will optimize their missions if they are

permitted to carry personnel aboard their cargo flights, thus saving travel by regular passenger flights.

4. Airworthiness standards applicable to the type certificate of the MD-11F, as well as current airworthiness standards, address the carriage, aboard commercial flights, of only the following types of occupants:

Crewmembers, including flight crewmembers and cabin attendants, who are each 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 briefed in the autonomous use of emergency equipment and emergency exit operation. It will also be required that the operator allows access to these seats only to persons found able to perform these tasks on their own.

Actions to be taken by DAC to provide an equivalent level of safety:

1. Occupancy is restricted to a maximum of seven persons.
2. Occupants are limited to the categories specified in § 121.583(a)(1) through (7).
3. The operator must determine that each occupant has the demonstrated physical ability to autonomously use the emergency provisions.
4. Each occupant must be instructed by the operator in accordance with FAA-approved procedures, on the autonomous use of the emergency provisions, and orally briefed before each takeoff by an appropriate crew member as to the location and use of the emergency exits and emergency equipment.

Specifics of the Proposed Design

Crew Rest Features:

Four bunks.

One coatroom, one enclosed waste container, and one miscellaneous stowage compartment.

Four stowage drawers, two under each lower bunk.

One fold-down seat and table.

One entry door with an emergency release device.

The use of the crew rest facility is not restricted, and may be utilized by flightcrew and supernumeraries.

Exits/Escape:

The requirements of § 25.807(c)(1) for a minimum of one Type IV exit for each side of the fuselage is offset by existing oversized Type I exits at doors 1L and 1R, each equipped with a slide/raft, on each side of the fuselage. Even if one of these exits should be blocked by shifting cargo, the remaining exit should be more than adequate. The right- and left-side cockpit windows are also available, providing an overall level of safety greater than that required by § 25.807(c)(1).

The escape path from either the crew rest facility or the courier module is from these units directly to doors 1L or 1R.

Communications Capabilities:

Two-way voice communications between the flight compartment and the crew rest facility is provided through conventional cabin attendant station type interphone handsets. The crew rest interphone is installed on a panel adjacent to the head end of the bunks, and will be accessible from any of the four bunks. This interphone is also readily accessible from any standing position in the crew rest facility or from the seat at the fold-down writing table.

Two-way voice communications between the flight compartment and the courier module is provided via a speaker installed in the ceiling of the module, and a microphone located on the wall of the module, as well as microphones in the oxygen masks.

Hand holds:

The requirement of § 25.785(d) to have handgrips installed when seatbacks do not allow a firm handhold could not be met due to the configuration of the courier module's rear-facing seats. Nevertheless, several holding devices are available in the area of the courier module.

Supplemental Oxygen:

Crew Rest Facility Oxygen:

Standard chemical oxygen generator assemblies with dropout masks are provided at the head of each bunk, as well as in the ceiling above the folding seat. These are similar to those for passengers on passenger flights, and function in the same manner. Each standard assembly has a two-man oxygen generator with two passenger oxygen masks attached. Therefore, each of

the five locations in the crew rest facility have two oxygen dispensing units (passenger oxygen masks).

The doors open and masks are automatically presented by aneroid activation. If the doors fail to receive power, a lighted button (red light) on the overhead AIR panel in the cockpit will require manual deployment by crew action as a backup to the automatic system. An audible chime (continuous buzzer) will be also activated. These chimes are easily heard during all phases of flight. The buzzer is resettable in the crew rest facility. The reset feature is independent at each location (courier module and crew rest facility). (The overhead lights in the crew rest facility will also be turned on with this same altitude sensing.)

#### Courier Module Oxygen:

Supplemental oxygen is provided by fixed oxygen bottles, which also supply oxygen for all occupants on the flight deck. A single mask is provided for each occupant, and is of the quick-donning, full-face, demand-type, similar to cockpit masks. They are immediately available to seated occupants in a manner similar to that provided for flight crewmembers.

There is a lighted button [or sign?] visible to both occupants of the courier module which lights and displays the words "DON MASKS" at a cabin altitude of approximately 10,000 feet. At the same time, an audible chime (continuous buzzer) will be activated. These chimes are continuous and easily heard during all phases of flight. These warning features (chime and lighted signs) can be either manually activated by the flight crew- members or automatically turned on by an altitude pressure switch. The buzzer is resettable at each location. The reset feature is independent at each location (courier module and crew rest facility). The requirements of § 25.1447(c)(1) for oxygen dispensing units to be automatically presented are compensated for by the users having knowledge of equipment location and use.

#### Lavatory Oxygen:

Standard supplemental oxygen drop box assemblies in the lavatory are to be employed. This standard assembly has a two-man oxygen generator with two passenger oxygen masks attached. Therefore, the one box in the lavatory has two oxygen dispensing units (passenger oxygen masks). These masks are automatically presented by aneroid activation. If the door fails to receive power, a lighted button (red light) on the overhead AIR panel in the cockpit will require manual deployment by crew action as a backup to the automatic system.

#### General Oxygen Considerations:

Due to the close relative proximity of the crew rest facility, courier module, cockpit, and galley, DAC considers it unnecessary to install additional supplemental oxygen other than a portable oxygen cylinder with passenger mask attached, in the galley. The requirements of

§ 25.1447(c)(1) for a ten percent excess quantity of dispensing units, evenly distributed, is mainly required for two purposes: by cabin attendants moving along the aisles, and to accommodate infants held in laps. None of these factors applies to the proposed configuration.

The process of depressurizing the cabin manually from the normal cabin pressure to a cabin altitude above 15,000 feet is stated by DAC to allow adequate time for the crew rest personnel to be alerted and proceed to their fixed seats in the cockpit or at the courier station without the use of breathing support. The smoke barrier will protect them from smoke and fumes during this procedure.

Lighted signage and placarding:

Two lighted "No Smoking Fasten Seat Belt" (NS/FSB) signs are provided in the crew rest facility, and are located to allow visibility by crew members from either standing or sitting positions.

Ventilation:

Conditioned air is provided to the crew rest facility from the aircraft air-conditioning packs via ship-side ducting connected to the top of the unit. This air supply is thermostatically controlled from within the crew rest, and is distributed through a main ceiling vent and individual eyeball-type outlets provided at each bunk. The system has a capacity adequate to support up to five occupants for an indefinite period. Exhaust air from the crew rest is dissipated to the main deck cargo compartment through venting in the floor of the unit.

Emergency Lighting:

Emergency lighting consists of three emergency lights located in the ceiling, one light at each bunk, and a self-powered exit sign located adjacent to the door [and/or a lighted exit sign is located on the inside surface of the crew rest door?]. The emergency system is battery powered and completely contained within the crew rest facility.

Emergency Equipment Type and Location:

One each halon and water fire extinguishers are provided in the crew rest facility. This equipment is stowed in a drawer located beneath a bunk and is identified with pictorial placards and arrows located at eye level and on the face of the drawer. This drawer is placarded for "Emergency Equipment Only."

In addition, there is a flashlight installed on the inside wall of the crew rest, adjacent to the entry door handle, and is directly accessible.

There is a horn inside the crew rest facility that is activated when smoke is detected by any one of the three smoke detectors. This horn is loud (4500 Hz and 80 db at 2 feet) for the expected noise level in the crew rest facility, and should wake all sleeping members of the crew rest facility. In the event that smoke is detected in the cargo compartment, the interphone will be used by the flightcrew to alert any crew rest occupants to proceed immediately to their seats in the cockpit or at the courier station.

There is one PBE (TSO C-116) in the crew rest module located in the same area as the required fire extinguisher in the crew rest facility. There is also a PBE (TSO-C116) and fire extinguisher located in the galley and another PBE (TSO-C116) in the cockpit. Each of these PBE's has a fire extinguisher located within three feet of it. Additionally, the crew oxygen masks at each of the five seats in the cockpit and at the two courier seats provide PBE protection to TSO-C99.

A Grant of Exemption for the Crew Rest Facility Will Not Affect Public Safety for the Following Reasons:

- (1) Approval is for cargo aircraft only.
- (2) Crew rest facility will be used by trained personnel meeting the requirements of § 121.583(a)(1) through (7).
- (3) Occupants will be briefed on the autonomous use of the emergency provisions.
- (4) Crew rest facility is not to be occupied during taxi, takeoff, or landing.
- (5) Crew rest facility complies with all other FAR requirements except those noted in this exemption request.
- (6) Provisions have been implemented to provide alternate means of compliance for each area of exemption.
- (7) Providing facilities for adequate rest of flight crew members will result in safer flight conditions.

In addition, granting this exemption will be in the public interest, since by allowing the crew members adequate sleep/rest, the airlines will be able to operate longer flight segments with fewer personnel. This will render their operations more efficient and result in cost savings which can be transferred on to the consumer in the form of lower shipping rates.

Reasons Why Granting an Exemption is in the Public Interest and will not Adversely Affect Public Safety:

Granting this exemption will be in the public interest, since by carrying supernumerary persons aboard their cargo flights, U.S. operators of MD-11 freighter airplanes will be able to operate under optimal safety conditions, to render their operation more efficient, and to make substantial savings in carrying their personnel from one place to another. The reasons for these benefits are developed in arguments above. The utility of cargo airplanes will also be improved.

A summary of DAC's petition was published in the Federal Register on April 22, 1997 (62 FR 19646). No comments were received.

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

14 CFR Part 121, e.g., § 121.583, recognizes a "person" category of occupant, as distinct from "passenger" or "crew" occupants addressed in 14 CFR Part 25, and allows non-compliance, for operational purposes only, with certain part 121 requirements normally pertinent to passenger-carrying airplanes, passenger-carrying operations, and passenger requirements. These "persons" are commonly referred to as supernumeraries. Supernumeraries are a special class of occupant, by virtue of certain knowledge and abilities attributed to them through selection and mandatory training. The resulting enhanced capabilities of supernumeraries, over that which can be expected of passengers, allows exemption in certain instances from selected type design requirements that are normally imposed for the safety of ordinary passengers. In all cases, however, the desired end result is the retention of all passenger safety features to the maximum extent reasonable, when all factors are considered, and an overall level of safety for supernumeraries that is comparable to that afforded to passengers.

Part 25 contains no similar provision which addresses "persons." Therefore, regardless of any part 121 provisions for operation, in order to modify part 25 transport category airplanes by installing supernumerary accommodations that do not comply with part 25 certification requirements for passengers, it is first necessary to petition for and obtain exemption from affected part 25 requirements. To date, the FAA has processed, generally favorably, a number of petitions for exemption associated with the installation of supernumerary accommodations, provided there was a public interest in doing so, and certain conditions were met to assure an adequate level of safety. Those conditions have varied, depending on the airplane design, the nature of the proposals under consideration, and the number of persons involved. In most instances, these petitions have addressed accommodations for only a few supernumeraries, and located immediately aft of the flight deck, which is a scenario reasonably consistent with that thought to be envisioned during the promulgation of § 121.583.

This petitioner has proposed seating accommodations for two supernumeraries in what is described as a courier module, located in the area immediately aft of the cockpit and forward of the smoke barrier and crash net. That is an installation which has some considerable precedent, with features that appear to be generally consistent with a number of previous approvals. Also proposed, however, is a crew rest facility located immediately aft of the smoke barrier and crash net, i.e., within the Class E cargo compartment itself. This is a unique installation for which exemption is sought, and requires the formulation of precedent-setting conditions to assure an adequate level of safety.

In reviewing the petition, the FAA notes the petitioner's statement to the effect that, 'all design criteria applicable to the carriage of passengers *have been taken into account*.' The FAA considers this statement to be somewhat less definitive than one declaring compliance with all pertinent sections of the FAR pertaining to the carriage of passengers. Note is also made of detailed discussion of some topics, but no mention at all of other topics (e.g., emergency lighting in occupied area, emergency exit signage, seat and berth qualifications and restraints systems, flammability characteristics of crew rest facility, etc.). Accordingly, the FAA conservatively must consider the possibility that topics not discussed by DAC in its petition may not have been hitherto addressed with the cognizant certificating office of the FAA. This grant of exemption shall be conditioned on a finding of compliance by that office with all pertinent passenger-carrying and cargo compartment requirements of part 25 except those from which exemption is sought herein.

(Note: The petitioner seeks certain exemptions in association with a total airplane occupancy of seven (two flight crewmembers plus five supernumeraries accommodated in three existing cockpit seats and the two proposed seats in the courier module). The three existing cockpit seats may be occupied in accordance with the operating provisions of § 121.583, however, without the cognizance of the Transport Airplane Directorate (TAD). Therefore, this exemption will address only the specific accommodations proposed to be installed, and shall not be expressed in terms of total airplane occupancy.)

The petitioner asserts in its supporting arguments that hazardous cargo cannot be left unattended, as one justification for permitting supernumeraries onboard such flights. Without making any determinations as to the accuracy of this claim, the FAA advises in this regard that the carriage of hazardous cargo is governed by the operational and security requirements of 49 CFR part 175. Accordingly, and in view of the fact that the proposed supernumeraries are not being accommodated in the same compartment as any hazardous cargo, the TAD makes no determination with regard to the acceptability of the carriage of supernumeraries along with hazardous cargo. The TAD does, however, as a reasonable precaution, recommend that the potential for exposure to hazardous materials be minimized to the maximum extent practicable, by reducing supernumerary occupancies on such flights to the minimum number absolutely required for safety of flight.

The petitioner states in its supporting arguments that utilizing supernumerary seating for the transport of company maintenance and operations personnel, in order to avoid the cost of their commercial transport, is an argument in support of the requested exemption. In response, the FAA advises that such an advantage would be considered one of private gain only, and by itself, could not justify an exemption. In accordance with the requirements of 14 CFR 11.25, exemptions can only be issued if a public interest is shown.

This is a configuration requested relief from the requirements of § 25.857(e), which permit carriage of only cargo when a class E cargo compartment is installed on the airplane. Class E

cargo compartments are separate from the flight deck and generally encompass the entire remaining interior of the airplane. Aircraft design standards for Class E cargo compartments reflect the intention that fires that might occur in this type of cargo compartment are to be controlled by starving the fire of oxygen. This is accomplished by depressurizing the airplane and maintaining a cabin altitude that will not support combustion. For this reason, only flight crewmembers are normally permitted on board such airplanes.

A major concern in permitting occupancy by non-crewmembers outside the flight deck on such airplanes is in assuring that there is a suitable means for preventing smoke penetration into this occupied area. Another concern is that the persons allowed on board the airplane are limited to those that are briefed on emergency equipment and procedures and are found by the operator to be both physically fit and willing to use the emergency equipment and means of emergency egress provided. The petitioner's design satisfies these concerns by providing a smoke curtain, and proposing appropriate limitations on the occupants.

In discussing the proposed crew actions in response to a fire/smoke event, the petition is noted to refer to a procedure of manually depressurizing the cabin to an altitude of 'above' 15,000 feet. That is unclear. The design requirements for aircraft with a Class E cargo compartment installed is predicated upon implementation of the cabin decompression procedures required by § 25.857(e)(3) to control a fire until a landing can be effected. Accordingly, MD-11 Airplane Flight Manual (AFM) procedures which require raising the cabin altitude to 25,000 feet when above 27,000 feet, and establishing a cabin differential pressure of 0.5 psi when below 27,000 feet, remain applicable, and shall be a condition of this exemption. Additionally in that regard, verification should be made that sufficient supplemental oxygen is available for all intended occupants at those cabin altitudes, for the maximum anticipated flight durations under those conditions.

The petitioner did not declare any intent with regard to the subject of smoking, except to indicate the existence of 'No Smoking' lighted signs in the crew rest facility only. As a condition of this grant of exemption, smoking shall be prohibited aft of the smoke curtain. Accordingly, any lighted 'No Smoking' signs in the crew rest facility that had been intended to be switchable shall instead be "hardwired on," i.e, designed so that they can not be switched off. Alternatively, the petitioner may elect to replace or supplement the hardwired lighted signs with 'No Smoking' placards. In any event, such placards and/or placards shall be visible from all seat and berth positions in that facility.

Regarding emergency exit lighting in the crew rest facility, the petition variously described 'a lighted exit sign located on the inside surface of the crew rest door,' and 'a self-powered exit sign located adjacent to the door.' The petitioner is advised that the FAA does not permit required exit signs to be installed *on* the associated exit door/hatch (because when the door/hatch is open, sign visibility is no longer maintained). As a condition of this grant of

exemption, an emergency exit marker sign shall be installed which complies with the requirements of §§ 25.811(d)(2) and 25.812(b)(2).

The petition's discussion of emergency lighting features in the crew rest facility did not include an indication that compliance with the activation (e.g., loss of the airplane's normal electric power, cockpit arm switch) requirements of § 25.812(f). Accordingly, compliance with these requirements shall be a condition of this grant of exemption.

The petition's discussion of the ventilation features of the crew rest facility did not include an indication of compliance with the smoke penetration and test requirements of §§ 25.855(h)(2) & (i), respectively. Accordingly, the petitioner is advised that a crew rest facility of this nature is an occupied compartment subject to these requirements, and compliance with these requirements shall be a condition of this grant of exemption.

The petition's discussion of the emergency exit/entry door to the crew rest facility did not include any indication of the features of this door. The FAA considers that this door must be quickly openable even when crowding occurs at either side of the door. Furthermore, if the design includes a means of locking the door from either side, then there must be a means of opening the door, from either side, in an emergency without the aid of tools or keys. This means may include but not be limited to removable hinge pins or the use of lavatory door type latches. Any internal locking devices of the door must be overridden by the normal internal opening means. With regard to the means provided for escaping the crew rest facility into the occupied area in the event of a fire/smoke event in either the Class E cargo compartment or in the crew rest facility, the petitioner shall demonstrate to the satisfaction of the FAA that expeditious access through the smoke curtain can be effected, and without introducing hazardous quantities of smoke into the occupied area. A successful demonstration shall be a condition of this exemption.

The requirement of § 25.785(d) for handholds is to assure that occupants have a means to steady themselves in moderately rough air while traversing the main aisles of typical passenger airplanes. On the proposed airplane, the occupied area is very small, with no aisles and nowhere to go, and it is possible to return to each seat very quickly. Therefore, the FAA concurs with the petitioner that it is not necessary to provide dedicated handholds beyond those that may be already incidentally available. Accordingly, their petition in this regard is granted.

The pertinent requirements of § 25.807(c)(1) are to assure a certain number of minimally sized emergency exits on each side of the fuselage for the intended occupancy. For the occupancy proposed by the petitioner, a minimum of a Type IV exit on each side is required. The petitioner is actually providing oversized Type I exits, however, which far exceed those minimum requirements. A petition for exemption from those requirements is therefore unnecessary. The FAA notes as commendable the petitioner's use of escape slide/rafts as the assist means at those exits.

Exemption is conditionally granted from the requirement of § 25.857(e) which would otherwise preclude the accommodation of occupants in an airplane in which a Class E cargo compartment is installed, for a two-seat courier module qualified for taxi, take off, and landing, which is located immediately aft of the cockpit, and a five-person crew rest facility for in-flight use only, which is located immediately aft of the smoke barrier. These conditions are discussed herein.

With regard to the supplemental oxygen requirements of § 25.1447(c)(1) from which exemption is sought, the FAA considers the petitioner's arguments favorably, and concurs that an exemption is warranted for the specific areas of literal non-compliance. The exemption from automatic presentation requirements is conditioned upon the FAA's determination that the visual means of notifying courier module occupants, or any occupants who may be within the general occupiable area, are adequate. The petition is noted to variously describe this means as a 'lighted button' and a 'sign.'

In consideration of the foregoing, I find that a partial grant of exemption is in the public interest and will not significantly affect the level of safety provided by the regulations. Therefore, pursuant to the authority contained in § 49 USC 40113 and 44701 of the Federal Aviation Act of 1958, delegated to me by the Administrator (14 CFR 11.53), Douglas Aircraft Company, McDonnell Douglas Corporations, is hereby granted an exemption from §§ 25.785(d), 25.857(e), and 25.1447(c)(1). The petition is granted to the extent required to permit type certification of the MD-11 freighter aircraft with a Class E cargo compartment, with accommodations in a courier module for up to two supernumeraries immediately aft of the cockpit, and a crew rest facility accommodating five occupants for inflight use only, immediately aft of the smoke barrier and crash net, when the airplane is equipped with two floor-level exits with escape slides within the immediate vicinity of the occupied area, except as defined in the conditions discussed above in the FAA's analysis/summary section.

Issued in Renton, Washington, on July 14, 1997

/s/

Gary L. Killion  
Acting Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service, ANM-100