**Luftfahrt-Bundesamt**
Bundesoberbehörde im Geschäftsbereich des Bundesministeriums für Verkehr, Bau und Stadtentwicklung (BMVBS)

Luftfahrt-Bundesamt - 38144 Braunschweig

An alle Luftfahrtunternehmen

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|---|---|
| Ihr Zeichen: | |
| Ihre Nachricht vom: | |
| Unser Zeichen: | B 22-30301.430.01.03/04-2009 |
| Unsere Nachricht vom: | |
| Auskunft erteilt: | Herr Tietjen |
| Telefon: | 0531 2355-513 |
| Fax: | 0531 2355-742 |
| E-Mail: | hj.tietjen@lba.de |
| Datum: | 12. August 2009 |

**Bekämpfung von Feuern an Bord von Luftfahrzeugen, die durch Lithium Batterien in Handys, Notebooks usw. ausgelöst wurden**

Sehr geehrte Damen und Herren,

aus gegebenem Anlass übersenden wir Ihnen die anliegenden SAFO der FAA vom 23.06.09 zur Kenntnisnahme und weiteren Veranlassung.

Mit freundlichen Grüßen

im Auftrag

HJ. Tietjen

Referat Flugbetrieb

U.S. Department
of Transportation
**Federal Aviation
Administration**

# SAFO

Safety Alert for Operators

SAFO 09013
DATE: 6/23/09

Flight Standards Service
Washington, DC

**http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo**

*A SAFO contains important safety information and may include recommended action. SAFO content should be especially valuable to air carriers in meeting their statutory duty to provide service with the highest possible degree of safety in the public interest. Besides the specific action recommended in a SAFO, an alternative action may be as effective in addressing the safety issue named in the SAFO.*

**Subject:** Fighting Fires Caused By Lithium Type Batteries in Portable Electronic Devices

**Purpose:** To recommend procedures for fighting fires caused by lithium type batteries in portable electronic devices (PED).

**Background:** The two types of batteries commonly used to power consumer PEDs brought on aircraft are lithium batteries (disposable) and lithium-ion batteries (rechargeable). Both these types are capable of ignition and subsequent explosion due to overheating. Overheating results in thermal runaway, which can cause the release of either molten burning lithium or a flammable electrolyte. Once one cell in a battery pack goes into thermal runaway, it produces enough heat to cause adjacent cells to go into thermal runaway. The resulting fire can flare repeatedly as each cell ruptures and releases its contents.

**Discussion:** Based on testing by the Fire Safety Branch of the Federal Aviation Administration (FAA) William J. Hughes Technical Center, the following procedures are recommended for fighting a fire of a lithium-type-battery powered PED. The procedures consist of two phases: (1) extinguishing the fire, and (2) cooling the remaining cells to stop thermal runaway.

(1) Utilize a Halon, Halon replacement or water extinguisher to extinguish the fire and prevent its spread to additional flammable materials.

(2) After extinguishing the fire, douse the device with water or other non-alcoholic liquids to cool the device and prevent additional battery cells from reaching thermal runaway.

**WARNING:** Do not attempt to pick up and move a smoking or burning device! Bodily injury may result.

**WARNING:** Do not cover the device or use ice to cool the device. Ice or other materials insulate the device, increasing the likelihood that additional battery cells will reach thermal runaway.

**Reference Materials:** The following are additional information related to lithium-type battery fires:

Additional information on lithium-type battery fires may be found by clicking on this link: SAFO 09013SUP.pdf.

The FAA has developed a training video to demonstrate effective techniques for fighting lithium-type battery fires. See the Video on Laptop Battery Fires at http://www.fire.tc.faa.gov/2007Conference/proceedings.asp Click on the "Training Videos" link on the lower right of the page.

**Recommended Action:** Directors of safety, directors of operations, training managers, and crewmembers should collaborate to include these procedures in the operator's manuals, operations, and training.