FAA Issues Fire Warning for Lithium Batteries

Joan Lowy (AP)

WASHINGTON - Federal aviation officials urged air carriers Friday to voluntarily take steps to reduce the risk of cargo fires caused by overheated lithium batteries, an indication of regulators' growing concern about the threat posed by air transport of the batteries.

The warning follows last month's crash of a United Parcel Service plane in Dubai that killed both pilots.

The Federal Aviation Administration acknowledged publicly for the first time in Friday's safety directive that the Boeing 747-400 was carrying a large quantity of lithium batteries. Smoke from a fire in the plane's main cabin, which was used for cargo, was so thick that the pilots told air traffic controllers they couldn't see their instruments as they struggled to land the plane.

Dubai authorities are leading an investigation of the accident with assistance from the National Transportation Safety Board and FAA. The cause of the crash hasn't yet been determined.

The safety directive urges air carriers to ask shippers to identify bulk battery shipments in shipping documents. It also recommends stowing battery shipments in cargo compartments in the belly of planes, where there are halon gas fire suppression systems. There are no fire suppression systems required in the main cabins of cargo or passenger planes.

The Air Transport Association, which represents major airlines and cargo carriers, is reviewing the safety directive and will implement the recommendations, David Castelveter, an association spokesman, said in a statement.

PRBA, which represents the rechargeable battery industry, said in a statement that the safety directive is consistent with the association's position that greater enforcement of existing safety regulations - not more stringent regulations - is the best way to address the problem.

Since the early 1990s, there have been dozens of incidents of batteries igniting in flight or during cargo handling. But exactly what triggered many of the fires is not well understood.

The FAA's safety directive said that recent research conducted by its scientists shows that when batteries are exposed to high temperatures they have the potential to create "thermal runaway," a chain reaction leading to self-heating and the release of a battery's stored energy.

A cargo compartment fire can be hot enough to ignite batteries even if they aren't involved in the initial fire, "creating a risk of a catastrophic event," the safety directive said. Once one battery experiences thermal runaway, it generates enough heat to trigger thermal runaway in other nearby batteries. Lithium metal batteries - the kind normally used in watches and cameras, for example - can create explosions forceful enough to damage cargo compartments.

FAA tests of as few as six loose lithium metal batteries stored in steel containers found that when exposed to heat they created enough explosive force to blow the lids off the containers, the directive said.

"There are currently no approved and tested containers that can sufficiently contain the known effects of accidental lithium metal battery ignition," the safety directive said. "Common metal shipping containers, pails and drums are not designed to withstand a lithium metal cell fire."

FAA officials declined to identify at what temperatures the batteries experienced thermal runaway or exploded.

The halon fire suppression systems used in the lower cargo compartments of passenger and cargo planes aren't able to put out fires caused by lithium metal batteries. However, the systems can extinguish fires caused by lithium ion batteries, which are rechargeable batteries similar to the kind used in many cell phones and laptop computers.

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