

LITHIUM-ION BATTERY FIRES



Source: NTSB - Lessons Learned from Marine Investigations.

- **HELMET ELEMENT 4 'Safety' – Item 5 'Communication Means & Equipment'**
- **Code of Safe Working Practices for Merchant Seafarers - 20.17 'Storage batteries: general' & 3.3.5 'Lithium-Ion Batteries'**

INCIDENT

During an onboard Navigational audit, the PAS Auditor observed that the portable VHF radios were left charging continuously unattended, while the vessel was alongside. The Auditor suggested to ensure that portable radios are charged only under supervision and remove them from the chargers upon process completion, in accordance with manufacturer's instructions.

WHY IS THIS IMPORTANT?

Over the past years, there have been an increasing number of reported incidents involving lithium-ion battery fires onboard vessels. After investigation, it has been concluded that such fire incidents were caused by lithium-ion battery cells on the communications table exploding. Lithium-ion battery cell explosions are usually caused by a thermal runaway - a failure mode for lithium-ion batteries, where overheating leads to a self-sustaining reaction, releasing a large amount of heat.

LESSONS LEARNED

The vessel's personnel can help prevent thermal runaways by doing the following:

- Follow manufacturers' instructions for the care and maintenance of lithium-ion batteries.
- Ensure that damaged batteries are properly disposed.
- Avoid unsupervised charging.
- Keep batteries and chargers away from heat sources and flammable materials.
- Use your critical thinking to assess the working environment and whenever you notice such unsafe condition, take immediate action.

Additionally, companies should ensure that lithium-ion batteries and devices are certified by a recognized organization.

Note: Tip of the month is circulated by P@S monthly in an effort to inform the industry of the red flags raised from the implementation of our onshore and onboard HELMET risk assessment program to meet highest standards, carried out by H.EL.M.E.T. Assessors.