

# Fire on Delta Airlines Flight Highlights Danger from Lithium-Ion Batteries

Experts suggest storing rechargeable devices in carry-on luggage



An airline disaster was narrowly averted on Tuesday when a fire in the cargo hold of a Delta airlines flight from Salt Lake City to Bozeman, Montana, was extinguished before the flight took off. The cause: an overheating lithium-ion (or Li-ion) battery in a passenger's checked luggage.

The incident highlights a hard-to-combat risk that threatens airline passengers with surprising frequency.

"This could have been serious," says John Cox, a veteran pilot and airline safety consultant with special expertise on lithium-ion batteries in aviation.

"Any time a lithium battery overheats the potential for fire and it spreading is very real. If the fire burned through the cargo hold lining, it could have threatened the airplane."

The small fire started in a toiletry bag in the cargo hold of the Delta Connection flight, and was extinguished before the plane took off. There were no injuries to passengers or crew and the flight proceeded to its destination.

"We are proud of the quick work of our ground crew who recognized and helped extinguish a bag containing a lithium-ion battery that began overheating inside the cargo hold during the loading process," Delta said in an e-mailed statement. "The situation underscores the importance of removing lithium-ion batteries from checked or gate-checked luggage." The airline did not describe the device involved and the FAA had no additional details.

Fires involving Li-ion batteries have become frighteningly routine in the aviation world. In 2017, the FAA reported 46 incidents on planes or in airports, roughly one every eight days.

By comparison there were 31 such incidents in 2016, only 16 incidents in 2015, nine in 2014, and eight in 2013. (No figures for 2018 are yet available.)

"It's one of the few rising risks in aviation," Cox says.

In 2016, Li-ion battery safety made news after the Samsung Galaxy Note7 smartphone was recalled over [fire hazard concerns](#). The FAA subsequently banned the phones from commercial aircraft. Earlier, in 2015, Delta, American and United had banned hoverboards from passenger luggage for similar reasons.

Battery fires are particularly dangerous because they burn very hot, according to Consumer Reports chief scientific officer James H. Dickerson, a physicist and former administrator at the Department of Energy's Center for Functional Nanomaterials at Brookhaven National Laboratory. Dickerson adds that battery fires tend to flare up even after it seems like they've been extinguished.

The danger is greatest when a Li-ion battery fire occurs in a cargo hold, Cox says.

Cargo holds are equipped with fire suppression systems that use Halon, a gas that suppresses flames by starving them of oxygen. But Li-ion battery fires are driven by internal chemical reactions that give off tremendous heat, and Halon does little to reduce the temperature. The battery will tend to continually reignite and can even cause nearby devices to catch fire.

The FAA instituted regulations controlling the transport of Li-ion batteries as commercial cargo after an onboard fire caused the fatal crash of UPS Airlines Flight 6 in 2010.

The issue was in the news again last year, after the [Department of Homeland Security banned laptops](#) in passenger compartments on flights from a number of airports in the Middle East and North Africa. The move was meant to combat terrorism, but experts argued that forcing passengers to check their laptops into the cargo hold beneath the plane presented a significant fire hazard.

The ban was lifted in July 2017.

## What You Can Do

Passengers have a large role to play in preventing these fires. The first step

is to follow the FAA guidelines regarding the transport of spare batteries on flights. Spare Li-ion batteries should not be stored loose in checked luggage but instead packed in a carry-on bag. The electrical terminals should be taped or otherwise protected to keep the battery from coming into contact with any stray metal devices, which could cause a short circuit.

Though the FAA doesn't require it, Cox recommends carrying all devices containing lithium-ion batteries in your carry-on luggage.

So, what should you do if your battery-powered device begins heating up or even smoking while you are on board? Cox says you should notify the flight crew immediately. Then, if possible, calmly move away from the burning device and let the flight crew do its job.

The FAA says the best way to cool a runaway battery is, believe it or not, with plain old water. "After extinguishing the fire, douse the device with water or other nonalcoholic liquids to cool the device and prevent additional battery cells from reaching thermal runaway," the FAA says in a written advisory.

That's what a JetBlue crew did last June when a flight from New York to San Francisco was diverted to Grand Rapids, Mich., for an emergency landing after an e-cigarette charger caught fire. The fire was extinguished and no one was injured.