

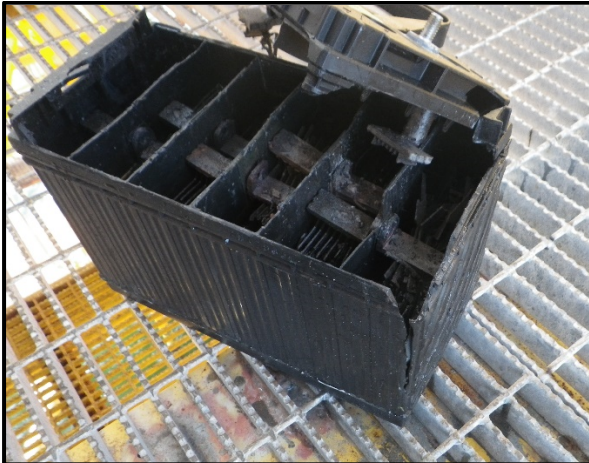
# SAFETY ALERT



**Safety Alert No. 388**  
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## **Malfunctioning Storage Batteries Cause Fires and Explosions**



*Heat and pressure built up inside the battery casing before exploding.*



*This battery may have exploded because it was charged with a second battery that had a malfunction, causing this battery to overcharge.*

Recently, there have been several incidents related to lead-acid storage batteries, including fires and explosions. Examples of these incidents include:

- When lead-acid storage batteries powering a compressor control panel exploded in a battery box. The heat and pressure inside the battery blew off the top of the battery.
- A starter-boost unit that caused the onboard battery circuitry to electrically short due to age-related wear and tear. Heat built up to a combustion temperature and caused a fire.
- A fire caused by a battery with an internal short that was stored in a very hot area. The heat melted plastic on the battery, creating a chemical reaction with the lead inside the battery. This fire ultimately shut down the platform.

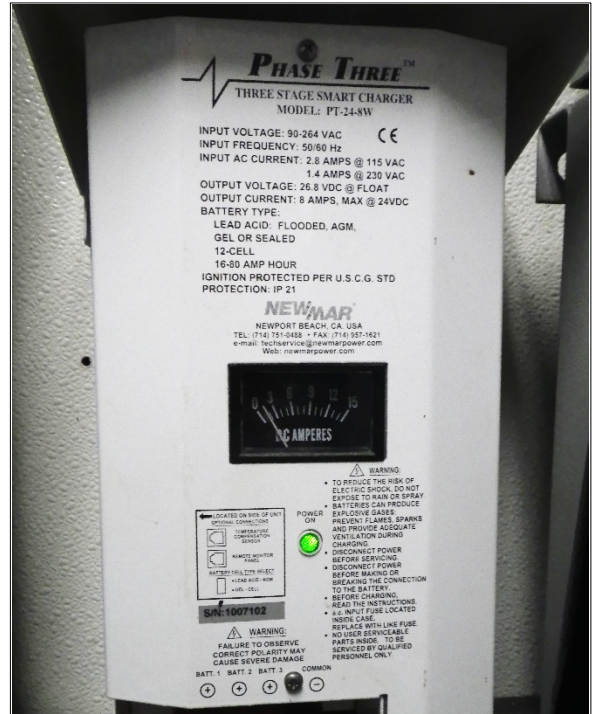
**Therefore, BSEE recommends that operators and contractors consider the following:**

- Write the purchase date and service start date on all batteries;
- Avoid mixing old and new batteries;
- If specific manufacturer guidance on battery shelf life is not available, consider adopting policies to replace batteries;
- Periodically inspect batteries for signs of leakage, swelling or damage;
- Check battery chargers and connectors for signs of damage or electrical faults;

- Ventilate battery enclosures and buildings to prevent gas accumulation. Charging batteries can release small amounts of explosive hydrogen gas that may not be detectable by gas detectors;
- Ventilate any unventilated enclosures thoroughly before performing hot work nearby;
- Avoid storing batteries close together or in confined spaces;
- Store batteries in a cool place and protect them from damage when not in use;
- Use proper PPE when cleaning up battery leaks;
- Uninterruptable Power Supplies (UPS) may use storage batteries and can have similar hazards and maintenance requirements. As a result, UPS failures have led to several blackouts and facility evacuations. Refer to [BSEE Safety Alert 333](#) for more information;
- Ensure the use of the correct battery type for its application. Different battery types may be very similar in appearance and can be inadvertently swapped;



A typical battery enclosure is shown above. The service start dates have been written on the batteries.



This battery charger has a switch to select different battery types: Lead Acid/AGM or Gel Cell

- Dispose of batteries properly and separate from other waste. Disposing batteries in trash compactors has caused fires offshore;
- Batteries that are designed to be charged by solar powered battery chargers may not be compatible with chargers using generator/mains power; and,
- Ensure that the charger is set to the correct type and voltage before use. Some chargers can charge multiple battery types.

--BSEE--

A **Safety Alert** is a tool used by BSEE to inform the offshore oil and gas industry of the circumstances surrounding a potential safety issue. It also contains recommendations that could assist avoiding potential incidents on the Outer Continental Shelf.