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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2024-1476; Project Identifier AD-2024-00090-T; Amendment 39-22761; AD 2024-10-15]**

**RIN 2120-AA64**

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

#### **AGENCY:**

Federal Aviation Administration (FAA), DOT.

#### **ACTION:**

Final rule; request for comments.

#### **SUMMARY:**

The FAA is adopting a new airworthiness directive (AD) for certain Gulfstream Aerospace Corporation Model GVII-G500 and GVII-G600 airplanes. This AD was prompted by a report of a failed rear engine mount discovered during a preflight walk-around due to visible engine misalignment. This AD requires inspecting the left and right engine mount points within the pylons and engine nacelles for non-conforming hardware installation, repairing the engine mount points if necessary, and revising the existing aircraft maintenance manual (AMM) to include revised procedures for engine removal and installation. The FAA is issuing this AD to address the unsafe condition on these products.

#### **DATES:**

This AD is effective June 7, 2024.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of June 7, 2024.

The FAA must receive comments on this AD by July 22, 2024.

#### **ADDRESSES:**

You may send comments, using the procedures found in [14 CFR 11.43](#) and [11.45](#), by any of the following methods:

- *Federal eRulemaking Portal*: Go to *regulations.gov*. Follow the instructions for submitting comments.
- *Fax*: 202-493-2251.
- *Mail*: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- *Hand Delivery*: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

*AD Docket*: You may examine the AD docket at *regulations.gov* by searching for and locating Docket No. FAA-2024-1476; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The street address for Docket Operations is listed above.

*Material Incorporated by Reference*:

- For Gulfstream material, contact Gulfstream Aerospace Corporation, Technical Publications Dept., P.O. Box 2206, Savannah, GA 31402-2206; telephone 800-810-4853; email [pubs@gulfstream.com](mailto:pubs@gulfstream.com); website [gulfstream.com/en/customer-support](http://gulfstream.com/en/customer-support).
- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at *regulations.gov* under Docket No. FAA-2024-1476.

**FOR FURTHER INFORMATION CONTACT:**

Jeffrey Johnson, Aviation Safety Engineer, FAA, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5554; email: [9-ASO-ATLACO-ADs@faa.gov](mailto:9-ASO-ATLACO-ADs@faa.gov).

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under the **ADDRESSES** section. Include Docket No. FAA-2024-1476 and Project Identifier AD-2024-00090-T at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in [14 CFR 11.35](#), the FAA will post all comments received, without change, to *regulations.gov*, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

**Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) ([5 U.S.C. 552](#)), CBI is exempt from public

disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Jeffrey Johnson, Aviation Safety Engineer, FAA, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5554; email: [9-ASO-ATLACO-ADs@faa.gov](mailto:9-ASO-ATLACO-ADs@faa.gov). Any commentary that the FAA receives that is not specifically designated as CBI will be placed in the public docket for this rulemaking.

## **Background**

The FAA has received a report indicating that, on January 31, 2024, a partially disengaged rear engine mount was discovered on an in-service Model GVII-G600 airplane. The flight crew noticed a visible misalignment in the pylon area adjacent to the thrust reverser during a preflight walk-around. The misalignment was caused by the upper, aft engine mount fastener migrating out of position in the pylon area.

Follow-on inspection revealed the hollow pin was the only hardware holding the aft strut in place, and migration of the hollow pin out of position was imminent, which would have resulted in the disconnection of the strut from the airplane. The cause of the upper rear engine mount failure was determined to be the secondary locking device (cotter pin) not being installed, and the separation of the retaining nut from the single strut attachment bolt, resulting in the bolt migrating out of position. The bolt and nut were found at the bottom of the pylon, and the required cotter pin was not located. It was believed that during a post-production engine removal and installation performed in a Gulfstream 145 Repair Station, using the AMM, the rear engine mount fasteners on the airplane side were loosened to aid in engine installation. It is probable that the aft upper strut attachment nut was not properly reinstalled, and the required cotter pin was not installed after the bolt and nut were installed. It was determined that maintenance personnel did not fully comply with the AMM procedures that were current at the time and anecdotal evidence that shows the maintenance personnel requested assistance from the production engine installation personnel to install the engine.

Gulfstream immediately performed technical evaluations on numerous airplanes, discovering other non-conforming engine mount hardware installations, but confirmed that none would have resulted in failure of the engine mount system. However, some of the non-conformances were found on engines installed in production. This indicates quality escapes exist in both production engine installation and in-service installation using the AMM procedures.

Additionally, an FAA investigation discovered numerous discrepancies in the production engine installation procedures, along with similar discrepancies in the AMM procedures for installing engines post-delivery/post-certificate of airworthiness. The FAA identified missing hardware callouts in the engine attachment instruction text, engine attachment hardware not shown in the AMM graphics, and inconsistencies in AMM image view labeling that could lead to misinterpretation of hardware orientation (left and right mirror image inconsistencies).

Failure of any single engine mount, if not addressed, could result in the separation of an engine from the airplane and subsequent loss of control of the airplane. The FAA is issuing this AD to address the

unsafe condition on these products.

## **FAA's Determination**

The FAA is issuing this AD because the agency determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

## **Related Material Under [1 CFR Part 51](#)**

The FAA reviewed Gulfstream GVII-G500 Customer Bulletin No. 092 and Gulfstream GVII-G600 Customer Bulletin No. 063, both Revision A, both dated April 9, 2024. This material specifies procedures for performing a one-time general visual inspection of the hardware at all engine mounts, attach fittings, links, and struts; for non-conforming engine mount hardware installations (including mis-oriented bolts, nuts, pins, and washers; all required hardware; application of torque; and correct hardware safety installations). This material also specifies reporting findings of non-conforming hardware to Gulfstream and returning non-conforming hardware to conforming configuration before further flight.

The FAA also reviewed the following AMM tasks for Chapter 71—Powerplant, of Gulfstream Aerospace GVII-G500 AMM, Document Number GAC-AC-GVII-G500-AMM-0001, Revision 18, dated March 29, 2024; and Gulfstream Aerospace GVII-G600 AMM, Document Number GAC-AC-GVII-G600-AMM-0001, Revision 14, dated March 29, 2024. This material contains the following revised maintenance procedures for engine removal and installation:

- 71-20-02 Engine Mount Hardware—Removal/Installation, 71-20 Mounts;
- 71-21-03 Engine Forward Link Assemblies—Removal/Installation, 71-21 Front Mounts;
- 71-21-04 Forward Engine Mount Assembly—Removal/Installation, 71-21 Front Mounts;
- 71-22-03 Aft Engine Mount Strut Assembly—Removal/Installation, 71-22 Rear Mounts;
- 71-23-05 Engine Thrust Strut—Removal/Installation, 71-23 Mounts: Support Links and Accessories; and
- 71-23-06 Engine Alignment Strut—Removal/Installation, 71-23 Mounts: Support Links and Accessories.

These documents are distinct since they apply to different airplane models.

This material 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.

## **AD Requirements**

This AD requires accomplishing the actions specified in the material described previously, except as discussed under “Differences Between this AD and the Referenced Material” and except for any differences identified as exceptions in the regulatory text of this AD.

## **Differences Between This AD and the Referenced Material**

The applicability of this AD is not limited to airplanes identified in paragraph I.A., Effectivity, of Gulfstream GVII-G500 Customer Bulletin No. 092 and Gulfstream GVII-G600 Customer Bulletin No. 063, both Revision A, both dated April 9, 2024. The unsafe condition was originally thought to be the

result of improper maintenance procedures during post-production engine removal and installation. Investigations subsequent to the issuance of the original Gulfstream customer bulletins were unable to definitively tie the unsafe condition to the removal/installation work and have determined that the unsafe condition could have originated during production. Therefore, this AD includes airplanes that both have and have not had engines replaced since production.

This AD requires inspecting the engine mount hardware installations for conforming hardware and revising the existing AMM to include revised maintenance procedures for engine removal and installation. Where Gulfstream GVII-G500 Customer Bulletin No. 092 and Gulfstream GVII-G600 Customer Bulletin No. 063, both Revision A, both dated April 9, 2024, state a compliance time of 12 months from the initial issue date of February 15, 2024, this AD requires a compliance time of within 30 days after the effective date of this AD.

### **Justification for Immediate Adoption and Determination of the Effective Date**

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) ([5 U.S.C. 551](#) *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies forgoing notice and comment prior to adoption of this rule because failure of any single engine mount could result in separation of the engine from the airplane. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to [5 U.S.C. 553\(b\)\(3\)\(B\)](#).

The compliance time in this AD is shorter than the time necessary for the public to comment and for publication of the final rule. In addition, the FAA finds that good cause exists pursuant to [5 U.S.C. 553\(d\)](#) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forgo notice and comment.

### **Regulatory Flexibility Act**

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to [5 U.S.C. 553](#) to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without notice and comment, RFA analysis is not required.

### **Costs of Compliance**

The FAA estimates that this AD affects 247 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

### **Estimated Costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Inspection of engine mount installation hardware	10 work-hours × \$85 per hour = \$850	\$0	\$850	\$209,950
AMM revision	1 work-hour × \$85 per hour = \$85	0	85	20,995

The FAA estimates the following costs to do any necessary repairs that would be required based on the results of the inspection. The FAA has no way of determining the number of aircraft that might need this repair:

### **On-Condition Costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per engine</b>
Engine mount hardware repair	1 work-hour × \$85 per hour = \$85	Up to \$4,651 *	Up to \$4,736.

*\* Estimate includes two highest-cost hardware locations: thrust strut and link assembly. Although more locations are possible, two locations are used in this estimate based on typical fleet findings to date.*

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

### **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.

The FAA is 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](#), and
- (2) Will not affect intrastate aviation in Alaska.

### List of Subjects in [14 CFR Part 39](#)

- Air transportation
- Aircraft
- Aviation safety
- Incorporation by reference
- Safety

### 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:

**2024-10-15 Gulfstream Aerospace Corporation:** Amendment 39-22761; Docket No. FAA-2024-1476; Project Identifier AD-2024-00090-T.

#### (a) Effective Date

This airworthiness directive (AD) is effective June 7, 2024.

#### (b) Affected ADs

None.

#### (c) Applicability

This AD applies to Gulfstream Aerospace Corporation airplanes, certificated in any category, identified in paragraphs (c)(1) and (2) of this AD.

(1) Model GVII-G500 airplanes, serial numbers (S/Ns) 72001 through 72140 inclusive.

(2) Model GVII-G600 airplanes, S/Ns 73001 through 73148 inclusive.

#### (d) Subject

Air Transport Association (ATA) of America Code 71, Powerplant.

**(e) Unsafe Condition**

This AD was prompted by a report of a failed rear engine mount discovered during a preflight walk-around due to visible engine misalignment. The FAA is issuing this AD to address failure of any single engine mount. The unsafe condition, if not addressed, could result in the separation of an engine from the airplane and subsequent loss of control of the airplane.

**(f) Compliance**

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

**(g) Inspection of Engine Mount Hardware Installations**

Within 30 days after the effective date of this AD, do all applicable actions identified as “RC” (required for compliance) in, and in accordance with, the Accomplishment Instructions of the applicable material specified in paragraphs (g)(1) and (2) of this AD.

(1) Gulfstream GVII-G500 Customer Bulletin No. 092, Revision A, dated April 9, 2024.

(2) Gulfstream GVII-G600 Customer Bulletin No. 063, Revision A, dated April 9, 2024.

**(h) Revision of Aircraft Maintenance Manual (AMM)**

Within 30 days after the effective date of this AD, revise the existing AMM to incorporate the procedures specified in paragraphs (h)(1)(i) through (vi) or (h)(2)(i) through (vi) of this AD, as applicable.

(1) Chapter 71—Powerplant, Gulfstream Aerospace GVII-G500 AMM, Document Number GAC-AC-GVII-G500-AMM-0001, Revision 18, dated March 29, 2024:

(i) 71-20-02 Engine Mount Hardware—Removal/Installation, 71-20 Mounts;

(ii) 71-21-03 Engine Forward Link Assemblies—Removal/Installation, 71-21 Front Mounts;

(iii) 71-21-04 Forward Engine Mount Assembly—Removal/Installation, 71-21 Front Mounts;

(iv) 71-22-03 Aft Engine Mount Strut Assembly—Removal/Installation, 71-22 Rear Mounts;

(v) 71-23-05 Engine Thrust Strut—Removal/Installation, 71-23 Mounts: Support Links and Accessories; and

(vi) 71-23-06 Engine Alignment Strut—Removal/Installation, 71-23 Mounts: Support Links and Accessories.

(2) Chapter 71—Powerplant, Gulfstream Aerospace GVII-G600 AMM, Document Number GAC-AC-GVII-G600-AMM-0001, Revision 14, dated March 29, 2024:

(i) 71-20-02 Engine Mount Hardware—Removal/Installation, 71-20 Mounts;



- (ii) 71-21-03 Engine Forward Link Assemblies—Removal/Installation, 71-21 Front Mounts;
- (iii) 71-21-04 Forward Engine Mount Assembly—Removal/Installation, 71-21 Front Mounts;
- (iv) 71-22-03 Aft Engine Mount Strut Assembly—Removal/Installation, 71-22 Rear Mounts;
- (v) 71-23-05 Engine Thrust Strut—Removal/Installation, 71-23 Mounts: Support Links and Accessories; and
- (vi) 71-23-06 Engine Alignment Strut—Removal/Installation, 71-23 Mounts: Support Links and Accessories.

### **(i) Credit for Previous Actions**

This paragraph provides credit for the actions specified in paragraph (g) of this AD, if those actions were performed before the effective date of this AD using the material identified in paragraphs (i)(1) through (4) of this AD, as applicable.

- (1) Gulfstream GVII-G500 Alert Customer Bulletin No. 001, dated February 7, 2024.
- (2) Gulfstream GVII-G500 Customer Bulletin No. 092, dated February 15, 2024.
- (3) Gulfstream GVII-G600 Alert Customer Bulletin No. 001, dated February 7, 2024.
- (4) Gulfstream GVII-G600 Customer Bulletin No. 063, dated February 15, 2024.

### **(j) Special Flight Permit**

Special flight permits may be issued in accordance with [14 CFR 21.197](#) and [21.199](#) to operate the airplane to a location where the inspection required by this AD can be performed, but special flight permits may not be issued to operate the airplane after a visual inspection has identified any non-conforming engine mount installation. Non-conforming engine mount installations must be repaired before further flight.

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

(1) The Manager, East Certification Branch, 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 responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (l)(1) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (k)(3)(i) and (ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. An AMOC is required for any deviations to RC steps,

including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

### **(l) Related Information**

(1) For more information about this AD, contact Jeffrey Johnson, Aviation Safety Engineer, FAA, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5554; email: [9-ASO-ATLACO-ADs@faa.gov](mailto:9-ASO-ATLACO-ADs@faa.gov).

(2) Material identified in this AD that is not incorporated by reference is available at the address specified in paragraph (m)(3) of this AD.

### **(m) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference of the material listed in this paragraph under [5 U.S.C. 552\(a\)](#) and [1 CFR part 51](#).

(2) You must use this material as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Gulfstream GVII-G500 Customer Bulletin No. 092, Revision A, dated April 9, 2024.

(ii) Gulfstream GVII-G600 Customer Bulletin No. 063, Revision A, dated April 9, 2024.

(iii) Chapter 71—Powerplant, Gulfstream Aerospace GVII-G500 Aircraft Maintenance Manual (AMM), Document Number GAC-AC-GVII-G500-AMM-0001, Revision 18, dated March 29, 2024:

**Note 1 to the introductory text of paragraph (m)(2)(iii):** The manufacturer name is located only on the title page of the document.

(A) 71-20-02 Engine Mount Hardware—Removal/Installation, 71-20 Mounts;

(B) 71-21-03 Engine Forward Link Assemblies—Removal/Installation, 71-21 Front Mounts;

(C) 71-21-04 Forward Engine Mount Assembly—Removal/Installation, 71-21 Front Mounts;

(D) 71-22-03 Aft Engine Mount Strut Assembly—Removal/Installation, 71-22 Rear Mounts;

(E) 71-23-05 Engine Thrust Strut—Removal/Installation, 71-23 Mounts: Support Links and Accessories; and

(F) 71-23-06 Engine Alignment Strut—Removal/Installation, 71-23 Mounts: Support Links and Accessories.

(iv) Chapter 71—Powerplant, Gulfstream Aerospace GVII-G600 AMM, Document Number GAC-AC-GVII-G600-AMM-0001, Revision 14, dated March 29, 2024:

**Note 2 to the introductory text of paragraph (m)(2)(iv):** The manufacturer name is located only on the title page of the document.

- (A) 71-20-02 Engine Mount Hardware—Removal/Installation, 71-20 Mounts;
- (B) 71-21-03 Engine Forward Link Assemblies—Removal/Installation, 71-21 Front Mounts;
- (C) 71-21-04 Forward Engine Mount Assembly—Removal/Installation, 71-21 Front Mounts;
- (D) 71-22-03 Aft Engine Mount Strut Assembly—Removal/Installation, 71-22 Rear Mounts;
- (E) 71-23-05 Engine Thrust Strut—Removal/Installation, 71-23 Mounts: Support Links and Accessories; and
- (F) 71-23-06 Engine Alignment Strut—Removal/Installation, 71-23 Mounts: Support Links and Accessories.

(3) For Gulfstream Aerospace material, contact Gulfstream Aerospace Corporation, Technical Publications Dept., P.O. Box 2206, Savannah, GA 31402-2206; telephone 800-810-4853; email [pubs@gulfstream.com](mailto:pubs@gulfstream.com); website [gulfstream.com/en/customer-support](http://gulfstream.com/en/customer-support).

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit [www.archives.gov/federal-register/cfr/ibr-locations](http://www.archives.gov/federal-register/cfr/ibr-locations) or email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov).

Issued on May 17, 2024.

Victor Wicklund,

Deputy Director, Compliance & Airworthiness Division, Aircraft Certification Service.

[[FR Doc. 2024-12581](#) Filed 6-5-24; 11:15 am]

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