

New Hampshire, Maine, New Jersey, New York, Pennsylvania, Massachusetts, Rhode Island, Delaware, Vermont, Wisconsin, Connecticut, and Washington, DC.

District 5—The States of Alaska, Hawaii, Nevada, Oregon, and Washington and all of the counties in the state of California except for those California counties included in District Seven.

District 6—The counties in the state of Texas, except for those counties in Texas included in District Seven.

District 7—The counties in the state of Texas; Dallam, Sherman, Hanaford, Ochiltree, Lipscomb, Hartely, Moore, Hutchinson, Roberts, Hemphill, Oldham, Potter, Carson, Gray, Wheeler, Deaf Smith, Randall, Armstrong, Donley, Collingsworth, Parmer, Castro, Swisher, Briscoe, Hall, Childness, Bailey, Lamb, Hale, Floyd, Motley, Cottle, Cochran, Hockely, Lubbock, Crosby, Dickens, King, Yoakum, Terry, Lynn, Garza, Kent, Stonewall, the states of New Mexico, Arizona, Utah, Colorado, Idaho, Montana, and Wyoming, and the following counties in California; San Bernardino, Riverside, San Diego, and Imperial.

Dated: June 8, 2006.

Kenneth C. Clayton,

Acting Administrator, Agricultural Marketing Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 23

[Docket No. CE247; Special Conditions No. 23-187-SC]

Special Conditions: Thielert Aircraft Engines; Piper PA 28-161 Cadet, Warrior II and Warrior III Series Airplanes; Installation of Thielert TAE-125-01 Aircraft Diesel Engine for Full Authority Digital Engine Control (FADEC) System and the Protection of the System From the Effects of High Intensity Radiated Fields (HIRF)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued to Thielert Aircraft Engines, GmbH, Lichtenstein, Germany for a supplemental type certificate for the Piper PA 28-161 Cadet, Warrior II and Warrior III series airplanes. The

supplemental type certificate for these airplanes will have a novel or unusual design feature associated with the installation of an aircraft diesel engine that uses an electronic engine control system instead of a mechanical control system. 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: The effective date of these special conditions is: June 7, 2006. Comments must be received on or before July 14, 2006.

ADDRESSES: Comments on the special conditions may be mailed in duplicate to: Federal Aviation Administration (FAA), Regional Counsel, ACE-7, Attention: Rules Docket, Docket No. CE247, 901 Locust, Room 506, Kansas City, Missouri 64106, or delivered in duplicate to the Regional Counsel at the above address. Comments must be marked: Docket No. CE247. Comments may be inspected in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

FOR FURTHER INFORMATION CONTACT:

Peter L. Rouse, Federal Aviation Administration, Aircraft Certification Service, Small Airplane Directorate, ACE-111, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: 816-329-4135, fax: 816-329-4090.

SUPPLEMENTARY INFORMATION: The FAA has determined that notice and opportunity for prior public comment hereon are impracticable because these procedures would significantly delay issuance of the design approval and thus delivery of the affected aircraft. 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 issuance.

Comments Invited

Interested persons are invited to submit such written data, views, or arguments as they may desire. Communications should identify the regulatory docket or special condition number and be submitted in duplicate to the address specified above. All communications received on or before the closing date for comments will be considered by the Administrator. The special conditions may be changed in light of the comments received. All

comments received will be available in the Rules Docket for examination by interested persons, both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerning this rulemaking will be filed in the docket. Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. CE247." The postcard will be date stamped and returned to the commenter.

Background

On February 11, 2002, Thielert Aircraft Engines applied for a supplemental type certificate for the Piper PA 28-161 Cadet, Warrior II and Warrior III series airplanes. The supplemental type certificate will allow Thielert Aircraft Engines to install a Thielert Aircraft engine (TAE 125-01 Aircraft Diesel Engine (ADE)) that is equipped with an electronic engine control system with full authority capability in these airplanes.

Type Certification Basis

Under the provisions of 14 CFR, part 21, § 21.101, Thielert Aircraft Engines must show that the Piper PA 28-161 Cadet, Warrior II and Warrior III series airplanes, as changed, continues to meet the applicable provisions of regulations incorporated by reference in the original certification basis of the Piper PA 28-161 Cadet, Warrior II and Warrior III series airplanes, as listed on Type Certificate No. 2A13; exemptions, if any; and the special conditions adopted by this rulemaking action. The Piper PA 28-161 Cadet, Warrior II and Warrior III series airplanes were originally certified under Part 3 of the Civil Air Regulations.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, CAR 3; 14 CFR, part 23) do not contain adequate or appropriate safety standards for the Piper PA 28-161 Cadet, Warrior II and Warrior III series airplanes because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions, as appropriate, as defined in § 11.19, are issued in accordance with § 11.38, and become part of the certification basis for the supplemental type certification basis in accordance with § 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

models that are listed on the same type certificate to incorporate the same novel or unusual design features, the special conditions would also apply under the provisions of § 21.101.

Novel or Unusual Design Features

The Thielert Aircraft Engines modified Piper PA 28–161 Cadet, Warrior II and Warrior III series airplanes will incorporate a novel or unusual design feature, an engine that includes an electronic control system with Full Authority Digital Engine control (FADEC) capability.

Many advanced electronic systems are prone to either upsets or damage, or both, at energy levels lower than analog systems. The increasing use of high power radio frequency emitters mandates requirements for improved High Intensity Radiated Fields (HIRF) protection for electrical and electronic equipment. Since the electronic engine control system used on the Thielert Aircraft Engines modified Piper PA 28–161 Cadet, Warrior II and Warrior III series airplanes will perform critical functions, provisions for protection from the effects of HIRF should be considered and, if necessary, incorporated into the airplane design data. The FAA policy contained in Notice 8110.71, dated April 2, 1998, establishes the HIRF energy levels that airplanes will be exposed to in service. The guidelines set forth in this notice are the result of an Aircraft Certification Service review of existing policy on HIRF, in light of the ongoing work of the Aviation Rulemaking Advisory Committee (ARAC) Electromagnetic Effects Harmonization Working Group (EEHWG). The EEHWG adopted a set of HIRF environment levels in November 1997 that were agreed upon by the FAA, the Joint Aviation Authorities (JAA), and industry participants. As a result, the HIRF environments in this notice reflect the environment levels recommended by this working group. This notice states that a FADEC is an example of a system that should address the HIRF environments.

Even though the control system will be certificated as part of the engine, the installation of an engine with an electronic control system requires evaluation due to the possible effects on or by other airplane systems (e.g., radio interference with other airplane electronic systems, shared engine and airplane power sources). The regulatory requirements in 14 CFR, part 23 for evaluating the installation of complex systems, including electronic systems, 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 certificated as part of the engine (reference § 23.1309(f)(1)). Also, electronic control systems often require inputs from airplane data and power sources and outputs to other airplane systems (e.g., automated cockpit powerplant controls such as mixture setting). Although the parts of the system that are not certificated with the engine could be evaluated using the criteria of § 23.1309, the integral nature of systems such as these makes it unfeasible to evaluate the airplane portion of the system without including the engine portion of the system. However, § 23.1309(f)(1) again prevents complete evaluation of the installed airplane system since evaluation of the engine system's effects is not required.

Therefore, special conditions are proposed for the Thielert Aircraft Engines modified Piper PA 28–161 Cadet, Warrior II and Warrior III series airplanes to provide HIRF protection and to evaluate the installation of the electronic engine control system for compliance with the requirements of § 23.1309(a) through (e) at Amendment 23–49.

Applicability

As discussed above, these special conditions are applicable to the Thielert Aircraft Engines modified Piper PA 28–161 Cadet, Warrior II and Warrior III series airplanes. Should Thielert Aircraft Engines apply at a later date for a supplemental type certificate to modify any other model included on the same type certificate as the Thielert Aircraft Engines modified Piper PA 28–161 Cadet, Warrior II and Warrior III series airplanes to incorporate the same novel or unusual design features, the special conditions would apply to that model as well under the provisions of § 21.101.

Conclusion

This action affects only certain novel or unusual design features on Piper PA 28–161 Cadet, Warrior II and Warrior III series 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 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:

Authority: 49 U.S.C. 106(g), 40113 and 44701; 14 CFR 21.16 and 21.101; and 14 CFR 11.38 and 11.19.

The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the supplemental type certification basis for Thielert Aircraft Engines modified Piper PA 28–161 Cadet, Warrior II and Warrior III series airplanes.

1. *High Intensity Radiated Fields (HIRF) Protection.* In showing compliance with 14 CFR part 21 and the airworthiness requirements of 14 CFR part 23, protection against hazards caused by exposure to HIRF fields for the full authority digital engine control system, which performs critical functions, must be considered. To prevent this occurrence, the electronic engine control system must be designed and installed to ensure that the operation and operational capabilities of this critical system are not adversely affected when the airplane is exposed to high energy radio fields.

At this time, the FAA and other airworthiness authorities are unable to precisely define or control the HIRF energy level to which the airplane will be exposed in service; therefore, the FAA hereby defines two acceptable interim methods for complying with the requirement for protection of systems that perform critical functions.

(1) The applicant may demonstrate that the operation and operational capability of the installed electrical and electronic systems that perform critical functions are not adversely affected when the aircraft is exposed to the external HIRF threat environment defined in the following table:

Frequency	Field strength (volts per meter)	
	Peak	Average
10 kHz–100 kHz	50	50
100 kHz–500 kHz	50	50
500 kHz–2 MHz	50	50
2 MHz–30 MHz	100	100
30 MHz–70 MHz	50	50
70 MHz–100 MHz	50	50
100 MHz–200 MHz	100	100
200 MHz–400 MHz	100	100
400 MHz–700 MHz	700	50
700 MHz–1 GHz	700	100
1 GHz–2 GHz	2000	200

Frequency	Field strength (volts per meter)	
	Peak	Average
2 GHz–4 GHz	3000	200
4 GHz–6 GHz	3000	200
6 GHz–8 GHz	1000	200
8 GHz–12 GHz	3000	300
12 GHz–18 GHz	2000	200
18 GHz–40 GHz	600	200

The field strengths are expressed in terms of peak root-mean-square (rms) values.

or, (2) The applicant may demonstrate by a system test and analysis that the electrical and electronic systems that perform critical functions can withstand a minimum threat of 100 volts per meter peak electrical strength, without the benefit of airplane structural shielding, in the frequency range of 10 kHz to 18 GHz. When using this test to show compliance with the HIRF requirements, no credit is given for signal attenuation due to installation. Data used for engine certification may be used, when appropriate, for airplane certification.

2. *Electronic Engine Control System.* The installation of the electronic engine control system must comply with the requirements of § 23.1309(a) through (e) at Amendment 23–49. The intent of this requirement is not to re-evaluate the inherent hardware reliability of the control itself, but rather determine the effects, including environmental effects addressed in § 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.

With respect to compliance with § 23.1309(e), the levels required for compliance shall be at the levels for catastrophic failure conditions.

Issued in Kansas City, Missouri on June 7, 2006.

David R. Showers,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. E6–9228 Filed 6–13–06; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 23

[Docket No. CE242; Special Conditions No. 23–182–SC]

Special Conditions: AmSafe, Inc.; Approved Model List; Installation of AmSafe Inflatable Restraints in Normal and Utility Category Non-23.562 Certified Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for the installation of an AmSafe, Inc., Inflatable Two-, Three-, Four- or Five-Point Restraint Safety Belt with an Integrated Airbag Device on various airplane models. These airplanes, as modified by AmSafe, Inc., will have a novel or unusual design feature(s) associated with the lap belt or shoulder harness portion of the safety belt, which contains an integrated airbag device. 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: *Effective Date:* The effective date of these special conditions is June 6, 2006.

FOR FURTHER INFORMATION CONTACT: Mr. Mark James, Federal Aviation Administration, Aircraft Certification Service, Small Airplane Directorate, ACE–111, 901 Locust, Room 301, Kansas City, Missouri 64106; 816–329–4137, fax 816–329–4090 e-mail mark.james@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

On August 19, 2005, AmSafe, Inc., Aviation Inflatable Restraints (AAIR) Division, 1043 North 47th Avenue, Phoenix, AZ 85043, applied for a supplemental type certificate for the installation of an inflatable restraint in various airplane models certified before the dynamic structural requirements as specified in 14 CFR, part 23, § 23.562, took effect.

The inflatable restraint system is either a two-, three-, four-, or five-point safety belt restraint system consisting of a shoulder harness and a lap belt with an inflatable airbag attached to either the lap belt or the shoulder harness. The

inflatable portion of the restraint system will rely on sensors to electronically activate the inflator for deployment. The inflatable restraint system will be made available on the pilot, co-pilot, and passenger seats of these airplanes.

In the event of an emergency landing, the airbag will inflate and provide a protective cushion between the occupant's head and structure within the airplane. This will reduce the potential for head and torso injury. The inflatable restraint behaves in a manner that is similar to an automotive airbag, but in this case, the airbag is integrated into the lap or shoulder belt. While airbags and inflatable restraints are standard in the automotive industry, the use of an inflatable restraint system is novel for general aviation operations.

The FAA has determined that this project will be accomplished on the basis of not lowering the current level of safety of the airplanes' original certification basis. The FAA has two primary safety concerns with the installation of airbags or inflatable restraints:

- That they perform properly under foreseeable operating conditions; and
- That they do not perform in a manner or at such times as to impede the pilot's ability to maintain control of the airplane or constitute a hazard to the airplane or occupants.

The latter point has the potential to be the more rigorous of the requirements. An unexpected deployment while conducting the takeoff or landing phases of flight may result in an unsafe condition. The unexpected deployment may either startle the pilot, or generate a force sufficient to cause a sudden movement of the control yoke. Either action could result in a loss of control of the airplane, the consequences of which are magnified due to the low operating altitudes during these phases of flight. The FAA has considered this when establishing these special conditions.

The inflatable restraint system relies on sensors to electronically activate the inflator for deployment. These sensors could be susceptible to inadvertent activation, causing deployment in a potentially unsafe manner. The consequences of an inadvertent deployment must be considered in establishing the reliability of the system. AmSafe, Inc., must show that the effects of an inadvertent deployment in flight are not a hazard to the airplane or that an inadvertent deployment is extremely improbable. In addition, general aviation aircraft are susceptible to a large amount of cumulative wear and tear on a restraint system. It is likely that the potential for inadvertent