

# M2110

*Posted on 27.02.2023 by Adam Parnell*

**Category:** [Superyachts](#)

**Report Title** Lithium-ion Battery Fire

## Initial Report

During recreational activities for the passengers, one E-foil jet ski stopped due to the battery running low while in use. It was decided to take the E-foil back to the yacht to replace the battery with a fully charged one.

The run-down battery was taken out and placed on the deck in the beach club and replaced with a fully charged one. 30 secs later, the used battery which had not been plugged in to commence charging, started smoking, and 3 secs later erupted into flames. The fire was extinguished in minutes using the installed hi-fog system and a fixed fire hose. The hi-fog automatically went off when two fire detector heads went into alarm.

A team wearing breathing apparatus went in after the flames were extinguished to retrieve the battery and ventilate the space before it was deemed safe to enter.

## Comment

The team handling the change of battery were very observant and acted swiftly to control the fire in its early stages, and the vessel should be praised for installing a hi-fog system and a fixed fire hose system as well as the response by the BA team. Clearly, there is a very good safety culture on board reinforced by good training of the members.

The leisure industry is using many more items of equipment that use lithium-ion batteries, so it is incumbent on all of us to better understand the hazards associated with their use.

Their unpredictable nature is a real cause for concern. CHIRP would like to understand in more detail why these batteries can be prone to spontaneous ignition and a thermal runaway reaction.

The thermal runaway occurs when the battery expels toxic gases, which ignite, rapidly increasing the temperature to a very high level.

It is thought that this can be brought about by the mechanical stress of the battery, heat stress or electrical stress, which can occur when overcharging the battery.

CHIRP feels that it is safe to say that good quality batteries which are properly looked after and taken out

of service at the end of their life, should ensure that self-ignition is minimised or eliminated. CHIRP would welcome more reports on incidents involving lithium-ion battery fires.

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## Key Issues

**Culture:** Excellent safety culture demonstrated by the boat crew – Does your organization have the same standards of equipment, training and response?

**Local Practices:** How thoroughly do you look at the procurement of batteries used to power your sports equipment? Do you have procedures for charging and disposal of the batteries?

**Alerting:** Are your members alerted to the potential hazards of lithium-ion battery incidents? Do you have a suitable training programme in place to mitigate the risks of a fire?

**teamwork**Teamwork

**lack\_of\_assertiveness**Assertiveness



