


What happens when a device nearly every passenger carries onboard a plane erupts in smoke and flames

 [cnn.com/2025/08/22/travel/battery-fire-risks-planes](https://www.cnn.com/2025/08/22/travel/battery-fire-risks-planes)

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The FAA demonstrates what happens when a lithium-ion battery overheats and erupts in flames. Pete Muntean reports.

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Atlantic City, NJ —

Almost every passenger carries lithium-ion batteries onto airplanes – in their phones, laptops, rechargeable powerpacks and even vapes. And when something goes wrong with one of them, Federal Aviation Administration tests show the results can be catastrophic.

Delta Air Lines Flight 1334 was flying from Atlanta to Fort Lauderdale last month when smoke and flames started pouring out of a backpack. The pilots declared an emergency and diverted to Fort Meyers where the 191 people onboard safely evacuated.

The culprit was a passenger's personal lithium-ion battery pack, which had been tucked away in the carry-on bag.

At the FAA's William J. Hughes Technical Center for Advanced Aerospace in Atlantic City, New Jersey, fire safety engineers research and demonstrate just how bad it can be.

"Lithium batteries can go into what's called thermal runaway," Fire Safety Branch Manager Robert Ochs, explained. "All of a sudden, it'll start to short circuit ... It will get warmer and warmer and warmer until the structure of the battery itself fails. At that point, it can eject molten electrolyte and flames and smoke and toxic gas."

The FAA conducted a demonstration for CNN inside their research hangar to show what could happen.

A rechargeable consumer battery pack, which might be used to charge a laptop or cell phone, was tucked into a seatback pocket and heated to more than 300 degrees to simulate the thermal runaway. Suddenly, sparks and flames violently erupted, scorching nearby seats and sending smoke billowing.



Demonstration of lithium ion battery thermal runaway at FAA technical center in Atlantic City, New Jersey.

CNN

"The testing that we're doing here is helping flight attendants," Ochs said. "Anytime that there's a fire on an airplane, it is a serious concern, and action has to be taken immediately because there is no escape."

These thermal runaways are difficult to fight. The FAA recommends flight attendants first use a halon fire extinguisher, which is standard equipment on planes, but that alone may not be enough.

In the test performed for CNN, the flames sprung back up in just moments.

“Grab that hand extinguisher, use it to put the flames out. But we know from our testing that that’s not going to stop, and that fire will reignite with a lithium battery,” Ochs said. “Adding the water, as much water from the galley cart, non-alcoholic liquids, everything that they can get to just start pouring on that device.”

The problems are not new, but more batteries are being carried onto planes than ever before. Safety organization UL Standards and Engagement says today an average passenger flies with four devices powered by lithium-ion batteries.

“The incidents of fire are rare, but they are increasing. We’re seeing as many as two per week, either on planes or within airports,” Jeff Marootian, the president and CEO of the organization, told CNN.

[The FAA allows](#) most consumer personal electronic devices with lithium-ion batteries in checked and carry-on luggage.

However, the latest federal data shows external battery packs are the top cause of incidents, and as a result the FAA has banned them from checked baggage where they are harder to extinguish.

But despite all of the warnings, UL Standards and Engagement says two in five passengers still say they check them.

“We know that within the cargo compartment, lithium battery fires are a serious danger,” Ochs said. “Passengers should bring them with them on board and they should be readily accessible. If one does happen to catch on fire and it’s stuffed deep within your bag, all the way up in an overhead bin, that’s going to be very hard for a flight attendant to fight.”



The aftermath of the plane fire at Gimhae International Airport in Busan, South Korea on January 28, 2025

JTBC

In January, Air Busan Airbus A321 on the ground at Gimhae International Airport in South Korea was gutted by flames. The investigation is ongoing, but the cause is thought to be a personal power pack battery stored in an overhead bin. Twenty-seven people were injured, three seriously.

As a result, South Korea created rules preventing power banks from being kept in overhead bins and prohibiting charging devices on board.

In the United States, Southwest Airlines now [requires](#) all battery packs to “remain in plain sight” when being used, and passengers cannot charge devices in the overhead bins.

“We know that this is a solvable problem, and first and foremost, it is about passenger awareness and education,” Marootian said. “A lithium battery fire on the ground is dangerous enough, at 30,000 feet it can be a catastrophe.”

Passengers should let flight attendants know if a device is getting too hot, and if a battery-powered device is dropped into a seat, they should get help before trying to adjust the seat.

“If you lose a device and a seat ... don’t operate the seat, because it could pinch it and that could cause a thermal runaway too,” Ochs said. “The best bet is anything that’s going wrong with your device, call the flight attendant.”

Consumers can also avoid devices that are cheaply made.

“If it is a lot cheaper than the other devices on the market, then most likely it doesn’t have the most rigorous manufacturing. There could be latent defects within the device itself that could cause it to fail,” he said.