DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA–2018–0782; Special Conditions No. 25–736–SC]

Special Conditions: Garmin International, Textron Aviation Inc. Model 560XL; Airplane Electronic System Security Protection From Unauthorized Internal Access

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for the Textron Aviation Inc. (Textron) Model 560XL, formerly known as, prior to July 29, 2015, the Cessna Model 560XL. This airplane, as modified by Garmin International (Garmin), will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. This design feature is Garmin G5000 avionics that allow internal connection to previously isolated data networks, which are connected to systems that perform functions required for the safe operation of the airplane. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: This action is effective on Garmin on November 21, 2018. Send comments on or before January 7, 2019.

ADDRESSES: Send comments identified by docket no. FAA–2018–0782 using any of the following methods:

Federal eRegulations Portal: Go to http://www.regulations.gov/ and follow the online instructions for sending your comments electronically.

Mail: Send comments to Docket Operations, M–30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue SE, Room W12–140, West Building Ground Floor, Washington, DC 20590–0001.

Hand Delivery or Courier: Take comments to Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Fax: Fax comments to Docket Operations at 202–493–2251.
in Textron Model 560XL airplanes. This is a twin-engine, turbofan airplane with seating for 12 passengers and two crew members, and a maximum takeoff weight of 20,200 pounds.

**Type Certification Basis**

Under the provisions of title 14, Code of Federal Regulations (14 CFR) 21.101, Garmin must show that the Textron Model 560XL airplane, as changed, continues to meet the applicable provisions of the regulations listed in Type Certificate No. A22CE, or the applicable regulations in effect on the date of application for the change, except for earlier amendments as agreed upon by the FAA.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Textron Model 560XL airplane because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.101.

Special conditions are initially applicable to the model for which they are issued. Should the applicant apply for a supplemental type certificate to modify any other model included on the same type certificate to incorporate the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Textron Model 560XL airplane must comply with the fuel-vent and exhaust-emission requirements of 14 CFR part 34, and the noise-certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type certification basis under § 21.101.

**Novel or Unusual Design Features**

The Textron Model 560XL airplane, as modified by Garmin, will incorporate the following novel or unusual design features:

- Garmin G5000 avionics that allow internal connection to previously isolated data networks, which are connected to systems that perform functions required for the safe operation of the airplane.

**Discussion**

The Textron Model 560XL airplane architecture is novel or unusual for commercial transport airplanes because it allows connection to previously isolated data networks connected to systems that perform functions required for the safe operation of the airplane. This data network and design integration creates a potential for unauthorized persons to access the aircraft-control domain and airline information-services domain, and presents security vulnerabilities related to the introduction of computer viruses and worms, user errors, and intentional sabotage of airplane electronic assets (networks, systems, and databases) critical to the safety and maintenance of the airplane.

The existing regulations and guidance material did not anticipate this type of system architecture or electronic access to airplane systems. Furthermore, 14 CFR regulations and the current system-safety assessment policy and techniques do not address potential security vulnerabilities, which could be exploited by unauthorized access to airplane networks and servers. Therefore, these special conditions ensure that the security of airplane systems and networks is not compromised by unauthorized wired or wireless internal access.

These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**Applicability**

As discussed above, these special conditions are applicable to the Textron Model 560XL airplane. Should Garmin apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. A22CE to incorporate the same novel or unusual design feature, these special conditions would apply to that model as well.

**Conclusion**

This action affects only certain novel or unusual design features on one model of airplane. It is not a rule of general applicability and affects only the applicant who applied to the FAA for approval of the features on the airplane.

**List of Subjects in 14 CFR Part 25**

- Aircraft, Aviation safety, Reporting and recordkeeping requirements.

**Authority Citation**

The authority citation for these special conditions is as follows:

**Authority:** 49 U.S.C. 106(f), 106(g), 40113, 44701, 44702, 44704.

**The Special Conditions**

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Textron Model 560XL airplanes as modified by Garmin, for airplane electronic-system security protection from unauthorized internal access.

1. The applicant must ensure that the design provides isolation from, or airplane electronic-system security protection against, access by unauthorized sources internal to the airplane. The design must prevent inadvertent and malicious changes to, and all adverse impacts upon, airplane equipment, systems, networks, or other assets required for safe flight and operations.

2. The applicant must establish appropriate procedures to allow the operator to ensure that continued airworthiness of the airplane is maintained, including all post-type-certification modifications that may have an impact on the approved electronic-system security safeguards.

Issued in Des Moines, Washington, on November 15, 2018.

Chris R. Parker,
Acting Manager, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service.

[PR Doc. 2018–25363 Filed 11–20–18; 8:45 am]

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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

14 CFR Part 25

[Docket No. FAA–2018–0781; Special Conditions No. 25–737–SC]


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

**ACTION:** Final special conditions; request for comments.

**SUMMARY:** These special conditions are issued for the Textron Aviation (Textron) Model 560XL, formerly known as, prior to July 29, 2015, the Cessna Model 560XL. This airplane, as modified by Garmin International (Garmin), will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. This design feature is Garmin G5000 avionics that allow external connection to previously isolated data networks, which are connected to systems that perform...