

(2) \* \* \*

(i) Such expenditures are in-kind contributions to a Federal candidate if they are coordinated general public political communications under 11 CFR 100.23.

\* \* \* \* \*

(ii) Such expenditures are independent expenditures under 11 CFR part 109 if they are made for a communication expressly advocating the election or defeat of a clearly identified Federal candidate that is not a coordinated general public political communication under 11 CFR 100.23.

\* \* \* \* \*

(3) \* \* \*

(iii) Such expenditures are not chargeable to the presidential candidate's expenditure limitation under 11 CFR 110.8 unless they were coordinated general public political communications under 11 CFR 100.23.

\* \* \* \* \*

Dated: November 30, 2000.

**Darryl R. Wold,**

*Chairman, Federal Election Commission.*

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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 25**

[Docket No. NM179; Special Conditions No. 25-168-SC]

**Special Conditions: Gulfstream Aerospace Corporation Model G-1159, G-1159A, and G-1159B Series Airplanes as Modified by Duncan Aviation; 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 Model G-1159, G-1159A, and G-1159B series airplanes modified by Duncan Aviation. These modified airplanes will have a novel or unusual design feature(s) associated with new avionics/electronics and electrical systems that will perform critical functions. 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 established by the existing airworthiness standards.

**DATES:** The effective date of these special conditions is November 29, 2000. Comments must be received on or before January 22, 2001.

**ADDRESSES:** Comments on these special conditions may be mailed in duplicate to: Federal Aviation Administration, Transport Airplane Directorate, Attention: Rules Docket (ANM-114), Docket No. NM179, 1601 Lind Avenue SW., Renton, Washington 98055-4056; or delivered in duplicate to the Transport Airplane Directorate at that address. All comments must be marked: Docket No. NM179. Comments may be inspected in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4:00 p.m.

**FOR FURTHER INFORMATION CONTACT:** For information concerning the certification program for Gulfstream Model G-1159, G-1159A, and G-1159B series airplanes, contact: Meghan Gordon, Federal Aviation Administration, Transport Airplane Directorate, Standardization Branch, ANM-113, 1601 Lind Avenue SW., Renton, Washington 98055-4056; telephone (425) 227-2138; fax (425) 227-1149.

For information on the general subject of HIRF, contact: Massoud Sadeghi, Federal Aviation Administration, Transport Airplane Directorate, Airplane and Flight Crew Interface Branch, ANM-111, 1601 Lind Avenue SW., Renton, Washington 98055-4056; telephone (425) 227-2117; fax (425) 227-1320.

**SUPPLEMENTARY INFORMATION:** The FAA has determined that notice and opportunity for prior public comment hereon are impracticable because these procedures would significantly delay issuance of the approval design 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.

**Comments Invited**

Although these special conditions are being issued as final special conditions without prior public notice, interested persons are invited to submit such written data, views, or arguments as they may desire. Communications should identify the regulatory docket number and be submitted in duplicate to the address specified above. All communications received on or before

the closing date for comments will be considered by the Administrator. The special conditions may be changed in light of the comments received. All comments received will be available in the Rules Docket for examination by interested persons, both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerning this rulemaking will be filed in the docket. Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to these special conditions must include a self-addressed, stamped postcard on which the following statement is made: "Comments to NM179." The postcard will be date stamped and returned to the commenter.

**Background**

On September 13, 2000, and on September 20, 2000, Duncan Aviation, 15745 South Airport Road, Battle Creek, Michigan 49015, submitted applications to the FAA for two Supplemental Type Certificates (STC). These STC's are for modifying Gulfstream Aerospace Model G-1159, G-1159A, and G-1159B series airplanes to include:

- The Collins FDS-2000 Flight Display System; and
- Dual Collins AHS-3000A Altitude Heading Reference Systems.

The FDS-2000 system is a replacement of the existing electro-mechanical Attitude Directional Indicator (ADI) and Horizontal Situational Indicator (HSI) flight instruments. It also provides additional functional capability and redundancy in the system.

The AHS-3000A system is a replacement for the existing electro-mechanical vertical and directional gyros. It also provides additional functional capability and redundancy in the system.

The avionics/electronics and electrical systems installed in the Gulfstream Model G-1159, G-1159A, and G-1159B airplanes have the potential to be vulnerable to high-intensity radiated fields (HIRF) external to the airplane.

The subject Gulfstream airplanes are T-tail, low swept-wing small transport category airplanes. The Model G-1159 airplane is powered by two Rolls Royce SPEY RB (163) 511-8 series engines mounted on pylons extending from the aft fuselage, and it has a maximum takeoff weight of 64,800 pounds. The Models G-1159A and G-1159B are slightly larger than the Model G-1159. These models are powered by two Rolls Royce SPEY RB (163-25) 511-8 series engines, and have a maximum takeoff

weight of 69,700 pounds. This series of airplanes operates with a 2-pilot crew and can hold up to 19 passengers.

### Type Certification Basis

Under the provisions of 14 CFR § 21.101, Duncan Aviation must show that the Gulfstream Models G-1159, G-1159A, and G-1159B airplanes, as modified, continue to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. A12EA, or the applicable regulations in effect on the date of application for the modification. The regulations incorporated by reference in the type certificate are commonly referred to as the "original type certification basis." The regulations incorporated by reference in Type Certificate No. A12EA are as follows:

#### 1. For the Gulfstream Model G-1159 Airplane

- CAR 4b dated December 31, 1953, including Amendments 4b-1 through 4b-14;
- Special Regulations SR422B and SR450A;
- § 25.1325 (effective 2/1/65);
- § 25.175 (effective 3/1/65) in lieu of 4b.155(b);
- § 36.1(c)(2) for airplane serial numbers (S/N) 1 through 165 and 775 approved for a 62,000 lb. takeoff weight;
- 14 CFR Part 36, Appendix C, for airplane S/N 166 through 299, except 249, 252, and 775;
- Special Conditions in Attachment A of FAA letter to Grumman, dated 9/27/65;
- Exemption No. 695A, CAR 4b.437, "Fuel Jettisoning System."

#### 2. For the Model G-1159A Airplane

- 14 CFR part 25 effective February 1, 1965, and Amendments 25-2 through 25-8, 25-10, 25-12, 25-16 through 25-22, 25-24, 25-26, 25-27, 25-29 through 25-34, 25-37, 25-40 (as applicable to a new APU installation);
- § 25.329 of Part 25 dated February 1, 1965 (as applied to a new autopilot installation);
- § 25.581 (lightning protection) of Amendment 25-23;
- § 25.771, Amendment 25-4. (A lockable door is not required between the pilot and passenger compartments.);
- § 25.994 (crashworthiness fuel system components);
- § 25.1309 of Amendment 25-41;
- Special Federal Aviation Regulation (SFAR) 27 through Amendment 2 (fuel venting emission);
- 14 CFR part 36 through Amendment 36-8 (noise requirements);
- Special Conditions contained in the FAA's letter to Grumman, dated 9/27/

65, applicable to the Gulfstream Model G-1159 airplane, are also applicable to the Gulfstream Model G-1159A airplane, except that reference to "4b.450" in the "Cooling Systems" special conditions is replaced by "FAR 25.1043 contained in Part 25 of the FAR, effective 2/1/65;"

- Special Conditions pertaining to dynamic gust loads contained in the enclosure to FAA AEA-212 letter, dated 7/22/80.

#### 3. For the Model G-1159B

- *Fuselage, Empennage, Autopilot, and Noise:*
    - CAR 4b, dated December 31, 1953, including Amendments 4b-1 through 4b-14;
    - CAR 4b.450, Cooling Systems;
    - Special Regulation SR450A;
    - § 25.175 (effective 3/1/65) in lieu of CAR 4b.155(b);
    - § 25.771, Amendment 25-4. [A lockable door is not required between the pilot and passenger compartments.]
    - § 25.1325 (effective 2/1/65);
    - § 36.7(d)(3)(ii);
    - Special Conditions in Attachment A of FAA letter to Grumman, dated 9/27/65.
  - *Wing Assembly, Landing Gear, Fuselage, and Empennage Modifications:*
    - 14 CFR part 25, effective February 1, 1965, Amendments 25-2 through 25-8, 25-10, 25-12, 25-16 through 25-22, 25-24, 25-26, except § 25.1203(b)(3), 25-27, 25-29 through 25-31, 25-34, 25-37, 25-40 (as applicable to a new APU installation);
    - § 25.581 (Lightning Protection) of Amendment 25-23;
    - § 25.771, Amendment 4 (A lockable door is not required between the pilot and passenger compartments.);
    - § 25.994 (Crashworthiness Fuel System Components);
    - 25.1309 of Amendment 25-41;
    - § 25.1329 (effective 2/1/65);
    - SFAR 27 through Amendment 2 (Fuel Venting Emissions);
    - Special Conditions contained in the FAA's letter to Grumman, dated 9/27/65, applicable to Gulfstream Model G-1159 airplane, are also applicable to the Gulfstream Model G-1159B airplane;
    - Special Conditions pertaining to dynamic gust loads, contained in the enclosure to FAA letter AEA-212, dated 7/22/80, is applicable to the Model G-1159B airplane.
- The special conditions approved in this document will form an additional part of the type certification basis for these airplanes.
- 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 for the Gulfstream Model G-1159, 11-59A, and G-1159B airplanes modified by Duncan Aviation because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions, as appropriate, are issued in accordance with § 11.49, as required by §§ 11.28 and 11.29(b), and become part of the type certification basis in accordance with § 21.101(b)(2).

Special conditions are initially applicable to the model for which they are issued. Should Duncan Aviation apply at a later date for a supplemental type certificate to modify any other model already included on the same type certificate to incorporate the same novel or unusual design feature, these special conditions would also apply to the other model under the provisions of § 21.101(a)(1).

### Novel or Unusual Design Features

The Gulfstream Model G-1159, G-1159A, and G-1159B airplanes modified by Duncan Aviation will incorporate new avionics/electronics and electrical systems that will perform critical functions. These systems include a new flight display system and a new attitude heading reference system. These systems may be vulnerable to HIRF external to the airplane.

### 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 Gulfstream Model G-1159, G-1159A, and G-1159B airplanes modified by Duncan Aviation. 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, plus the advent of space and satellite communications coupled with electronic command and control of

the airplane, and the use of composite material in the airplane structure, the immunity of critical 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, alternatively, paragraph 2., below:

1. A minimum threat of 100 volts rms 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.

Or

2. A threat external to the airframe for both of the following field strengths for the frequency ranges indicated. Both peak and average field strength components from Table 1 are to be demonstrated.

TABLE 1

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 in Table 1 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 Gulfstream Model G-1159, G-1159A, and G-1159B series airplanes modified by Duncan Aviation. Should Duncan Aviation apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. A12EA to incorporate the same novel or unusual design feature, the special conditions would apply to that model as well under the provisions of § 21.101(a)(1).

**Conclusion**

This action affects only certain novel or unusual design features on Gulfstream Model G-1159, G-1159A, and G-1159B airplanes modified by Duncan Aviation. 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.

As stated previously, the substance of these special conditions has been subjected to the notice and comment period in several prior instances and has been derived without substantive change from those previously issued. It is unlikely that prior public comment would result in a significant change from the substance contained herein. For this reason, and 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.

**The Special Conditions**

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 Aerospace Model G-1159, G-1159A,

and G-1159B airplanes modified by Duncan Aviation:

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 this special condition, 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 November 29, 2000.

**Ali Bahrami,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*

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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. 2000-SW-27-AD; Amendment 39-12028; AD 2000-24-21]**

**RIN 2120-AA64**

**Airworthiness Directives; Siam Hiller Holdings, Inc. Model UH-12, UH-12A, UH-12B, UH-12C, UH-12D, UH-12E, UH-12E-L, UH-12L, and UH-12L4 Helicopters**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), for Siam Hiller Holdings, Inc. (Hiller), formerly Rogerson Hiller Corporation, Model UH-12, UH-12A, UH-12B, UH-12C, UH-12D, UH-12E, UH-12E-L, UH-12L, and UH-12L4 helicopters, that requires replacing all undrilled-shank bolts at pivoting joints in the control system linkage with drilled-shank bolts and installing castellated nuts and cotter pins. This amendment is prompted by an accident caused by separation of the control system linkage of a Model UH-12E helicopter. The actions specified by this AD are intended to prevent separation of the control system attachments at pivoting points and subsequent loss of control of the helicopter.