

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

In the matter of the petition of

Gulfstream Aerospace Corporation

for an exemption from § 25.809(a) of
Title 14, Code of Federal Regulations

Regulatory Docket No. FAA-2015-3595

GRANT OF EXEMPTION

By letter dated August 14, 2015, Mr. Robert Glasscock, Director of ODA Programs, Gulfstream Aerospace Corporation, PO Box 2206, Savannah, Georgia, 31402-2206, petitioned the Federal Aviation Administration (FAA) for an exemption from the requirements of § 25.809(a) of Title 14, Code of Federal Regulations (14 CFR). This exemption, if granted, would permit relief from the requirement to provide a means of viewing the likely areas of evacuee ground contact prior to opening the door for the overwing emergency exits on Gulfstream GVII-G500 airplanes.

The petitioner requests relief from the following regulation:

Section 25.809(a), at Amendment 25-116, requires, in pertinent part, that each emergency exit be provided with a means to permit viewing of the likely areas of evacuee ground contact prior to opening the exit.

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-2015-3595.

Background

Gulfstream Aerospace Corporation (Gulfstream) of Savannah, Georgia, has submitted an application to the FAA's Atlanta Aircraft Certification Office for type certification of a new, twin-engine, transport category aircraft to be known as the Gulfstream Model GVII-G500.

Title 14 CFR 25.809(a), Amendment 25-116, states that each emergency exit, including each flightcrew emergency exit, must be a moveable door or hatch in the external walls of the fuselage, allowing an unobstructed opening to the outside. In addition, each emergency exit must have means to permit viewing of the conditions outside the exit when the exit is closed. The viewing means may be on or adjacent to the exit, provided no obstructions exist between the exit and the viewing means. Means must also be provided to permit viewing of the likely areas of evacuee ground contact. The likely areas of evacuee ground contact must be viewable during all lighting conditions with the landing gear extended as well as in all conditions of landing gear collapse.

The GVII-G500 emergency exit configuration consists of the Type I Main Entry Door, along with two pairs of overwing emergency exits which will be demonstrated to provide equivalent or better egress flow rate as a single Type III overwing exit. These overwing emergency exits are identical in size and shape to those certified on the GVI. The GVII-G500 will have a maximum seating capacity of 19 passengers and the overwing exits are centrally located in the passenger cabin. The exits house large oval windows which provide a full panoramic view of the wing surface as well as the ground area just beyond the point of occupant first contact.

Partial relief is being sought for the GVII-G500 and its derivatives, from the requirements of § 25.809(a) for the overwing exits since this outside viewing means does not permit viewing of the likely area of the evacuee ground contact prior to exit opening. Relief is necessary since literal compliance with the rule would, at a minimum, require extensive design changes to the airplane (such as movement of the exits forward or complete redesign of the exit configuration) to provide the view of the exact ground location as currently prescribed. Furthermore, due to the height of the wing versus the height of the doors, a truly compliant configuration may ultimately not be physically obtainable.

Supportive Information

Notice of Proposed Rulemaking (Notice No. 96-9) was published in the *Federal Register* on July 24, 1996 (61 FR 38552). The notice proposed to upgrade several cabin safety requirements including outside viewing means. The FAA's response to the commenters was that the impact of § 25.809(a) went beyond what was envisioned in the rulemaking process for the overwing exits on some airplanes.

The intent of the requirement was to enable a person to ascertain whether to open an exit, and whether it was safe to evacuate through the exit, based on the assessment of the outside conditions. To the extent that the means used for the determination of the former did not also allow an assessment of the ground, it was agreed that an additional viewing means might be necessary, and that the additional means might be somewhat remote from the exit. Therefore, the amendment was reworded to allow for dual purpose of the viewing means, and to distinguish the required locations of the two. The intent of the rule was that it was not necessary for a person to be able to view the ground-contact point while in position to open an overwing exit. The rule itself refers to the ground-contact

view separately from the view of conditions outside the exit, but the intent of the rule was not clearly expressed in the rule language. The European Aviation Safety Agency (EASA) incorporated the improved language in their certification specification (CS) at Amendment 25/12, dated July 13, 2012. CS 25.809(a)(3) states, “For non-over-wing passenger emergency exits, a means must also be provided to permit viewing of the likely areas of evacuee ground contact when the exit is closed with the landing gears extended or in any condition of collapse. Furthermore, the likely areas of evacuee ground contact must be viewable with the exit closed during all ambient lighting conditions when all landing gears are extended.”

Factors Supporting the Petition

Based on the design and location of the elliptical windows, Gulfstream believes that the ability to perform a fully effective visual assessment of outside aircraft conditions and evacuation route with the overwing exits closed is provided. The arrangement of the large elliptical windows at the overwing exits provides a field of view of approximately 140°. A view of the full surface of the wing as well as the ground area surrounding the wing, including areas just feet from the location of likely occupant ground contact is provided. With this large panoramic view, an occupant can directly see the wing surface to ensure no hazards are present but will also be provided a view of enough of the ground area to make a logical assessment as to the conditions at the point of contact prior to opening the exit.

Once the evacuee steps onto the surface of the wing, they will be then able to follow the appropriate escape route and view the ground where they would likely make contact to confirm no hazards exist. Evacuees will be capable of viewing the escape route and ground during all lighting conditions. The exterior egress lighting is integral to the emergency lighting system.

Effect of the Exemption on Safety

Granting this exemption would not affect safety because:

1. The proposed configuration provides a level of safety consistent with the intent of the rule and provides an effective means to assess outside conditions prior to opening overwing exits. The GVII-G500 model aircraft design is consistent with industry present state-of-the-art and design practice.
2. The GVII-G500 and its derivatives will comply with anticipated future harmonized requirements as written in the EASA CRD to NPA 2010-11 and now incorporated in EASA CS 25.809(a) at Amdt. 12.

Issue of Public Interest

Gulfstream Aerospace Corporation designs, develops, manufactures, markets, and services the world’s most technologically advanced business jet aircraft to an international market. Gulfstream’s leadership position in the global business jet market

is due to the efforts of its nearly 10,000 employees in the manufacturing plants, completion centers, and service centers across North America. The corporation utilizes numerous products, such as avionics and environmental control systems, from scores of suppliers located throughout the United States. Gulfstream competes for new business all over the world. Granting this exemption would benefit the public as a whole, because it:

1. Minimizes significant cost impacts and avoids investing time and efforts to develop a design that would meet some aspects of the present regulation which will be changed in the future.
2. Allows the Gulfstream GVII-G500 model designs to meet EASA and FAA anticipated future harmonized regulation preventing competitive disadvantage due to additional design/manufacturing complexity and increased weight.

Operation Outside the United States

The EASA certification standard 25.809(a) is not currently harmonized with 14 CFR 25.809(a).

Regardless of EASA requirements, per 14 CFR 11.81(h), Gulfstream requests consideration be given to extending this exemption for operation outside of the United States. Gulfstream aircraft are routinely registered and operated outside of the United States and projections are the same for the Model GVII-G500. Granting this extension of privileges will allow for operations based within foreign countries having bilateral agreements with the United States accepting FAA 14 CFR part 25 as their airworthiness standards for transport category aircraft. Gulfstream believes that limiting this exemption to use within the US would put unfair restrictions on the marketability of this aircraft.

Federal Register publication

The FAA has determined that good cause exists for waiving the requirement for *Federal Register* publication for public comment because the request is identical in all material respects to previously granted exemptions; the exemption, if granted, would not set a precedent; and any delay in acting on this petition would be detrimental to Gulfstream Aerospace Corporation.

The FAA's Analysis

The FAA has reviewed the information provided by Gulfstream Aerospace Corporation and has concluded that granting this exemption is in the public interest for the reasons stated by the applicant and the reasons discussed below. The FAA has determined that there is no adverse impact on safety if an occupant cannot simultaneously see conditions immediately outside the overwing emergency exit door and the ground-contact point. As stated by the petitioner, the impact of the regulation, as codified, went beyond what was envisioned in the rulemaking process for the overwing exits on some airplanes.

On many overwing exits, the location where the evacuee makes first contact on the ground is a considerable distance from the point from which they exit the passenger cabin. The distance the evacuee moves either forward or aft on the wing upper surface, and then down to the ground either by escape slide, or by jumping off of the wing, or sliding down the leading or trailing edge of the wing, makes it impossible to see the ground contact point from inside the airplane because of the distance or the wing itself blocking the view. Some commenters to the Notice of Proposed Rulemaking (Notice No. 96-9) made this point, and the FAA response was:

With respect to the potential for the exit to be somewhat remote from the point where the evacuees would contact the ground, the FAA agrees that this may be the case. The intent of the requirement is to enable a person to ascertain whether to open an exit, and whether it is safe to evacuate through the exit, based on an assessment of the outside conditions. To the extent that the means used for determination of the former does not also allow an assessment of the ground, the FAA agrees that an additional viewing means may be necessary, and that the additional means may be somewhat remote from the exit. We have therefore reworded the amendment to allow for the dual purpose of the viewing means, and to distinguish the required locations of the two.

Our intent in this rule was that it is not necessary for a person to be able to view the ground contact point while in position to open an overwing exit. The rule itself refers to the ground-contact view separately from the view of conditions outside the exit, but the intent of the rule was not clearly expressed in the rule language. The FAA worked with the European Aviation Safety Agency (EASA) to improve the rule language based on our experience applying this rule. EASA incorporated the improved language in their Certification Specifications (CS) at amendment 25/12, dated July 13, 2012. CS 25.809(a)(3) states:

For non-over-wing passenger emergency exits, a means must also be provided to permit viewing of the likely areas of evacuee ground contact when the exit is closed with the landing gears extended or in any condition of collapse. Furthermore, the likely areas of evacuee ground contact must be viewable with the exit closed during all ambient lighting conditions when all landing gears are extended.

The FAA is considering rulemaking to harmonize this requirement with EASA.

The proposed configuration provides a level of safety consistent with the intent of the rule. The petition proposes that the large elliptical window allows for outside viewing to assess the outside conditions prior to opening the exit. The evacuee can then open the exit and step out onto the wing and move along the wing to assess the conditions where they would make first contact to the ground. At that point, if the conditions were not acceptable, evacuees would search for another location from which to exit off of the wing. To enforce literal compliance that is more stringent than our original intent for the rule would result in an unnecessary burden on the petitioner.

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, I grant Gulfstream Aerospace Corporation an exemption from 14 CFR 25.809(a) at Amendment 25-116. The exemption is granted to the extent necessary to allow Gulfstream Aerospace Corporation to partially comply with the outside-viewing requirements for the overwing emergency exits on Model GVII-G500 airplanes. Specifically, the exemption provides relief from the requirement that overwing exits permit viewing of the likely areas of evacuee ground contact when the exits are closed. This exemption allows viewing the first point of contact with the ground after the overwing exit has been opened and the evacuee is on the upper surface of the wing on Gulfstream Model GVII-G500 airplanes. Gulfstream must demonstrate compliance with all other requirements of § 25.809(a) at Amendment 25-116 for this airplane.

Issued in Renton, Washington, on November 5, 2015.

/s/

Dionne Palermo
Acting Manager, Transport Airplane Directorate
Aircraft Certification Service