

Revision 0

### Non-aeronautical lead acid batteries

3 March 1997

#### General

Civil Aviation Authority (CAA) Advisory Circulars (ACs) contain information about standards, practices, and procedures that the Director has found to be an **acceptable means of compliance** with the associated rule.

Consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices, or procedures are found to be acceptable they will be added to the appropriate AC.

#### Purpose

This AC describes an acceptable means of compliance with Civil Aviation Rule Part 43 relating to the use of non-aeronautical lead acid batteries in aircraft.

#### Related Rules

AC 43-12 relates to Civil Aviation Rule Part 43 - *General Maintenance Rules*.

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## General

Under Part 91 operators are required to ensure that their aircraft is maintained in an airworthy condition. Part 43 contains requirements for maintenance that must be complied with to assure this airworthiness. Part 43 includes the requirement that approved parts be used and that an aircraft remain in its original or properly modified condition.

- Non-aeronautical lead acid batteries may be approved for installation in the following aircraft types:
- Non-aerobatic aircraft operating under VFR only
- Gliders

The conditions for fitting a non-aeronautical lead acid battery include:

- Only new batteries should be used. Rebuilt, re-plated, or reconditioned batteries will not be considered acceptable
- Batteries should comply with the standards in this advisory circular
- A modification for the fitment of the battery must be raised for approval in accordance with Part 21

## Acceptable standards

The following standards are acceptable for the development of modifications to utilise non-aeronautical batteries:

- Australian/New Zealand Standard;  
AS/NZS 2176
- British Standards;  
BS 3911  
BS 6475
- Society of Aeromotive Engineers;  
SAE J537
- International Electrotechnical Commission:  
IEC 95-1  
IEC 95-2  
IEC 952-1  
IEC 952-2  
IEC 952-3

Batteries in the YUASA NP series are also acceptable.

## Modification information

The following factors shall be addressed in the modification package submitted for approval in accordance with Part 21:

- Installation
  - Mounting and restraint should be provided appropriate for the aircraft's type of operation
  - There should be clear and permanent identification of battery lead polarity
  - Suitable insulation should be fitted to either the battery or surrounding aircraft structure to prevent any exposed terminal or inter-cell connector coming into contact with the aircraft structure
  - A load analysis should be provided to check that the battery provides adequate capacity for the anticipated electrical loads
  - Appropriate aircraft weight and balance should be calculated
  
- Maintenance
  - Terminals, preferably non-interchangeable terminals, should provide good continuing contact with the battery terminals
  - Suitable access should be provided to allow maintenance tasks to be carried out in-situ or the battery should be readily removable for inspection or servicing
  
- Operation

There should be adequate venting, draining, and acid proofing provided for the battery compartment

When the battery being used is of the lead acid paste or gel cell type, there is no requirement for a battery compartment drain.