

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC 20591

In the matter of the petition of

**CIRRUS DESIGN
CORPORATION**

for an exemption from § 23.177(b) of
Title 14, Code of Federal Regulations

Regulatory Docket No. FAA 2014-0533

GRANT OF EXEMPTION

By letter dated July 23, 2014, Mr. Tom Engelmann, Certification Engineer, Cirrus Design Corporation (Cirrus), 4515 Taylor Circle, Duluth, MN 55811 petitioned the Federal Aviation Administration (FAA) on behalf of Cirrus for an exemption from § 23.177(b) of Title 14, Code of Federal Regulations (14 CFR). The proposed exemption, if granted, would allow type certification of the Cirrus Model SF50 without a Rudder-Aileron Interconnect (RAI).

The petitioner requests relief from the following regulation:

Section 23.177(b), in pertinent part, states:

“(b)(1) The static lateral stability, as shown by the tendency to raise the low wing in a sideslip with the aileron controls free, may not be negative for any landing gear and flap position appropriate to the takeoff, climb, cruise, approach, and landing configurations. This must be shown with symmetrical power from idle up to 75 percent of maximum continuous power at speeds from $1.2 V_{S1}$ in the takeoff configuration(s) and at speeds from $1.3 V_{S1}$ in other configurations, up to the maximum allowable airspeed for the configuration being investigated (V_{FE} , V_{LE} , V_{NO} , V_{FC}/M_{FC} , whichever is appropriate) in the takeoff, climb, cruise, descent, and approach configurations. For the landing configuration, the power must be that necessary to maintain a 3-degree angle of descent in coordinated flight.

(2) The static lateral stability may not be negative at $1.2 V_{S1}$ in the takeoff configuration, or at $1.3 V_{S1}$ in other configurations.

(3) The angle of sideslip for these tests must be appropriate to the type of airplane, but in no case may the constant heading sideslip angle be less than that obtainable with a 10 degree bank or, if less, the maximum bank angle obtainable with full rudder deflection or 150 pound rudder force.”

The petitioner supports its request with the following information:

The petitioner states on the SR20 and SR22 the rudder aileron interconnect introduced a higher level of complexity into the flight control system and was the subject of several Service Bulletins as well as an Airworthiness Directive (AD) on the previous Cirrus Models SR20 and SR22. To avoid similar issues with the SF50, Cirrus is requesting an exemption to simplify maintainability without detrimental effect on operational safety.

The FAA has determined that good cause exists for waiving the requirement for Federal Register publication because the exemption, if granted, would not set a precedent, and any delay in acting on this petition would be detrimental to Cirrus.

The FAA’s analysis is as follows:

The FAA recognizes relief granted in another similar circumstance as presented in your petition. Exemption No. 10923 granted relief from § 23.177(b) to the SR20/22 Cirrus model series. This exemption yielded no comments when it was published in the Federal Register (75 FR 73919). The FAA has reviewed your reasons for requesting an exemption and finds that—

1. Flight test results show the level of safety provided by § 23.177(b) remains satisfactory. Cirrus has demonstrated the use of the electric roll trim control system, as part of the approved type design, for lateral control in the event the primary roll controls system becomes disconnected;
2. Flight test show that with the RAI removed, all other subpart B rules remain compliant;
3. The reasons stated by the FAA for granting the previous relief (Exemption 10923) also applies to this Cirrus design; and
4. A grant of exemption is in the public interest.

The FAA’s Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. §§ 106(f), 40113 and 44701, delegated to me by the Administrator, Cirrus Design Corporation is granted an exemption from 14 CFR 23.177(b) to the extent necessary to allow Cirrus to remove the Rudder-Aileron Interconnect (RAI) from the Cirrus SF50 airplane, subject to the conditions and limitations listed below.

Conditions and Limitations

1. The Airplane Flight Manual (AFM) Limitations must show that the electric roll trim system must be operational for flight.

Issued in Kansas City, MO, on October 23, 2014.

//SIGNED//

Earl Lawrence
Manager, Small Airplane Directorate
Aircraft Certification Service