

## Standard Change CS-SC034c

### EXCHANGE OF AN EXISTING BATTERY FOR A LITHIUM IRON PHOSPHATE (LiFePO<sub>4</sub>) BATTERY SYSTEM

#### 1. Purpose

This SC is for the exchange of an existing battery for LiFePO<sub>4</sub>-type battery systems in aircraft.

This SC does not cover nor replace the applicable regulations for the handling, storage, transport, or disposal of batteries.

*Note:* This SC does not cover the installation of a battery in a new location.

#### 2. Applicability/Eligibility

This SC is applicable to sailplanes, including powered sailplanes.

#### 3. Acceptable methods, techniques, and practices

- Before installation, a statement has to be available to ensure that the battery systems, batteries or the battery cells are compliant at least with one of the following standards:
  - RTCA DO-347, Certification Test Guidance for Small and Medium Sized Rechargeable Lithium Batteries and Battery Systems; or
  - RTCA DO-311A, Minimum Operational Performance Standards for Rechargeable Lithium Batteries and Battery Systems; or
  - UL 1642, Standard for Lithium Batteries, or equivalent standards; or
  - UL 2054, Standard for Household and Commercial Batteries, or equivalent standards; or
  - UL 62133 Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes – Safety Requirements for Portable Sealed Secondary Cells, and for Batteries Made From Them, for Use in Portable Applications, or equivalent standards; or
  - UL 1973 Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications, or equivalent standards; or
  - IEC 62133-2 Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary lithium cells, and for batteries made from them, for use in portable applications, Part 2: Lithium systems, or equivalent standards.
- The battery systems, batteries or the battery cells are eligible for installation without an EASA Form 1.
- For installation purposes, FAA Advisory Circular AC 43.13-2B, Chapters 1 and 2, and FAA Advisory Circular AC 43.13-1B, Chapter 11, or ASTM F2639-18 or subsequent revisions contain acceptable data.
- Any impact on the weight and balance of the aircraft needs to be considered.
- It must be possible for the pilot to disconnect the battery from the electric system in flight.

*Note:* For example, a standard master battery switch commonly found in most aircraft is an acceptable means to disconnect the battery.

**4. Limitations**

- Batteries that are used for propulsion are not covered.
- Starter batteries are not covered.
- The battery system shall have an integrated battery management system provided by the battery manufacturer.
- Each installed battery system shall have a maximum capacity of 160 Wh.
- Any limitation defined by the battery system manufacturer applies.

**5. Manuals**

Amend the ICAs to introduce the required maintenance actions/inspections and intervals.

**6. Release to service**

A release to service of the aircraft by the pilot-owner is acceptable only if the original battery mounting and connectors remain.

[Issue: STAN/2]

[Issue: STAN/3]

[Issue: STAN/4]