

Dated: May 11, 2004.

Jeanette C. Brinkley,
Secretary, Farm Credit Administration Board.
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. 278, Special Conditions No. 25-262-SC]

Special Conditions: Gulfstream Model GV-SP and GIV-X; High Intensity Radiated Fields (HIRF)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for Gulfstream Aerospace Corporation Model GV-SP and GIV-X airplanes. These airplanes will have novel and unusual design features when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. Specifically, these airplanes will use the Honeywell EPIC System which includes the Electronic Display System (EDS), Air Data System, Inertial Reference System, and Automatic Flight Control System. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for the protection of these systems from the effects of high-intensity radiated fields (HIRF). These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that provided by the existing airworthiness standards.

DATES: The effective date of these special conditions is May 14, 2004. Comments must be received on or before June 14, 2004.

ADDRESSES: Comments on these special conditions may be mailed in duplicate to: Federal Aviation Administration, Transport Airplane Directorate, Attention: Rules Docket (ANM-113), Docket No. NM278, 1601 Lind Avenue SW., Renton, Washington 98055-4056; or delivered in duplicate to the Transport Airplane Directorate at the above address. All comments must be marked: Docket No. NM278.

FOR FURTHER INFORMATION CONTACT: Joseph Jacobsen, FAA, Standardization Branch, ANM-113, Transport Airplane

Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington 98055-4056; telephone (425) 227-2011; facsimile (425) 227-1149.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA has determined that notice and opportunity for prior public comment are impracticable, because these procedures would significantly delay certification of the airplane and thus delivery of the affected aircraft. In addition, the substance of these special conditions has been subject to the public comment process in several prior instances with no substantive comments received. The FAA, therefore, finds that good cause exists for making these special conditions effective upon issuance; however, the FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data. We ask that you send us two copies of written comments.

We will file in the docket all comments we receive as well as a report summarizing each substantive public contact with FAA personnel concerning these special conditions. The docket is available for public inspection before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this preamble between 7:30 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

We will consider all comments we receive on or before the closing date for comments. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change these special conditions based on the comments we receive.

If you want the FAA to acknowledge receipt of your comments on these special conditions, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

Background

On August 22, 2000, Gulfstream applied for an amendment to Type Certificate No. A12EA to include an updated version of the model GIV airplane, called the GIV-X. On October 24, 2000, Gulfstream applied for a second amendment to Type Certificate No. A12EA to include an updated

version of the model GV airplane, called the GV-SP.

The GIV-X and GV-SP airplanes are both pressurized, low-wing, "T-tail" transport category airplanes with a tricycle landing gear. Both carry a maximum of 19 passengers. The GIV-X is powered by two Rolls-Royce model Tay 611-8C engines; the GV-SP is powered by two BMW-Rolls Royce Deutschland model BR700-710C4-11 engines.

The primary difference between the existing GV and the new GV-SP is the installation of an advanced avionics and flight deck display suite—the new Honeywell EPIC System—in the GV-SP. The EPIC System includes an Electronic Display System, Air Data System, Inertial Reference System, and Automatic Flight Control System.

The primary differences between the existing GIV and the new GIV-X are the following features of the GIV-X:

- An advanced avionics and flight deck display suite—the EPIC System,
- Airframe aerodynamic changes to increase performance, range and economics,
- Derivative Tay 611-8C engines with GV nacelles and thrust reversers,
- A new Full Authority Digital Engine Control (FADEC), and
- A modified yaw damper and a new hard-over prevention system (HOPS).

Both the Gulfstream model GIV-X and GV-SP airplanes will utilize electrical and electronic systems that perform critical functions. The existing airworthiness regulations do not contain adequate or appropriate safety standards for protection of these systems from the effects of high intensity radiated fields (HIRF) external to the airplane. Therefore, these special conditions are proposed.

Type Certification Basis

Under the provisions of 14 CFR 21.101, Gulfstream must show that the model GIV-X and GV-SP airplanes meet the applicable provisions of the regulations incorporated by reference in Type Certificate A12EA or the applicable regulations in effect on the date of application for the change. The regulations incorporated by reference in the type certificate are commonly referred to as the "original type certification basis."

The certification basis for the Gulfstream GIV-X airplanes includes 14 CFR part 25, effective February 1, 1965, including Amendments 25-1 through 25-101 with the exceptions listed below:

Section	Title	Amendment
25.21(e)	Proof of compliance	25-7
25.305	Strength and deformation	25-54, 25-86 **
25.321	Flight loads—General	25-23, 25-86 **
25.333	Flight maneuvering envelope	25-0, 25-86 **
25.335(b)	Design airspeeds (speed margin)	25-23
25.341	Gust and turbulence loads	25-0, 25-86 **
25.343	Design fuel and oil loads	25-18, 25-86 **
25.365	Pressurized compartment loads	25-54, 25-87 **
25.373	Speed control devices	25-0, 25-86 **
25.391	Control surface loads—General	25-0, 25-86 **
25.427	Unsymmetrical loads	25-0, 25-86 **
25.445	Auxiliary aerodynamic surfaces	25-0, 25-86 **
25.459	Special devices	25-0 *
25.491	Takeoff run	25-0, 25-91 **
25.561	Emergency landing conditions	25-23, 25-64 (seats), 25-91 (new structure) **
25.571	Damage tolerance and fatigue evaluation of structure	25-54 (wing and empennage), 25-96 (fuselage changes) **
25.671	Control systems—General	25-0
25.677(c)	Trim systems	25-0
25.693	Joints	25-0 *
25.695	Power-boost and power-operated control system	25-0
25.807	Emergency exits	25-55 *
25.807(c)(2) and (d)(4)	Emergency exits	25-15 *
25.813(a), (b), (c), (d), and (f)	Emergency exit access	25-46 *
25.841	Pressurized cabins	25-38, 25-87 **
25.857	Cargo compartment classification	25-32 *
25.858	Cargo or baggage compartment smoke or fire detection systems.	25-54 *
25.963	Fuel tanks	25-40
25.973	Fuel tank filler connection	25-40
25.1013	Oil tanks	25-36
25.1447	Equipment standards for oxygen dispensing units	25-41, 25-87 **
25.1517	Rough air speed, VRA	25-86 (new paragraph—NA) *
25.1557	Miscellaneous markings and placards	25-38 *

* These systems have no changes from the basic GIV model; therefore, the paragraphs remain at the original GIV certification basis and the later amendment was not adopted. Amendment 25-0 is the original published version of Part 25, February 1, 1965.

** Unmodified structure remains in compliance with the earlier amendment listed. New or modified structure is in compliance with the later amendment level listed.

The certification basis for the Gulfstream GV-SP airplanes includes 14 CFR part 25, effective February 1, 1965, including Amendments 25-1 through 25-98, with the exceptions and limitations specified in Type Certificate A12EA. In addition, the GIV-X and GV-SP certification bases include certain special conditions, exemptions, and equivalent safety findings that are not relevant to these special conditions.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, 14 CFR part 25, as amended) do not contain adequate or appropriate safety standards because of novel or unusual design features, special conditions are prescribed under the provisions of § 21.16.

Special conditions, as defined in 14 CFR 11.19, are issued in accordance with § 11.38 and become part of the type certification basis in accordance with § 21.101.

Special conditions are initially applicable to the models for which they are issued. Should the applicant apply for a type certificate to modify any other model included on Type Certificate A12EA to incorporate the same novel or

unusual design feature, the special conditions would also apply to the other models under the provisions of § 21.101.

Novel or Unusual Design Features

The Gulfstream Model GV-SP and GIV-X airplanes will incorporate a Honeywell EPIC System which will perform certain critical functions. The EPIC System includes the Electronic Display System (EDS), Air Data System, Inertial Reference System, and Automatic Flight Control System. The GIV-X also incorporates a new Full Authority Digital Engine Control (FADEC), a modified yaw damper and a new hard-over prevention system (HOPS). These systems may be vulnerable to high-intensity radiated fields (HIRF) external to the airplane. The current airworthiness standards of part 25 do not contain adequate or appropriate safety standards for the protection of this equipment from the adverse effects of HIRF. Accordingly, these systems are considered novel or unusual design features.

Discussion

There is no specific regulation that addresses protection requirements for electrical and electronic systems from HIRF. Increased power levels from ground-based radio transmitters and the growing use of sensitive electrical and electronic systems to command and control airplanes have made it necessary to provide adequate protection.

To ensure that a level of safety is achieved equivalent to that intended by the regulations incorporated by reference, special conditions are needed for the Gulfstream Model GV-SP and GIV-X airplanes. These special conditions require that new electrical and electronic systems that perform critical functions, such as the EPIC System, be designed and installed to preclude component damage and interruption of function due to both the direct and indirect effects of HIRF.

High-Intensity Radiated Fields (HIRF)

With the trend toward increased power levels from ground-based transmitters and the advent of space and satellite communications, coupled with electronic command and control of the

airplane, the immunity of critical digital avionic/electronics and electrical systems to HIRF must be established.

It is not possible to precisely define the HIRF to which the airplane will be exposed in service. There is also uncertainty concerning the effectiveness of airframe shielding for HIRF.

Furthermore, coupling of electromagnetic energy to cockpit-installed equipment through the cockpit window apertures is undefined. Based on surveys and analysis of existing HIRF emitters, an adequate level of protection exists when compliance with the HIRF protection special condition is shown in accordance with either paragraph 1 or 2 below:

1. A minimum threat of 100 volts rms (root-mean-square) per meter electric field strength from 10 KHz to 18 GHz.

a. The threat must be applied to the system elements and their associated wiring harnesses without the benefit of airframe shielding.

b. Demonstration of this level of protection is established through system tests and analysis.

2. A threat external to the airframe of the field strengths indicated in the table below for the frequency ranges indicated. Both peak and average field strength components from the table below are to be demonstrated.

Frequency	Field strength (volts per meter)	
	Peak	Average
10 kHz–100 kHz	50	50
100 kHz–500 kHz	50	50
500 kHz–2 MHz	50	50
2 MHz–30 MHz	100	100
30 MHz–70 MHz	50	50
70 MHz–100 MHz	50	50
100 MHz–200 MHz	100	100
200 MHz–400 MHz	100	100
400 MHz–700 MHz	700	50
700 MHz–1 GHz	700	100
1 GHz–2 GHz	2000	200
2 GHz–4 GHz	3000	200
4 GHz–6 GHz	3000	200
6 GHz–8 GHz	1000	200
8 GHz–12 GHz	3000	300
12 GHz–18 GHz	2000	200
18 GHz–40 GHz	600	200

The field strengths are expressed in terms of peak of the root-mean-square (rms) over the complete modulation period.

The threat levels identified above are the result of an FAA review of existing studies on the subject of HIRF, in light of the ongoing work of the Electromagnetic Effects Harmonization Working Group of the Aviation Rulemaking Advisory Committee.

Applicability

As discussed above, these special conditions are applicable to Gulfstream

GV–SP and GIV–X airplanes. Should Gulfstream apply at a later date for design change approval to modify any other model included on the same type certificate to incorporate the same or similar novel or unusual design feature, these special conditions would apply to that model as well under the provisions of § 21.101.

Conclusion

This action affects only certain novel or unusual design features on Gulfstream GV–SP and GIV–X airplanes. It is not a rule of general applicability and affects only the applicant which applied to the FAA for approval of these features on these airplanes.

The substance of the special conditions for this airplane has been subjected to the notice and comment procedure in several prior instances and has been derived without substantive change from those previously issued. Because a delay would significantly affect the certification of the airplane, which is imminent, the FAA has determined that prior public notice and comment are unnecessary and impracticable and good cause exists for adopting these special conditions upon issuance. The FAA is requesting comments to allow interested persons to submit views that may not have been submitted in response to the prior opportunities for comment described above.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Gulfstream Model GV–SP and GIV–X airplanes.

1. *Protection from Unwanted Effects of High-Intensity Radiated Fields (HIRF).* Each electrical and electronic system that performs critical functions must be designed and installed to ensure that the operation and operational capability of these systems to perform critical functions are not adversely affected when the airplane is exposed to high-intensity radiated fields.

2. For the purpose of these special conditions, the following definition applies:

Critical Functions. Functions whose failure would contribute to or cause a failure condition that would prevent the

continued safe flight and landing of the airplane.

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

Ali Bahrami,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 04–10999 Filed 5–13–04; 8:45 am]

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DEPARTMENT OF COMMERCE

Bureau of Industry and Security

15 CFR Part 736

[Docket No. 040108007–4007–01]

RIN 0694–AC 99

General Order Implementing Syria Accountability and Lebanese Sovereignty Act of 2003

AGENCY: Bureau of Industry and Security, Commerce.

ACTION: Final rule.

SUMMARY: The Bureau of Industry and Security is amending the Export Administration Regulations (EAR) by adding new General Order No. 2 to Supplement No. 1, Part 736. Section 5(a)(1) of the Syria Accountability and Lebanese Sovereignty Act of 2003 (the SAA), requires a prohibition on the export to Syria of all items on the Commerce Control List (CCL). The SAA also requires that the President impose two or more of the six additional sanctions set forth in the SAA. One of the additional sanctions chosen by the President prohibits the export to Syria of products of the United States, other than food and medicine. This Order is issued consistent with Executive Order 13338 of May 11, 2004, which implements the SAA.

DATES: *Effective Date:* This rule is effective May 14, 2004.

ADDRESSES: Although there is no public comment period, written comments on this rule may be sent to Sheila Quarterman, Office of Exporter Services, Regulatory Policy Division, Bureau of Industry and Security, Department of Commerce, P.O. Box 273, Washington, DC 20044, or e-mail: squarter@bis.doc.gov.

FOR FURTHER INFORMATION CONTACT: Eileen Albanese, Director, Office of Exporter Services, Bureau of Industry and Security, Department of Commerce, P.O. Box 273, Washington, DC 20044, or Telephone: (202) 482–0436.

SUPPLEMENTARY INFORMATION: