

Lithium Battery Safety Program



Aviation Safety Board
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Naval Safety Command



Lithium Battery Safety Program //////////////////////////////////////

The Lithium Battery Safety Program (LBSP) establishes safety guidelines for lithium batteries to help minimize risk and institute a certification process to verify safety guidelines and hazards are properly characterized. All hands need to understand the danger lithium-ion batteries present in case of uncontrolled release of energy caused by a rupture, explosion, fire or venting of toxic and combustible gases.

The NAVSEA 9310.1C and S9310-AQ-SAF-010 established the LBSP. The Navy LBSP Responsibilities and Procedures Manual Chapter 1, section 1-9.2, established the requirement all reporting all lithium battery-related mishaps, near misses, incidents, failures, non-mishap venting or malfunctions to the Lithium Battery Certification Authority (LBCA) via e-mail to LIBATTS@navy.mil. Additionally, NAVSAFECOM ALSAFE 24-015 reinforces the current requirements regarding the lithium battery safety certification process; safe handling, charging, stowage and disposition of lithium battery systems; and reporting criteria for any mishaps or near misses involving lithium power supplies.

The e-mail should contain the following information at a minimum:

TO NAVSEA.

C.2.1 Date of Incident

C.2.2 Time of Incident

C.2.3 Location of Incident (For shore facility, specify installation name, building and room number(s); for ships, specify class, hull number and spaces)

C.2.4 Reporting Activity/Command

C.2.5 POC Information

C.2.6 Type of Incident (Personal injury, equipment or property damage or both)

C.2.7 Lithium battery powered property or equipment involved in the incident (Item name/nomenclature/part numbers)

C.2.8 Incident Description (Describe sequence of events, contributing environmental or operational conditions, extent of equipment damage and injuries)

C.2.9 Corrective Actions or Precautions Taken

C.3 The following are examples of a lithium battery incident report to NAVSEA:

C.3.1 On (fill in date/time), there was a minor lithium battery mishap aboard a (fill in type/model/series) aircraft involving 7 (fill in type) sonobuoys. The hazard is exposure to SO₂, which is a toxic gas. Five sonobuoys experienced leaking of clear, viscous liquid; two experienced swelling at (provide a specific location on the piece of equipment). All 7 sonobuoys were jettisoned from the aircraft. The sonobuoys were certified by NOSSA in 2014. (Add command POC information)

C.3.2 During inspection of a returned unused (fill in equipment name) on (fill in date/time) at (fill in installation name), one of the lithium batteries was found to be partially faulted and observed to be slightly swollen. Both batteries present in the unit (the affected and second, unaffected battery) were removed from the unit and disposed of without mishap. (Add command POC information)

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If anything appears wrong with lithium batteries, such as indications of leaking electrolytes, bad odors or visual indications such as discoloration, bulging, cracking or deformation, report it to the LBCA. Additionally, some failures in lithium batteries can create an audible ping once the battery has started to relieve pressure. Every command must report non-mishaps associated with lithium batteries to allow NAVSEA to refine the risk assessment associated with the storage and use of lithium batteries.

Important steps all units should take immediately include verifying the lithium battery instructions they have are current and conducting one-time hazard awareness training. Training should be tailored to specific groups depending on their interactions with lithium batteries. Damage Control and Causality/Emergency response teams should train on fire hazards specific to lithium batteries.

Other involved parties include damage control officers and assistants who should review their responsibilities specific to approving the storage location of lithium batteries, as well as supply officers and logistics specialists who should train on the hazards associated with lithium battery storage such as audio and visual cues of a battery incident occurring. Finally, duty officers and command leadership should conduct training on the reporting requirements established in the Navy LBSP Responsibilities and Procedures manual.

Report all lithium battery-related mishaps, failures & malfunctions

Highlighting the reporting requirements for any mishap or near miss involving lithium-powered systems helps ensure we're able to protect our Sailors, Marines and equipment, and continue projecting our warfighting capability where and when it's needed.



Above: A failed lithium battery. All lithium battery-related mishaps, near misses, incidents, failures, non-mishap venting or malfunctions must be reported to the Lithium Battery Certification Authority via email: LIBATTS@navy.mil.

Cover: A charging device and battery in the bottom of a metal wastebasket. The lithium battery and charger were placed under a Sailor's pillow, which ignited in the middle of the night. The Sailor's personal belongings were damaged, no injuries to the Sailor and the fire was contained.