Exemption No. 10865

UNITED STATES OF AMERICA

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

RENTON, WASHINGTON 98057-3356

In the matter of the petition of **Airbus** for an exemption from §§ 25.813(e), 121.310(f)(5) and 121.310(f)(6) of Title 14, Code of Federal Regulations	**Regulatory Docket No. FAA-2013-0189**

GRANT OF EXEMPTION

By letter dated April 23rd, 2013, Mr. Y. Regis, Director, Head of Product Integrity, Airbus S.A.S, Société par Actions Simplifiée, Au Capital De 2.704.375, Euros, 383 474 814 R.C.S., Toulouse, petitioned the Federal Aviation Administration (FAA) for an exemption from the requirements of §§ 25.813(e), 121.310(f)(5), and 121.310(f)(6) of Title 14, Code of Federal Regulations (14 CFR). This exemption, if granted, would permit the installation of doors on mini-suites in the passenger compartment on Airbus Model A321 airplanes.

The petitioner requests relief from the following regulations:

> **Section 25.813(e), Amendment 25-46 –** No door may be installed between any passenger seat that is occupiable for takeoff and landing and any passenger emergency exit, such that the door crosses any egress path (including aisles, crossaisles and passageways).
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> **Section 121.310(f)(5)** – No door may be installed in any partition between passenger compartments.
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> **Section 121.310(f)(6)** – No person may operate an airplane manufactured after November 27, 2006, that incorporates a door installed between any passenger seat occupiable for takeoff and landing and any passenger emergency exit, such that the door crosses any egress path (including aisles, crossaisles and passageways).

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 2013-0189.

> The cabin proposed for the Jet Blue Airlines A321 (U.S. operator) is a two class layout, with 16 Business Class seats and 143 Economy Class seats (159 passengers). The Business Class includes 4 single seats that are "mini-suites" types. These mini-suites consist in a seat with surrounding furniture's intended to provide privacy to the occupants. Typically, the complete closure of the single mini-suites is possible by mean of a sliding element, moving parallel to the aircraft longitudinal axis. The sliding elements are manually actuated and are controlled by the passengers. The sliding elements are locked for TT&L and will be enabled for passenger use from the Cabin Crew. By installing these doors, the proposed configuration is not complying with the requirement of 14 CFR 25.813(e), 14CFR Part 121 § 121.310(f)(5) and 14CFR Part 121 §121.310(f)(6). Airbus respectfully requests that the FAA grant an exemption for these doors to allow installation of these four mini-suite seats on this A321.
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> 1. Sections of the Federal Aviation Regulation (FAR) that are affected:
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> Exemption from 14 CFR Part 25 §25.813(e) at Amendment 46 which states: "No door may be installed in any partition between passenger compartments."
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> Exemption from 14 CFR Part 121 §121.310(f)(5) which states: "No door may be installed in any partition between passenger compartments."
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> Exemption from 14 CFR Part 121 §121.310(f)(6) which states: "No person may operate an airplane manufactured after November 27, 2006, that incorporates a door installed between any passenger seat occupiable for takeoff and landing and any passenger emergency exit, such that the door crosses any egress path (including aisles, cross aisles and passageways)".
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> 2. Identification of issue:
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> Part 25 prohibits the installation of doors "between passenger compartments" since Amendment 15. The separation of cabin classes by doors was common at the time. Amendment 25-116, effective November 26, 2004, changed that requirement for interior doors such that no interior door can be installed between any passenger seat (occupiable for taxi takeoff or landing) and any exit on Part 25 airplanes. Although the requirements of §25.813(e) at Amdt. 116 are not applicable to A321, § 121.310(f)(6) renders these new standards applicable to all other transport category airplanes that are manufactured after November 27, 2006. These requirements prohibit interior door between any passenger seat (occupiable for taxi takeoff or landing) and is more severe in recognition of the risk that passengers may become trapped behind such doors in an emergency evacuation.

Ref: NRPM 96-9-[...] *"this door could be detrimental in evacuation of passengers, who tended not to recognize that there was an exit beyond the door, even if it were the closest available. However, the current regulation is worded such that doors may be installed between passengers and exits provided there are not passengers on both sides of the door. For example, a door could be installed across the main passenger aisle at the end of a cabin. The current regulations only require that the door be open for takeoff and landing. It is now considered undesirable to permit the installation of a door between any passenger and an exit. Should such a door (either through omission or mechanical failure) become jammed in the event of an emergency evacuation, persons could be prevented or delayed in evacuating which could result in fatalities or injuries that would not otherwise have occurred. The hazards associated with a jammed door are still present whether or not passengers are on both sides of the door, and the recognition factor has not been mitigated. Either could result in the same consequences--failure of some passengers to evacuate the airplane."*[...]

The goal is to prevent the occurrence of passengers being trapped in an area of the cabin or being delayed for evacuating the aircraft further to the jamming of a door. It is arguable whether the sliding doors installed on the mini-suites really constitutes "door" in the sense of the rule. But, certain design precautions are taken on the A321 to provide to the four mini-suites installations an acceptable level of safety and to eliminate the risk for the occupants.

It is to be noted that the FAA allows the installation of interior doors on executive aircraft interiors (Ref. SFAR 109 §10). These doors are generally separating cabin zones thus creating isolated compartments, but are acceptable providing that the conditions of SFAR 109 are respected.

Airbus already installed mini-suites on A340-500 and A380 for common carriage in Europe (EASA Special Conditions), Boeing has the same kind of suites on their B777. The design of the mini-suites which will be installed on A321 is in line with the previously certified ones. They are not creating a completely isolated compartment for the occupants, as the sliding doors have a partial height. This ensures that the seated passengers know what is happening in the cabin while seated in the mini-suites, and cabin attendants can observe the mini-suites while performing their duties. In addition, design precautions and adequate procedures are taken to ensure that the occupants of the mini-suite can operate and exit the mini-suites safely in all conditions (see below supporting argumentation).

3. Requested regulatory relief:

The main objective of this request for exemption is to permit the installation of four mini-suites in the Business Class of the A321. The doors that are provided on the mini-suites requires that Airbus receive the requested exemption from §25.813(e), §121.310(f)(5) and §121.310(f)(6).

4. Supporting Argumentations:

Although the number of mini-suites on the proposed A321 cabin layout is low compared to the previously certified configurations, the design precautions implemented on these mini-suites are in line with the ones certified on previous mini-suite installations. They consist in:

1. Only single occupancy of the Mini-suite is allowed during taxi, takeoff and landing, and this reduces the occupancy in this area substantially.

2. Mini-suite entrance can only provide access to the specific mini-suite.

3. Mini-suites cannot provide an egress path for evacuation other then the path out of the mini-suite for its single occupant.

4. Installation of the mini-suites does not introduce any additional obstructions or diversions to evacuating passengers, even from other parts of the cabin.

5. The design of the doors and surrounding "furniture" above the cabin floor in the aisles is such that each passenger's actions and demeanour can be readily observed by cabin crew members with stature as low as the 5th percentile female, when walking along the aisle.

6. The mini-suite doors is opened during taxi, takeoff and landing.

7. The hold open retention mechanism for mini-suites doors holds the doors open under FAR 25 561(b) emergency landing conditions.

8. There is a secondary, backup hold open retention mechanism for the mini-suite doors that can be used to "lock" the doors in the open position if there is an electrical or mechanical failure of the primary retention mechanism. The secondary retention mechanism holds the doors open under FAR 25.561(b) emergency landing conditions.

9. There is a mean by which cabin crew can readily check, that all mini-suite doors are open during taxi, take-off and landing.

10. There is a mean by which cabin crew can prevent the seated mini-suites occupant from operating the doors. This means is envisaged to be used particularly to secure the suite during TTOL phases of the flight.

11. Appropriate placards, or other equivalent means are provided to ensure the mini-suite occupants know that the doors must be in the open position for taxi, takeoff and landing.

12. Training and operating instructions materials regarding the proper configuration of the mini- suite doors for taxi, takeoff and landing are provided to the operator

for incorporation into their cabin crew training programs and associated operational manuals.

13. The mini-suite allows the occupant to evacuate the mini suite in the event the door closes and becomes jammed during an emergency landing. (This will be achieved by means of the Emergency Passage Feature, which might be though frangible and / or with a removable emergency panel, or equivalent (such as dual sliding doors). The Emergency Passage Feature is capable of being easily broken / removed by the occupant of the mini suite when the door becomes jammed. Trapping of any occupant is not acceptable and the occupant using the Emergency Passage Feature cannot rely on another occupant to assist in passage. In addition a second path out of the mini-suite is provided. This second escape path consists in climbing over the sliding screen, using the seat cushion as footstep. All ways to exit the mini suite in case of emergency will be demonstrated to work for a 5th percentile female and a 95th percentile male.

14. The height of the mini-suite walls and doors are such that a 95th percentile male can fit between them and the airplanes interior furnishing.

15. No mechanism to latch the doors together in the closed position is allowed.

16. The mini-suite doors are openable from the inside or outside with 25 pounds force or less regardless of power failure conditions.

17. If the mini-suites doors are electrically powered the doors are remained "locked" in the open position after power loss to the mini-suites.

18. Mini-suites installation maintains the main, cross aisles and passage ways.

19. Mini-suites doors do not impede main aisle or cross aisle egress paths in the open, closed or translating position.

20. The mini-suite doors are open-able even with a crowded aisle.

21. The number of individual passenger seat modules are not exceed 25% of the max number of passenger seats allowed between the doors as defined in the A321 type Certification. However, for the purpose of this exemption, Airbus request that only the four mini-suites of the business class area (between door 1 and door 2) for Jet Blue Airlines be considered and processed.

    Note: An additional flight attendant - above the minimum required by the operating rules is provided to ensure that the mini-suites are in the correct position for taxi, takeoff and landing.

    In addition, Airbus emphasize that the compliance to JAR 25 785 (h)(1) - direct view - will be analysed to ensure that the installation of these mini-suites does not impair the compliance to this requirement.

5. Public interest

> Operators want to provide the traveling public with a very high level of comfort and the possibility to install mini-suites in their aircraft is achieving that goal. The ability to install and certify mini-suites in the business class improves the operator's marketability, and lead to increase their sales. Mini-suites installed on commercial aircraft are requested by an increased number of aircraft operators and many of those already have other aircraft with mini-suites embodied in their fleet. These customers want to ensure a consistent cabin operation and passenger experience across their fleet, and will continue to require inclusion of mini-suites in their fleet. By doing this, the public will benefit from the lower cost of travel when the operators increase their revenue and then reduce their operating costs leading a majority of the flying public to benefit from lower ticket prices. As mentioned, the possibility to have common operating procedures across the fleet is keeping the operating costs down. In addition, it prevents the potential for human error that may be introduced when procedures vary substantially for similar products. For the reasons above mentioned, it is Airbus opinion that the overall level of safety is improved and this is in the public's best interest. In summary, the grant of that exemption will expand Jet Blue Airlines sales, which benefits the economic health of the United States. This serves the public interest by serving economic interests of the United States.

In a follow-up letter dated June 17, 2013, the petitioner provided additional proprietary information regarding the need to have a flight attendant above the minimum required by the operating rules. The applicant does not believe an additional attendant should be required.

***Federal Register* publication**

Although the petitioner requested that action on its petition not be delayed for publication in the Federal Register, the FAA found that the petition, if granted, would set a precedent. Therefore, to allow an opportunity for the public to comment on the petition, a summary of it was published in the *Federal Register* on June 6, 2013 (78 FR 34139). No comments were received.

The FAA's analysis

The FAA considers the petitioner's proposal to be in the public interest based mainly on the increased marketability for the operator to provide a desired feature to their customer base, promoting an equality of sales in competitive markets as noted in previous exemptions of this same nature.

Following accident experience in the 1960's, the FAA amended 14 CFR part 25, in Amendment 25-15, to prohibit the installation of doors "between passenger compartments." At the time of the amendment, it was common practice to divide the first class and tourist class cabins with a solid door. It was determined in the course of accident investigations that this door could be detrimental in the evacuation of passengers. The resulting regulatory change was intended specifically to prevent this occurrence.

Until recently, part 25 allowed the installation of doors between an emergency exit and the passenger compartment. Amendment 25-116 to part 25 prohibits interior doors between the exit and the passenger compartment. In addition, § 121.310(f)(6), Amendment 121-306, prohibits these doors in airplanes manufactured after November 27, 2006, operated under 14 CFR part 121. Amendments 25-116 and 121-306, titled "Miscellaneous Cabin Safety Changes," were published in the *Federal Register* on October 27, 2004 (69 FR 62788).

For many years the FAA has been granting exemptions for the installation of doors between passenger compartments for non-commercially operated transport category airplanes. These exemptions include limitations that the airplanes are not operated for hire or offered for common carriage. This limitation does not preclude the operator from receiving remuneration to the extent consistent with 14 CFR parts 125 and 91, subpart F. Also, these exemptions included the following conditions:

1. Each door between passenger compartments must be frangible or there must be another means of allowing passage of a range of occupants (5th percentile female to 95th percentile male) in the event the door becomes jammed.

2. Doors must be in the open position during taxi, takeoff, and landing.

3. Appropriate procedures must be established to signal the flightcrew that a door between passenger compartments is closed and to prohibit takeoff or landing when a door between passenger compartments is not in the proper position.

4. Doors between passenger compartments must have dual means to retain them in the open position, each of which means must be capable of withstanding the inertia loads specified in § 25.561.

Several operators of small transport airplanes and Boeing Business Jets (BBJ) have requested that these exemptions be expanded to include commuter and on-demand operations under 14 CFR part 135. Under part 135 operations, a separate evaluation would be needed. In most cases, the doors between the passenger compartments must be mechanically fastened in the open position or removed from the type design of the airplane.

Additionally, the FAA has granted several equivalent level of safety findings for small transport airplanes (e.g., Cessna, Dassault Aviation), typically 19 or fewer passenger seats, where the lavatory is occupied for taxi, take-off, and landing. These findings were limited to one additional passenger to the total passenger seating configuration since these size airplanes have only a single lavatory. As with part 135 operations, additional evaluation conditions would apply for taxi, takeoff, and landing.

The use of doors on mini-suites differs from previous applications where doors have been limited to private use in several ways. First, the installation of mini-suites necessarily reduces the passenger capacity of the airplane, which has the effect of increasing the evacuation capability of the airplane overall. Second, there is only a single occupant who could theoretically be behind each door, and no other passenger is affected. By limiting the mini-suite

to one occupant, and by restricting the egress routes to permit only one way in and out of the mini-suite, the potential for confusion or inadvertent blockage of the evacuation route for any individual is reduced. Lastly, the passenger controls the position of the door, so it is not dependent on the actions of another passenger to maintain egress capability. Previous approvals of mini-suites involved airplanes certificated prior to the adoption of Amendment 25-116 that were not operating under 14 CFR part 121. For those approvals, the FAA required an additional crewmember whose primary duty was to ensure that the mini-suite doors were positioned correctly for taxi, takeoff, and landing. Previous approvals have also involved twin-aisle airplanes for which the arrangement of mini-suites results in a more complex interior arrangement.

As previously noted, the applicant does not believe an additional flight attendant should be required as a limitation to this exemption because there are only 4 mini-suites installed. The FAA has reviewed the applicant's position and agrees that an additional attendant is not required for the following reasons:

- The A321 is a single-aisle airplane. This means the installation of mini-suites does not significantly increase the complexity of the interior arrangement.

- A maximum of 4 mini-suites are installed in the business class section of the airplane.

- No more than 159 passengers are carried. Section 121.391(a)(4) requires two flight attendants for airplanes having a seating capacity of more than 100 passengers plus 1 additional attendant for each unit (or part of a unit) of 50 passenger seats above a seating capacity of 100 passengers. Based on the passenger seating configuration of 159 seats, a minimum of 4 flight attendants are required on each flight. From a regulatory standpoint, three of the flight attendants are each responsible for 50 passenger seats and one flight attendant is responsible for 9 passenger seats (of which 4 could also be the mini-suites.)

The passenger capacity, total number of mini-suites, and simplicity of the interior arrangement all have the effect of reducing the need for additional, i.e., above the regulatory requirement, number of flight attendants. In this case, the FAA has concluded that adding a fifth flight attendant would not increase the likelihood that the mini-suite doors would be correctly positioned. In general, though, the FAA considers that a dedicated crewmember is needed to properly manage the mini-suite doors, if any of the above conditions are not satisfied.

Should Airbus decide to petition to increase the number of mini-suites in the future, the FAA may require an additional attendant above the minimum required by 14 CFR 121.391, based on the design and installation of the mini-suite as well as taking into consideration the number of passenger seats versus the number of required flight attendants.

The preamble to Amendment 25-116 cited safety risks that justified the prohibition against interior doors:

> It was determined in the course of accident investigations that this door could be detrimental in evacuation of passengers, who tended not to recognize that there was an

> exit beyond the door, even if it were the closest available…. Should such a door (either through omission or mechanical failure) become jammed in the event of an emergency evacuation, persons could be prevented or delayed in evacuating which could result in fatalities or injuries that would not otherwise have occurred. The hazards associated with a jammed door are still present whether or not passengers are on both sides of the door, and the recognition factor has not been mitigated. Either could result in the same consequences—failure of some passengers to evacuate the airplane.

In order to prevent these cited safety risks and provide a level of safety at least equal to that provided by the rule, the limitations on this exemption will ensure the following:

- The doors to the mini-suites will remain in the open position in taxi, takeoff, and landing; can be opened easily, if necessary; and will not interfere with evacuation of any other passenger.

- The mini-suite doors or walls are low enough that a 5th percentile female and a 95th percentile male will be able to exit the mini-suite in the event both doors are closed and unopenable.

- Failure modes associated with powered doors are correctly accounted for.

- Operational procedures are adequate, including training and information associated with the mini-suites, placards, and the duties of flight attendants.

The fact that the exit is beyond the mini-suite door is easily recognized by the occupant, so that safety risk is not a factor in these mini-suites. Under the conditions and limitations on this exemption, there is no need to limit the exemption to private use.

After the events of September 11, 2001, the Transportation Security Administration (TSA) has required the removal of certain curtains that separate the different parts of the passenger cabins because of security concerns. TSA has allowed curtains that separate the galley area from the passenger area. One of the reasons they allow these curtains is that crew members occupy the galley area and not passengers. FAA has coordinated the doors installed on these mini-suites with TSA, however, final acceptance for airplanes used by operators subject to security program requirements (e.g., 49 CFR 1544) is the responsibility of TSA.

The FAA's decision

In consideration of the foregoing, I find that a 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, Airbus is hereby granted an exemption from 14 CFR 25.813(e), Amendment 25-116, and 14 CFR 121.310(f)(5) and (f)(6). The petition is granted to the extent necessary to allow Airbus to install doors on mini-sites on Model A321 airplanes. Specifically, the exemption allows relief from the requirement that prohibits the installation of interior doors between passenger seats and emergency exits.

This exemption does not constitute TSA acceptance of the doors installed on these mini-suites.

This exemption is subject to the following conditions, and limitation numbers 1, 6, 9, 10, and 20 must be documented in the limitations section of the airplane flight manual:

1. The maximum total number of passenger seats, including mini-suites, is limited to 159.

2. Installation of mini-suites on the Model A321 is limited to 4, located between doors 1 and 2.

3. Each mini-suite can only provide accommodation for one single occupant for taxi, takeoff, and landing.

4. Each mini-suite entrance can only provide access to that specific mini-suite (i.e., no other access to any other mini-suite or part of the airplane).

5. Mini-suites cannot provide an egress path for evacuation for any person other than the single occupant of the mini-suite.

6. Installation of the mini-suites must not introduce any additional deterrents to evacuating passengers, even from other parts of the cabin.

7. The mini-suite doors must be open during taxi, takeoff, and landing.

8. The hold-open retention mechanism for mini-suite doors must hold the doors open under § 25.561(b) emergency landing conditions.

9. There must be a secondary, backup hold-open retention mechanism for the mini-suite doors that can be used to "lock" the doors in the open position if there is an electrical or mechanical failure of the primary retention mechanism. The secondary retention mechanism must hold the doors open under § 25.561(b) emergency landing conditions. Secondary retention mechanism control will be positioned such that a seated and belted occupant would not be able to operate it.

10. Appropriate placards, or other equivalent means, must be provided to ensure the mini-suite doors are in the open position for taxi, takeoff, and landing.

11. Training and operating instruction materials regarding the proper configuration of the mini-suite doors for taxi, takeoff, and landing must be provided to the operator for incorporation into their flight attendant's training programs and appropriate operational manuals.

12. A dual means of egress out of mini-suites must be provided such that either egress path can accommodate either a 5th percentile female or a 95th percentile male. The installation of a pair of sliding doors, or a single frangible door, in the mini-suite entrance have been found to be acceptable methods of meeting this requirement . The pair of doors must translate longitudinally in opposite directions, fore and aft. This ensures that

in the event of a retention mechanism failure, only one of the mini-suite doors will be closed. That is, inertial loads that tend to force one door in the closed position act to force the opposite door to the open position.

13. The height of the mini-suite walls and doors must be such that a 95th percentile male can fit between them and the airplane's interior furnishings. An evacuation demonstration is required showing that a 5th percentile female and a 95th percentile male will be able to exit the mini-suite in the event the door is closed and unopenable. This demonstration must be conducted for each different mini-suite layout.

14. No mechanism to latch the doors (if applicable) together in the closed position is allowed.

15. The mini-suite doors must be openable from the inside or outside with 25 pounds force or less regardless of power failure conditions.

16. If the mini-suite doors are powered, the doors must remained locked in the open position after power loss to the mini-suite.

17. Mini-suites installation must not reduce the dimensions of the main aisles, crossaisles, and passageways below the regulatory minimum.

18. Mini-suite doors must not impede main aisle or crossaisle egress paths in the open, closed, or translating position.

19. The mini-suite doors must be openable even with a crowded aisle.

20. Each mini-suite door must have a discrete hold-open mechanism that cannot be easily disengaged by a seated, belted occupant of the mini-suite. These hold-open mechanisms must be engaged for taxi, takeoff, and landing.

    a. For powered doors, this could be a deactivation switch for the door-closing mechanism. It is the flight attendant's duty to deactivate the mini-suite doors for taxi, takeoff, and landing.

    b. For manually operated doors, this could be a latching mechanism that cannot be easily activated by a seated, belted occupant of the mini-suite. It is the flight attendant's duty to engage these latches for taxi, takeoff, and landing.

21. Powered-door operations must not be hazardous to occupants. For example, compressive force of the door closing on body parts between the door and the door jam must not be a hazard. Both crushing of body parts and asphyxiation need to be considered.

22. The powered-door system must be designed to protect components from damage caused by items blocking door operation, misalignment of the mechanism, and minor deformation of the structure that would prevent the door from being correctly positioned for taxi, takeoff, and landing.

23. The powered-door system must be designed to prevent overheating of the components that could be an ignition source.

24. Powered doors must be able to be opened from either side of the doors regardless of the side from which the door was closed. If latches/locks are powered, the doors must be able to be opened from either side of the door regardless of the side from which the latches/locks are engaged.

Issued in Renton Washington, on September 11, 2013.

/s/ by Jeffrey E. Duven

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