

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-20280; Directorate Identifier 2004-NM-254-AD; Amendment 39-13978; AD 2005-04-06]

RIN 2120-AA64

Airworthiness Directives; Gulfstream Model GV-SP Series Airplanes

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

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Gulfstream Model GV-SP series airplanes. This AD requires repetitive inspections of the avionics standard communication bus (ASCB) for any noise interference and repair of the ASCB if noise interference is found. This AD also requires revisions of the airplane flight manual (AFM) to prohibit dispatch of any flight with the integrated standby flight display (SFD) inoperative; to add procedures to facilitate recovery of the cockpit display units in the event that the cockpit displays go blank; and to add flightcrew briefings on the use of standby instruments in case the cockpit display units go blank and do not recover. This AD also requires installing an avionics software update and a hardware upgrade to the Honeywell Primus Epic system to correct a display blanking problem; installing the update will allow removal of certain AFM revisions and will end the repetitive inspections of the ASCB. This AD is prompted by a report indicating that all four cockpit flight panel displays went blank simultaneously. We are issuing this AD to prevent a software error from blanking the cockpit display units, which will result in a reduction of the flightcrew's situational awareness, and possible loss of control of the airplane. We are also issuing this AD to address noise interference in the ASCB, which can interfere with the display recovery after a blanking event and consequently extend the time that the displays remain blank. In addition, we are issuing this AD to ensure that the flightcrew is advised of the procedures necessary to address blank cockpit display units.

DATES: Effective February 23, 2005.

The incorporation by reference of certain publications listed in the AD is approved by the Director of the Federal Register as of February 23, 2005.

We must receive comments on this AD by April 18, 2005.

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, Technical Publications Dept., P.O. Box 2206, Savannah, Georgia 31402-2206. 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. This docket number is FAA-2005-20280; the directorate identifier for this docket is 2004-NM-254-AD.

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: Robert Chupka, 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) 703-6070; fax (770) 703-6097.

SUPPLEMENTARY INFORMATION: We have received a report indicating that all four cockpit flight panel displays went blank simultaneously during flight, then recovered without any flightcrew action after approximately 74 seconds, on a Gulfstream Model GV-SP series airplane. Two similar incidents occurred on the ground. An engineering investigation revealed a software problem on the Honeywell Primus Epic system, which can cause a temporary loss of data from the cockpit display units. Loss of the cockpit display units will result in a reduction of the flightcrew's situational awareness, and possible loss of control of the airplane. The engineering investigation also revealed noise interference on the avionics standard communication bus (ASCB), which is a part of the Honeywell Primus Epic system. Noise interference, if not corrected, can possibly interfere with the display recovery after a blanking event, and consequently extend the time that the cockpit displays remain blank.

Other Relevant Rulemaking

We determined that since the Honeywell Primus Epic system also is installed on Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model ERJ 170 series airplanes, those airplanes are

subject to an unsafe condition similar to that addressed in this AD. In light of that determination, we issued AD 2004-26-12, amendment 39-13924 (69 FR 78300, December 30, 2004), to address that unsafe condition on that airplane model. We may consider additional rulemaking on other airplane models having the Honeywell Primus Epic system that also exhibit a similar unsafe condition.

Relevant Service Information

We have reviewed Gulfstream G500 Alert Customer Bulletin 2, dated October 27, 2004; and Gulfstream G550 Alert Customer Bulletin 2, dated October 27, 2004. The customer bulletins describe procedures for inspecting the ASCB for any noise interference and contacting the manufacturer if any noise interference indications are found during the inspection.

We have also reviewed Gulfstream G500 Airplane Flight Manual (AFM) GAC-AC-G500-OPS-0001, Revision 7, dated December 28, 2004; and Gulfstream G550 AFM GAC-AC-G550-OPS-0001, Revision 9, dated December 28, 2004. The AFM revisions describe procedures to recover the cockpit display units in the event that all four cockpit display units go blank during flight. Additionally, these AFM revisions describe procedures to ensure that the flightcrew is aware that dispatch of any flight with any of the following display units inoperative is prohibited: the integrated standby flight display (SFD), very high frequency (VHF) 1, very high frequency omnidirectional range (VOR) 1, or air traffic control (ATC) 1. The AFM revisions also describe procedures to advise the flightcrew that, during the use of Taxi/Before Takeoff, Descent, and Before Landing checklists, the briefings (takeoff and approach) should include the possibility of the loss of all cockpit display units and the subsequent transition to the use of the standby instruments.

In addition, we have reviewed Gulfstream G500 Aircraft Service Change 902; and Gulfstream G550 Aircraft Service Change 902; both dated December 30, 2004. The aircraft service changes describe procedures to install software updates to the Honeywell Primus Epic systems and for submitting the service reply card, and specify concurrent accomplishment of Gulfstream G500 Aircraft Service Change 043, dated December 30, 2004; and Gulfstream G550 Aircraft Service Change 043, dated December 30, 2004; as applicable. Gulfstream G500 Aircraft Service Change 043 and Gulfstream G550 Aircraft Service Change 043 describe procedures for installing hardware upgrades to the Honeywell Primus Epic systems. The hardware upgrades include upgrading and retrofitting display controllers, display units, a display driver unit, and a data management unit in addition to replacing an existing circuit breaker with a new circuit breaker. Installing the software update and the hardware upgrade will allow removal of certain AFM revisions and will end the repetitive inspections of the ASCB.

Accomplishing the actions specified in the service information is intended to adequately address the unsafe condition.

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 prevent a software error from blanking the cockpit display units, which will result in a reduction of the flightcrew's situational awareness, and possibly loss of control of the airplane. We are also issuing this AD to address noise interference in the avionics standard communication bus (ASCB), which can interfere with the display recovery after a blanking event and consequently extend the time that the displays remain blank. In addition, we are issuing this AD to ensure that the flightcrew is advised of the procedures necessary to address blank cockpit display units, and to ensure that adequate standby instrument systems are available to safely complete the flight.

This AD requires doing the actions specified in the service information described previously, except as discussed under "Differences Between the AD and the Customer Bulletins."

Differences Between the AD and the Customer Bulletins

Operators should note that, although the Accomplishment Instructions of the referenced customer bulletins describe procedures for submitting a sheet recording compliance with the customer bulletin, this AD will not require those actions. The FAA does not need this information from operators.

Operators should note that, although the Modification Instructions of the referenced aircraft service changes describe procedures for submitting a service reply card, this AD will not require those actions. The FAA does not need this information from operators.

Although the customer bulletins specify that operators may contact the manufacturer for disposition if any noise interference indications are found during the inspection of the ASCB, this AD requires operators to repair the ASCB according to a method approved by the FAA.

The customer bulletins specify a one time inspection; however, they do note that a recurring inspection will be added to the applicable airplane maintenance manual (AMM). The recurring inspection interval in the applicable AMM is specified as 60 days, the same as this AD.

The customer bulletins state that a certain number of Gulfstream Model GV-SP series airplanes with specific serial numbers are affected. This AD also specifies certain additional airplanes with serial numbers that are not stated in the customer bulletin. These additional airplanes may also be subject to the unsafe condition.

Clarification of AFM Revisions

As indicated in Note 1 of this AD, operators may accomplish the AFM revisions required by this AD by inserting a copy of Gulfstream G500 AFM GAC-AC-G500-OPS-0001, Revision 7, dated December 28, 2004, or Gulfstream G550 AFM GAC-AC-G550-OPS-0001, Revision 9, dated December 28, 2004, into the applicable AFM. Future general revisions to the AFM must contain the identical procedures specified in the applicable sections of the AFM revisions required by this AD.

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-2005-20280; Directorate Identifier 2004-NM-254-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 19477-78), or you can visit <http://dms.dot.gov>.

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 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).

2005-04-06 Gulfstream Aerospace Corporation: Amendment 39-13978. Docket No. FAA-2005-20280; Directorate Identifier 2004-NM-254-AD.

Effective Date

- (a) This AD becomes effective February 23, 2005.

Affected ADs

- (b) None.

Applicability

- (c) This AD applies to Gulfstream Model GV-SP series airplanes, certificated in any category; with serial numbers 5001 through 5062 inclusive.

Unsafe Condition

- (d) This AD was prompted by a report indicating that all four cockpit flight panel displays went blank simultaneously. There were also two reports of similar incidents occurring on the ground. The FAA is issuing this AD to prevent a software error from blanking the cockpit display units, which will result in a reduction of the flightcrew's situational awareness, and possible loss of control of the airplane. We are also issuing this AD to address noise interference in the avionics standard communication bus (ASCB), which can interfere with the display recovery after a blanking event and consequently extend the time that the displays remain blank. In addition, we are issuing this AD to ensure that the flightcrew is advised of the procedures necessary to address blank cockpit display units.

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.

Initial and Repetitive Inspections

- (f) Within 50 flight hours after the effective date of this AD, and thereafter at intervals not to exceed 60 days: Do an inspection of the ASCB for any noise interference indications in accordance with the Accomplishment Instructions of Gulfstream G500 Alert Customer Bulletin 2, dated October 27, 2004, including Appendix A; or Gulfstream G550 Alert Customer Bulletin 2, dated October 27, 2004, including Appendix A; as applicable. If any noise interference indication is found during any

inspection required by this AD, before further flight, repair the ASCB according to a method approved by the Manager, Atlanta Aircraft Certification Office (ACO), FAA.

Airplane Flight Manual (AFM) Revisions

(g) Within 72 hours after the effective date of this AD, revise sections of the applicable AFM in accordance with the actions required in paragraphs (g)(1), (g)(2), (g)(3), and (g)(4) of this AD. Any further revisions to the AFM must contain the identical procedures in the applicable sections of the AFM revisions as required by this AD.

Note 1: This may be accomplished by inserting a copy of Gulfstream G500 AFM GAC-AC-G500-OPS-0001, Revision 7, dated December 28, 2004; or Gulfstream G550 AFM GAC-AC-G550-OPS-0001, Revision 9, dated December 28, 2004; as applicable; into the applicable AFM.

(1) Revise the Limitations section of the Gulfstream G500 AFM and the Gulfstream G550 AFM by inserting a copy of the procedures in Section 1-34-140, "3-in-1" Integrated Standby Instrument System (SFD), of Gulfstream G500 AFM GAC-AC-G500-OPS-0001, Revision 7, dated December 28, 2004; or Section 1-34-140, "3-in-1" Integrated Standby Instrument System (SFD), of Gulfstream G550 AFM GAC-AC-G550-OPS-0001, Revision 9, dated December 28, 2004; as applicable; in the applicable AFM.

(2) Revise the Limitations section of the Gulfstream G500 AFM and the Gulfstream G550 AFM by inserting a copy of the procedures in Section 1-101-10, Checklist Compliance, of Gulfstream G500 AFM GAC-AC-G500-OPS-0001, Revision 7, dated December 28, 2004; or Section 1-101-10, Checklist Compliance, of Gulfstream G550 AFM GAC-AC-G550-OPS-0001, Revision 9, dated December 28, 2004; as applicable; in the applicable AFM.

(3) Revise the Abnormal Procedures section of the Gulfstream G500 AFM and the Gulfstream G550 AFM by inserting a copy of the procedures in Section 3-16-150, Loss of All Display Units (DUs), of Gulfstream G500 AFM GAC-AC-G500-OPS-0001, Revision 7, dated December 28, 2004; or Section 3-16-150, Loss of All Display Units (DUs), of Gulfstream G550 AFM GAC-AC-G550-OPS-0001, Revision 9, dated December 28, 2004; as applicable; in the applicable AFM.

(4) Revise the Normal Procedures section of the Gulfstream G500 AFM and the Gulfstream G550 AFM by inserting a copy of the procedures contained in the applicable "Section" listed in Table 1 of this AD.

TABLE 1.—AFM REVISIONS

Section	Applicable Gulfstream AFM
Section 02–04–20, Taxi/Before Takeoff	G500 AFM GAC–AC–G500–OPS–0001, as specified in Revision 7, dated December 28, 2004.
Section 02–04–20, Taxi/Before Takeoff	G550 AFM GAC–AC–G550–OPS–0001, as specified in Revision 9, dated December 28, 2004.
Section 02–05–30, Descent	G500 AFM GAC–AC–G500–OPS–0001, as specified in Revision 7, dated December 28, 2004.
Section 02–05–30, Descent	G550 AFM GAC–AC–G550–OPS–0001, as specified in Revision 9, dated December 28, 2004.
Section 02–05–50, Before Landing	G500 AFM GAC–AC–G500–OPS–0001, as specified in Revision 7, dated December 28, 2004.
Section 02–05–50, Before Landing	G550 AFM GAC–AC–G550–OPS–0001, as specified in Revision 9, dated December 28, 2004.

Note 2: Instead of inserting the AFM procedures required by this AD into the AFM, use of the information contained in Gulfstream G550 AFM GAC-AC-JAA-550-OPS-0001, Revision 2, dated January 12, 2005, is considered acceptable for airplanes operated under/in accordance with Joint Aviation Authority/European Aviation Safety Agency (EASA) regulations/supervision/oversight.

Terminating Action

(h) Within 90 days or 300 flight hours after the effective date of this AD, whichever occurs first, do the actions required in paragraphs (h)(1) and (h)(2). Doing the actions in paragraphs (h)(1) and (h)(2) ends the requirements of paragraph (f) of this AD, and the AFM revisions required by paragraphs (g)(1), (g)(2), and (g)(4) of this AD may be removed from the AFMs.

(1) Install an avionics software update for the Honeywell Primus Epic system in accordance with the Modification Instructions of Gulfstream G500 Aircraft Service Change 902, dated December 30, 2004; or Gulfstream G550 aircraft Service Change 902, dated December 30, 2004; as applicable.

(2) Concurrent with the actions required in paragraph (h)(1) of this AD, install hardware upgrades for the Honeywell Primus Epic system in accordance with the Modification Instructions of Gulfstream G500 Aircraft Service Change 043, dated December 30, 2004; or Gulfstream G550 Aircraft Service Change 043, dated December 30, 2004; as applicable.

No Reporting

(i) Although the customer bulletins referenced in this AD specify to submit certain information to the manufacturer, this AD does not include that requirement.

Alternative Methods of Compliance (AMOCs)

(j) 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

(k) 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. (The appendices to the Gulfstream alert customer bulletins are not dated.) 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, Technical Publications Dept., P.O. Box 2206, Savannah, Georgia 31402-2206. 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.

Gulfstream service information	Pages	Revision level	Date
G500 Airplane Flight Manual GAC-AC-G500-OPS-0001.	List of Effective Pages; Pages A through H	Revision 7	December 28, 2004.
G500 Alert Customer Bulletin 2, including Appendix A.	1-2; 1-4 (appendix)	Original	October 27, 2004.
G500 Aircraft Service Change 043	1-8	Original	December 30, 2004.
G500 Aircraft Service Change 902	1-6	Original	December 30, 2004.

G550 Airplane Flight Manual GAC-AC-G550-OPS-0001.	List of Effective Pages; Pages A through H	Revision 9	December 28, 2004.
G550 Alert Customer Bulletin 2, including Appendix A.	1-2; 1-4 (appendix)	Original	October 27, 2004.
G550 Aircraft Service Change 043	1-8	Original	December 30, 2004.
G550 Aircraft Service Change 902	1-6	Original	December 30, 2004.

Issued in Renton, Washington, on February 8, 2005.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 05-2761 Filed 2-15-05; 8:45 am]

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