



[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 21

[Docket No. FAA-2016-9452]

Airworthiness Criteria: Glider Design Criteria for Stemme AG Model Stemme S12

Powered Glider

AGENCY: Federal Aviation Administration (FAA), DOT

ACTION: Airworthiness design criteria.

SUMMARY: These airworthiness criteria are issued for the Stemme AG model Stemme S12 powered glider. The Administrator finds the design criteria, which make up the certification basis for the Stemme S12, acceptable.

DATES: These airworthiness design criteria are effective [INSERT A DATE 30 DAYS AFTER THE DATE OF PUBLICATION].

FOR FURTHER INFORMATION CONTACT: Mr. Jim Rutherford, Federal Aviation Administration, Small Airplane Directorate, Aircraft Certification Service, 901 Locust, Room 301, Kansas City, MO 64106, telephone (816) 329-4165, facsimile (816) 329-4090.

SUPPLEMENTARY INFORMATION:

Background

On January 08, 2016, Stemme AG submitted an application for type validation of the Stemme S12 in accordance with the Technical Implementation Procedures for Airworthiness and Environmental Certification Between the FAA and the European Aviation Safety Agency (EASA), Revision 5, dated September 15, 2015. The Stemme S12 is a two-seat, self-launching,

powered glider with a liquid cooled, turbocharged engine mounted in the center fuselage, an indirect drive shaft, and a fully-foldable, variable-pitch composite propeller in the nose. It is constructed from glass and carbon fiber reinforced composites, features a conventional T-type tailplane, and has a retractable main landing gear. The glider has a maximum weight of 1,984 pounds (900 kilograms) and may be equipped with an optional dual-axis autopilot system. EASA type certificated the Stemme S12 under Type Certificate Number (No.) EASA.A.054 on March 11, 2016. The associated EASA Type Certificate Data Sheet (TCDS) No. EASA.A.054 defined the certification basis Stemme AG submitted to the FAA for review and acceptance.

The applicable requirements for glider certification in the United States can be found in FAA Advisory Circular (AC) 21.17-2A, “Type Certification—Fixed-Wing Gliders (Sailplanes), Including Powered Gliders,” dated February 10, 1993. AC 21.17-2A has been the basis for certification of gliders and powered gliders in the United States for many years. AC 21.17-2A states that applicants may utilize the Joint Aviation Requirements (JAR)-22, “Sailplanes and Powered Sailplanes”, or another accepted airworthiness criteria, or a combination of both, as the accepted means for showing compliance for glider type certification.

Type Certification Basis

The applicant Certification Basis is based on EASA Certification Specification (CS)-22, “Sailplanes and Powered Sailplanes”, initial issue, dated November 14, 2003. In addition to CS-22 requirements, the applicant will comply with other requirements from the certification basis referenced in EASA TCDS No. EASA.A.054, including special conditions and equivalent safety findings.

Discussion of Comments

Notice of proposed airworthiness design criteria for the Stemme AG Stemme S12 powered glider was published in the Federal Register on November 30, 2016 (81 FR 86296). No comments were received, therefore these airworthiness design criteria are adopted as proposed.

The Airworthiness Design Criteria

Accordingly, pursuant to the authority delegated to me by the Administrator, the following airworthiness design criteria under the special class provision of 14 CFR 21.17(b) as part of the type certification basis for the Stemme AG Stemme S12 power glider:

1. 14 CFR part 21, effective February 1, 1965, including amendments 21-1 through 21-93 as applicable.
2. EASA CS-22, initial issue, dated November 14, 2003.
3. EASA Special Condition No. SC-A.22.1.01, “Increase in maximum mass for sailplanes and powered sailplanes.”
4. “Preliminary Standard for the Substantiation of Indirect Drive Shafts in Power Plants of Powered Sailplanes Certified to JAR-22” (with a modification for the Stemme AG model Stemme S 10), Luftfahrt-Bundesamt (LBA) document number (no.) I231-87, issued August 05, 1988.
5. Installation of a Dual-Axis Autopilot System, including—
 - EASA CS-VLA (Very Light Aeroplanes) 1309, “Equipment, systems, and installations”; initial issue, dated November 14, 2003; and
 - EASA CS-23.1329, “Automatic pilot system”, amendment 3, dated July 20, 2012.

6. Drop Testing for Retractable Landing Gear (EASA equivalent safety findings) to include CS-VLA 725, “Limit drop tests”; CS-VLA 726, “Ground load dynamic tests”; and CS-VLA 727, “Reserve energy absorption”; initial issue dated November 14, 2003.

7. “Standards for Structural Substantiation of Sailplane and Powered Sailplane Parts Consisting of Glass or Carbon Fiber Reinforced Plastics”, LBA document no. I4-FVK/91, issued July 1991.

8. “Guideline for the analysis of the electrical system for powered sailplanes”, LBA document no. I334-MS 92, issued September 15, 1992.

9. The following kinds of operation are allowed: VFR-Day.

10. Date of application for FAA Type Certificate: January 08, 2016.

Issued in Kansas City, Missouri on January 23, 2017.

Mel Johnson
Acting Manager, Small Airplane Directorate
Aircraft Certification Service

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