

Lithium Battery Overheating Flight Crew Guidance

When faced with a lithium battery-powered Personal Electronic Device (PED) in which at least one cell has gone into thermal runaway, flight and cabin crews should first ensure all other personnel are moved away from the device to the maximum extent possible. If flames are present, they should be extinguished using the nearest fire extinguisher. After the fire is extinguished, the firefighting crewmember, with adequate personal protection, should pour water or other non-flammable liquid on to the PED to cool the device, reducing the likelihood of additional cells from thermal runaway. The device should not be covered with ice; tests show that ice increases the likelihood of additional thermal runaway.

A smoking or burning PED should not be moved to another part of an aircraft or for placement in a containment device unless adequate protection of the firefighting crewmember is assured and moving the device is the safest action in the professional judgment of the crew¹. Moving the device can coincide with the venting of a cell, or cells, causing the risk of serious injury to nearby persons, including the crewmember. Adequate protection includes, but is not limited to, heat resistant gloves, eye protection, and a means of shielding the crewmember from the device.

- If, in the judgment of the flight-crew, moving the PED is safer than attempting to cool it in place, or if the PED is inaccessible, use of personal protective equipment should be used to move the PED to a location where it can be contained and cooled. If a containment device is required, the containment device should be placed as close as practical to the overheating PED. Containment technology should be considered as a safe place in which the device can be stored during and after a thermal runaway event.
- If adequate protection is not available: After dousing the device with water and monitoring it for no additional thermal runaway for a minimum of fifteen minutes, the overheating device should be moved and contained.

If the smoking or burning PED is located in the cockpit, after the flight crew have donned oxygen masks and smoke goggles, the pilot-in-command must determine the advisability of moving it to a less-critical area of the aircraft to avoid damage from both the fire and fire-fighting activities. In general, moving the device should only be attempted when proper personal protective equipment is in place. A diversion to the nearest suitable airport or landing area should be considered unless the device is safely contained and clearly presents no additional threat.

1 SAFO 19013 Supplement, http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo/all_safos/media/2009/SAFO09013sup.pdf