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 Cirrus Design Corporation model SF50 airplanes.

Fire Extinguishing for Upper Aft Fuselage Mounted Engine

SC 23.1195 Fire Extinguishing Systems

Fire extinguishing systems must be installed and compliance shown with the following:

(a) Except for combustor, turbine, and tailpipe sections of turbine-engine installations that contain lines or components carrying flammable fluids or gases for which a fire originating in these sections is shown to be controllable, a fire extinguisher system must serve each engine compartment.

(b) The fire extinguishing system, the quantity of the extinguishing agent, the rate of discharge, and the discharge distribution must be adequate to extinguish fires. An individual “two shot” system must be used.

(c) The fire extinguishing system for a nacelle must be able to simultaneously protect each compartment of the nacelle for which protection is provided.

SC 23.1197 Fire Extinguishing Agents

The following applies:

(a) Fire extinguishing agents must:

1. Be capable of extinguishing flames emanating from any burning of fluids or other combustible materials in the area protected by the fire extinguishing system; and

2. Have thermal stability over the temperature range likely to be experienced in the compartment in which they are stored.

(b) If any toxic extinguishing agent is used, provisions must be made to prevent harmful concentrations of fluid or fluid vapors (from leakage during normal operation of the airplane or as a result of discharging the fire extinguisher on the ground or in flight) from entering any personnel compartment, even though a defect may exist in the extinguishing system. This must be shown by test except for built-in carbon dioxide fuselage compartment fire extinguishing systems for which—

1. Five pounds or less of carbon dioxide will be discharged, under established fire control procedures, into any fuselage compartment; or

2. Protective breathing equipment is available for each flight member on flight deck duty.

SC 23.1199 Extinguishing Agent Containers

The following applies:

(a) Each extinguishing agent container must have a pressure relief valve to prevent bursting of the container by excessive internal pressures.

(b) The discharge end of each discharge line from a pressure relief connection must be located so that discharge of the fire extinguishing agent would not damage the airplane. The line must also be located or protected to prevent clogging caused by ice or other foreign matter.

(c) A means must be provided for each fire extinguishing agent container to indicate that the container has discharged or that the charging pressure is below the established minimum necessary for proper functioning.

(d) The temperature of each container must be maintained under intended operating conditions to prevent the pressure in the container from—

1. Falling below that necessary to provide an adequate rate of discharge; or

2. Rising high enough to cause premature discharge.

(e) If a pyrotechnic capsule is used to discharge the extinguishing agent, each container must be installed so that temperature conditions will not cause hazardous deterioration of the pyrotechnic capsule.

SC 23.1201 Fire Extinguishing System Materials

The following apply:

(a) No material in any fire extinguishing system may react chemically with any extinguishing agent so as to create a hazard.

(b) Each system component in an engine compartment must be fireproof.

Issued in Kansas City, Missouri on April 12, 2010.

Steve Thompson,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2010–9026 Filed 4–19–10; 8:45 am]

BILLING CODE 4910–13–P
The Cirrus Design Corporation model SF50 aircraft is equipped with a Williams International FJ33–5A turbofan engine using an electronic engine control system (FADEC) instead of a traditional mechanical control system. Even though the engine control system will be certified as part of the engine, the installation of an engine with an electronic control system requires evaluation due to critical environmental effects and possible effects on or by other airplane systems, for example, indirect effects of lightning, radio interference with other airplane electronic systems, shared engine and airplane data and power sources.

The regulatory requirements in 14 CFR part 23 for evaluating the installation of complex systems, including electronic systems and critical environmental effects, are contained in §23.1309. However, when §23.1309 was developed, the use of electronic control systems for engines was not envisioned. Therefore, the §23.1309 requirements were not applicable to systems certified as part of the engine (reference §23.1309(f)(1)). Parts of the system that are not certified with the engine could be evaluated using the criteria of §23.1309. However, the integral nature of these systems makes it unfair to evaluate the airplane portion of the system without including the engine portion of the system.

In some cases, the airplane that the engine is used in will determine a higher classification than the engine controls are certified for, requiring the FADEC systems be analyzed at a higher classification. As of November 2005, FADEC special conditions mandated the classification for 23.1309 analysis for loss of FADEC control as catastrophic for any airplane. This is not to imply an engine failure is classified as catastrophic, but that the digital engine control must provide an equivalent reliability to mechanical engine controls.

Type Certification Basis

Under the provisions of 14 CFR part 21, §21.17, Cirrus Design Corporation must show that the model SF50 meets the applicable provisions of part 23, as amended by Amendments 23–1 through 23–59, thereto.

If the Administrator finds that the applicable airworthiness regulations (i.e., part 23) do not contain adequate or appropriate safety standards for the model SF50 because of a novel or unusual design feature, special conditions are prescribed under the provisions of §21.16.

In addition to the applicable airworthiness regulations and special conditions, the model SF50 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. Also, the FAA must issue a finding of regulatory adequacy pursuant to §611 of Public Law 92–574, the “Noise Control Act of 1972.”

Special conditions, as appropriate, as defined in 11.19, are issued in accordance with §11.38, and become part of the type certification basis in accordance with §21.17(a)(2).

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, the special conditions would also apply to the other model under the provisions of §21.101(a)(1).

Novel or Unusual Design Features

The Cirrus Design Corporation model SF50 will incorporate the following novel or unusual design features:

Electronic engine control system.

Applicability

As discussed above, these special conditions are applicable to the model SF50. Should Cirrus Design Corporation apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, the special conditions would apply to that model as well as under the provisions of §21.101(a)(1).

Conclusion

This action affects only certain novel or unusual design features on the model SF50 airplanes. It is not a rule of general applicability and it affects only the applicant who applied to the FAA for approval of these features on the airplane.

Under standard practice, the effective date of final special conditions would be 30 days after the date of publication in the Federal Register; however, as the certification date for the Cirrus Design Corporation model SF50 is imminent, the FAA finds that good cause exists to make these special conditions effective upon issuance.

List of Subjects in 14 CFR Part 23

Aircraft, Aviation safety, Signs and symbols.

Citation

The authority citation for these special conditions is as follows:
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 Cirrus Design Corporation model SF50 airplanes.

1. Electronic Engine Control

The installation of the electronic engine control system must comply with the requirements of 14 CFR 23.1309(a) through (e) at Amendment 23–49. The intent of this requirement is not to reevaluate the inherent hardware reliability of the control itself, but rather determine the effects, including environmental effects addressed in 14 CFR 23.1309(e), on the airplane systems and engine control system when installing the control on the airplane. When appropriate, engine certification data may be used when showing compliance with this requirement; however, the effects of the installation on this data must be addressed.

For these evaluations, the loss of FADEC control will be analyzed utilizing the threat levels associated with a catastrophic failure.

Issued in Kansas City, Missouri, on April 12, 2010.

Steve Thompson,
Acting Manager, Small Airplane Directorate,
Aircraft Certification Service.

Docket No. 0912031426–0047–01

Effective Date:

This final rule revises the Export Administration Regulations (EAR) to reflect changes to the MTCR Annex agreed to at the November 2009 Plenary in Rio de Janeiro, Brazil. Corresponding MTCR Annex references are provided below for the MTCR Annex changes agreed to at the November 2009 Plenary. MT CR member countries agreed to clarify the meaning of “production facilities”, the export of which is prohibited by the MTCR Guidelines for Category I. This clarification is reflected in the changes set forth in section 772.1 (Definitions of Terms as Used in the Export Administration Regulations), which amend the definition of the term “production facilities” to add the word production before the word equipment. The definition will therefore state that “production facilities” mean “production equipment” and specially designed “software” therefor integrated into installations for “development” or for one or more phases of “production” (MTCR Annex Change Definitions: “Production Facilities”). This clarification more specifically describes the type of equipment that is included under the definition of “production facilities”. BIS expects this change to have no impact on license applications.

In addition, this rule amends the Commerce Control List (CCL) (Supplement No. 1 to Part 774 of the EAR) to reflect changes to the MTCR Annex. Specifically, the following Export Control Classification Numbers (ECCNs) are affected:

ECCN 1C117 is amended by revising the heading and the “items” paragraph in the List of Items Controlled section (MTCR Annex Change Category II: Item 6.C.7). A significant agreement was reached by MTCR member countries on the control of tungsten and molybdenum on the MTCR Annex. New controls were added for super infiltrated tungsten, silver infiltrated tungsten, and tungsten alloys in solid