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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-1225; Directorate Identifier 2012-NM-219-AD; Amendment 39-17288; AD 2012-25-07]

RIN 2120-AA64

Airworthiness Directives; Gulfstream Aerospace Corporation Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Gulfstream Aerospace Corporation Model GIV-X airplanes. This AD requires performing a modified system power-on self test (SPOST) of the flap/stabilizer electronic control unit (FSECU), and revising the airplane flight manual to incorporate these test procedures into the daily preflight check. This AD was prompted by reports indicating that the FSECU does not detect failures of the brake feature within the horizontal stabilizer electric motor unit (HSEMU), or failures of drive solenoids for hydraulic valves within the flap hydraulic control module (FHCM) during the SPOST. We are issuing this AD to detect and correct such failures, which could result in runaway horizontal stabilizer pitch trim system and consequent loss of pitch control.

DATES: This AD is effective December 17, 2012.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of December 17, 2012.

We must receive comments on this AD by January 31, 2013.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Gulfstream Aerospace Corporation, Technical Publications Dept., P.O. Box 2206, Savannah, GA 31402-2206; telephone 800-810-4853; fax 912-965-3520; email pubs@gulfstream.com; Internet http://www.gulfstream.com/product_support/technical_pubs/pubs/index.htm. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Sanford Proveaux, Aerospace Engineer, Continued Operational Safety and Certificate Management Branch, ACE-102A, FAA, Atlanta Aircraft Certification Office (ACO), 1701 Columbia Avenue, College Park, Georgia 30337; phone: 404-474-5566; fax: 404-474-5606; email: sanford.proveaux@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We have received reports that the flap/stabilizer electronic control unit (FSECU) is not detecting failures of the brake feature in the horizontal stabilizer electric motor unit (HSEMU), or failures of drive solenoids for hydraulic valves in the flap hydraulic control module (FHCM) during the system power-on self test (SPOST). The potential for undetected horizontal stabilizer actuator (HSA) brake failures results from the FSECU executing its SPOST before 115VAC and hydraulic power are available during the airplane power-on sequence. The root cause of this issue is the failure of the system power-up test logic to first consider whether hydraulic and electrical power have been supplied to the system articles under test; the test logic therefore does not provide accurate information about the condition of the articles. Failure to test the brake-holding torque functionality and capability exposes the airplane to a potential latent failure of a protective feature critical to the safe operation of the horizontal stabilizer system. These conditions, if not corrected, could result in a potential runaway horizontal stabilizer pitch trim system and consequent loss of pitch control. Further, failure of the FHCM drive solenoid valves to halt uncommanded flap motion could result in uncommanded flap motion or flap runaway.

Relevant Service Information

We reviewed the following service information:

- Gulfstream G350 Alert Customer Bulletin 11, including Service Reply Card, dated December 4, 2012, which includes Revision 31, dated December 4, 2012, of the Gulfstream G350 Airplane Flight Manual Document GAC-AC-G350-OPS-0001.
- Gulfstream G450 Alert Customer Bulletin 11, including Service Reply Card, dated December 4, 2012, which includes Revision 33, dated December 4, 2012, of the Gulfstream G450 Airplane Flight Manual Document GAC-AC-G450-OPS-0001.
- Section 1-27-40, "Flap/Stabilizer System Preflight Check," of the Gulfstream G350 Airplane Flight Manual Document GAC-AC-G350-OPS-0001, Revision 31, dated December 4, 2012.

- Section 1-27-40, "Flap/Stabilizer System Preflight Check," of the Gulfstream G450 Airplane Flight Manual Document GAC-AC-G450-OPS-0001, Revision 33, dated December 4, 2012.
- Section 2-03-20, "Before Starting Engines," of the Gulfstream G350 Airplane Flight Manual Document GAC-AC-G350-OPS-0001, Revision 31, dated December 4, 2012.
- Section 2-03-20, "Before Starting Engines," of the Gulfstream G450 Airplane Flight Manual Document GAC-AC-G450-OPS-0001, Revision 33, dated December 4, 2012.

For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for Docket No. FAA-2012-1225.

FAA's Determination

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

AD Requirements

This AD requires accomplishing the actions specified in the service information identified previously, except as discussed under "Differences Between the AD and the Service Information."

Differences Between the AD and the Service Information

This AD requires compliance within 3 days. However, these actions are recommended before further flight by Gulfstream G350 Alert Customer Bulletin 11, dated December 4, 2012; and Gulfstream G450 Alert Customer Bulletin 11, dated December 4, 2012. We have determined that the 3-day compliance time required by this AD will adequately ensure safety while avoiding the need to ground the fleet.

Although the service information recommends that operators contact Gulfstream if a successful test is not achieved, this AD requires operators to repair those conditions before further flight in accordance with a method approved by the FAA.

Interim Action

We consider this AD interim action. Gulfstream is in the process of updating software intended to terminate the actions required by this AD. Once this upgrade is developed, approved, and available, we might consider further rulemaking to require the upgraded software.

FAA's Justification and Determination of the Effective Date

An unsafe condition exists that requires the immediate adoption of this AD. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because failure of the brake feature in the HSEMU could result in a runaway horizontal stabilizer pitch trim system which, if left uncorrected, could result in loss of airplane pitch control. Therefore, we find that notice and opportunity for prior public comment are impracticable and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include the docket number FAA-2012-1225 and Directorate Identifier 2012-NM-219-AD at

the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

Costs of Compliance

We estimate that this AD affects 200 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Preflight procedure test	1 work-hour × \$85 per hour = \$85	\$0	\$85	\$17,000
AFM revision	1 work-hour × \$85 per hour = \$85	0	85	17,000

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this AD.

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

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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

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 FAA amends § 39.13 by adding the following new airworthiness directive (AD):



2012-25-07 Gulfstream Aerospace Corporation: Amendment 39-17288; Docket No. FAA-2012-1225; Directorate Identifier 2012-NM-219-AD.

(a) Effective Date

This AD is effective December 17, 2012.

(b) Affected ADs

None.

(c) Applicability

This AD applies to Gulfstream Aerospace Corporation Model GIV-X airplanes, certificated in any category, serial numbers 4001 through 4271 inclusive.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 27, Flight controls.

(e) Unsafe Condition

This AD was prompted by reports indicating that the flap/stabilizer electronic control unit (FSECU) does not detect failures of the brake feature within the horizontal stabilizer electric motor unit (HSEMU), or failures of the drive solenoids for hydraulic valves within the flap hydraulic control module (FHCM) during the system power-on self test (SPOST). We are issuing this AD to detect and correct such failures, which could result in runaway horizontal stabilizer pitch trim system and consequent loss of pitch control.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) SPOST

Within 3 days after the effective date of this AD, perform an SPOST of the FSECU, in accordance with the applicable service information identified in paragraph (h)(1) or (h)(2) of this AD.

(1) For Model GIV-X (G350) airplanes: Use Gulfstream G350 Alert Customer Bulletin 11, dated December 4, 2012, excluding Service Reply Card, dated December 4, 2012, and excluding Revision 31, dated December 4, 2012, of the Gulfstream G350 Airplane Flight Manual Document GAC-AC-G350-OPS-0001.

(2) For Model GIV-X (G450) airplanes: Use Gulfstream G450 Alert Customer Bulletin 11, dated December 4, 2012, excluding Service Reply Card, dated December 4, 2012, and excluding Revision

33, dated December 4, 2012, of the Gulfstream G450 Airplane Flight Manual Document GAC-AC-G450-OPS-0001.

(h) Revision of Aircraft Flight Manual (AFM)

Before further flight after the FSECU passes the SPOST required by paragraph (g) of this AD, revise the Normal Procedures and Limitations sections of the AFM to incorporate the information identified in paragraph (g)(1) or (g)(2) of this AD, as applicable.

(1) For Model GIV-X (G350) airplanes: Incorporate the information in Section 1-27-40, "Flap/Stabilizer System Preflight Check," and Section 2-03-20, "Before Starting Engines," of the Gulfstream G350 Airplane Flight Manual Document GAC-AC-G350-OPS-0001, Revision 31, dated December 4, 2012. This may be accomplished by inserting into the AFM a copy of Gulfstream G350 Airplane Flight Manual Document GAC-AC-G350-OPS-0001, Revision 31, dated December 4, 2012.

(2) For Model GIV-X (G450) airplanes: Section 1-27-40, "Flap/Stabilizer System Preflight Check," and Section 2-03-20, "Before Starting Engines," of the Gulfstream G450 Airplane Flight Manual Document GAC-AC-G450-OPS-0001, Revision 33, dated December 4, 2012. This may be accomplished by inserting into the AFM a copy of Gulfstream G450 Airplane Flight Manual Document GAC-AC-G450-OPS-0001, Revision 33, dated December 4, 2012.

(i) Corrective Action for Failed SPOST

If the FSECU fails any SPOST required by this AD or as specified in the applicable AFM, repair before further flight in accordance with a method approved by the Manager, Atlanta Aircraft Certification Office (ACO), FAA. For a repair method to be approved by the Manager, Atlanta ACO, as required by this paragraph, the Manager's approval letter must specifically refer to this AD.

(j) Special Flight Permit

Special flight permits, as described in Section 21.197 and Section 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199), are not allowed.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Atlanta ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(l) Related Information

For more information about this AD, contact Sanford Proveaux, Aerospace Engineer, Continued Operational Safety and Certificate Management Branch, ACE-102A, FAA, Atlanta Aircraft Certification Office (ACO), 1701 Columbia Avenue, College Park, Georgia 30337; phone: 404-474-5566; fax: 404-474-5606; email: sanford.proveaux@faa.gov.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Gulfstream G350 Alert Customer Bulletin 11, dated December 4, 2012.

(ii) Gulfstream G450 Alert Customer Bulletin 11, dated December 4, 2012.

(iii) Section 1-27-40, "Flap/Stabilizer System Preflight Check," of the Gulfstream G350 Airplane Flight Manual Document GAC-AC-G350-OPS-0001, Revision 31, dated December 4, 2012. The document number of this document is identified on the revision transmittal page and the first page of the Record of Revisions; no other page of this document contains this information.

(iv) Section 1-27-40, "Flap/Stabilizer System Preflight Check," of the Gulfstream G450 Airplane Flight Manual Document GAC-AC-G450-OPS-0001, Revision 33, dated December 4, 2012. The document number of this document is identified on the revision transmittal page and the first page of the Record of Revisions; no other page of this document contains this information.

(v) Section 2-03-20, "Before Starting Engines," of the Gulfstream G350 Airplane Flight Manual Document GAC-AC-G350-OPS-0001, Revision 31, dated December 4, 2012. The document number of this document is identified on the revision transmittal page and the first page of the Record of Revisions; no other page of this document contains this information.

(vi) Section 2-03-20, "Before Starting Engines," of the Gulfstream G450 Airplane Flight Manual Document GAC-AC-G450-OPS-0001, Revision 33, dated December 4, 2012. The document number of this document is identified on the revision transmittal page and the first page of the Record of Revisions; no other page of this document contains this information.

(3) For service information identified in this AD, contact Gulfstream Aerospace Corporation, Technical Publications Dept., P.O. Box 2206, Savannah, GA 31402-2206; telephone 800-810-4853; fax 912-965-3520; email pubs@gulfstream.com; Internet http://www.gulfstream.com/product_support/technical_pubs/pubs/index.htm.

(4) You may view this service information at FAA, Transport Airplane Directorate, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on December 7, 2012.

Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.