



Federal Aviation Administration

Memorandum

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To: See Distribution List

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Subject: Information: Designee Support of Repairs and Alterations Involving Lithium
Batteries and Battery Systems

Memo No. AIR100-15-140-GM50

This memorandum provides information and instruction to Aircraft Certification Offices (ACO), Organization Designation Authorization (ODA) holders, and Designated Engineering Representatives (DER) regarding support of repairs and alterations that involve rechargeable or non-rechargeable lithium batteries on transport category airplanes.

A battery system consists of the battery, battery charger (if the battery is rechargeable), and any protective, monitoring, and alerting circuitry or hardware inside or outside of the battery. It also includes vents (where necessary) and packaging. In this memorandum, we will refer to both a battery and a battery system as a battery.

Updated Guidance Material

FAA Order 8300.16, *Major Repair and Alteration Data Approval*, paragraph 1-5, states that the Flight Standards Service (AFS) Major Repair and Alteration Data Approval Job Aid provides policy on approval methods for specific major repairs and alterations. The job aid is available at http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs300/media/Major_Repair_Alteration_Job-Aid.pdf.

The FAA recently revised section H, items 7 and 8, of the table for transport category airplanes in this job aid to indicate when a change involving a lithium battery is to be approved through a supplemental type certificate (STC), and when an ACO, DER, or ODA unit member may approve repair or alteration data.

The job aid states that changes to designs involving lithium batteries are to be approved through an STC project, except in the following cases:

1. Non-rechargeable batteries in accessible areas for which applicable special conditions have been established. The job aid defines an “accessible area” as an area normally occupied by crew or passengers during flight that is reachable with the contents of a hand fire extinguisher without moving any panels. If established, these requirements are identified in the certification basis section of the type certificate data sheet (TCDS) or STC.
2. Very small batteries (for example, button/coin cells) not required for safe operation of the airplane that have less than 2 watt-hours of energy and meet Underwriters Laboratories (UL) 1642, UL 2054, or International Electrotechnical Commission (IEC) 62133.

The job aid also states that the following changes require coordination with the ACO, because compliance with special conditions must be demonstrated in addition to compliance with the airworthiness standards of Title 14 of the Code of Federal Regulations part 25:

- Changes to designs involving non-rechargeable lithium batteries in accessible areas for which applicable special conditions are identified in the certification basis section of the TCDS or STC. Very small batteries (for example, button/coin cells) not required for safe operation of the airplane that have less than 2 watt-hours of energy and meet UL 1642 or UL 2054 are exceptions that do not require coordination with the ACO.

Instruction

When requested to support a repair or alteration involving a lithium battery, a DER or ODA unit member must—

- Ensure the approval method (for example, STC or ACO coordinated field approval) is consistent with that allowed in the AFS Major Repair and Alteration Data Approval Job Aid.
- Ensure special conditions have been established for the lithium battery installation, except for those not required for safe operation of the airplane with less than 2 watt-hours of energy that meet UL 1642, UL 2054, or IEC 62133. If special conditions were not established, an STC project should be initiated through an ACO to approve the change as stated in the AFS Major Repair and Alteration Data Approval Job Aid.

Until a designee demonstrates through experience a sufficient understanding of compliance, ACOs should only authorize the designee to *recommend* approval of data associated with lithium battery special conditions.

When a ACO coordination is required by the job aid, the ACO is to ensure that the method of compliance in applicable issue papers are used or coordinate with the Transport Standards Staff on an acceptable alternative.

If there are any questions regarding this policy, please contact Mike Thompson at michael.t.thompson@faa.gov or Jon Mowery at jon.mowery@faa.gov or 202-267-1575.

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