

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 § 25.1447(c)(1) of
Title 14, Code of Federal Aviation Regulations

Regulatory Docket No. 29710

PARTIAL GRANT OF EXEMPTION

By letter AI/EA-S No. 413.1724/99, dated August 10, 1999, Wolfgang Didszuhn, Vice-president, Product Integrity, Airbus Industrie, 1 Rond Point Maurice Bellonte, 31707 Blagnac, Cedex, France, petitioned for an exemption from § 25.1447(c)(1) of Title 14, Code of Federal Aviation Regulations (14 CFR). Through electronic mail dated August 12, 1999, Airbus also submitted additional supporting information. The proposed exemption, if granted, would permit relief from the requirement for passenger oxygen masks to be automatically presented before the cabin pressure altitude exceeds 15,000 feet for the Airbus Model A320 series airplanes.

The petitioner requests relief from the following regulations:

Section 25.1447(c)(1) states that there must be an oxygen dispensing unit connected to oxygen supply terminals immediately available to each occupant, wherever seated. If certification for operation above 30,000 feet is requested, the dispensing units providing the required oxygen flow must be automatically presented to the occupants before the cabin pressure altitude exceeds 15,000 feet and the crew must be provided with a manual means to make the dispensing units immediately available in the event of failure of the automatic system.

The petitioner's supportive information is as follows:

In order to provide operation to high altitude airports up to 14,100 feet, the Airbus Model A320 series aircraft will be modified. This modification would prevent nuisance deployment of the passenger oxygen masks at a cabin pressure altitude below 16,000 feet.

PUBLIC INTEREST STATEMENT

The granting of this exemption would be in the public interest by allowing US airlines to compete with other operators of A320 series airplanes at high altitude airports already approved by other authorities. Service could be provided to the flying public at airports with altitudes up to 14,100 feet.

FACTORS SUPPORTING THE PETITION

Currently an aneroid switch that activates the automatic deployment of the passenger oxygen masks is set at 14,000 +0/-500 feet cabin pressure altitude. This is in compliance with § 25.1447(c)(1) 14 CFR, and the Joint Aviation Requirements.

During aircraft operations at high altitude airports (ground operation, take-off and landing) the cabin pressure altitude may exceed the lowest actuation setting of 13,500 feet.

In order to avoid an unintentional actuation of the oxygen system the pressure switch must be changed. This modification is based on the means of compliance with Joint Aviation Requirements ACJ 25.1447(c)(1) which states, "The design of the automatic presentation system should take into account that when landing field altitude is less than 2000 feet below the normal preset automatic presentation altitude, the automatic presentation altitude may be reset to landing field altitude plus 2000 feet."

A new actuation setting of 16,000 +0/-500 feet cabin pressure altitude is necessary for airports above altitudes of 11,500 feet.

A high altitude airfield switch in the cockpit panel is installed that has two positions: "NORMAL": automatic passenger oxygen mask activation at 14,000 feet is enabled. "HI ALT": automatic passenger oxygen mask activation at 14,000 feet is disabled.

When approaching an airport landing field altitude above 11,500 feet, the high altitude airfield switch has to be pushed in order to deactivate the normal setting of 14,000 feet. The switch remains in the "HI ALT" position during ground operations.

"An indication light on the switch is illuminated when it is in the "HI ALT" position so that the crew is reminded to reset the switch after departure from high altitude airports." The indication light turns off after the switch is reset.

Even if the altitude at which the masks will automatically deploy is set at 16,000 feet instead of 15,000 feet the flightcrew can manually deploy the masks to the passengers, if necessary.

"Regarding the cabin pressure controller:

" - The landing field elevation is taken into account during cruise, which enables the controller to increase or decrease cabin altitude.

" - During climb from a high altitude airfield the cabin altitude is controlled to 8,000 feet.

" - The limit of 15,000 feet for cabin pressure altitude specified in FAR 25.841(a) is not exceeded. . ."

When operating into airports that do not require the design modifications, the oxygen system continues to operate as if the modification was not installed.

In addition, corresponding Airplane Flight Manual (AFM) procedures for using the high altitude mode for airports located above 9,200 feet are submitted with our petition. The current AFM limits the-aircraft to operations at airports at or below 9,200 feet as an airplane limitation. The AFM does not consider the oxygen mask deployment system limitations that would allow a maximum operating airport altitude of 11,500 feet. The calculation of this altitude is based on ACJ 1447 [14,000 ft - 500 ft - 2000 ft = 11,500 ft]. Due to a limited number of airports above 9,200 feet and in order to avoid crew confusion between aircraft limits and system limits, only the current airplane limit of 9,200 feet is considered when establishing the proposed operating procedures for using the high altitude mode.

FAA's Determination as to Need for Public Process

In accordance with § 11.27(j) (3) 14 CFR, the FAA finds that action on this petition need not be delayed by Federal Register publication and comment procedures for the following reasons: (1) The notice and opportunity for prior public comment are impracticable because those procedures would significantly delay issuance of the approval design and the delivery of the affected aircraft, and (2) Issuance of the exemption would not set a precedent. A similar exemption (Number 6076), Regulatory Docket Number 28029, was granted to the Boeing Commercial Airplane Group on April 26, 1995. A summary of Boeing's petition was published in the Federal Register on February 17, 1995 (60 FR 9422). No comments were received.

The FAA's analysis/summary is as follows:

The petitioner requests an exemption for the Airbus A320 series airplanes. The petitioner commonly uses this terminology for the A319, A320, and A321 series airplanes that are listed on the type data sheet. Therefore, the FAA considers this request for exemption is for the A319, A320, and A321 series airplanes.

The petitioner requests relief from the requirement of § 25.1447(c)(1), which states in part that oxygen dispensing equipment for occupants must be automatically presented

before the cabin pressure altitude reaches 15,000 feet. This requirement originated in § 4b.651(d)(3)(i) of the Civil Aviation Regulations (CAR) and was carried over as § 25.1447(c)(1) 14 CFR when part 25 was codified. The requirement that the oxygen equipment be automatically presented before the cabin pressure altitude reaches 15,000 feet was added at Amendment 25-41, effective September 1, 1977.

In order to operate into airports with altitudes up to 14,100 feet, the pressure switch must be changed. Because the existing switch is set for 14,000 +0/-500 feet the existing device could trigger the dropping of the masks when operating at high altitude airports. A new high altitude mode pressure switch, set at 16,000 +0/-500 feet, will allow the airplane to land at airports up to 14,100 feet without dropping the masks. The flightcrew retains the capability of deploying the masks using the manual control in the cockpit. In addition the passenger oxygen mask deployment system operates normally except when operating in the high altitude mode.

For operations at a high altitude airport the high altitude mode is activated at the top of descent, remains activated while on the ground, and is deactivated during climb. The cabin pressure controller will gradually adjust the cabin pressure altitude from the normal 8,000 feet to the airport landing altitude as the airplane descends. During climb, the cabin pressure controller will gradually adjust the cabin pressure altitude from the airport altitude to the normal 8,000 feet.

The petitioner not only requested the exemption be applicable to operations at airports above 11,500 feet but also submitted a proposed Airplane Flight Manual revision that allows use of the high altitude mode for airports above 9,200 feet. Considering the tolerances on the oxygen mask aneroid switch and the cabin pressure controller, the FAA has determined that the current aneroid switch set at 14,000 +0/-500 feet will not result in an unintentional operation of the oxygen system for airports at or below 12,500 feet. Therefore, raising the aneroid switch setting for oxygen mask deployment for airports located between 9,200 and 12,500 feet is not technically necessary.

The FAA acknowledges there are very few airports located above between 9,200 and 12,500 feet. However, the FAA has determined that passengers should not be unnecessarily exposed to the possibility of cabin pressure altitudes above 15,000 feet. In addition, the FAA has determined that flight crew training regarding the use of the high altitude mode for airport altitudes above 12,500 feet can negate any confusion between the new airport altitude limits and the existing AFM material that limits the aircraft to operations at airports below 9,200 feet. In order to ensure that the high altitude mode is used only to operate into airports above 12,500 feet, this partial grant of exemption requires that an operating limitation be added to the airplane flight manual that prohibits its use for operations into airports at lower elevations.

The FAA has determined that the proposed system provides an acceptable level of safety. In conclusion, the FAA has determined that the changes to the automatic deployment of the passenger oxygen masks will allow the Airbus Industrie Model A319, A320, and A321 series airplanes to safely serve airports above 12,500 feet and below 14,100 feet. When operating into airports that do not require these design modifications, the oxygen system will continue to operate, as do those on the airplanes that have not had the systems modified.

In consideration of the foregoing, I find that a partial 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 the requirement of § 25.1447(c)(1) 14 CFR that states that the passenger oxygen masks be automatically presented before the cabin pressure altitude exceeds 15,000 feet, for Airbus Industrie Model A319, A320, and A321 series airplanes when operating into airports with altitudes above 12,500 feet and below 14,100 feet.

As a condition of this partial grant of exemption, the following limitation must be added to the operating limitations section of the airplane flight manual:

Use of the high altitude mode is prohibited for operations into airports below 12,500 feet.

This exemption will remain in effect unless superseded or rescinded.

Issued in Renton, Washington, on September 16, 1999.

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