

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2005-22034; Directorate Identifier 2004-NM-182-AD; Amendment 39-14607; AD 2006-11-03]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Gulfstream Model GV and GV-SP Series Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all Gulfstream Model GV and certain Model GV-SP series airplanes. This AD requires a one-time inspection of the left and right aileron and elevator actuators to determine the part and serial numbers of each actuator, repetitive inspections of suspect actuators to detect broken damper shafts, and replacement of any actuator having a broken damper shaft. This AD also requires that operators report any broken damper shaft they find to the FAA. This AD also requires a terminating action for the repetitive inspections. This AD results from reports of broken or cracked damper shafts within the aileron and elevator actuator assemblies. We are issuing this AD to prevent broken damper shafts, which could result in locking of an aileron or elevator actuator (hard-over condition), which would activate the hard-over protection system (HOPS), resulting in increased pilot workload and consequent reduced controllability of the airplane.

**DATES:** This AD becomes effective June 29, 2006.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of June 29, 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 Gulfstream Aerospace Corporation, Technical Publications Dept., P.O. Box 2206, Savannah, Georgia 31402-2206, for service information identified in this AD.

**FOR FURTHER INFORMATION CONTACT:** Gerald Avella, Aerospace Engineer, Systems and Equipment Branch, ACE-119A, FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, Suite 450, Atlanta, Georgia 30349; telephone (770) 703-6066; fax (770) 703-6097.

## **SUPPLEMENTARY INFORMATION:**

### **Examining the Docket**

You may examine the 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 supplemental notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to all Gulfstream Model GV and certain Model GV-SP series airplanes. That supplemental NPRM was published in the Federal Register on March 30, 2006 (71 FR 16066). That supplemental NPRM proposed to require a one-time inspection of the left and right aileron and elevator actuators to determine the part and serial numbers of each actuator, repetitive inspections of suspect actuators to detect broken damper shafts, and replacement of any actuator having a broken damper shaft. That supplemental NPRM also proposed to require that operators report any broken damper shaft they find to the FAA. That supplemental NPRM also proposed to mandate the previously optional terminating action.

### **Comments**

We provided the public the opportunity to participate in the development of this AD. No comments have been received on the supplemental 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 in the supplemental NPRM.

### **Costs of Compliance**

There are about 214 airplanes of the affected design in the worldwide fleet. This AD will affect about 174 airplanes of U.S. registry. The following table provides the estimated costs for U.S. operators to comply with this AD. Gulfstream has stated that it will provide replacement parts at no cost to operators.

## ESTIMATED COSTS

Action	Gulfstream airplane model	Work hours	Average labor rate per hour	Cost per airplane	Fleet cost
Inspection for part/serial number	GV and GV-SP series airplanes.	1	\$80	\$80	\$13,920
Inspection of actuators, per	GV series airplanes	14 per actuator	80	1,120	<sup>1</sup> 194,880
inspection cycle (if accomplished).	GV-SP series airplanes	4 per actuator	80	320	<sup>1</sup> 55,680
Terminating replacement	GV series airplanes	26 per aileron actuator (2	80	4,160	723,840
		actuators per airplane).	80	8,320	1,447,680
	GV-SP series airplanes	32 per aileron actuator (2	80	5,120	890,880
		actuators per airplane).	80	8,320	1,447,680

<sup>1</sup> Per actuator, per inspection cycle.

### 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):

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2006-11-03 Gulfstream Aerospace Corporation:** Amendment 39-14607. Docket No. FAA-2005-22034; Directorate Identifier 2004-NM-182-AD.

## Effective Date

- (a) This AD becomes effective June 29, 2006.

## Affected ADs

- (b) None.

## Applicability

- (c) This AD applies to all Gulfstream Model GV series airplanes, and Model GV-SP series airplanes having serial numbers (S/Ns) 5001 through 5052 inclusive; certificated in any category.

## Unsafe Condition

- (d) This AD results from reports of broken or cracked damper shafts within the aileron and elevator actuator assemblies. We are issuing this AD to prevent broken damper shafts, which could result in locking of an aileron or elevator actuator (hard-over condition), which would activate the hard-over protection system (HOPS), resulting in increased pilot workload and consequent reduced controllability of the airplane.

## Compliance

- (e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

## Service Information References

- (f) The term "customer bulletin," as used in this AD, means the Accomplishment Instructions of the applicable Gulfstream customer bulletins specified in Table 1 of this AD. Although the customer bulletins recommend completing and submitting the Service Reply Card or reporting compliance with the customer bulletin, those actions are not required by this AD.

**TABLE 1.—APPLICABLE GULFSTREAM CUSTOMER BULLETINS**

<b>For—</b>	<b>For model—</b>	<b>Use—</b>	<b>Dated—</b>
(1) Initial/repetitive inspections of and corrective actions for identified subject actuators.	(i) GV–SP series airplanes	Gulfstream G500 Customer Bulletin 4	August 23, 2004.
	(ii) GV–SP series airplanes	Gulfstream G550 Customer Bulletin 4	August 23, 2004.
	(iii) GV series airplanes	Gulfstream GV Customer Bulletin 123	August 23, 2004.
(2) Terminating replacement of subject actuators.	(i) GV–SP series airplanes	Gulfstream G500 Customer Bulletin 6	December 8, 2004.
	(ii) GV–SP series airplanes	Gulfstream G550 Customer Bulletin 6	December 8, 2004.
	(iii) GV series airplanes	Gulfstream GV Customer Bulletin 124	December 8, 2004.

### **Inspection To Determine Actuator Part and Serial Numbers**

(g) Within 500 flight hours after the effective date of this AD: Do a one-time inspection of the left and right aileron and elevator actuators to determine the part number (P/N) and S/N of each actuator, in accordance with the applicable customer bulletin.

### **No Subject Actuators Installed**

(h) If no actuator with a P/N and S/N listed in Table 1 "Serial Number Effectivity Table" of the applicable customer bulletin is identified during the inspection required by paragraph (g) of this AD, no further action is required by this AD, except as required by paragraph (l) of this AD.

### **Initial and Repetitive Inspections of Subject Actuators**

(i) For any actuator identified during the inspection required by paragraph (g) of this AD with a P/N and S/N listed in Table 1 "Serial Number Effectivity Table" of the applicable customer bulletin, and for actuators for which the P/N or S/N is missing or unreadable: Before further flight, do a detailed inspection of the identified actuator to detect a broken damper shaft, in accordance with the applicable customer bulletin.

**Note 1:** For the purposes of this AD, a detailed inspection is: "An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required."

(1) If no damper shaft is found broken: Repeat the inspection required by paragraph (i) of this AD thereafter at intervals not to exceed 500 flight hours, until the terminating replacement specified in paragraph (j) of this AD is accomplished.

### **Corrective Action for Subject Actuators**

(2) If any damper shaft is found broken: Before further flight, do the action specified in paragraph (i)(2)(i), (i)(2)(ii), or (j) of this AD, in accordance with the applicable customer bulletin.

(i) Replace the actuator with a new or serviceable actuator having a P/N and S/N listed in Table 1 "Serial Number Effectivity Table" of the applicable customer bulletin, provided the new or serviceable actuator has been inspected in accordance with the requirements of paragraph (i) of this AD. Thereafter, repeat the inspection required by paragraph (i) of this AD for that actuator at intervals not to exceed 500 flight hours, until the terminating replacement specified in paragraph (j) of this AD is accomplished.

(ii) Replace the actuator with a new or serviceable actuator having a new P/N listed in Table 2 "Retrofit Part Number Replacement Table" of the applicable customer bulletin. This replacement terminates the requirements of this paragraph for that actuator only.

### **Terminating Replacement**

(j) Within 24 months after the effective date of this AD: Replace all identified suspect actuators with new or serviceable actuators having a new P/N listed in Table 2 "Retrofit Part Number Replacement Table" of the applicable customer bulletin. This replacement terminates the requirements of this AD, except as required by paragraph (l) of this AD.

### **Reporting Requirement**

(k) Submit a report of any broken damper shafts to the Manager, Atlanta Aircraft Certification Office (ACO), FAA, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia 30349; fax (770) 703-6097. The report must be done at the applicable time specified in paragraph (k)(1) or (k)(2) of this AD. The report must include the inspection date, the airplane model and S/N, the actuator position (left or right aileron or elevator), and the actuator P/N and S/N. Information collection requirements contained in this AD have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(1) If the inspection required by paragraph (i) of this AD is done after the effective date of this AD: Submit a report within 30 days after the inspection is done.

(2) If an inspection required by paragraph (i) of this AD was done before the effective date of this AD: Submit a report within 30 days after the effective date of this AD.

### **Parts Installation**

(l) As of the effective date of this AD, no person may install an aileron or elevator actuator having a P/N and S/N specified in the applicable customer bulletin on any airplane, unless the actuator has been inspected according to paragraph (i) of this AD.

### **Special Flight Permit Prohibited**

(m) Special flight permits (14 CFR 21.197 and 21.199) are not allowed if any broken damper shaft is found during any inspection required by paragraph (i) of this AD.

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

(n)(1) The Manager, Atlanta ACO, FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) Before using any AMOC approved in accordance with § 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

## Material Incorporated by Reference

(o) You must use the applicable customer bulletins specified in Table 2 of this AD to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference of these documents in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Gulfstream Aerospace Corporation, Technical Publications Dept., P.O. Box 2206, Savannah, Georgia 31402-2206, for a copy of this service information. You may review copies at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Room PL-401, Nassif Building, Washington, DC; on the Internet at <http://dms.dot.gov>; or at the National Archives and Records Administration (NARA). For information on the availability of this material at the NARA, call (202) 741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

**TABLE 2.—MATERIAL INCORPORATED BY REFERENCE**

<b>Customer bulletin</b>	<b>Date</b>
Gulfstream G500 Customer Bulletin 4	August 23, 2004.
Gulfstream G500 Customer Bulletin 6	December 8, 2004.
Gulfstream G550 Customer Bulletin 4	August 23, 2004.
Gulfstream G550 Customer Bulletin 6	December 8, 2004.
Gulfstream GV Customer Bulletin 123	August 23, 2004.
Gulfstream GV Customer Bulletin 124	December 8, 2004.

Issued in Renton, Washington, on May 15, 2006.

Kevin M. Mullin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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