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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-1990; Project Identifier AD-2023-00734-A; Amendment 39-22784; AD 2024-14-03]

RIN 2120-AA64

Airworthiness Directives; Various Airplanes

AGENCY:

Federal Aviation Administration (FAA), DOT.

ACTION:

Final rule.

SUMMARY:

The FAA is adopting a new airworthiness directive (AD) for various airplanes modified with a certain configuration of the Garmin GFC 500 Autopilot System installed per Supplemental Type Certificate (STC) No. SA01866WI. This AD was prompted by a report of an un-commanded automatic pitch trim runaway when the autopilot was first engaged. This AD requires updating the applicable Garmin GFC 500 Autopilot System software for your airplane and prohibits installing earlier versions of that software. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective August 20, 2024.

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA-2023-1990; 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

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.

FOR FURTHER INFORMATION CONTACT:

Christopher Withers, Aviation Safety Engineer, FAA, 1801 S Airport Road, Wichita, KS 67209; phone: (316) 946-4190; email: *christopher.d.withers@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 various airplanes modified with a certain configuration of the Garmin GFC 500 Autopilot System installed per STC No. SA01866WI. The NPRM published in the **Federal Register** on October 10, 2023 (88 FR 69891). The NPRM was prompted by a report of an un-commanded automatic pitch trim runaway when the autopilot was first engaged. In the NPRM, the FAA proposed to require updating the applicable Garmin GFC 500 Autopilot System software for your airplane and prohibit installing earlier versions of that software.

The FAA issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 by adding an AD that would apply to various airplanes modified with a certain configuration of the Garmin GFC 500 Autopilot System installed per STC No. SA01866WI. The SNPRM published in the **Federal Register** on April 17, 2024 (89 FR 27398). The SNPRM was prompted by comments received on the NPRM. The SNPRM proposed to revise the applicability by removing certain airplane models and adding other airplane models, revised paragraph (e) of the proposed AD to clarify that certain hardware failures affected the primary pitch servo and added Note 1 to paragraph (g) of the proposed AD. The FAA is issuing this AD to address autopilot software that does not properly handle certain hardware failures of the primary pitch servo. The unsafe condition, if not addressed, could result in un-commanded automatic pitch trim runaway and loss of control of the airplane.

Discussion of Final Airworthiness Directive

Comments

The FAA received one comment from the National Transportation Safety Board (NTSB). The NTSB supported the SNPRM without change.

Conclusion

The FAA reviewed the relevant data, considered the comment received, and determined that air safety requires adopting the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. This AD is adopted as proposed in the SNPRM.

Costs of Compliance

The FAA estimates that this AD affects 5,900 airplanes of U.S. registry.

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

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Update autopilot software	1 work-hour × $85 per hour = $85	$0	$85	$501,500

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:

2024-14-03 Various Airplanes: Amendment 39-22784; Docket No. FAA-2023-1990; Project Identifier AD-2023-00734-A.

(a) Effective Date

This airworthiness directive (AD) is effective August 20, 2024.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all airplane models specified in Table 1 to paragraph (c) of this AD, certificated in any category, having a Garmin GFC 500 Autopilot System that includes an optional GSA 28 pitch trim servo installed per Supplemental Type Certificate No. SA01866WI using Master Drawing List 005-01264-00, Revisions 1 through 76.

Table 1 to Paragraph (c)—Applicable Airplane Models

Type certificate holder	Airplane model
Commander Aircraft Corporation	112B, 112TC, 112TCA, 114, 114A, 114B, and 114TC
DAHER AEROSPACE	TB 20 and TB 21
Mooney International Corporation	M20C, M20D, M20E, M20F, M20G, M20J, M20K, M20M, M20R, and M20S
Piper Aircraft, Inc.	PA-24, PA-24-250, and PA-24-260
Piper Aircraft, Inc.	PA-28-140, PA-28-150, PA-28-151, PA-28-160, PA-28-161, PA-28-180, PA-28-181, PA-28-201T, PA-28-235, PA-28-236, PA-28R-180, PA-28R-200, PA-28R-201, PA-28R-201T, PA-28RT-201, and PA-28RT-201T
Piper Aircraft, Inc.	PA-30 and PA-39
Piper Aircraft, Inc.	PA-32-260, PA-32-300, PA-32-301, PA-32-301FT, PA-32-301T, PA-32-301XTC, PA-32R-300, PA-32RT-300, PA-32RT-300T, PA-32R-301 (HP), PA-32R-301 (SP), and PA-32R-301T
Textron Aviation Inc. (type certificate previously held by Beech Aircraft Corporation, Raytheon Aircraft Company, Hawker Beechcraft Corporation, and Beechcraft Corporation)	19A, B19, M19A, A23A, A23-19, A23-24, B23, C23, A24, A24R, B24R, and C24R
Textron Aviation Inc. (type certificate previously held by Beech Aircraft Corporation, Raytheon Aircraft Company, Hawker Beechcraft Corporation, and Beechcraft Corporation)	C35, D35, E35, F35, and G35
Textron Aviation Inc. (type certificate previously held by Beech	35-33, 35-A33, 35-B33, 35-C33, 35-C33A, 36, A36, A36TC, B36TC, E33, E33A, E33C, F33, F33A, F33C, G33, H35, J35, K35, M35, N35, P35, S35, V35, V35A, and V35B

Type certificate holder	Airplane model
Aircraft Corporation, Raytheon Aircraft Company, Hawker Beechcraft Corporation, and Beechcraft Corporation)	
Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company)	172D, 172E, 172F, 172G, 172H, 172I, 172K, 172L, 172M, 172N, 172P, 172Q, 172R, and 172S
Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company)	F172E, F172F, F172G, F172H, F172K, F172L, F172M, F172N, F172P
Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company)	172RG, P172D, and R172K
Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company)	FR172K
Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company)	177B
Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company)	177RG
Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company)	F177RG
Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company)	182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 182S, 182T, F182P, F182Q, FR182, R182, T182, T182T, and TR182
Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company)	206H, P206C, P206D, P206E, T206H, TP206C, TP206D, TP206E, TU206C, TU206D, TU206E, TU206F, TU206G, U206C, U206D, U206E, U206F, and U206G
Textron Aviation Inc. (type certificate previously held by Cessna Aircraft Company)	210D, 210E, 210F, 210G, 210H, 210J, 210K, 210L, 210M, 210N, T210F, T210G, T210H, T210J, T210K, T210L, T210M, and T210N

(d) Subject

Joint Aircraft System Component (JASC) Code 2210, Autopilot System.

(e) Unsafe Condition

This AD was prompted by a report of an un-commanded automatic pitch trim runaway when the autopilot was first engaged. The FAA is issuing this AD to address autopilot software that does not properly handle certain hardware failures of the primary pitch servo. The unsafe condition, if not addressed, could result in un-commanded automatic pitch trim runaway and loss of control of the airplane.

(f) Compliance

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

(g) Required Action

Within 12 months after the effective date of this AD, update the Garmin GFC 500 Autopilot System software applicable to your airplane to a version that is not 8.01 or earlier for the G5, not version 9.01 or earlier for the G3X Touch, and not version 2.59 or earlier for the GI 275.

Note 1 to paragraph (g): The software update can be done using Garmin Mandatory STC Service Bulletin 22123, Rev A, dated January 3, 2023. This AD also allows the installation of versions other than those listed in Garmin Mandatory STC Service Bulletin 22123, Rev A, dated January 3, 2023, provided those versions are not listed in paragraph (g) of this AD.

(h) Installation Prohibition

As of the effective date of this AD, do not install Garmin GFC 500 Autopilot System Software that is version 8.01 or earlier for the G5, version 9.01 or earlier for the G3X Touch, or version 2.59 or earlier for the GI 275, on any airplane.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Central 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 local Flight Standards District Office, as appropriate. If sending information directly to the manager of the Central Certification Branch, send it to the attention of the person identified in paragraph (j)(1) of this AD. Information may be emailed to *wichita-cos@faa.gov*.

(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.

(j) Additional Information

(1) For more information about this AD, contact Christopher Withers, Aviation Safety Engineer, FAA, 1801 S Airport Road, Wichita, KS 67209; phone: (316) 946-4190; email: *christopher.d.withers@faa.gov*.

(2) For material identified in this AD that is not incorporated by reference, contact Garmin International, Attention: Garmin Aviation Support, 1200 E 151st Street, Olathe, KS 66062; phone:

(866) 739-5687; website: *support.garmin.com/en-US/aviation/*.

(k) Material Incorporated by Reference

None.

Issued on July 10, 2024.

James D. Foltz,

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

BILLING CODE 4910-13-P

BILLING CODE 4910-13-C

[FR Doc. 2024-15529 Filed 7-15-24; 8:45 am]

BILLING CODE 4910-13-P

TRADUCTION DE COURTOISIE

de la DIRECTIVE de NAVIGABILITE FAA de référence US-2024-14-03

Auto Flight - Système de pilotage automatique Garmin GFC 500 - Mise à jour du logiciel
GARMIN INTERNATIONAL INC.
GARMIN GFC 500 Autopilot System EASA STC 10069439

(a) Date d'entrée en vigueur :

Cette consigne de navigabilité (CN) entrera en vigueur le 20/08/24.

(b) CN affectées
Aucune

(c) APPLICABILITE :
Cette consigne de navigabilité s'applique à tous les modèles d'avions spécifiés dans le tableau 1 du paragraphe (c) de cette consigne, certifiés dans n'importe quelle catégorie, équipés d'un système de pilotage automatique Garmin GFC 500 comprenant un servo de compensation en tangage GSA 28 installé conformément au STC n° SA01866WI utilisant la Master Drawing List 005- 01264-00, révisions 1 à 76.

Tableau 1 du paragraphe c) - Modèles d'avions applicables

Détenteur du Certificat de Type	Modèles d'avions
Commander Aircraft Corporation	112B, 112TC, 112TCA, 114, 114A, 114B et 114TC
DAHER AEROSPACE	TB 20 et TB 21
Mooney International Corporation	M20C, M20D, M20E, M20F, M20G, M20J, M20K, M20M, M20R et M20S
Piper Aircraft, Inc	PA-24, PA-24-250 et PA-24-260
Piper Aircraft, Inc	PA-28-140, PA-28-150, PA-28-151, PA-28-160, PA-28-161, PA628-180, PA-28-181, PA-28-201T, PA-28-235, PA-28-236, PA-28R-180, PA-28R-200, PA-28R-201, PA-28R-201T, PA-28RT-201, et PA-28RT-201T
Piper Aircraft, Inc	PA-30 et PA-39
Piper Aircraft, Inc	PA-32-260, PA-32-300, PA-32-301, PA-32-301FT, PA-32-301T, PA-32-301XTC, PA-32R-300, PA-32RT-300, PA-32RT-300T, PA-32R-301 (HP), PA-32R-301 (SP), et PA-32R-301T
Textron Aviation INC. (Certificat de type précédemment détenu par Beech Aircraft Corporation, Raytheon Aircraft Company, Hawker Beechcraft Corporation et Beechraft Corporation)	19A, B19, M19A, A23A, A23-19, A23-24, B23, C23, A24, A24R, B24R, et C24R
Textron Aviation INC. (Certificat de type précédemment détenu par Beech Aircraft Corporation, Raytheon Aircraft Company, Hawker Beechcraft Corporation et Beechraft Corporation)	C35, D35, E35, F35, et G35
Textron Aviation INC. (Certificat de type précédemment détenu par Beech Aircraft Corporation, Raytheon Aircraft Company, Hawker Beechcraft Corporation et Beechraft Corporation)	35-33, 35-A33, 35-B33, 35-C33, 35-C33A, 36, A36, A36TC, B36TC, E33, E33A, E33C, F33, F33A, F33C, G33, H35, J35, K35, M35, N35, P35, S35, V35, V35A, et V35B
Textron Aviation INC. (Certificat de type précédemment détenu par Cessna Aircraft Company)	172D, 172E, 172, 172G, 172H, 1721, 172K, 172M, 172M, 172N, 172P, 172Q, 172R, et 172S

Textron Aviation INC. (Certificat de type précédemment détenu par Cessna Aircraft Company)	**F172E, F172F, F172G, F172H, F172K, F172L, F172M, F172N, F172P**
Textron Aviation INC. (Certificat de type précédemment détenu par Cessna Aircraft Company)	**172RG, P172D et R172K**
Textron Aviation INC. (Certificat de type précédemment détenu par Cessna Aircraft Company)	**FR172K**
Textron Aviation INC. (Certificat de type précédemment détenu par Cessna Aircraft Company)	**177B**
Textron Aviation INC. (Certificat de type précédemment détenu par Cessna Aircraft Company)	**177RG**
Textron Aviation INC. (Certificat de type précédemment détenu par Cessna Aircraft Company)	**F177RG**
Textron Aviation INC. (Certificat de type précédemment détenu par Cessna Aircraft Company)	**182E, 182F, 182G, 182H, 182J, 182K,182L, 182M, 182N, 182P, 182Q, 182R, 182S, 182T, F182P, F182Q, FR182, R182, T182, T182T, et TR182**
Textron Aviation INC. (Certificat de type précédemment détenu par Cessna Aircraft Company)	**206H, P206C, P206D, P206E, T206H, TP206C, TP206D, TP206E, TU206C, TU206D,TU206E, TU206F, TU206G, U206C, U206D, U206E, U206F et U206G**
Textron Aviation INC. (Certificat de type précédemment détenu par Cessna Aircraft Company)	**210D, 210E, 210F, 210G, 210H, 210J, 210K, 210L, 210M, 210N, T210F, T210G, T210H, T210J, T210K, T210L, T210M et T210N**

(d) Objet
Joint Aircraft System Component (JASC) Code 2210, Autopilot System.

(e) Situation dangereuse
Cette CN a été émise à la suite d'un rapport faisant état d'un emballement intempestif de la compensation automatique en tangage lors de l'enclenchement initial du pilote automatique. La FAA émet cette CN pour remédier au fait que le logiciel du pilote automatique ne gère pas correctement certaines défaillances matérielles de la servocommande principale de tangage. Cette situation dangereuse, si elle n'est pas corrigée, peut entraîner un emballement intempestif de la compensation automatique en tangage et une perte de contrôle de l'avion.

(f) Conformité
Se conformer à la présente CN dans les délais de mise en conformité spécifiés, sauf si cela a déjà été fait.

(g) Actions requises
Dans les 12 mois suivant la date d'entrée en vigueur de cette consigne de navigabilité, mettez à jour le logiciel du système de pilotage automatique Garmin GFC 500 applicable à votre avion à une version qui n'est pas la version 8.01 ou une version antérieure pour le G5, qui n'est pas la version 9.01 ou une version antérieure pour le G3X Touch, et qui n'est pas la version 2.59 ou une version antérieure pour le GI 275.

Note 1 au paragraphe (g) : La mise à jour du logiciel peut être effectuée à l'aide du bulletin de service STC obligatoire de Garmin 22123, rév. A, daté du 3 janvier 2023. La présente CN autorise également l'installation de versions autres que celles énumérées dans le Garmin Mandatory STC Service Bulletin 22123, Rev A, daté du 3 janvier 2023, à condition que ces versions ne soient pas énumérées au paragraphe (g) de la présente CN.

(h) Interdiction d'installation
À compter de la date d'entrée en vigueur de cette consigne de navigabilité, n'installez pas le logiciel du système de pilotage automatique Garmin GFC 500 qui est la version 8.01 ou antérieure pour le G5, la version 9.01 ou antérieure pour le G3X Touch, ou la version 2.59 ou antérieure pour le GI 275, sur n'importe quel avion.

(i) Autres méthodes de mise en conformité (AMOC)
(Contacter l'autorité compétente)

(j) Informations complémentaires
(1) Pour plus d'informations sur cette CN, contactez Christopher Withers, Aviation Safety Engineer, FAA, 1801 S Airport Road, Wichita, KS 67209 ; téléphone : (316) 946-4190 ; courriel : christopher.d.withers@faa.gov.

(2) Pour le matériel identifié dans cette CN qui n'est pas incorporé par référence, contactez Garmin International, à l'attention de Garmin Aviation Support : Garmin Aviation Support, 1200 E 151st Street, Olathe, KS 66062 ; téléphone : (866) 739-5687 ; site web : support.garmin.com/en-US/aviation/.

(k) Matériel incorporé par référence
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