[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1152; Project Identifier MCAI-2022-00260-T]

RIN 2120-AA64

Airworthiness Directives; BAE Systems (Operations) Limited Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain BAE Systems (Operations) Limited Model Avro 146-RJ series airplanes. This proposed AD was prompted by a report that certain inertial reference units (IRUs) have out-of-date magnetic variation (MagVar) tables. This proposed AD would require assessing the values between the MagVar tables of the affected IRUs and the most recently published MagVar data tables, and corrective actions if necessary. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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.

For service information identified in this NPRM, contact BAE Systems (Operations) Limited, Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, United Kingdom; telephone +44 1292 675207; fax +44 1292 675704; email RApublications@baesystems.com; internet baesystems.com/Businesses/RegionalAircraft/index.htm. 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.

Examining the AD Docket

You may examine the AD docket atregulations.gov by searching for and locating Docket No. FAA-2022-1152; 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 NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Todd Thompson, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone: 206-231-3228; email Todd.Thompson@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include "Docket No. FAA-2022-1152; Project Identifier MCAI-2022-00260-T" at the beginning of your comments. The most helpful comments reference a specific portion of the

proposal, 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 the proposal 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 NPRM.

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 NPRM 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 NPRM, 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 NPRM. Submissions containing CBI should be sent to Todd Thompson, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone: 206-231-3228; email Todd.Thompson@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The Civil Aviation Authority (CAA), which is the aviation authority for the United Kingdom, has issued CAA AD G-2022-0005, dated February 24, 2022 (CAA AD G 2022-0005) (also referred to after this as the MCAI), to correct an unsafe condition for

Model AVRO 146-RJ airplanes equipped with Honeywell Inertial Reference Unit part number (P/N) HG2001BC02 or P/N HG2001BC04. You may examine the MCAI in the AD docket at regulations.gov by searching for and locating Docket No. FAA-2022-1152.

This proposed AD was prompted by a report that Honeywell IRUs, P/N HG2001BC02 and P/N HG2001BC04, have out-of-date MagVar tables. The navigation system for Model Avro 146-RJ series airplanes has an inertial reference system (IRS) that uses true north to calculate magnetic heading and track. The IRS includes IRUs with MagVar data tables that correct the heading/track for the effects of magnetic variation. Due to the change in the location of magnetic north over time, the level of IRS accuracy diminishes in certain geographical locations if an IRU's MagVar data table is not kept up to date with current WMM MagVar data tables. Consequently, certain airplanes may have IRUs with MagVar tables that are out of date, which can lead to inaccurate heading, course, and bearing calculations.

The FAA is proposing this AD to address IRUs having outdated MagVar data tables, which could lead to inaccurate IRS calculations, possibly resulting in increased risk of controlled flight into terrain, or collision with another airplane and injury to occupants. See the MCAI for additional background information.

Related Service Information Under 1 CFR Part 51

BAE Systems has issued All Operator Message 21-011V-1, Issue 1, dated September 27, 2021. This service information describes, among other actions, procedures for assessing the accuracy of an affected IRU's MagVar data table when compared to the existing WMM MagVar data tables, and corrective actions if the MagVar is greater than 2 degrees. The corrective actions include either updating an affected IRU's MagVar data tables, or operating an airplane only if the terrain awareness warning system (TAWS) and traffic collision avoidance system (TCAS) are installed and operative and revising the operator's FAA-approved minimum equipment list (MEL) to prohibit dispatch unless

both TAWS and TCAS are installed and operative. BAE Systems All Operator Message 21-011V-1, Issue 1, dated September 27, 2021, also specifies that updating the data tables would terminate the MEL prohibition provided the airplane has operative TAWS and TCAS.

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.

FAA's Determination

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 the State of Design Authority, the FAA has been notified of the unsafe condition described in the MCAI and service information referenced above. The FAA is proposing this AD because the FAA evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Proposed AD Requirements in this NPRM

This proposed AD would require accomplishing the actions specified in the service information already described, except as discussed under "Differences Between this Proposed AD and the MCAI."

Differences Between this Proposed AD and the MCAI

CAA AD G-2022-0005 requires operators to provide "information for flight crew" regarding procedures for operating in areas with known or suspected significant magnetic variation and a means for flight crews to report other suspected affected locations." However, this proposed AD would not specifically require those actions as they are already required by FAA 14 CFR part 91 regulations.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 10 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

Estimated costs for required actions

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
1 work-hour X $85 per hour = $85	$0	$85	$850

The FAA has received no definitive data on which to base the cost estimates for the on-condition actions specified in this proposed AD.

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

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Would not affect intrastate aviation in Alaska, and

(3) Would 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 Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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:

BAE Systems (Operations) Limited: Docket No. FAA-2022-1152; Project Identifier MCAI-2022-00260-T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to BAE Systems (Operations) Limited Model Avro 146-RJ70A, 146-RJ85A, and 146-RJ100A airplanes, certificated in any category, equipped with Honeywell inertial reference unit (IRU) part number (P/N) HG2001BC02 or P/N HG2001BC04.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a report that certain IRUs have out-of-date magnetic variation (MagVar) tables. The FAA is issuing this AD to address IRUs having outdated MagVar lookup tables, which could lead to inaccurate inertial reference system calculations, possibly resulting in increased risk of controlled flight into terrain, or collision with another airplane and injury to occupants.

(f) Compliance

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

(g) Definitions

For the purpose of this AD, the following definitions apply:

(1) Affected IRU: A Honeywell IRU having P/N HG2001BC02 using a MagVar lookup table from 1990, or P/N HG2001BC04 using a MagVar lookup table from 1995.

(2) WMM: World Magnetic Model, which is the standard model for navigation, altitude, and heading referencing systems using the geomagnetic field. The WMM is produced at 5-year intervals. The existing WMM as of [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER] was released December 10, 2019.

(h) Magnetic Variation Assessment

Within 3 months after the effective date of this AD, and thereafter at intervals not to exceed 5 years, assess the accuracy of an affected IRU's MagVar data table , in accordance with the Recommendations of BAE Systems All Operator Message 21-011V-1, Issue 1, dated September 27, 2021.

(1) If the difference between an affected IRU's MagVar data table and the existing WMM MagVar data tables is less than or equal to 2 degrees for the routes that the airplane may operate, no further action is required until the assessment is repeated, as required by the introductory text to paragraph (h) of this AD.

(2) If the difference between an affected IRU's MagVar data table and the existing WMM MagVar data tables is greater than 2 degrees for the routes that the airplane may operate: Do the actions required by paragraph (h)(2)(i) or (ii) of this AD.

(i) Within three months after the effective date of this AD or before further flight after the assessment in the introductory text to paragraph (h) of this AD, whichever occurs later: Update the airplane's affected IRU MagVar data tables in accordance with the Recommendations of BAE Systems All Operator Message 21-011V-1, Issue 1, dated September 27, 2021.

(ii) Comply with the provisions specified in, and at the times specified in, paragraphs (h)(2)(ii)(A) and (B) of this AD.

(A) Further flight is prohibited in areas where the difference between the installed and the existing WMM MagVar values exceeds the 2 degree tolerance unless both terrain awareness warning system (TAWS) and traffic collision avoidance system (TCAS) are installed and operative.

(B) Before further flight, revise the operator's existing FAA-approved minimum equipment list (MEL) to prohibit dispatch unless both TAWS and TCAS are installed and operative.

(3) If an affected IRU's MagVar data table cannot be determined, follow the procedures specified in the Recommendations of BAE Systems All Operator Message 21-011V-1, Issue 1, dated September 27, 2021.

(4)This AD does not require operators to provide flightcrews with certain operating procedures as those actions are already required by existing FAA operating regulations.

(i) Terminating Action for MEL Prohibition

Updating both affected IRUs, as specified in paragraph (h)(2)(i) of this AD, terminates the MEL prohibition specified in paragraph (h)(2)(ii)(B) of this AD, provided both TAWS and TCAS are installed and operative.

(j) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, Large Aircraft Section, 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 Large Aircraft Section, International Validation Branch, send it to the attention of the person identified in paragraph (k)(2) of this AD. Information may be emailed to: 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:* As of the effective date of this AD, for any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, Large Aircraft Section, International Validation Branch, FAA; or the UK CAA; or BAE Systems (Operations) Limited's UK CAA DOA. If approved by the DOA, the approval must include the DOA-authorized signature.

(k) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) CAA AD G-2022-0005, dated February 24, 2022, for related information. This MCAI may be found in the AD docket on the internet at regulations.gov by searching for and locating Docket No. FAA-2022-1152.

(2) For more information about this AD, contact Todd Thompson, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone 206-231-3228; email Todd.Thompson@faa.gov.

(3) For service information identified in this AD, contact BAE Systems

(Operations) Limited, Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, United Kingdom; telephone +44 1292 675207; fax +44 1292 675704; email RApublications@baesystems.com; internet baesystems.com/Businesses/RegionalAircraft/index.htm. 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.

Issued on November 9, 2022.

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

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