



**SAFT**

## Nickel cadmium aircraft battery life

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### 1. Life duration

The life duration of a battery is subject to various factors such as:

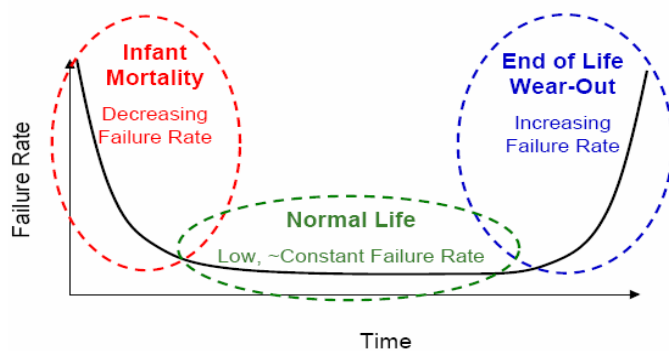
- number of operating hours
- the aircraft utilisation – flight duration, flights per day etc.
- the ambient temperature
- the battery start frequency
- the on board charging system
- maintenance capability

It is therefore difficult to determine in advance how long the expected life of a battery will be in the real situation. It is also why it is very important to follow the maintenance procedures described in the CMM or OMM.

It should be noted that **maximum life duration is 12 years. Saft accepts no responsibility for the battery after this.**

### 2. Cell replacement during battery life

It is normal for a number of cells to require replacement during the life of a battery. There is no significant effect on the life of a new cell from mixing it with older cells. Studies have shown that new cells will have slightly higher voltage in discharge and slightly lower voltage in charge. Cell failure follows the usual 'bathtub' curve (see illustration below)



While some users go on replacing cell after cell in their batteries for an indefinite period, most users prefer to replace all the cells (or the whole battery, which is usually more cost effective) when the number of failed cells reaches a certain number. This avoids going too far into the wear-out phase of battery life when further removals begin to become necessary with growing frequency leading to higher costs and a greater risk of unscheduled removals.

This number may vary according to operator experience but in general **Saft requires to change all the cells or replace the complete battery if:**

- **one or more cells are found to be faulty and 5 of the original cells in the battery have previously been changed**
- **or 3 or more cells are found to be faulty during the same maintenance.**

All cells that are changed must be replaced by a new Saft cell

This is considered end of battery life whether all the cells are replaced or the complete battery is replaced.



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