

 <b>適航指令發布單</b> <b>Airworthiness Directive Issuance Form</b>			
民航局 AD 編號 AD number	CAA-2017-02-010	發布日期 Date issued	2017/2/23
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	To Gulfstream Aerospace Corporation Model GVI airplanes, certificated in any category, serial numbers 6001 through 6164 inclusive. Note 1 to paragraph (c) of this AD: Model GVI airplanes are also referred to by marketing designations G650 and G650ER.		
主旨摘要	To prevent undetected actuation of the main ram LVDT. if not corrected, could result in mechanical failure of the flight control surface actuator mechanism under force fight .		
民航局 CAA <input type="checkbox"/> 本國產品 Native products <input type="checkbox"/> 其他個案 Other	設計國民航主管機構 Original Authorities <input checked="" type="checkbox"/> FAA <input type="checkbox"/> EASA <input type="checkbox"/> Brazil <input type="checkbox"/> Transport Canada Civil Aviation <input type="checkbox"/> DGAC <input type="checkbox"/> Germany LBA <input type="checkbox"/> CAA-NL <input type="checkbox"/> UK CAA <input type="checkbox"/> Japan CAB <input type="checkbox"/> CAA of Israel <input type="checkbox"/> Other _____		
	設計國 AD 編號 Original AD number	2017-04-01	
	1. 直接採用原 AD 之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) _ a. 生效日期另訂為(Re-specify the effective date as) : _____ b. 執行時限另訂為(Re-specify the compliance time or period as) : _____		
	2. 使用人是否需要將 AD 執行結果向民航局提出報告?(Do Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)		
備註 Note	ATA 27. Reference: Gulfstream G650 Aircraft Service Change 037, Revision A, dated June 28, 2016. and Gulfstream G650ER Aircraft Service Change 037, Revision A, dated June 28, 2016.		
註： 1. AD 內容後附。 2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。 3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail： <a href="mailto:adcaa@mail.caa.gov.tw">adcaa@mail.caa.gov.tw</a>			
Note： 1. The AD text is enclosed. 2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval. 3. For further information, please contact Civil Aeronautics Administration on Tel:(02)2349-6331~3, Fax:(02)2545-8464, e-mail： <a href="mailto:adcaa@mail.caa.gov.tw">adcaa@mail.caa.gov.tw</a>			

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[Rules and Regulations]

[Pages 11146-11148]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2016-9191; Directorate Identifier 2016-NM-106-AD; Amendment 39-18796; AD 2017-04-01]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Gulfstream Aerospace Corporation Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Gulfstream Aerospace Corporation Model GVI airplanes. This AD was prompted by a report indicating that there are design deficiencies in the software used for monitoring the disconnect for the flight control computer (FCC)-hosted flight controls actuation main ram linear variable differential transducer (LVDT). This AD requires an update of the FCC software. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective March 28, 2017.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of March 28, 2017.

**ADDRESSES:** For service information identified in this final rule, 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](mailto:pubs@gulfstream.com); Internet: [http://www.gulfstream.com/product\\_support/technical\\_pubs/pubs/index.htm](http://www.gulfstream.com/product_support/technical_pubs/pubs/index.htm). You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9191.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9191; 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 address for the Docket Office (phone: 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Myles Jalalian, Aerospace Engineer, Systems and Equipment Branch, ACE-119A, FAA, Atlanta Aircraft Certification Office (ACO), 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5572; fax: 404-474-5606; email: Myles.Jalalian@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Gulfstream Aerospace Corporation Model GVI airplanes. The NPRM published in the Federal Register on November 15, 2016 (81 FR 80009). The NPRM was prompted by a report indicating that there are design deficiencies in the software used for monitoring the disconnect for the FCC-hosted flight controls actuation main ram LVDT. The NPRM proposed to require an update of the FCC software. We are issuing this AD to prevent undetected actuation of the main ram LVDT. Undetected actuation of the main ram LVDT, if not corrected, could result in mechanical failure of the flight control surface actuator mechanism under force fight (the actuator is working against the intended load forces), causing primary surface hardover, spoiler hardover, and loss of control of the airplane.

### **Comments**

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

### **Conclusion**

We reviewed the relevant data and determined that air safety and the public interest require adopting this AD as proposed, except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

### **Related Service Information Under 1 CFR Part 51**

We reviewed Gulfstream G650 Aircraft Service Change Number 037, Revision A, dated June 28, 2016; and Gulfstream G650ER Aircraft Service Change Number 037, Revision A, dated June 28, 2016. The service information describes procedures for doing an update of the FCC software. This service information is distinct because it applies to different airplanes. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **Costs of Compliance**

We estimate that this AD affects 90 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
Software update	57 work-hours × \$85 per hour = \$4,845	\$9,126	\$13,971	\$1,257,390

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

### 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):



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**2017-04-01 Gulfstream Aerospace Corporation:** Amendment 39-18796; Docket No. FAA-2016-9191; Directorate Identifier 2016-NM-106-AD.

**(a) Effective Date**

This AD is effective March 28, 2017.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Gulfstream Aerospace Corporation Model GVI airplanes, certificated in any category, serial numbers 6001 through 6164 inclusive.

Note 1 to paragraph (c) of this AD: Model GVI airplanes are also referred to by marketing designations G650 and G650ER.

**(d) Subject**

Air Transport Association (ATA) of America Code 27; Flight controls.

**(e) Unsafe Condition**

This AD was prompted by a report indicating that there are design deficiencies in the software used for monitoring the disconnect for the flight control computer (FCC)-hosted flight controls actuation main ram linear variable differential transducer (LVDT). We are issuing this AD to prevent undetected actuation of the main ram LVDT. Undetected actuation of the main ram LVDT, if not corrected, could result in mechanical failure of the flight control surface actuator mechanism under force fight (the actuator is working against the intended load forces), causing primary surface hardover, spoiler hardover, and loss of control of the airplane.

**(f) Compliance**

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

**(g) Software Update for FCC**

Within 24 months after the effective date of this AD, do an FCC software update, in accordance with the Modification Instructions of Gulfstream G650 Aircraft Service Change 037, Revision A, dated June 28, 2016; or Gulfstream G650ER Aircraft Service Change 037, Revision A, dated June 28, 2016; as applicable.

#### **(h) Reporting not Required**

Although Gulfstream G650 Aircraft Service Change 037, Revision A, dated June 28, 2016; and Gulfstream G650ER Aircraft Service Change 037, Revision A, dated June 28, 2016; specify to submit certain information to the manufacturer, this AD does not require that action.

#### **(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Atlanta Aircraft Certification Office (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 paragraph (j) 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

#### **(j) Related Information**

For more information about this AD, contact Myles Jalalian, Aerospace Engineer, Systems and Equipment Branch, ACE-119A, FAA, Atlanta ACO, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5572; fax: 404-474-5606; email: Myles.Jalalian@faa.gov.

#### **(k) 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 G650 Aircraft Service Change 037, Revision A, dated June 28, 2016.

(ii) Gulfstream G650ER Aircraft Service Change 037, Revision A, dated June 28, 2016.

(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](http://www.gulfstream.com/product_support/technical_pubs/pubs/index.htm).

(4) You may view this service information at FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. 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 February 2, 2017.

Michael Kaszycki,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.