

Training Enhancements in Response to Lithium Battery Fires

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In 2017 an air carrier training working group was formed to recommend updates and/or improvements to current training and guidance associated with the response to high energy battery fires, or high energy fires (HEF). This presentation will share some of the recommendations from that working group related to training for cabin or flightdeck crewmembers in terms of immediate response to high energy fires in the cabin or flightdeck.

Firefighting training and responses for crewmembers has evolved over the years to address fires started accidentally by passengers extinguishing cigarettes in lavatory trash receptacles, electrical fires resulting from malfunctions of galley equipment and hidden fires which may require application of fire extinguishing agents behind interior panels.

More recently, lithium battery fires have become a significant concern. Risks include the carriage of lithium batteries as cargo, and in the cabin, as well as with passengers carrying Personal Electronic Devices (PED) powered by lithium batteries.

There are some inherent differences between HEF and other types of on-board fires in the way they initiate and propagate and the best ways to extinguish them. These batteries are capable of overheating and going into thermal runaway, which can cause the sudden release of the contents of the battery as a flaming jet. They can also release heavy smoke, unburned hydrocarbons, and in some cases the battery can explode. If the thermal runaway is not stopped before it propagates to adjacent cells, the resulting fire can flare up repeatedly and become uncontrollable.

While the possibility of an explosive fire is understood, there is a need for additional information related to the volume and toxicity of the smoke/fumes created by high-energy fires. Updated guidance is imperative considering that some flightdeck Electronic Flight Bags (EFB) are mounted, making them difficult to remove or resulting in a unique firefighting challenge for HEFs involving them.