

inclusive, and serial numbers 98 through 119 inclusive only.

**(n) Additional AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, International Validation 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 International Validation Branch, send it to the attention of the person identified in paragraph (o) of this AD. Information may be emailed to: [9-AVS-AIR-730-AMOC@faa.gov](mailto:9-AVS-AIR-730-AMOC@faa.gov). Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, International Validation Branch, FAA; or EASA; or Dassault Aviation's EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

**(o) Additional Information**

For more information about this AD, contact Tom Rodriguez, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone 206-231-3226; email [tom.rodriguez@faa.gov](mailto:tom.rodriguez@faa.gov).

**(p) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

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

(3) The following service information was approved for IBR on March 17, 2023.

(i) European Union Aviation Safety Agency (EASA) AD 2022-0144, dated July 11, 2022.

(ii) [Reserved]

(4) The following service information was approved for IBR on December 7, 2020 (85 FR 69142, November 2, 2020).

(i) European Union Aviation Safety Agency (EASA) AD 2020-0116, dated May 20, 2020.

(ii) [Reserved]

(5) For EASA ADs 2022-0144 and 2020-0116, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email [ADS@easa.europa.eu](mailto:ADS@easa.europa.eu); website [easa.europa.eu](http://easa.europa.eu). You may find these EASA ADs on the EASA website at [ad.easa.europa.eu](http://ad.easa.europa.eu).

(6) 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.

(7) You may view this material that is incorporated by reference at the National

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

Issued on January 25, 2023.

**Christina Underwood,**

*Acting Director, Compliance & Airworthiness Division, Aircraft Certification Service.*

[FR Doc. 2023-02782 Filed 2-9-23; 8:45 am]

**BILLING CODE 4910-13-P**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2022-0684; Project Identifier MCAI-2021-01204-T; Amendment 39-22287; AD 2022-27-02]**

**RIN 2120-AA64**

**Airworthiness Directives; Bombardier, Inc., Airplanes**

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

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Bombardier, Inc., Model BD-700-2A12 airplanes. This AD was prompted by a report of a lateral offset observed on the head-up display (HUD) of several airplanes between the synthetic vision system (SVS) and actual runway due to mechanical misalignment of the HUD during manufacturing and assembly. This AD requires revising the existing airplane flight manual (AFM) to prohibit steep approach landing (SAL) and enhanced flight vision system (EFVS) operations. This AD also requires calibrating the HUD. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective March 17, 2023.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of March 17, 2023.

**ADDRESSES:**

*AD Docket:* You may examine the AD docket at [regulations.gov](http://regulations.gov) under Docket No. FAA-2022-0684; 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, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of

Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

*Material Incorporated by Reference:*

- For service information identified in this final rule, contact Bombardier Business Aircraft Customer Response Center, 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 1-514-855-2999; email [ac.yul@aero.bombardier.com](mailto:ac.yul@aero.bombardier.com); website [bombardier.com](http://bombardier.com).

- You may view this service information 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](http://regulations.gov) under Docket No. FAA-2022-0684.

**FOR FURTHER INFORMATION CONTACT:**

Thomas Niczky, Aerospace Engineer, Avionics and Electrical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7347; email [9-avs-nyaco-cos@faa.gov](mailto:9-avs-nyaco-cos@faa.gov).

**SUPPLEMENTARY INFORMATION:**

**Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Bombardier, Inc., Model BD-700-2A12 airplanes. The NPRM published in the **Federal Register** on June 21, 2022 (87 FR 36783). The NPRM was prompted by AD CF-2021-36, dated November 1, 2021, issued by Transport Canada, which is the aviation authority for Canada (referred to after this as the MCAI). The MCAI states that during production activities, a lateral offset was observed on the HUD of several airplanes between the SVS and actual runway. An investigation determined the cause of the offset to be mechanical misalignment of the HUD during manufacturing and assembly. This offset, if not corrected, will create an incorrect airplane reference display on the HUD, which could lead to excessive deviation during landing. This could particularly affect SAL or EFVS operations.

In the NPRM, the FAA proposed to require revising the existing AFM to prohibit SAL and EFVS operations, and calibrating the HUD. The FAA is issuing this AD to address the unsafe condition on these products.

You may examine the MCAI in the AD docket at [regulations.gov](http://regulations.gov) under Docket No. FAA-2022-0684.

## Discussion of Final Airworthiness Directive

### Comments

The FAA received a comment from Executive Jet Management, Inc. (EJM). The following presents the comment received on the NPRM and the FAA's response.

### Request To Provide Means To Allow Later-Approved Service Information

EJM noted that ADs for Bombardier airplanes often involve approval for alternative methods of compliance (AMOCs) because the required AFMs or other service information becomes outdated before the AD becomes effective. Because of the increasing number of Bombardier ADs that require these AMOCs, EJM expressed concern over the burden associated with the AMOC process. EJM recognized that the FAA cannot allow the future use of service information that is not available when the AD is published. EJM noted that an AD issued by the European Union Aviation Safety Agency (EASA) typically states that the use of later-approved revisions of the required service information is acceptable for compliance, and that the corresponding FAA AD refers to that EASA AD for the requirements. EJM requested a similar process for ADs for Bombardier airplanes, adding that this process would streamline their workload and enhance safety.

The FAA partially agrees with the request. The FAA agrees with referencing the latest AFM revisions in this AD. Certain sections of Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1 cited in the NPRM have been revised, as described under "Related Service Information under 1 CFR part 51" in this final rule. The AFM sections are modified to revise calculations for certain performance data, and therefore do not add any additional work to the proposed requirements of the NPRM. The FAA revised paragraphs (g)(1) through (3) of this AD to require the revised service information. This AD also provides credit for use of the documents that were identified in the NPRM, as specified in revised paragraph (i) of this AD.

The FAA disagrees with adding a statement that allows using later-approved revisions of the AFM sections specified in the Related Service Information under 1 CFR part 51 section of this AD, as the FAA would need to determine their effect to the AD. Further, the FAA is required by Office of the Federal Register (OFR) regulations for approval of materials incorporated

by reference, as specified in 1 CFR 51.1(f), to either publish the service document contents as part of the actual AD language; or submit the service document to the OFR for approval as referenced material, in which case the FAA may only refer to such material in the text of an AD. However, it is not necessary to include a statement in this final rule that allows the use of later-approved revisions of the AFM. Paragraph (g) of this AD requires revising the existing AFM to "include the information in" the specified sections of the AFM. As long as the information included in the AFM is identical to "the information in" those AFM sections, operators may use means other than the specified AFM revisions to comply with the requirement.

Regarding the IBR the MCAI process, the FAA must have permission from the design approval holder to post in the AD docket the service information required for compliance with the MCAI. At this time, the FAA has not received Bombardier's permission for the "IBR the MCAI" process. Without this permission, the FAA cannot IBR the MCAI.

### Additional Changes Made to This AD

The FAA has revised paragraph (h) of this AD to allow the HUD calibration to be done using Bombardier Service Bulletin 700-34-7521, Revision 03, dated July 27, 2021, or Bombardier Service Bulletin 700-34-7521, Revision 04, dated December 6, 2021; and Bombardier Service Bulletin 700-34-7523, Revision 01, dated December 8, 2021; as applicable. This change more closely reflects the revisions specified in paragraph B. of the MCAI. The FAA has also removed paragraph (i)(1)(iv) of this AD (paragraph (i)(4) of the proposed AD), and reidentified the subsequent paragraph accordingly, because Bombardier Service Bulletin 700-34-7521, Revision 03, dated July 27, 2021, is now specified in paragraph (h) of this AD. Further, paragraphs (i)(1)(i) through (iv) have been clarified to specify which documents are and are not incorporated by reference in this AD.

### Conclusion

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data, considered the comment received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is

issuing this AD to address the unsafe condition on this product. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

### Related Service Information Under 1 CFR Part 51

Bombardier has issued the following documents to prohibit SAL and EFVS operations until the HUD has been calibrated.

- Section 6., Service Bulletins, Chapter 1—Introduction, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 18, dated August 18, 2022.
- Supplement 7—Enhanced Flight Vision System (EFVS) Operations, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 18, dated August 18, 2022.
- Supplement 20—Steep Approaches with Published Glidepath Angles from 4.5 to 5.5 Degrees, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 18, dated August 18, 2022.

(For obtaining this material in the Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, use Document Identification No. GL 7500 AFM.)

Bombardier has issued the following documents, which specify procedures for calibrating the HUD (and second HUD if installed). The procedures include an inspection of the HUD mounting brackets and sill beams for damage and contamination (*e.g.*, drill shavings and adhesive) of the mating surfaces and injection holes, an inspection for voids in the structural adhesive, and applicable corrective actions. Corrective actions include replacing damaged brackets and backfilling voids with structural adhesive. These documents are distinct since they apply to different airplane configurations.

- Bombardier Service Bulletin 700-34-7521, Revision 03, dated July 27, 2021.
- Bombardier Service Bulletin 700-34-7521, Revision 04, dated December 6, 2021.
- Bombardier Service Bulletin 700-34-7523, Revision 01, dated December 8, 2021.

This service information 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.

**Other Related Service Information**

Earlier revisions of Bombardier Service Bulletins 700–34–7521 and 700–34–7523 included a typographical error on the metric values on the “External Target Board” table. This error was corrected in Bombardier Service Bulletin 700–34–7521, Revision 03, dated July 27, 2021; Bombardier Service Bulletin 700–34–7521, Revision 04, dated December 6, 2021; and Bombardier Service Bulletin 700–34–7523, Revision 01, dated December 8,

2021. This error is further described in the Retroactive Action section in these service bulletins. The FAA has determined that the earlier revisions are acceptable for compliance with the requirements of this AD under certain conditions in their entirety if imperial values were used. However, if the metric values specified in the earlier revisions were used, the HUD calibration is not considered completed for the purposes of Supplement 7—Enhanced Flight Vision System (EFVS) Operations, and Supplement 20—Steep

Approaches with Published Glidepath Angles from 4.5 to 5.5 Degrees, of Chapter 7—Supplements, of the Bombardier Global 7500 AFM, Publication No. CSP 700–7000–1, until retroactive actions are also done as specified in paragraph (i) of this AD.

**Costs of Compliance**

The FAA estimates that this AD affects 40 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

**ESTIMATED COSTS FOR REQUIRED ACTIONS**

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
HUD calibration	39 work-hours (for 36 airplanes with 1 HUD) or 108 work-hours (for 4 airplanes with 2 HUDs) × \$85 per hour = \$3,315 (1 HUD) or \$9,180 (2 HUDs).	\$7,400 per HUD	\$10,715 (1 HUD) or \$23,980 (2 HUDs).	\$385,740 (36 airplanes with 1 HUD); \$95,920 (4 airplanes with 2 HUDs).
AFM revision .....	1 work-hour × \$85 per hour .....	\$0 .....	\$85 .....	\$3,400.

The FAA estimates that replacement brackets would cost up to \$1,200 (per HUD) if required for any on-condition corrective actions in this AD. The FAA has received no definitive data on which to base the work-hour estimates for this replacement. The FAA has no way of determining the number of airplanes that might need this on-condition action.

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.

**Paperwork Reduction Act**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 2120–0056. The time for public reporting for this collection of information, including reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information, is provided in the Costs of Compliance section already described. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this

burden, to Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177–1524.

**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,

(2) Will not affect intrastate aviation in Alaska, 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.

**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:

**2022–27–02 Bombardier, Inc.:** Amendment 39–22287; Docket No. FAA–2022–0684; Project Identifier MCAI–2021–01204–T.

**(a) Effective Date**

This airworthiness directive (AD) is effective March 17, 2023.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Bombardier, Inc., Model BD-700-2A12 airplanes, certificated in any category, serial numbers 70006 through 70084 inclusive.

**(d) Subject**

Air Transport Association (ATA) of America Code 34, Navigation.

**(e) Unsafe Condition**

This AD was prompted by a report of a lateral offset observed on the head-up display (HUD) of several airplanes between the synthetic vision system (SVS) and actual runway. The FAA is issuing this AD to address this offset, which could create an incorrect aircraft reference display on the HUD, and lead to excessive deviation during landing, particularly affecting steep approach landing (SAL) or enhanced flight vision system (EFVS) operations.

**(f) Compliance**

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

**(g) Revision of the Existing Airplane Flight Manual (AFM)**

Within 30 days after the effective date of this AD, revise the existing AFM to include the information in the sections of the AFM specified in paragraphs (g)(1) through (3) of this AD.

(1) Section 6., Service Bulletins, Chapter 1—Introduction, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 18, dated August 18, 2022.

**Note 1 to paragraph (g)(1):** For obtaining the sections and supplements of the Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, specified in paragraphs (g)(1) through (3) of this AD, use Document Identification No. GL 7500 AFM.

(2) Supplement 7—Enhanced Flight Vision System (EFVS) Operations, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 18, dated August 18, 2022.

(3) Supplement 20—Steep Approaches with Published Glidepath Angles from 4.5 to 5.5 Degrees, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 18, dated August 18, 2022.

**(h) Head-Up Display (HUD) Calibration**

Within 27 months after the effective date of this AD, calibrate the HUD and second HUD (if installed), including a general visual inspection of the HUD mounting brackets and sill beams for damage and contamination (e.g., drill shavings and adhesive) of the mating surfaces and injection holes, a general visual inspection for voids in the structural adhesive, and applicable corrective actions, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 700-34-7521, Revision 03, dated July 27, 2021, or Bombardier Service Bulletin 700-34-7521, Revision 04, dated December 6, 2021; and Bombardier Service Bulletin 700-34-7523, Revision 01, dated December 8, 2021; as applicable. All corrective actions must be done before further flight.

**(i) Credit for Previous Actions**

(1) This paragraph provides credit for actions required by paragraph (h) of this AD, if those actions were performed before the effective date of this AD using the service information identified in, and meeting the applicable conditions specified in, paragraphs (i)(1)(i) through (iv) of this AD.

(i) Credit is allowed for Bombardier Service Bulletin 700-34-7521, dated April 1, 2021 (which is not incorporated by reference in this AD), if the retroactive actions identified in Bombardier Service Bulletin 700-34-7521, Revision 03, dated July 27, 2021, or Bombardier Service Bulletin 700-34-7521, Revision 04, dated December 6, 2021, (which are incorporated by reference in this AD) are done within 27 months after the effective date of this AD.

(ii) Credit is allowed for Bombardier Service Bulletin 700-34-7521, Revision 01, dated April 30, 2021 (which is not incorporated by reference in this AD), if the retroactive actions identified in Bombardier Service Bulletin 700-34-7521, Revision 03, dated July 27, 2021, or Bombardier Service Bulletin 700-34-7521, Revision 04, dated December 6, 2021, (which are incorporated by reference in this AD) are done within 27 months after the effective date of this AD.

(iii) Credit is allowed for Bombardier Service Bulletin 700-34-7521, Revision 02, dated July 12, 2021 (which is not incorporated by reference in this AD), if the retroactive actions identified in Bombardier Service Bulletin 700-34-7521, Revision 03, dated July 27, 2021, or Bombardier Service Bulletin 700-34-7521, Revision 04, dated December 6, 2021 (which are incorporated by reference in this AD) are done within 27 months after the effective date of this AD.

(iv) Credit is allowed for Bombardier Service Bulletin 700-34-7523, dated April 1, 2021 (which is not incorporated by reference in this AD), if the retroactive actions identified in Bombardier Service Bulletin 700-34-7523, Revision 01, dated December 8, 2021 (which is incorporated by reference in this AD), are done within 27 months after the effective date of this AD.

(2) This paragraph provides credit for the actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using the service information identified in paragraphs (i)(2)(i) through (xii) of this AD, as applicable.

**Note 2 to paragraph (i)(2):** For obtaining the sections and supplements of the Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, specified in paragraphs (i)(2)(i) through (xii) of this AD, use Document Identification No. GL 7500 AFM.

(i) Section 6., Service Bulletins, Chapter 01—Introduction, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 14, dated October 21, 2021.

(ii) Section 6., Service Bulletins, Chapter 1—Introduction, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 15, dated February 3, 2022.

(iii) Section 6., Service Bulletins, Chapter 1—Introduction, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 16, dated April 26, 2022.

(iv) Section 6., Service Bulletins, Chapter 1—Introduction, Bombardier Global 7500

AFM, Publication No. CSP 700-7000-1, Revision 17, dated July 14, 2022.

(v) Supplement 7—Enhanced Flight Vision System (EFVS) Operations, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 14, dated October 21, 2021.

(vi) Supplement 7—Enhanced Flight Vision System (EFVS) Operations, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 15, dated February 3, 2022.

(vii) Supplement 7—Enhanced Flight Vision System (EFVS) Operations, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 16, dated April 26, 2022.

(viii) Supplement 7—Enhanced Flight Vision System (EFVS) Operations, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 17, dated July 14, 2022.

(ix) Supplement 20—Steep Approaches with Published Glidepath Angles from 4.5 to 5.5 Degrees, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 14, dated October 21, 2021.

(x) Supplement 20—Steep Approaches with Published Glidepath Angles from 4.5 to 5.5 Degrees, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 15, dated February 3, 2022.

(xi) Supplement 20—Steep Approaches with Published Glidepath Angles from 4.5 to 5.5 Degrees, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 16, dated April 26, 2022.

(xii) Supplement 20—Steep Approaches with Published Glidepath Angles from 4.5 to 5.5 Degrees, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 17, dated July 14, 2022.

**(j) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, New York ACO 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 ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada; or Bombardier, Inc.'s Transport Canada Design Approval

Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

#### (k) Additional Information

(1) For more information about this AD, contact Thomas Niczky, Aerospace Engineer, Avionics and Electrical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7347; email [9-avs-nyacos@faa.gov](mailto:9-avs-nyacos@faa.gov).

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (l)(3) and (4) of this AD.

#### (l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

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

(i) Bombardier Service Bulletin 700-34-7521, Revision 03, dated July 27, 2021.

(ii) Bombardier Service Bulletin 700-34-7521, Revision 04, dated December 6, 2021.

(iii) Bombardier Service Bulletin 700-34-7523, Revision 01, dated December 8, 2021.

(iv) Section 6., Service Bulletins, Chapter 01—Introduction, Bombardier Global 7500 Airplane Flight Manual (AFM), Publication No. CSP 700-7000-1, Revision 18, dated August 18, 2022.

**Note 3 to paragraph (l)(2)(iv):** For obtaining the section and supplements of the Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, specified in paragraphs (l)(2)(iv) through (vi) of this AD, use Document Identification No. GL 7500 AFM.

(v) Supplement 7—Enhanced Flight Vision System (EFVS) Operations, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 18, dated August 18, 2022.

(vi) Supplement 20—Steep Approaches with Published Glidepath Angles from 4.5 to 5.5 Degrees, Chapter 7—Supplements, Bombardier Global 7500 AFM, Publication No. CSP 700-7000-1, Revision 18, dated August 18, 2022.

(3) For service information identified in this AD, contact Bombardier Business Aircraft Customer Response Center, 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; telephone 1-514-855-2999; email [ac.yul@aero.bombardier.com](mailto:ac.yul@aero.bombardier.com); website [bombardier.com](http://bombardier.com).

(4) You may view this service information 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 service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html).

Issued on December 20, 2022.

**Christina Underwood**,  
*Acting Director, Compliance & Airworthiness Division, Aircraft Certification Service.*

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

**[Docket No. FAA-2022-1313; Project Identifier MCAI-2021-01418-T; Amendment 39-22317; AD 2023-02-10]**

**RIN 2120-AA64**

#### **Airworthiness Directives; BAE Systems (Operations) Limited Airplanes**

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

**ACTION:** Final rule.

**SUMMARY:** The FAA is superseding Airworthiness Directive (AD) 99-25-11 for certain BAE Systems (Operations) Limited Model BAe 146 and Avro 146-RJ series airplanes. AD 99-25-11 required repetitive inspections for cracks along the face of the retraction attachment boss in the nose landing gear (NLG) sidewall; and corrective action, if necessary. This AD was prompted by a report of a crack found on the left-hand sidewall well on the NLG, and by the determination that additional airplanes are subject to the identified unsafe condition. This AD continues to require the actions in AD 99-25-11, and expands the applicability. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective March 17, 2023.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of March 17, 2023.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of February 1, 2000 (64 FR 72522, December 28, 1999).

#### **ADDRESSES:**

**AD Docket:** You may examine the AD docket at [regulations.gov](http://regulations.gov) under Docket No. FAA-2022-1313; 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, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of

Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**Material Incorporated by Reference:**

- For service information identified in this final rule, contact BAE Systems (Operations) Limited, Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, United Kingdom; phone: +44 1292 675207; fax: +44 1292 675704; email: [RAPublications@baesystems.com](mailto:RAPublications@baesystems.com); website: [regional-services.com](http://regional-services.com).

- You may view this service information at the Airworthiness Products Section, Operational Safety Branch, FAA, 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](http://regulations.gov) under Docket No. FAA-2022-1313.

#### **FOR FURTHER INFORMATION CONTACT:**

Todd Thompson, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; phone: (206) 231-3228; email: [Todd.Thompson@faa.gov](mailto:Todd.Thompson@faa.gov).

#### **SUPPLEMENTARY INFORMATION:**

#### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 99-25-11, Amendment 39-11454 (64 FR 72522, December 28, 1999) (AD 99-25-11). AD 99-25-11 applied to certain BAE Systems (Operations) Limited Model BAe 146 and Avro 146-RJ series airplanes. AD 99-25-11 required repetitive eddy current inspections for cracks along the face of the retraction attachment boss in the NLG sidewall; and corrective action, if necessary. AD 99-25-11 was prompted by issuance of MCAI by a foreign civil aviation authority. The FAA issued AD 99-25-11 to address cracking along the face of the retraction attachment boss in the NLG sidewall, which could result in premature extension of the NLG or result in depressurization of the airplane.

FAA AD 99-25-11 corresponds to British AD 015-10-98.

The NPRM published in the **Federal Register** on October 31, 2022 (87 FR 65541). The NPRM was prompted by AD G-2021-0016R1, dated February 18, 2022 (U.K. CAA AD G-2021-0016R1) (also referred as the MCAI), issued by the Civil Aviation Authority, which is the aviation authority for the United Kingdom. U.K. CAA AD G-2021-0016R1 superseded European Union