



**[4910-13]**

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 25**

**[Docket No. FAA-2016-8029; Special Conditions No. 25-634-SC]**

### **Special Conditions: Garmin International, Beechcraft Corporation Model 400A Airplanes; Airplane Electronic-System Security Protection from Unauthorized External Access**

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

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

**SUMMARY:** These special conditions are issued for the Beechcraft Corporation (Beechcraft) Model 400A airplane. 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. These airplanes will have a digital-systems network architecture composed of several connected networks that may allow access to or by external computer systems and networks, and may otherwise result in airplane electronic-system security vulnerabilities without appropriate protection. 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 [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]. We must receive your comments by [INSERT DATE 45 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** Send comments identified by docket number FAA-2016-8029 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.

*Privacy:* The FAA will post all comments it receives, without change, to <http://www.regulations.gov/>, including any personal information the commenter provides. Using the search function of the docket Web site, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the **Federal Register** published on April 11, 2000 (65 FR 19477-19478), as well as at <http://DocketsInfo.dot.gov/>.

*Docket:* Background documents or comments received may be read at <http://www.regulations.gov/> at any time. Follow the online instructions for accessing the docket or go 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.

**FOR FURTHER INFORMATION CONTACT:** Varun Khanna, FAA, Airplane and Flight Crew Interface, ANM-111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington, 98057-3356; telephone 425-227-1298; facsimile 425-227-1149.

**SUPPLEMENTARY INFORMATION:**

The FAA has determined that notice of, and opportunity for prior public comment on, these special conditions is impracticable because these procedures would significantly delay issuance of the design approval and thus delivery of the affected airplane.

In addition, the substance of these special conditions has been subject to the public-comment process in several prior instances with no substantive comments received. The FAA therefore finds that good cause exists for making these special conditions effective upon publication in the **Federal Register**.

**Comments Invited**

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

We will consider all comments we receive by the closing date for comments. We may change these special conditions based on the comments we receive.

## **Background**

On February 13, 2014, Garmin applied for a supplemental type certificate to allow installation of digital-systems network architecture, composed of several connected networks that may allow access to or by external computer systems and networks, in Beechcraft Model 400A airplanes. The Model 400A airplane is a small, twin-engine, transport-category airplane with a maximum takeoff weight of 16,300 lbs and capable of carrying 7 to 9 passengers, plus 2 crew members.

## **Type Certification Basis**

Under the provisions of Title 14, Code of Federal Regulations (14 CFR) 21.101, Garmin must show that the Beechcraft Model 400A airplane, as changed, continues to meet the applicable provisions of the regulations listed in Type Certificate No. A16SW, 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 Beechcraft Model 400A airplane because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

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 Beechcraft Model 400A 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 Beechcraft Model 400A airplanes will incorporate the following novel or unusual design features:

The Garmin G5000, installed in the Beechcraft Model 400A airplane, may add wired and wireless access points to the networks of the Aircraft Control Domain and Airline Information Services Domain. This 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 error, and intentional sabotage of airplane electronic assets (networks, systems, and databases) if not appropriately protected.

### **Discussion**

The Garmin G5000 allows connection to airplane electronic systems and networks, and access from airplane external sources (e.g., operator networks, wireless devices, Internet connectivity, service-provider satellite communications, electronic flight bags, etc.) to the previously isolated airplane electronic assets. Airplane electronic assets include electronic equipment and systems, instruments, networks, servers, software and electronic components,

field-loadable software and hardware applications, and databases. This proposed design may otherwise result in network security vulnerabilities from intentional or unintentional corruption of data and systems required for the safety, operation, and maintenance of the airplane if not appropriately protected. The existing regulations and guidance material did not anticipate this type of system architecture, or external wired and wireless electronic access to airplane electronic systems. Furthermore, regulations, and current system safety-assessment policy and techniques, do not address potential security vulnerabilities that could be caused by unauthorized access to airplane electronic systems and networks.

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 Beechcraft Model 400A airplane. Should Garmin apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. A16SW 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 these features on the airplane.

The substance of these special conditions has been subjected to the notice and comment period in several prior instances and has been derived without substantive change from those

previously issued. It is unlikely that prior public comment would result in a significant change from the substance contained herein. Therefore, because a delay would significantly affect the certification of the airplane, which is imminent, the FAA has determined that prior public notice and comment are unnecessary and impracticable, and good cause exists for adopting these special conditions upon publication in the **Federal Register**. The FAA is requesting comments to allow interested persons to submit views that may not have been submitted in response to the prior opportunities for comment described above.

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

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 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 Beechcraft Model 400A airplanes modified by Garmin.

1. The applicant must ensure that the airplane electronic systems are protected from access by unauthorized sources external to the airplane, including those possibly caused by maintenance activity.
2. The applicant must ensure that electronic system-security threats are identified and assessed, and that effective electronic system-security protection strategies are implemented to protect the airplane from all adverse impacts on safety, functionality, and continued airworthiness.

3. 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 Renton, Washington, on August 11, 2016.

Paul Bernado

Acting Manager, Transport Airplane Directorate

Aircraft Certification Service

[FR Doc. 2016-20000 Filed: 8/19/2016 8:45 am; Publication Date: 8/22/2016]