



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0915; Project Identifier AD-2020-00661-Q]

RIN 2120-AA64

Airworthiness Directives; Rockwell Collins, Inc., Global Positioning Systems

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 Rockwell Collins, Inc. (Rockwell Collins), GPS-4000S Global Positioning Systems (GPS) installed on airplanes. This proposed AD was prompted by an un-announced GPS position error, which could cause a misleading localizer performance with vertical guidance (LPV) glidepath, resulting in controlled flight into terrain (CFIT). This proposed AD would require upgrading the GPS-4000S. 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 <https://www.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 Rockwell Collins, Inc., 400 Collins Road NE, Cedar Rapids, IA 52498; phone: 319-295-5000; email: customersupport@rockwellcollins.com; internet: <https://www.rockwellcollins.com/>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call 816-329-4148. It is also available on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0915.

Examining the AD Docket

You may examine the AD docket on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0915; 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, any comments received, and other information. The street address for Docket Operations is listed in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Paul Rau, Aerospace Engineer, Wichita ACO Branch, FAA, 1801 Airport Road, Wichita, Kansas 67209; phone: 316-946-4149; fax: 316-946-4107; email: paul.rau@faa.gov or Wichita-COS@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 the ADDRESSES section. Include “Docket No. FAA-2020-0915; Project Identifier AD-2020-00661-Q” 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 this 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 <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact we receive 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 Paul Rau, Aerospace Engineer, Wichita ACO Branch, FAA, 1801 Airport Road, Wichita, Kansas 67209; phone: 316-946-4149; fax: 316-946-4107; email: paul.rau@faa.gov or Wichita-COS@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.

Discussion

The FAA was notified of a software error in the Rockwell Collins GPS-4000S GPS, part number (P/N) 822-2189-100, installed on airplanes. The software error can result in an un-announced inaccurate GPS position in the region within approximately 1,000 miles (+/- 20 degrees) of 180 degrees west longitude. The software improperly applies the wide area augmentation system ionospheric delay corrections to the GPS

signal from satellites located across the 180th meridian. Due to this anomaly, the position accuracy may be diminished such that the GPS-4000S P/N 822-2189-100 will not support LPV approaches in the affected region. This condition, if not addressed, could result in a misleading glidepath on an affected LPV approach resulting in CFIT.

Related Service Information

The FAA reviewed Rockwell Collins Service Information Letter (SIL) GPS-4X00()-19-3, Revision No. 2, dated March 25, 2020. The service letter describes the unsafe condition and provides operating limitations for approaches to airports in the affected region until the software is upgraded.

The FAA also reviewed Rockwell Collins Service Bulletin GPS-4X00()-34-510, Revision No. 1, dated March 6, 2020. The service bulletin specifies procedures for upgrading the GPS-4000S software, which removes P/N 822-2189-100 and installs P/N 822-2189-101.

FAA's Determination

The FAA is issuing this AD because it evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

AD Requirements

This proposed AD would require removing P/N 822-2189-100 GPS-4000S Global Positioning System(s) from the airplane and installing P/N 822-2189-101 GPS-4000S Global Positioning System(s).

Costs of Compliance

The FAA estimates that this proposed AD would affect 3,500 airplanes of U.S. registry. The FAA estimates that 2,000 airplanes have two GPS-4000S units installed and 1,500 airplanes have one GPS-4000S unit installed.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Replace GPS-4000S (airplanes with 2 units installed)	7 work-hours x \$85 per hour = \$595	\$4,540.00	\$5,135	\$10,270,000
Replace GPS-4000S (airplanes with single unit installed)	3.50 work-hours x \$85 per hour = \$297.50	\$2,270	\$2,567.50	\$3,851,250

According to the manufacturer, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all costs in this cost estimate.

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) 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 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:

Rockwell Collins, Inc.: Docket No. FAA-2020-0915; Project Identifier AD-2020-00661-Q.

(a) Comments Due Date

The FAA must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

This airworthiness directive (AD) applies to Rockwell Collins, Inc. GPS-4000S Global Positioning System (GPS) part number (P/N) 822-2189-100 installed on airplanes, certificated in any category.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 3400, NAVIGATION SYSTEM.

(e) Unsafe Condition

This AD was prompted by an un-annunciated GPS vertical error that could result in a hazardously misleading localizer performance vertical (LPV) glidepath. The FAA is issuing this AD to prevent a misleading GPS position on an LPV approach. The unsafe condition, if not addressed, result in a misleading GPS position on an LPV approach resulting in controlled flight into terrain.

(f) Compliance

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

(g) Actions

(1) Within 24 months after the effective date of this AD, replace GPS-4000S GPS P/N 822-2189-100 with P/N 822-2189-101.

(2) As of the effective date of this AD, do not install GPS-4000S GPS P/N 822-2189-100 on any airplane.

(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Wichita 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 local Flight Standards District 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 (i)(1) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(i) Related Information

(1) For more information about this AD, contact Paul Rau, Aerospace Engineer, Wichita ACO Branch, FAA, 1801 Airport Road, Wichita, Kansas 67209; phone: 316-946-4149; fax: 316-946-4107; email: paul.rau@faa.gov or Wichita-COS@faa.gov.

(2) For service information identified in this proposed AD, contact Rockwell Collins, Inc., Collins Aviation Services, 400 Collins Road NE, M/S 164-100, Cedar Rapids, IA 52498-0001; telephone: 888-265-5467 (U.S.) or 319-265-5467; fax: 319-295-4941 (outside U.S.); email: techmanuals@rockwellcollins.com; internet: <https://portal.rockwellcollins.com/web/publications-and-training>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call 816-329-4148.

Issued on October 21, 2020.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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