Exemption No. 10996

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98057-3356

In the matter of the petition of **Airbus** for exemption from § 25.809(a) of Title 14, Code of Federal Regulations	**Regulatory Docket No. FAA-2013-0969**

GRANT OF EXEMPTION

By letter V25M13025866, dated October 29, 2013, Mr. Jean-François Petit, Cabin Safety Certification Manager, 1 Rond-point Maurice Bellonte, 31707 Blagnac Cedex, France, petitioned the Federal Aviation Administration (FAA), on behalf of Airbus SAS, for an exemption from the requirements of Title 14, Code of Federal Regulations (14 CFR) 25.809(a), as amended by Amendment 25-116. This exemption, if granted, would permit relief from the requirement that, for the Airbus Model A350 series airplane, flightcrew emergency exits have a means to view outside conditions under all lighting conditions.

The petitioner requests relief from the following regulations:

Section 25.809(a), at Amendment 25-116, requires that each emergency exit be provided with a means to view conditions outside the airplane prior to opening an exit, under all lighting conditions.

The petitioner supports its request with the following information:

This section quotes the relevant information from the petitioner's request, with minor edits for clarity. 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-2013-0969.

> Airbus petitions for an exemption from 14 CFR Part 25 § 25.809(a) at Amdt. 116 for outside viewing from the flight deck emergency exit. This requirement is applicable to A350 through its certification basis which includes the requirements of 14 CFR Part 25 up to Amendment 129. Since amendment 116, Section 25.809(a) requires each emergency exit to have means to view the outside conditions prior to opening the exit.

This viewing means may be on or adjacent to the exit provided no obstructions exist between the exit and the viewing means. This means must also be provided to permit viewing of the likely areas of evacuee ground contact during all lighting conditions with the landing gear extended as well as in all conditions of landing gear collapse. The A350 design does not have a dedicated means on or adjacent to the exit to view the outside conditions at the flight deck emergency exit. Furthermore, while the outside viewing capability provided by the flight deck windows on the A350 is sufficient for an evaluation of the outside conditions, the flight deck geometry results in a viewing area from the flight deck windows which does not permit the viewing of the likely area of evacuee ground contact in all conditions of landing gear collapse. In that respect, the design does not meet the literal language of the rule. Airbus respectfully requests that the FAA grant a partial exemption for this part of the rule on A350.

Identification of issue:

With Amendment 25-116, the FAA introduced requirements to provide outside viewing means at each emergency exit. 14 CFR 25.809(a) includes the requirement that an outside viewing means at emergency exits permit viewing of the likely area of evacuee ground contact and that the likely area of evacuee contact be viewable during all lighting conditions with the landing gear extended as well as in all conditions of landing gear collapse.

While the primary evacuation route for the flight crew on A350 is typically through the passenger cabin emergency exits, an overhead escape hatch is provided in the flight deck. Although used as a secondary evacuation path, the overhead hatch provides a means for the flight crew to evacuate the flight deck. In that respect, the flight deck overhead hatch is considered as a flight deck emergency exit and needs to comply with the outside viewing requirements of 14 CFR 25.809(a).

On A350, the basic design of the hatch does not have a means on or adjacent to the exit to permit viewing. But, the large flight deck windows are providing an effective means to the flight crew members to assess outside conditions when deciding whether or not they can open the hatch. So, even though the flight deck overhead hatch does not allow a view of the outside conditions when it is closed, the detection of a hazard directly above the A350 will be done by looking through the flight deck windows.

The rule also requires the viewing means at emergency exits to permit viewing of the likely area of evacuee ground contact and that the likely area of evacuee ground contact be viewable during all lighting conditions with the landing gear extended as well as in all conditions of landing gear collapse. On A350, the curvature of the fuselage in the vicinity of the flight deck does not allow direct viewing of the ground through the window where the evacuees would normally be expected to make their initial ground contact. It is very unlikely that a hazard will not be detected while viewing out the flight deck windows and in darkness conditions, the flight crew members will have the possibility to use the flashlight to assess the general outside area when no external light sources (e.g., runway and/or airport lighting) is available. Partial relief from § 25.809(a) at Amendment 25-116 is then necessary because the design of the A350 does not literally comply with the rule as it is written.

Supporting Argumentations:

The primary evacuation route for the flight crew on A350 is typically through the passenger cabin emergency exits. If the overhead escape hatch is used to evacuate the flight deck, the flight crew members will be able to assess the outside conditions:

- The large flight deck windows installed on A350 flight deck provide an accurate means for assessing the outside conditions.

- Even though the ground contact area where the evacuees would normally be expected to make their initial ground contact is not visible from the flight deck windows, the hazard directly above the airplane could be detected.

- In night conditions, the flight crew members will have the possibility to use the flashlight that is installed on the flight deck to ascertain the outside conditions through the flight deck window. In night conditions, other emergency exits on A350 are equipped with a dedicated external lighting system in line with the requirements of 14 CFR 25.809(a). These lights, in addition to the flashlight, will also help the flight deck members to assess the outside conditions through the flight deck windows.

Based on these arguments, Airbus considers that the grant of that partial exemption will not affect the level of safety compared to aircraft that would have a dedicated flight deck emergency exit viewing means compliant to 14 CFR 25.809(a) as it is literally written. The design standards provided in the A350 flight deck, flight deck emergency exits are all consistent with the intent of the rule.

Public interest

Airbus presents the argument that the granting of this exemption will be in the public interest by proposing an adequate level of safety for the A350. Not granting this exemption would lead Airbus to launch extensive design changes and manufacturing efforts to install a dedicated outside viewing means and an external lighting system without improving materially the level of safety for the flight crew. Then, the design complexity plus weight penalties and maintenance costs involved in by these changes represent a real burden for operators and additional fuel consumption. The grant of this exemption is in the public interest as it will contribute to operator's competitiveness as well as to reduced fuel consumption and emissions.

Federal Register publication

A summary of this petition was published in the *Federal Register* on February 26, 2014 (79 FR 10869). No comments were received.

The FAA's analysis

The FAA has reviewed the information Airbus provided and has concluded that granting this exemption is in the public interest for the reasons discussed below.

At the time the notice for proposed rulemaking and final rule for Amendment 25-116 were written, the primary focus was on passenger exits, although the FAA intended to have consistency between passenger and crew exits as well. Thus, the requirements are identical for

the two exit categories. Nonetheless, flightcrew exits have several characteristics that influence the effectiveness of the outside viewing means, and may justify a different approach.

First, as noted, there are flightcrew exits for which the point of ground contact cannot be seen from a flightdeck window because of fuselage curvature, and the path from the exit to the ground contact point is not a straight line. In this case, the value in illuminating that point is questionable, since the person using the exit would not be able to see the illuminated location on the ground anyway. Of course, more sophisticated features such as cameras or optical scopes could be installed. However, these go beyond the intent of the requirement, assuming a flightdeck window is available and has a typical field of view.

Second, flightcrew exits are generally used when the passenger exits are not available to the crew, or the situation demands more rapid egress than is possible by leaving the flightdeck and moving to a passenger exit. In those cases, outside viewing of the specific ground-contact point is largely useless because the flightcrew has no alternative to using the flightcrew exit(s). As noted in the final rule, however, a means should be available to see outside the airplane to generally assess conditions, even if the specific point of ground contact is not visible. Flightdeck windows typically satisfy this need.

Third, for an overhead hatch, the potential hazards are reduced with respect to opening of the exit. Because the hatch is on top of the airplane, the main hazard for which opening of the exit could jeopardize safety is a fire, and a fire of that magnitude will be visible from the flightdeck windows. Again, while there is value in being able to generally assess outside conditions (under all lighting conditions), the need to see specific points on the ground is greatly reduced. In the case of an overhead hatch, an acceptable approach may be to provide a general view of the outside area, and provide portable illumination, e.g., a flashlight for the flightcrew exit, that the crew can use. However, some form of exterior illumination is required, per the regulation.

Airbus also states that an exemption is in the public interest based on the cost of redesign, along with added weight, and their view that literal compliance will have no appreciable effect on safety. The FAA agrees that the current requirement would impose unintended design consequences on the Model A350 airplane without providing commensurate safety benefits. And, Airbus notes in their petition that the FAA has granted an exemption for the Boeing Model 787 airplane for the same subject. For this reason, we are considering an amendment to the requirement that would better reflect the original intent with respect to flightdeck exits. The European Aviation Safety Agency (EASA) has adopted a similar requirement and advisory material into the Certification Specifications in Europe. Airbus' proposal meets the EASA criteria. We are working with EASA with respect to the outside-viewing requirement of § 25.809(a), with a goal of developing a common standard that distinguishes between passenger and flightcrew exits. We anticipate that a new, harmonized requirement ultimately will be adopted.

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 § 25.809(a), to permit relief from the requirements that flightcrew emergency exits have a means to view outside conditions

under all lighting conditions for the Airbus Model A350 series airplanes, subject to the following limitations:

1. This exemption is limited to airplanes that have a flightdeck overhead hatch that functions as the flightcrew exit.

2. If airplane-mounted exterior illumination is not available under emergency conditions to view outside the flightdeck window, portable illumination capable of providing outside visibility under dark-of-night conditions must be readily accessible to either pilot.

Issued in Renton, Washington, on May 27, 2014.

/s/ Michael Kaszycki

Michael Kaszycki
Acting Manager, Transport Airplane Directorate
Aircraft Certification Service