

Handling and Storing Lithium-Ion Batteries

By Tracey Boston

The MCA recently released new guidelines for yacht toys and tenders, effective June 2023, including monitoring batteries and recommendations on storage. With a number of total losses of yachts due to fires in the last



year and some having no determined cause, agencies are increasing the awareness of proper storage and charging of lithium-ion batteries.

In just the past three years, about 24 billion new lithium-ion cells have been produced worldwide. Internal manufacturer information says that every 10,000th cell is defective. "This does not mean that they all will cause a thermal runaway, but it is possible," says Rainer Daniel of Fisacon, a company leading the charge in the development of fully certified charging and storage boxes for yacht toy lithium-ion batteries.

In a thermal runaway, several things happen simultaneously, he says. Within a very short time, the battery burns and temperatures of 800°C-plus are generated, hydrocarbon explosions occur, and a toxic smoke-gas mixture with hydrofluoric acid forms. This acid is aggressive. It enters the body through the skin, causing no pain, but even small amounts are lethal. Plus, cells are thrown out of the battery at speeds of up to 300 m/sec.

Remember, your water toys are luxury assets and should be maintained just as you would maintain any other vessel part, with a high degree of care. The toys pose no threat if carefully maintained, but

there are some tips to greatly reduce the risk of water toy battery issues, as well as a solution for fire prevention.

- / Be observant. Check regularly for any signs of battery erosion or damage. According to the MCA, "If you notice any of the following: hissing, whistling, or popping, a possible sweet chemical smell, then black 'smoke' (nanoparticles of heavy metals, not smoke) then white vapor coming from the Li-ion battery or the watercraft generally, assume that it is heating and take appropriate firefighting measures."
- / Never charge a damaged battery, and only charge using the correct charger that came with the battery.
- / Follow manufacturer's guidelines when charging batteries and do not charge in a hot environment.
- / Avoid any water, especially saltwater, touching the battery. Never submerge batteries in water.
 - > For Fliteboards, check the side control glass. If water has ingressed into the battery compartment, the glass will show red.
 - > For Audi e-tron foils and Fliteboards, spray the connectors, both on the battery and on the mast connection points, with connector spray. This eliminates and dries out saltwater on the connectors.
- / Always remove batteries from the e-foils at the end of the day and store batteries in recommended boxes, cupboards, or cabinets.

Tracey Boston has been a yacht steward for more than 10 years and currently manages the social media & digital marketing for Ocean Premium, a leading company for water toy rentals and sales, providing water toy maintenance and repair support. Fisacon is an advisor for Ocean Premium. oceanpremium.com; fisacon.com

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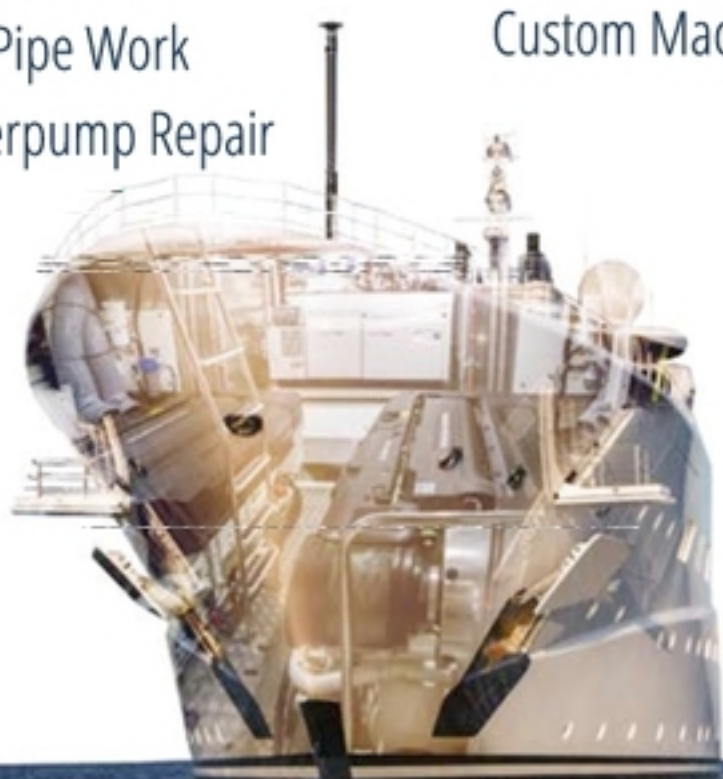
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