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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 25

[Docket No. NM350, Special Conditions No. 25-320-SC]

#### Special Conditions: Gulfstream Aerospace Corporation Model G-1159 Gulfstream II Airplanes; 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 the Gulfstream Aerospace Corporation Model G-1159 Gulfstream II airplanes modified by Gulfstream Aerospace Corporation, Dallas, Texas. These modified airplanes will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. The modification incorporates the installation of dual electronic attitude direction indicators (ADI) and dual horizontal situation indicators (HSI). 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 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 July 20, 2006. We must receive your comments by August 30, 2006.

**ADDRESSES:** You must mail two copies of your comments to: Federal Aviation Administration, Transport Airplane Directorate, Attn: Rules Docket (ANM-

113), Docket No. NM350, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. You may deliver two copies to the Transport Airplane Directorate at the address indicated above. You must mark your comments Docket No. NM350. You may inspect comments in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

**FOR FURTHER INFORMATION CONTACT:** Greg Dunn, FAA, Airplane and Flight Crew Interface Branch, ANM-111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2799; facsimile (425) 227-1320.

#### SUPPLEMENTARY INFORMATION:

##### Comments Invited

The FAA has determined that notice and opportunity for prior public comment is unnecessary as 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 on issuance; however, the FAA invites interested people to take part in this rulemaking by sending 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 about these special conditions. You may inspect the docket 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 by 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 May 19, 2006, Gulfstream Aerospace Corporation, Dallas, Texas, applied for a supplemental type certificate (STC) to modify the Model G-1159 Gulfstream II airplanes. These airplanes are low-wing, pressurized transport category airplanes with two fuselage-mounted jet engines. They are capable of seating up to 19 passengers, with a crew of two pilots. The modification incorporates the installation of dual electronic ADI and dual HSI. These systems have a potential to be vulnerable to HIRF external to the airplane.

#### Type Certification Basis

Under 14 CFR 21.101, Gulfstream Aerospace Corporation must show that the Model G-1159 Gulfstream II airplanes, as modified to include dual electronic ADI and dual HSI, continue to meet the applicable provisions of the regulations incorporated by reference in Type Certificate (TC) No. A12EA or the applicable regulations in effect on the date of application for the change. We commonly refer to the regulations incorporated by reference in the TC as the "original type certification basis." The specific regulations are the Civil Aviation Regulations (CAR) 4b, as amended by Amendments 4b-1 through 4b-14.

If the Administrator finds that the applicable airworthiness regulations (i.e., CAR 4b as amended) do not contain adequate or appropriate safety standards for the Model G-1159 Gulfstream II airplanes, because of a novel or unusual design feature, special conditions are prescribed under § 21.16.

Besides the applicable airworthiness regulations and special conditions, the Gulfstream Aerospace Corporation Model G-1159 Gulfstream II airplanes, must comply with the fuel vent exhaust emission requirements of 14 CFR part 34. It must also comply with the noise certification requirement of 14 CFR part 36.

We issue special conditions, as defined in 14 CFR part 11.19, under § 11.38 and they become part of the type certification basis under § 21.101.

Special conditions are initially applicable to the model for which they are issued. Should Gulfstream Aerospace Corporation apply later for an STC to modify any other model included on TC No. A12EA to incorporate the same or similar novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

**Novel or Unusual Design Features**

As noted earlier, the modified Model G-1159 Gulfstream II airplanes, modified by Gulfstream Aerospace Corporation, will incorporate dual electronic ADI and dual HSI that will perform critical functions. These systems may be vulnerable to 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 adverse affects of HIRF. Therefore, we consider these systems to be 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 avionics/electronics and electrical 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 Model G-1159 Gulfstream II airplanes. These special conditions require that new avionics/electronics and electrical systems that perform critical functions 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 avionics/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 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 identified in the following table for the frequency ranges indicated. Both peak and average field strength components from the table 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
2GHz-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 the Model G-1159 Gulfstream II airplanes. Should Gulfstream Aerospace Corporation apply later for an STC on another model included on TC No. A12EA to incorporate the same or similar novel or unusual design feature, these special conditions would apply to that model as well under § 21.101.

**Conclusion**

This action affects only certain novel or unusual design features on the Model G-1159 Gulfstream II airplanes. It is not a rule of general applicability and affects only the applicant who applied to the FAA for approval of these features on the airplane.

The substance of the special conditions for these airplanes 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 immediately. The FAA is requesting comments to allow interested people to put in 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.

**The Special Conditions**

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the supplemental type certification basis for the modified Gulfstream Aerospace Corporation Model G-1159 Gulfstream II 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 July 20, 2006.

Ali Bahrami,

Manager, Transport Airplane Directorate,  
Aircraft Certification Service.

[FR Doc. E6-12139 Filed 7-28-06; 8:45 am]

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2006-24868; Directorate Identifier 2006-NM-103-AD; Amendment 39-14698; AD 2006-15-17]

RIN 2120-AA64

#### Airworthiness Directives; Fokker Model F.28 Mark 0070 and 0100 Airplanes

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all Fokker Model F.28 Mark 0070 and 0100 airplanes. This AD requires modification of the wiring distribution of the alternating current bus transfer power system and the right-hand and left-hand windshield anti-icing system, as necessary. This AD results from a report of electrical sparks coming out of the flight deck from a panel behind the left seat. We are issuing this AD to prevent failure of the sliding window heating element(s), due to electrical overload, which could result in smoke and fire in the cockpit.

**DATES:** This AD becomes effective September 5, 2006.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of September 5, 2006.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC.

Contact Fokker Services B.V., Technical Services Dept., P.O. Box 231, 2150 AE Nieuw-Vennep, the Netherlands, for service information identified in this AD.

**FOR FURTHER INFORMATION CONTACT:** Tom Rodriguez, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1137; fax (425) 227-1149.

#### SUPPLEMENTARY INFORMATION:

##### Examining the Docket

You may examine the airworthiness directive (AD) docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the street address stated in the **ADDRESSES** section.

##### Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to all Fokker Model F.28 Mark 0070 and 0100 airplanes. That NPRM was published in the **Federal Register** on May 25, 2006 (71 FR 30072). That NPRM proposed to require modification of the wiring distribution of the alternating current bus transfer power system and the right-hand and left-hand windshield anti-icing system, as necessary.

##### Comments

We provided the public the opportunity to participate in the development of this AD. We received no comments on the NPRM or on the determination of the cost to the public.

##### Conclusion

We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed.

##### Costs of Compliance

This AD will affect about 10 airplanes of U.S. registry. The required actions will take about 3 work hours per airplane, at an average labor rate of \$80 per work hour. Based on these figures, the estimated cost of the AD for U.S. operators is \$2,400, or \$240 per airplane.

##### Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations

for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

##### Regulatory Findings

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the **ADDRESSES** section for a location to examine the regulatory evaluation.

##### List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

##### Adoption of the Amendment

■ Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### PART 39—AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

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

##### § 39.13 [Amended]

- 2. The Federal Aviation Administration (FAA) amends § 39.13 by adding the following new airworthiness directive (AD):

**2006-15-17 Fokker Services B.V.:**  
Amendment 39-14698. Docket No. FAA-2006-24868; Directorate Identifier 2006-NM-103-AD.

##### Effective Date

- (a) This AD becomes effective September 5, 2006.