

Coalition of Airline Pilots Associations



Lithium Batteries

Background: Lithium batteries are a known aviation safety hazard, and have been banned on both foreign and domestic passenger aircraft since 2004. However, no such restriction exists for the nation's all-cargo carriers. Airlines such as UPS and FedEx are flying hundreds of thousands of lithium batteries on a daily basis posing a significant threat to their pilots and people on the ground.

The advancement of battery technology has outpaced existing procedures and regulations regarding the safe shipping of these products by any air carrier. Lithium battery technology has seen a technological breakthrough in the power and capacity of batteries. Since the implementation of this technology the power of these batteries has grown 600%.

- The science is indisputable: a Lithium battery fire will rapidly exceed the existing design specifications of any commercial aircraft.
- Currently, no fire suppression system capable of extinguishing a lithium battery fire in flight exists.
- Shipments of lithium batteries have been banned on both foreign and domestic passenger aircraft since 2004, however, there is no such restriction on the nation's all-cargo carriers.
- These batteries also pose a security threat. Since these highly volatile batteries can be legally shipped, all that is need is an ignition source and the aircraft is at risk. Simply improperly packaging those batteries could create a short which would be sufficient to ignite the batteries.
- Until an appropriate fire suppression technology is available, all air shipments of lithium batteries should be halted.

NTSB Recommends Fire Suppression Systems on All Cargo Aircraft: Since the emergency ban on carriage of primary, non-rechargeable lithium batteries on passenger aircraft in 2004, numerous National Transportation Safety Board (NTSB) recommendations have been issued. Among those was a recommendation four years ago to require fire-suppression systems on all Part 121 Cargo operators to mitigate the threat of cargo fires. We are still without that requirement, despite an FAA issued Notice of Proposed Rule Making (NPRM) fifteen months ago. While the FAA uses phrases such as "immediate public safety risk," and "significant transportation safety issue," our regulators have not been able to further the safety of all-cargo aircraft with concern to the carriage of primary, non-rechargeable lithium batteries (this type of lithium battery is the most volatile and accounts for approximately 5% of all lithium battery shipments).

CAPA Recommendations: A multi-layered cargo screening system, designed with the expectation of capturing both unintentional and the intentional undocumented shipments of all hazardous materials to include lithium batteries. *(Recommendations continued next page)*

Specifically CAPA recommends the following changes and advancements in the aviation industry to prevent future aircraft accidents:

1. Restrict the carriage of primary, non-rechargeable Lithium-metal based cells on FAR part 121 Air Carriers until safe packaging materials are available and proven to contain a fire, or an effective suppression system that suppresses a primary, non-rechargeable Lithium-metal fire is produced and required for FAR part 121 Air Carriers.
2. Regulate all high-energy battery technology as declared hazardous material requiring adequate packaging and crew notification. Develop packaging technology to deter the spreading of a battery-initiated fire.
3. Develop active fire detection and suppression for all decks and compartments of all-cargo and passenger aircraft to ensure that any on-board fire is suppressed to allow an emergency recovery of the aircraft. This system should be able to suppress fires for at least 4 hours at 1,500 degrees F.
4. Require that certificated FAR part 121 Air Carriers be equipped to maintain cockpit visibility sufficient to allow the pilots to see basic flight instruments and the outside environment at all times during emergencies when dense, continuous smoke is in the cockpit.