EASA	COMMENT RESPONSE DOCUMENT
	Proposed Special Condition SC-LSA-F2480-01 on Propulsion Lithium Batteries (Applicable to LSA)

Commenter 1 : SIEMENS AG

Comment #1 : Special Condition

The current wording :

- Batteries cells and other subcomponents of the system should be designed, assembled and installed so as to minimize the effects of these failure modes. Design precautions might include :

• Mitigating the effect of thermal runaway or fire, and ensuring the surrounding structure might be able to withstand the thermal loads, corrosive fluids or gasses

• Designing the compartment for the battery in order to cope with overpressure or expansion.

is proposed to be amended as followed:

- Batteries cells and other subcomponents of the system should be designed, assembled and installed so as to minimize the effects of these failure modes. Design precautions might include :

• Mitigating the effect of thermal runaway or fire, and ensuring the surrounding structure might be able to withstand the thermal loads, corrosive fluids or gasses

• The battery and/or the battery installation compartment shall be designed to prevent hazardous overpressure scenarios.

To avoid such possible one-sided interpretation of term “cope with” that would exclude solutions e.g. venting out of pressure instead of e.g. sustaining it.

EASA response:
EASA agrees with the proposal. The SC will be modified as follows:

- Batteries cells and other subcomponents of the system should be designed, assembled and installed so as to minimize the effects of these failure modes. Design precautions might include :

• Mitigating the effect of thermal runaway or fire, and ensuring the surrounding structure might be able to withstand the thermal loads, corrosive fluids or gasses

• Designing the battery and/or the battery installation compartment to prevent hazardous overpressure scenarios.

Comment #2 : Special Condition

The current wording :

- Li battery installations must have a system to control the charging rate of the battery automatically so as to prevent battery overheating or overcharging, and,

• A battery temperature sensing and over-temperature warning system with a means for automatically disconnecting the battery from its charging source in the event of an over-temperature condition or,

• A battery failure sensing and warning system with a means for automatically disconnecting the battery from its charging source in the event of battery failure.

is proposed to be clarified:

These two bullets “OR’d” suggest equivalence of the two (2) sensing systems described in the sense of an “either – or” design decision. However not every battery failure might be accompanied by an overtemperature. SC to be clarified relative to the need of either one or both types of sensing and warning.

EASA response:

EASA agrees that SC wording is not clear enough and can lead to confusion. Both types of sensing and warning systems are needed. The SC will be modified accordingly:

- Li battery installations must have a system to control the charging rate of the battery automatically so as to prevent battery overheating or overcharging, and,

• A battery temperature sensing and over-temperature warning system with a means for automatically disconnecting the battery from its charging source in the event of an over-temperature condition ~~or~~ and,

• A battery failure sensing and warning system with a means for automatically disconnecting the battery from its charging source in the event of battery failure.

Comment #3 : Special Condition

The current wording :

- Li battery installations must have a system to control the charging rate of the battery automatically so as to prevent battery overheating or overcharging, and,

• A battery temperature sensing and over-temperature warning system with a means for automatically disconnecting the battery from its charging source in the event of an over-temperature condition or,

• A battery failure sensing and warning system with a means for automatically disconnecting the battery from its charging source in the event of battery failure.

is proposed to be clarified:

Discharging and excessive discharging to be considered in rephrasing of this paragraph because safe battery cell temperatures and pressures must be maintained during any charging and discharging condition.

EASA response: ***EASA agrees that discharging shall be addressed when it could represent a hazard. The following SC will be included:*** *- A protection against overcharge and critical discharge of the batteries shall be provided including deep or unbalanced discharge if necessary for the type of battery.*