

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

In the matter of the petition of

**Lockheed Martin Aircraft and  
Logistics Centers**

for an exemption from §§ 25.807(g)(1)  
and 25.807(i)(1) of Title 14, Code of  
Federal Regulations

Regulatory Docket No. FAA-2004-18747

**PARTIAL GRANT OF EXEMPTION**

By letter dated July 20, 2004, Mr. Gary Barrington, Manager – Requirements, Certification and Support, Lockheed Martin Aircraft and Logistics Centers, 244 Terminal Road, Greenville, South Carolina, 26905, petitioned the Federal Aviation Administration for an exemption from Title 14, Code of Federal Regulations (14 CFR) 25.807(g)(1) and 25.807(i)(1).

The requested exemption, if granted, would permit relief from the requirements of these regulations to allow carriage of six non-crewmembers (commonly referred to as supernumeraries) on Gulfstream Model GV-SP (G550) airplanes which have been converted from a passenger to a Compact Airborne Early Warning (CAEW) configuration.

**The petitioner requests relief from the following regulations:**

Section 25.807(g)(1), Amendment 25-94, requires that in airplanes having a passenger seating configuration of 1 to 9 seats, there must be at least one Type IV or larger overwing exit in each side of the fuselage.

Section 25.807(i)(1), Amendment 25-94, requires that airplanes having a passenger seating configuration of 1 to 9 seats must have at least one exit above the waterline in each side of the airplane, meeting at least the dimensions of a Type IV exit.

**The petitioner supports its request with the following information:**

“Lockheed Martin Aircraft Center petitions for exemption from the requirements of 14 CFR Part 25.807 regarding emergency exits.

“Relief is sought from 14 CFR Part 25.807 on the basis that the Supplemental Type Certificate (STC) installs provisional equipment that only has a military application, that only trained military personnel will be allowed on the aircraft, the aircraft is limited to 8 crew members, and that the aircraft is not for hire to passengers.

“14 CFR 11.81(b) Section of 14 CFR from which relief is sought:

“14 CFR Part 25.807 Emergency Exits (g)(1) and (i)(1)

“14 CFR 11.81(c) Extent and reason of relief sought:

“Application has been made for a STC on Gulfstream GV-SP (G550) aircraft. The G550 aircraft is a 19 passenger transport category aircraft intended to be operated for business and corporate travel. The modification will outfit the aircraft with mission equipment for military operations. The purpose of this petition is to request an exception to 14 CFR 25.807 for the requirements for emergency exit design and construction, specifically, the requirements for overwing exits per paragraph g subparagraph 1 and per ditching requirements of paragraph i subparagraph 1. This petition is due to the unique exterior fairing and interior equipment installations for military application. This aircraft is not operated for hire or offer for common carriage.

“14 CFR 11.81(d) Public Interest:

“The Gulfstream G550 aircraft, with the addition of this STC, will be used exclusively as a military aircraft. The crew will be trained military personnel skilled in aircraft operations and procedures. The general public will not be allowed access to the modified aircraft.

“14 CFR 11.81(e) Information in support of petition:

“The special missions provisional equipment for this STC includes the installation of an external fuselage fairing. This fairing extends from the forward passenger door to just forward of the engines. This fairing covers the four emergency overwing exits. The two left and right forward emergency exits will be disabled.

The aft emergency exits will remain and are not modified. However, these exits are externally covered by the fairing. A hatch will be provided in the external fairing which will allow external access to the aircraft emergency exit. The hatch will have a handle to allow persons on either side of the hatch to unlock or unlatch the hatch without use of tools. Although trained military personnel can egress through the provided hatches, it is the intent of this petition that these hatches not be certified as emergency exits.

“The Gulfstream G550 aircraft is designed to the requirements of 14 CFR Part 25 for transport category aircraft. These rules are addressed basically to Transport Category aircraft that are used for the carriage of fare paying passengers from the general public. These rules also apply for aircraft with well over 400 passengers seating. The Gulfstream 550 aircraft is Type Certificated for a maximum of 19 passengers. This special mission aircraft will be equipped with 6 cabin seats for a total of 8 crew members. Typical transport category aircraft carry the general public with passengers that are unfamiliar with flying or the operation of emergency equipment. The crew utilizing this special missions aircraft are trained and are very familiar with the specific aircraft. Unlike an airline operation, the crew of 8 are tasked with a specific mission and are intimately knowledgeable of the specific aircraft and its unique characteristics, including the emergency equipment and escape routes.

“As a result, Lockheed Martin proposes the following limitations:

- “1. The airplane is not operated for hire.
- “2. All crew members be trained regarding the operation of the emergency exit and external fairing hatch.
- “3. Limited to 8 crew members

“14 CFR 11.81 (f) Petition summary:

“Lockheed Martin Aircraft Center petitions for exemption from the requirements of 14 CFR Part 25.807 regarding emergency exits. Specifically, the requirements for over wing exits per paragraph g subparagraph 1 and per ditching requirements of paragraph i subparagraph 1. The modification will disable the left and right forward emergency exits which are covered by the external fairings. The aft left and right exits will be provided with external hatches that can be opened internally or externally. There will be no modification to the existing forward exit (entry door) and it will remain fully functional as an additional emergency egress path. Total occupancy will be limited to 8 trained mission crew members.

A notice including a summary of this petition was published in the Federal Register on August 17, 2004 (69 FR 51142). No comments were received in response to the notice.

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

The FAA disagrees with the petitioner's intent "that the overwing hatches not be certified as emergency exits." Emergency exits of the appropriate size and number must be installed based on the seating configuration on the airplane. Without the aft pair of overwing exits, only the forward left hand entry door would be available as an exit.

The addition of the external fairing hatches is not in compliance with § 25.809(a), which requires an unobstructed opening to the outside. Although not identified by the petitioner, the FAA views an exemption from § 25.809(a) as necessary. We consider the external fairing hatch to be an exit. The hatch must meet the requirements of an exit. We do not consider the external fairing hatch exits to be acceptable for commercial operations. The FAA considers the proposed external fairing hatch exits acceptable for a government use purpose, provided the limitations below are followed.

The certification regulations for transport category airplanes address airplane occupants as being either "crew" or "passengers." Due to differences in training, physical capabilities, and other factors (such as familiarity with the airplane), the means required by part 25 to address emergency evacuation and emergency equipment differ for passengers and crewmembers.

Although the petitioner proposes the limitation of eight crewmembers, only two crewmembers are required to fly this model airplane. For FAA purposes, the occupants are identified as two crew and six supernumeraries. Because supernumeraries are not crewmembers, they must be considered "passengers" by default, with respect to part 25. However, supernumeraries do hold a special status because of their training and other factors. The FAA, in the past, has granted certain exemptions to allow the carriage of supernumeraries on cargo airplanes without compliance with all of the part 25 standards for passenger safety, provided that certain other conditions are met. Those conditions have varied, depending on the airplane design, the nature of the proposals under consideration, and the number and location of persons to be carried. We view the unique 'military-like' government use operation of this airplane as similar to a cargo operation and therefore accept using supernumeraries as part of this configuration.

The FAA recognizes that supernumeraries, as opposed to passengers, may be selected and trained appropriately in the use of emergency exit operation. The FAA considers that the petitioner's proposed training of the elliptical and external fairing hatch emergency exit operation, once FAA approved, will provide an adequate level of safety to supernumeraries for the petitioner's airplane configuration.

It should also be noted that the overwing emergency exits are not of standard size. We have issued an equivalent safety finding for the overall evacuation capability being satisfactory for the 19 passenger configuration with all exits active, plus additional compensating features. Section 25.807 requires that there must be at least one Type IV exit on each side of the airplane. The Type IV exit is defined as being a rectangular opening of not less than 19 inches wide by 26 inches high, with corner radii not greater than 6.3 inches, located over the wing, with a step-up inside the airplane of not more than 29 inches and a step-down outside the airplane of not more than 36 inches. The overwing exit on the GV-SP is a 26 inches wide by 19 inches high ellipse. This exit has not been shown to be equivalent to the Type IV and therefore is assumed to have a certain amount of reduced capacity. Furthermore, some large occupants may not fit through the elliptical exit and block others from using that exit. A pair of Type IV exits have a defined capacity of nine passenger seats. We have determined that six specifically trained supernumeraries that can be shown to fit through the elliptical exit are an acceptable capacity. Having more than six will require a more in depth review of the GV-SP elliptical exit capacity compared to the Type IV. In all cases, the opening of the external fairing hatch exits must be at least meet the requirements of a Type IV exit.

Supporting the CAEW Gulfstream GV-SP variant aircraft is considered to be in the public interest for reasons of national and international security. Airborne Early Warning, Command and Control (AEWC&C) systems provide real-time intelligence and command and control needed to achieve and maintain air superiority over a combat area and to enable surveillance of borders in peacetime.

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, Lockheed Martin Aircraft and Logistics Centers is hereby granted a partial exemption, as explained below, from the following sections of 14 CFR:

<b>Section</b>	<b>Amendment Level</b>
§ 25.807(g)(1)	Amendment 25-94
§ 25.807(i)(1)	Amendment 25-94
§ 25.809(a)	Amendment 25-94

The exemption from these regulations allows the carriage of up to six supernumeraries, in addition to two crewmembers, in the flight compartment of Gulfstream Model GV-SP (G550) airplanes converted from a passenger version to a government use Compact Airborne Early Warning (CAEW) configuration under FAA Project ST7276AT-T. The following limitations apply and 1 through 4 must be documented in the limitations section of the Airplane Flight Manual (AFM):

1. The airplane is operated for government use only. The government use operation is intended to include the specific 'military like' mission activity, and any associated training, maintenance and ferry flights. The specific modifications of this airplane interior and exterior are appropriate only for flights related to the specific mission. The airplane may not be used in common carriage or for hire operations.
2. All crewmembers and supernumeraries are trained regarding the operation of the emergency exit and the external fairing hatch. This petitioner's proposed training must be acceptable to the FAA Aircraft Certification Office as part of the Supplemental Type Certificate process.
3. Occupancy in the airplane is restricted to a minimum of two crew, and maximum of six supernumeraries (maximum of eight occupants total). It must be demonstrated with the interior arrangement installed, or an acceptable mock-up that occupants representing the 5<sup>th</sup> percentile female and the 95<sup>th</sup> percentile male can open and egress through the overwing elliptical and external fairing hatch exits.
4. The pilot in command must make the determination that all occupants can operate and egress through the overwing elliptical and external fairing hatch exits prior to each flight.
5. The design of the external fairing hatch exits must meet the requirements of the Type IV exit and include an adequate viewing window so the airplane occupants can assess the external conditions, such as a fire, and make a determination of the most appropriate exit to use in the event of evacuation.
6. The interior arrangement must not interfere with the access to and use of the emergency exits.

Issued in Renton, Washington, on December 3, 2004.

/s/  
Ali Bahrami  
Manager, Transport Airplane Directorate,  
Aircraft Certification Service