
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.001(1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Gulfstream (Grumman) G1159 and G-IV Series Aeroplanes

AD/G1159/49 Elevator and Aileron Actuator Damper Shafts 9/2007

Applicability: Gulfstream Model GV series and Model GV-SP series aeroplanes having serial numbers (S/Ns) 5001 through 5052 inclusive.

Requirement: **Service Information References**

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

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

1. 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.

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2. 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 detailed in Requirement 1 of this AD, no further action is required by this AD, except as detailed in Requirement 5 of this AD.
3. For any actuator identified during the inspection detailed in Requirement 1 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:

- a. Do a detailed inspection of the identified actuator to detect a broken damper shaft, in accordance with the applicable customer bulletin.

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."

- b. If no damper shaft is found broken, Repeat the inspection detailed in Requirement 3a. of this AD.
- c. If any damper shaft is found broken, do the action specified in Requirement 3c.(i), 3c.(ii) or 4 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 Requirement 3 of this AD. Thereafter, repeat the inspection detailed in Requirement 3 of this AD for that actuator.
 - (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 detailed in Requirement 3 of this AD for that actuator only.
4. 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 detailed in Requirement 5 of this AD.

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5. Do not install an aileron or elevator actuator having a P/N and S/N specified in the applicable customer bulletin on any aeroplane, unless the actuator has been inspected according to Requirement 3 of this AD.
6. Special flight permits are not allowed if any broken damper shaft is found during any inspection detailed in Requirement 3 of this AD.

Note: FAA AD 2006-11-03 Amdt 39-14607 dated 15 May 2006 refers.

- Compliance:
1. Within 500 flight hours after the effective date of this AD, unless previously accomplished.
 2. From the effective date of this AD.
 3.
 - a. Before further flight, after the effective date of this AD.
 - b. Repetitively at intervals not to exceed 500 flight hours, until the terminating replacement specified in Requirement 4 of this AD is accomplished.
 - c. Before further flight, after the effective of this AD.
 - (i) Repetitive inspection at intervals not to exceed 500 flight hours, until the terminating replacement specified in Requirement 4 of this AD is accomplished.
 4. Within 12 months after the effective date of this AD.
 5. From the effective date of this AD.
 6. From the effective date of this AD.

This Airworthiness Directive becomes effective on 30 August 2007.

Background: This AD results from reports of broken or cracked damper shafts within the aileron and elevator actuator assemblies. The issuing of this AD is 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 aeroplane.



David Punshon
Delegate of the Civil Aviation Safety Authority

26 June 2007