Input paper: [[1]](#footnote-1) ENG8-n.n.n

Input paper for the following Committee(s): check as appropriate Purpose of paper:

**□** ARM **x** ENG **□** PAP **x** Input

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Workplan Task Number / Technical Domain 2 …………………………………

Working Group WG2

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Definition of battery cycle life

# Summary

Under ENG7 action 22 the IALA Secretariat was requested to upload definitions from Guideline G1067 to the IALA Dictionary.

## Related documents

Guideline G1067-3, Dec 2017.

# Definition of Cycle Life

The definition of cycle life in G1067-3 and in the Dictionary as follows:

1. The definition of cycle life in the Dictionary is: The number of cycles obtainable from a cell or battery under specified conditions.
2. The definition of cycle life in G1067-03 is: The cycle life (endurance) is the ability of the battery to withstand repeated charging and discharging.

The cycle life of a battery varies based on the conditions the battery is in. Factors such as temperature, movement, how frequently it is used etc. are important as well. For example, lithium polymer batteries function best in moderate temperatures because that is when the gel is at the optimum density to be fluid and still retain its conductivity. But heat it up too much, it becomes less dense, swelling up and reducing its conductivity. Therefore number of fully charging after discharging until a battery capacity reduced to %80 of capacity, that number is defined as cycle life. But in the display of the number of cycle life, it is essential that working temperature and DoD (depth of discharge) values are used together. For example the number of cycle life with %20 DoD , 25 °C and number of cycle life with %80 DoD and 40°C are totally different from each other.

In conclusion, in the light of information above cycle life may be defined as the battery’s ability to maintain its own useful capacity to withstand repeated charging and discharging under specified conditions.

# Action requested of the Committee

The Committee is requested to consider if the definition above may be regard as new definition of cycle life

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)
2. Input papers should be assigned to a work task as listed in the Committee work plan which is available in input papers. Leave open if uncertain but consider how the paper is to be processed if not relevant to a work task [↑](#footnote-ref-2)