

(3) A recommended speed for flight in rough air. This speed must be chosen to protect against the occurrence, as a result of gusts, of structural damage to the airplane and loss of control (for example, stalling);

(4) Procedures for restarting any turbine engine in flight, including the effects of altitude; and

(5) Procedures, speeds, and configuration(s) for making a normal approach and landing, in accordance with SC 23.73 and § 23.75, and a transition to the balked landing condition.

(6) [Reserved]

(b) [Reserved]

(c) In addition to paragraph (a) of this special condition, the following information must be furnished:

(1) Procedures, speeds, and configuration(s) for making an approach and landing with one engine inoperative;

(2) Procedures, speeds, and configuration(s) for making a balked landing with one engine inoperative and the conditions under which a balked landing can be performed safely, or a warning against attempting a balked landing;

(3) The  $V_{SSE}$  determined in § 23.149; and

(4) Procedures for restarting any engine in flight including the effects of altitude.

(d) [Reserved]

(e) [Reserved]

(f) In addition to paragraphs (a) and (c) of this section, the information must include the following:

(1) Procedures, speeds, and configuration(s) for making a normal takeoff.

(2) Procedures and speeds for carrying out an accelerate-stop in accordance with SC 23.55.

(3) Procedures and speeds for continuing a takeoff following engine failure in accordance with SC 23.59(a)(1) and for following the flight path determined under SC 23.57 and SC 23.61(a).

(g) Information identifying each operating condition in which the fuel system independence prescribed in § 23.953 is necessary for safety must be furnished, together with instructions for placing the fuel system in a configuration used to show compliance with that section.

(h) For each airplane showing compliance with § 23.1353(g)(2) or (g)(3), the operating procedures for disconnecting the battery from its charging source must be furnished.

(i) Information on the total quantity of usable fuel for each fuel tank, and the effect on the usable fuel quantity, as a

result of a failure of any pump, must be furnished.

(j) Procedures for the safe operation of the airplane's systems and equipment, both in normal use and in the event of malfunction, must be furnished.

## 25. SC 23.1587 Performance Information

Instead of compliance with § 23.1587, the following apply:

Unless otherwise prescribed, performance information must be provided over the altitude and temperature ranges required by SC 23.45(b).

(a) The following information must be furnished—

(1) The stalling speeds  $V_{SO}$  and  $V_{S1}$  with the landing gear and wing flaps retracted, determined at maximum weight under § 23.49, and the effect on these stalling speeds of angles of bank up to 60 degrees;

(2) The steady rate and gradient of climb with all engines operating, determined under § 23.69(a);

(3) The landing distance, determined under § 23.75 for each airport altitude and standard temperature, and the type of surface for which it is valid;

(4) The effect on landing distances of operation on other than smooth hard surfaces, when dry, determined under SC 23.45(g); and

(5) The effect on landing distances of runway slope and 50 percent of the headwind component and 150 percent of the tailwind component.

(b) [Reserved].

(c) [Reserved]

(d) In addition to paragraph (a) of this section, the following information must be furnished—

(1) The accelerate-stop distance determined under SC 23.55;

(2) The takeoff distance determined under SC 23.59(a);

(3) At the option of the applicant, the takeoff run determined under SC 23.59(b);

(4) The effect on accelerate-stop distance, takeoff distance and, if determined, takeoff run, of operation on other than smooth hard surfaces, when dry, determined under SC 23.45(g);

(5) The effect on accelerate-stop distance, takeoff distance, and if determined, takeoff run, of runway slope and 50 percent of the headwind component and 150 percent of the tailwind component;

(6) The net takeoff flight path determined under SC 23.61(b);

(7) The enroute gradient of climb/descent with one engine inoperative, determined under § 23.69(b);

(8) The effect, on the net takeoff flight path and on the enroute gradient of

climb/descent with one engine inoperative, of 50 percent of the headwind component and 150 percent of the tailwind component;

(9) Overweight landing performance information (determined by extrapolation and computed for the range of weights between the maximum landing and maximum takeoff weights) as follows—

(i) The maximum weight for each airport altitude and ambient temperature at which the airplane complies with the climb requirements of SC 23.63(d)(2); and

(ii) The landing distance determined under § 23.75 for each airport altitude and standard temperature.

(10) The relationship between IAS and CAS determined in accordance with SC 23.1323(b) and (c).

(11) The altimeter system calibration required by § 23.1325(e).

Issued in Kansas City, Missouri on April 2, 2009.

**John Colomy,**

*Acting Manager, Small Airplane Directorate, Aircraft Certification Service.*

[FR Doc. E9-8581 Filed 4-14-09; 8:45 am]

**BILLING CODE 4910-13-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 23

[Docket No. CE291; Special Conditions No. 23-231-SC]

#### Special Conditions: Spectrum Aeronautical, LLC Model 40; Lithium Polymer Battery Installation

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

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Spectrum Aeronautical, LLC Model 40 (S-40) airplane. This airplane will have a novel or unusual design feature associated with the installation of lithium polymer (Li-Poly) batteries for emergency, main, and auxiliary power unit (APU) applications. 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:* April 7, 2009.

**FOR FURTHER INFORMATION CONTACT:** Jim Brady, Aerospace Engineer, Standards

Office (ACE-111), Small Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone (816) 329-4132.

#### SUPPLEMENTARY INFORMATION:

##### Background

On November 21, 2007, Spectrum Aeronautical, LLC applied for a type certificate for their new model 40 airplane. The model 40 (S-40) airplane is a 2+9 (pilots + passengers) conventionally configured low wing normal category twin-engine jet airplane manufactured primarily from advanced carbon fiber composite materials. The model S-40 is designed to be certified for a single pilot operation for day, night, VFR, IFR and flight into known icing operations at altitudes up to 45,000 feet. The company will show compliance with Reduced Vertical Separation Minimums (RVSM) requirements. Spectrum proposes to utilize lithium polymer (Li-Poly) batteries for emergency, main, and auxiliary power unit (APU) on the model S-40 airplane.

##### Type Certification Basis

Under the provisions of 14 CFR part 21, § 21.17, Spectrum Aeronautical, LLC must show that the model S-40 meets the applicable provisions of part 23, as amended by Amendments 23-1 through 23-57 thereto.

In addition, the certification basis includes certain special conditions, and exemptions that are not relevant to these special conditions.

In addition to the applicable airworthiness regulations and special conditions, the S-40 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 and the FAA must issue a finding of regulatory adequacy under § 611 of Public Law 92-574, the "Noise Control Act of 1972."

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 23) do not contain adequate or appropriate safety standards for the model S-40 because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

The FAA issues special conditions, as defined in § 11.19, under § 11.38 and they become part of the type certification basis under § 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 or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

##### Novel or Unusual Design Features

The Spectrum S-40 will incorporate the following novel or unusual design features: Spectrum proposes to utilize lithium polymer (Li-Poly) batteries for emergency, main, and auxiliary power unit (APU) on the Spectrum S-40 airplane model. This type of battery possesses certain failure and operational characteristics, and maintenance requirements that differ significantly from that of the nickel cadmium (Ni-Cd) and lead acid rechargeable batteries currently approved for installation in small airplanes. Current regulations in 14 CFR part 23 do not address installation of Li-Poly batteries. This special condition is being proposed to require that all characteristics of the Li-Poly battery and its installation that could affect safe operation of the Spectrum S-40 airplane are addressed, along with establishing that appropriate maintenance requirements must be provided to ensure electrical power is available from the batteries when needed.

##### Discussion of Comments

Notice of proposed special conditions No. 23-08-05-SC for the Spectrum Aeronautical, LLC Model 40 (S-40) airplanes was published on December 2, 2008 (73 FR 73195). No comments were received, and the special conditions are adopted as proposed except for paragraphs (8), (9), and (10). In paragraph (8), we added the words "state of charge" to indicate the condition of the batteries. In paragraph (9), we added the word "manufacturer's" to indicate which maintenance manual we were discussing. Finally, in paragraph (10), we reworded the paragraph to clarify the intent.

As discussed above, these special conditions are applicable to the Spectrum S-40. Should Spectrum Aeronautical LLC apply at a later date for a change to the type certificate to include another model on the same type certificate incorporating the same novel or unusual design feature, the 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 it affects only the applicant who applied to the FAA for

approval of these features on the airplane.

##### List of Subjects in 14 CFR Part 23

Aircraft, Aviation safety, Signs and Symbols.

■ 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 Spectrum Aeronautical, LLC model S-40 airplanes.

##### *Spectrum Aeronautical, LLC Model 40 Lithium Polymer Battery Installation*

In lieu of the requirements of 14 CFR part 23, § 23.1353(a) through (e), lithium polymer batteries and battery installations on the Spectrum S-40 airplane must be designed and installed as follows:

(1) Safe cell temperatures and pressures must be maintained during any probable charging or discharging condition, or during any failure of the charging or battery monitoring system not shown to be extremely remote. The Li-Poly battery installation must be designed to preclude explosion or fire in the event of those failures.

(2) Li-Poly batteries must be designed to preclude the occurrence of self-sustaining, uncontrolled increases in temperature or pressure.

(3) No explosive or toxic gasses emitted by any Li-Poly battery in normal operation or as the result of any failure of the battery charging or monitoring system, or battery installation not shown to be extremely remote, may accumulate in hazardous quantities within the airplane.

(4) Li-Poly batteries that contain flammable fluids must comply with the flammable fluid fire protection requirements of 14 CFR part 23, § 23.863(a) through (d).

(5) No corrosive fluids or gasses that may escape from any Li-Poly battery may damage surrounding airplane structure or adjacent essential equipment.

(6) Each Li-Poly battery installation must have provisions to prevent any hazardous effect on structure or essential systems that may be caused by the maximum amount of heat the battery can generate during a short circuit of the battery or of its individual cells.

(7) Li-Poly battery installations must have a system to control the charging

rate of the battery automatically, so as to prevent battery overheating or overcharging, and

(i) A battery temperature sensing and over-temperature warning system with a means for automatically disconnecting the battery from its charging source in the event of an over-temperature condition, or,

(ii) A battery failure sensing and warning system with a means for automatically disconnecting the battery from its charging source in the event of battery failure.

(8) Any Li-Poly battery installation whose function is required for safe operation of the airplane, must incorporate a monitoring and warning feature that will provide an indication to the appropriate flight crewmembers, whenever the capacity and state of charge of the batteries have fallen below levels considered acceptable for dispatch of the airplane.

(9) The Instructions for Continued Airworthiness (ICAW) must contain recommended manufacturer's maintenance and inspection requirements to ensure that batteries, including single cells, meet a safety function level essential to the aircraft's continued airworthiness.

(i) The ICAW must contain operating instructions and equipment limitations in an installation maintenance manual.

(ii) The ICAW must contain installation procedures and limitation in a maintenance manual, sufficient to ensure that cells or batteries, when installed according to the installation procedures, still meet safety functional levels, essential to the aircraft's continued airworthiness. The limitation must identify any unique aspects of the installation.

(iii) The ICAW must contain corrective maintenance procedures to functionally check battery capacity at manufacturers recommended inspection intervals.

(iv) The ICAW must contain scheduled servicing information to replace batteries at manufacturers recommended replacement time.

(v) The ICAW must contain maintenance inspection requirements to visually check for a battery and/or charger degradation.

(10) The ICAW must contain maintenance procedures to check, at manufacturer's recommended inspection intervals, the function of any batteries in a rotating stock (spares) that experience degraded charge retention capability or other damage due to prolonged storage.

(11) System Safety Assessment process should address the software and complex hardware levels for the

sensing, monitoring and warning systems, if these systems contain complex devices. The functional hazard assessment (FHA) for the system is required based on the intended functions described. The criticality of the specific functions will be determined by the safety assessment process for compliance with 14 CFR part 23, § 23.1309, and Advisory Circular 23.1309-1C contains acceptable means for accomplishing this requirement. For determining the failure condition, the criticality of a function will include the mitigating factors. The failure conditions must address the loss of function and improper operations.

It should be noted that these special conditions are not intended to replace 14 CFR part 23, § 23.1353 in the certification basis of the Spectrum model S-40 airplanes. The special conditions apply only to Li-Poly batteries and battery installations. The battery requirements of 14 CFR part 23, § 23.1353 would remain in effect for batteries and battery installations on the Spectrum airplane that do not utilize Li-Poly chemistry.

Issued in Kansas City, Missouri on April 7, 2009.

**John Colomy,**

*Acting Manager, Small Airplane Directorate, Aircraft Certification Service.*

[FR Doc. E9-8582 Filed 4-14-09; 8:45 am]

**BILLING CODE 4910-13-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2009-0347; Directorate Identifier 2009-CE-022-AD; Amendment 39-15883; AD 2009-08-10]

**RIN 2120-AA64**

#### **Airworthiness Directives; Pilatus Aircraft Ltd. Model PC-12/47E Airplanes**

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

**ACTION:** Final rule; request for comments.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for the products listed above that will supersede an existing AD. This AD results from mandatory continuing airworthiness information (MCAI) issued by the aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

Field reports have indicated that the possibility exists that both Primary Flight Displays (PFDs) could indicate a roll attitude offset of up to 10 degrees in the same direction if an accelerated turn onto the active runway is performed immediately followed by take-off. This condition has been reported to correct itself after several minutes.

This situation, if not corrected, could result in an undesired bank angle, which would constitute an unsafe condition.

This AD requires actions that are intended to address the unsafe condition described in the MCAI.

**DATES:** This AD becomes effective April 20, 2009.

On April 20, 2009, the Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD.

We must receive comments on this AD by May 15, 2009.

**ADDRESSES:** You may send comments by any of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- *Fax:* (202) 493-2251.

- *Mail:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

- *Hand Delivery:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone (800) 647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Doug Rudolph, Aerospace Engineer, 901 Locust, Room 301, Kansas City, Missouri 64106; *telephone:* (816) 329-4059; *fax:* (816) 329-4090.

#### **SUPPLEMENTARY INFORMATION:**

##### **Discussion**

On February 12, 2009, we issued AD 2009-04-14, Amendment 39-15820 (74 FR 7810; February 20, 2009). That AD required actions intended to address an unsafe condition on the products listed above.