

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2004-19337; Directorate Identifier 2004-NM-155-AD; Amendment 39-13824; AD 2004-21-03]

RIN 2120-AA64

Airworthiness Directives; Gulfstream Model G-1159, G-1159A, G-1159B, and G-IV Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Gulfstream Model G-1159, G-1159A, G-1159B, and G-IV 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 provides an optional terminating action for the repetitive inspection requirements of this AD. This AD is prompted by reports of broken or cracked damper shafts within the aileron and elevator actuator assemblies. We are issuing this AD to detect and correct broken damper shafts, which could result in locking of an aileron or elevator actuator (hard-over condition), subsequent loss of aileron or elevator control, and consequent reduced controllability of the airplane.

DATES: Effective November 2, 2004.

The incorporation by reference of certain publications listed in the AD is approved by the Director of the Federal Register as of November 2, 2004.

We must receive comments on this AD by December 17, 2004.

ADDRESSES: Use one of the following addresses to submit comments on this AD.

- DOT Docket Web site: Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.
- Government-wide rulemaking Web site: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- Mail: Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, room PL-401, Washington, DC 20590.

- Fax: (202) 493-2251.
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street SW., Washington, DC, 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, PO Box 2206, Mail Station D-10, Savannah, Georgia 31402-9980. You can examine this information 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/code_of_federal_regulations/ibr_locations.html.

You can examine the contents of this 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., room PL-401, on the plaza level of the Nassif Building, Washington, DC.

Docket Management System (DMS)

The FAA has implemented new procedures for maintaining AD dockets electronically. As of May 17, 2004, new AD actions are posted on DMS and assigned a docket number. We track each action and assign a corresponding directorate identifier. The DMS AD docket number is in the form "Docket No. FAA-2004-99999." The Transport Airplane Directorate identifier is in the form "Directorate Identifier 2004-NM-999-AD." Each DMS AD docket also lists the directorate identifier ("Old Docket Number") as a cross-reference for searching purposes.

Examining the Dockets

You can 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 DOT street address stated in the ADDRESSES section. Comments will be available in the AD docket shortly after the DMS receives them.

FOR FURTHER INFORMATION CONTACT: Technical information: 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.

Plain language information: Marcia Walters, marcia.walters@faa.gov.

SUPPLEMENTARY INFORMATION: We have received a report from the airplane manufacturer, Gulfstream, that the damper shafts in two actuators broke under normal torquing requirements during assembly of the actuators for a Gulfstream Model GV-SP airplane. Approximately one week after the original occurrence, a third actuator was found with a cracked damper shaft. In each case, the cracks originated at the threaded base of the damper shaft. In addition, the third actuator was found to be from a manufacturing lot previous to that of the other two actuators. Parker Aerospace, the actuator manufacturer, notified Gulfstream that the production process used after 1998 to manufacture aileron and elevator actuator damper shafts (internal to the actuator) may induce cracks in the threaded portion of the shaft. This cracking could cause the retaining nut and the separated portion of the failed damper shaft to become dislodged from the damper body and block the movement of the assembly. This condition, if not corrected, could result in locking of an aileron or elevator actuator (hard-over condition), subsequent loss of aileron or elevator control, and consequent reduced controllability of the airplane.

The affected aileron and elevator actuators installed on Gulfstream Model G-1159, G-1159A, G-1159B, G-IV, and GV series airplanes, are identical to those installed on Model GV-SP airplanes. Therefore, all of these models may be subject to the identified unsafe condition.

Other Rulemaking for Additional Airplane Models

Operators should note that, as we explained previously, Gulfstream Model GV and GV-SP series airplanes are subject to the same unsafe condition addressed in this AD. We are currently considering additional rulemaking to address the unsafe condition for those airplanes. However, because the unsafe condition is less severe for those models, the planned compliance time for that action would allow enough time to provide notice and opportunity for prior public comment on the merits of the corrective actions.

Relevant Service Information

We have reviewed the following Gulfstream alert customer bulletins:

TABLE—RELEVANT SERVICE INFORMATION

For model—	Alert customer bulletin—	Revision—	Dated—
G-1159 and G-1159B series airplanes	Gulfstream GII/GIIB Alert Customer Bulletin 29A	A	August 23, 2004.
G-1159A series airplanes	Gulfstream GIII Alert Customer Bulletin 15A	A	August 23, 2004.
G-IV series airplanes	Gulfstream G300 Alert Customer Bulletin 32A	A	August 23, 2004.
G-IV series airplanes	Gulfstream G400 Alert Customer Bulletin 32A	A	August 23, 2004.
G-IV series airplanes	Gulfstream GIV Alert Customer Bulletin 32A	A	August 23, 2004.

The alert customer bulletins describe procedures for a one-time inspection of the left and right aileron and elevator actuators to determine the part number (P/N) and serial number (S/N) of each actuator. The alert customer bulletins also describe procedures for an inspection of the actuators with certain P/Ns and S/Ns to detect broken damper shafts, and replacement of any actuator having a broken damper shaft with a new or serviceable actuator.

FAA's Determination and Requirements of This AD

The unsafe condition described previously is likely to exist or develop on other airplanes of the same type design. Therefore, we are issuing this AD to detect and correct broken damper shafts, which could result in locking of an aileron or elevator actuator (hard-over condition), subsequent loss of aileron or elevator control, and consequent reduced controllability of the airplane. This AD requires accomplishing the actions specified in the service information described previously, except as discussed under "Differences Between the AD and Alert Customer Bulletins." This AD also requires that operators report any broken damper shafts found during the initial and repetitive inspections required by paragraph (h) of this AD to the FAA.

Differences Between the AD and Alert Customer Bulletins

The alert customer bulletins do not specify the type of inspection to use to determine the P/N and S/N of the actuators. We have determined that the location of the actuators will require access and possibly additional inspection aides, and therefore, this AD requires a general visual inspection to determine the P/N and S/N of the actuators. We have included the definition of a general visual inspection in this AD.

The alert customer bulletins do not specify what to do if an installed actuator either has a P/N and/or S/N that is missing or is unreadable. This AD requires that those actuators be inspected to detect broken damper shafts—as if they have a P/N and S/N listed in the alert customer bulletin.

The alert customer bulletins recommend a one-time inspection of the aileron and elevator actuators for broken damper shafts. However, a suspect damper shaft found undamaged during the initial inspection still has the potential to break at some time in the future. Because a one-time inspection alone would not provide the degree of safety necessary, we have determined that repetitive inspections of the suspect actuators are necessary to ensure an adequate level of safety for the affected transport airplane fleet. We have also determined that an interval of 500 flight hours or 12 months, whichever is first, is an appropriate compliance time for the repetitive inspections. Although the alert customer bulletins do not include repetitive inspections, they do note that a recurring inspection will be added to the applicable airplane maintenance manual.

The alert customer bulletins also do not specify the type of inspection to use to detect broken damper shafts. We have determined that a detailed inspection for this action is appropriate; we have included the definition of this inspection in this AD. Therefore, this AD requires a detailed inspection to detect broken damper shafts. We have included the definition of a detailed inspection in this AD.

The alert customer bulletins specify replacing an actuator having a broken damper shaft, but they do not specify with what type of replacement actuator. This AD requires replacement with either:

- A new or serviceable actuator having a subject P/N and S/N listed in the alert customer bulletin, provided it has been inspected for broken damper shafts in accordance with the requirements of this AD; or
- A new or serviceable actuator having a P/N and/or S/N different than those listed in the alert customer bulletin. Replacing an actuator with an actuator having a different P/N and/or S/N terminates the requirements of this AD for that actuator only.

We are not requiring the terminating action (i.e., replacement of all suspect actuators) at this time, because we have determined, and the actuator manufacturer has confirmed, that the necessary replacement actuators (with a P/N and/or S/N not listed in the applicable alert customer bulletin) are not yet available and will not be available for another 24 to 36 months. Therefore, we are providing the terminating action as an option for operators once those parts become available.

The alert customer bulletins do not recommend that findings of broken damper shafts be reported. This AD requires findings of all broken damper shafts be reported to the FAA. When the unsafe condition addressed by an AD is likely due to a manufacturer's quality control (QC) problem, a reporting requirement is instrumental in ensuring that we can gather as much information as possible regarding the extent and nature of the QC problem or breakdown, especially in cases where the data may not be available through other established means. This information is necessary to ensure that proper corrective action will be taken. Based on the results of these reports, we may determine that further corrective action is warranted.

The Accomplishment Instructions of the referenced alert customer bulletins specify to submit the Service Reply Card or compliance information to the manufacturer. This AD does not include those actions; we do not need this information from operators.

Clarification of Applicability

The effectivities of the alert customer bulletins include all Model G-1159, G-1159A, G-1159B, and G-IV series airplanes, equipped with aileron or elevator actuators having certain P/Ns and S/Ns. Because there is no way to determine if an actuator with a suspect P/N and S/N is installed without inspecting the airplane, this AD applies to all Model G-1159, G-1159A, G-1159B, and G-IV series airplanes. We would, however, point out that the first action in the alert customer bulletins is an inspection to determine if an actuator having a certain P/N and S/N is installed.

Interim Action

This AD is considered to be interim action. The inspection reports that are required by this AD will enable us to obtain better insight into the nature and extent of the broken damper shafts, and eventually to develop final action to address the unsafe condition. Once final action has been developed and replacement parts are available, we may consider further rulemaking.

Changes to 14 CFR Part 39/Effect on the AD Relating to Special Flight Permits

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance (AMOC). This material is included in part 39, except that the office authorized to approve AMOCs is identified in each individual AD.

However, as amended, part 39 provides for the FAA to add special requirements for operating an airplane to a repair facility to do the work required by an airworthiness directive. For purposes of this AD, we have determined that such a special flight permit is prohibited.

FAA's Determination of the Effective Date

An unsafe condition exists that requires the immediate adoption of this AD; therefore, providing notice and opportunity for public comment before the AD is issued is impracticable, and good cause exists to make this AD effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements that affect flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to submit any relevant written data, views, or arguments regarding this AD. Send your comments to an address listed under ADDRESSES. Include "Docket No. FAA-2004-19337; Directorate Identifier 2004-NM-155-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the AD. We will consider all comments received by the closing date and may amend the AD in light of those comments.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this AD. Using the search function of our docket web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You can review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-19478), or you can visit <http://dms.dot.gov>.

We are reviewing the writing style we currently use in regulatory documents. We are interested in your comments on whether the style of this document is clear, and your suggestions to improve the clarity of our communications with you. You can get more information about plain language at <http://www.faa.gov/language> and <http://www.plainlanguage.gov>.

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 the regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the 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. 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 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**

We post ADs on the internet at "www.faa.gov"

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).

2004-21-03 Gulfstream Aerospace Corporation: Amendment 39-13824. Docket No. FAA-2004-19337; Directorate Identifier 2004-NM-155-AD.

Effective Date

- (a) This AD becomes effective November 2, 2004.

Affected ADs

- (b) None.

Applicability

- (c) This AD applies to all Gulfstream Model G-1159, G-1159A, G-1159B, and G-IV series airplanes; certificated in any category.

Unsafe Condition

- (d) This AD is prompted by reports of broken or cracked damper shafts within the aileron and elevator actuator assemblies. The FAA is issuing this AD to detect and correct broken damper shafts, which could result in locking of an aileron or elevator actuator (hard-over condition), subsequent loss of aileron or elevator control, 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.

Note 1: This AD refers to certain portions of Gulfstream alert customer bulletins for applicability and inspection information. In addition, this AD specifies inspection requirements beyond those included in the alert customer bulletins. Where the AD and the alert customer bulletins differ, the AD prevails.

Service Information References

- (f) The term "alert customer bulletin," as used in this AD, means the Accomplishment Instructions of the Gulfstream alert customer bulletins, as applicable, specified in Table 1 of this AD. Although the applicable alert customer bulletin recommends completing and submitting the Service

Reply Card or reporting compliance with the applicable alert customer bulletin, those actions are not required by this AD.

TABLE 1.—APPLICABLE GULFSTREAM ALERT CUSTOMER BULLETINS

For model—	Alert customer bulletin—	Revision—	Dated—
G–1159 and G–1159B series airplanes	Gulfstream GII/GIIB Alert Customer Bulletin 29A.	A	August 23, 2004.
G–1159A series airplanes	Gulfstream GIII Alert Customer Bulletin 15A	A	August 23, 2004.
G–IV series airplanes	Gulfstream G300 Alert Customer Bulletin 32A	A	August 23, 2004.
G–IV series airplanes	Gulfstream G400 Alert Customer Bulletin 32A	A	August 23, 2004.
G–IV series airplanes	Gulfstream GIV Alert Customer Bulletin 32A	A	August 23, 2004.

Inspection To Determine Actuator Part and Serial Numbers

(g) Within 50 flight hours after the effective date of this AD, do a one-time general visual inspection of the left and right aileron and elevator actuators to determine the part number (P/N) and serial number (S/N) of each actuator, in accordance with the applicable alert customer bulletin.

Note 2: For the purposes of this AD, a general visual inspection is: "A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to ensure visual access to all surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or droplight and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked."

Initial and Repetitive Actuator Inspections and Corrective Action

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

Note 3: 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 (h) of this AD thereafter at intervals not to exceed 500 flight hours or 12 months, whichever occurs first.

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

(i) Replace the actuator with a new or serviceable actuator having a P/N and S/N listed in the applicable alert customer bulletin, provided the new or serviceable actuator has been inspected in accordance with the requirements of paragraph (h) of this AD. Thereafter, repeat the inspection required by paragraph (h) of this AD at intervals not to exceed 500 flight hours or 12 months, whichever occurs first.

(ii) Replace the actuator with a new or serviceable actuator having a P/N and/or S/N not listed in the applicable alert customer bulletin. This replacement terminates the requirements of this AD for that actuator only.

Optional Terminating Action

(i) Replacement of all suspect actuators with new or serviceable actuators having a P/N and/or S/N not listed in the applicable alert customer bulletin terminates the requirements of this AD.

Reporting Requirement

(j) Submit a report of any broken damper shafts to the Manager, Atlanta Aircraft Certification Office (ACO), FAA, Small Airplane Directorate, 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 (j)(1) or (j)(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 of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(1) If the inspection required by paragraph (h) of this AD was done after the effective date of this AD: Submit the report within 10 days after the inspection.

(2) If the inspection required by paragraph (h) of this AD was done before the effective date of this AD: Submit the report within 10 days after the effective date of this AD.

Parts Installation

(k) 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 alert customer bulletin, on any airplane, unless the actuator has been inspected according to paragraph (h) of this AD.

Special Flight Permit

(l) Special flight permits (14 CFR 21.197 and 21.199) are not allowed.

Alternative Methods of Compliance (AMOCs)

(m) 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.

Material Incorporated by Reference

(n) You must use the service information that is specified in Table 2 of this AD to perform the actions that are required by this AD, unless the AD specifies otherwise.

TABLE 2.—MATERIAL INCORPORATED BY REFERENCE

Alert customer bulletin—	Revision—	Dated—
Gulfstream GII/GIIB Alert Customer Bulletin 29A	A	August 23, 2004.
Gulfstream GIII Alert Customer Bulletin 15A	A	August 23, 2004.
Gulfstream GIV Alert Customer Bulletin 32A	A	August 23, 2004.
Gulfstream G300 Alert Customer Bulletin 32A	A	August 23, 2004.
Gulfstream G400 Alert Customer Bulletin 32A	A	August 23, 2004.

The Director of the Federal Register approves the incorporation by reference of those documents in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. For copies of the service information, contact Gulfstream Aerospace Corporation, P.O. Box 2206, Mail Station D-10, Savannah, Georgia 31402-9980. You can review copies at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., room PL-401, Nassif Building, Washington, DC; or 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/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on October 4, 2004.
Kalene C. Yanamura,
Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.
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