INDEPENDENT PILOTS ASSOCIATION

September 28, 2015

Office of the Secretary of Transportation
U.S. Department of Transportation
Dockets Operations

M-30, Ground Floor, Room W12-140
1200 New Jersey Avenue, SE
Washington, DC 20590-0001

Re: *[Docket No. DOT–OST–2015–0169] Notice of Lithium Battery Safety Public Meeting and Request for Information*

Sir/Madame,

The Independent Pilots Association (IPA) represents the 2,600 professional pilots who fly in service of United Parcel Service (UPS), the world's largest transportation company, and gratefully take this opportunity to submit comments on the Request for Information on Lithium Battery Safety (Docket No. DOT-2015-0169).

Over the past ten years the IPA has been at the vanguard of the issue of safely carrying Lithium Batteries via air cargo. We represent the pilots who every day and night are directly responsible for safely transporting lithium batteries and other hazardous materials. The first hull loss at UPS was the on-board fire and destruction of UPS Flight 1307 on February 7, 2006 a DC-8 on approach to Philadelphia, PA (PHL). UPS' second hull loss resulted in the loss of two of our friends and colleagues, Captain Doug Lampe and First Officer Matt Bell on Flight 6 a UPS B747-400 on September 3, 2010 shortly after takeoff from Dubai, UAE (DXB).

The IPA has been intimately involved with much of the testing of the safe carriage of Lithium Batteries over the past five years. We believe that any solution to mitigate the risk of carrying Lithium Batteries must be a multilayered approach. Just picking one, or two of the suggestions below will not fully mitigate the risk in carrying Lithium Batteries. The fact is that the carriage of Lithium Batteries via air cargo is increasing exponentially and we must act now to prevent further loss of life.

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Based on our extensive, and unique knowledge of this issue, we offer the following comments and suggestions as you prepare for the upcoming October ICAO DGP meetings in Montreal. The order in which they are presented in no way indicates an order of importance. Our goal is to improve safety and to prevent future catastrophic events.

- **Require all Operators, both passenger and cargo, to perform a Risk Assessment of the carriage of Lithium Batteries within their current operation.**

  Recent guidance from two major aircraft manufactures has stated that a Lithium Battery fire can quickly overwhelm the capabilities of any aircraft's ability to handle the event. Initial regulatory efforts to mitigate the risk to passengers by prohibiting the carriage of some Lithium Batteries on passenger aircraft has only increased the risk to cargo operations. For example, when carrying Lithium Metal Batteries there is currently no known means of effectively dealing with a Lithium Metal thermal event while onboard a cargo aircraft. The "mitigation" procedure previously used to justify the continued carriage of <u>any</u> Lithium Batteries on cargo aircraft - to depressurize - has been scientifically proven to be ineffective.

  Current Safety Management System (SMS) protocol requires Operators to identify and quantify risk. The FAA should require all Operators that currently carry any Lithium Batteries to perform a robust Risk Assessment and then present to the FAA their mitigation strategy. This should be done within the next 30 days.

- **Require all Lithium Batteries transported to be fully declared, documented, marked, labeled and packaged as dangerous goods.**

  As our industry struggles to integrate safety mitigation strategies for the carriage of Lithium Batteries, there are no industry-wide processes for identifying the quantity of batteries being shipped. Countless shipments utilize a regulatory loophole to create a package of 8 batteries and then "over pack" a box by inserting hundreds of these 8 battery packages into a larger box. There is no limit to the number of boxes that can be shipped that way and no paperwork identifying the quantity. This type of shipment (called "Section 2") skirts important packaging, handling and crew notification requirements.

- **Create a proximity/quantity limit for the shipment via air of Lithium Batteries, as well as segregation standards from other Dangerous Goods.**

  Current regulations allow for an entire airplane to be closely packed with thousands of Lithium Batteries, with no limit on the amount or size of the batteries in a compartment or container.

  In addition, a compartment, or container, can be fully loaded with Lithium Batteries right next to other Dangerous Goods such as flammable liquids. The investigation into the loss of Asiana Flight 991 and crew identified this as a possible factor.

- **Require that all Lithium Batteries transported be packaged so that the hazardous effects associated with thermal runaway must remain within the package.**

  In this day and age it is inconceivable that a known hazardous material is allowed to be shipped on an aircraft in packaging that is not required to contain the effects of a thermal runaway within the package.

  If manufacturers cannot contain a thermal event within the battery/cell itself, then the packaging must not allow any amount of flame outside of the package. The external surface temperature of the package cannot exceed the amount that would ignite packaging material or cause batteries or cells in adjacent packages to go into thermal runaway. No fragments should be able to exit the package and the package must maintain its structural integrity. Finally, the quantity of flammable vapor should be less than the amount of gas, that when mixed in air and ignited, could cause a pressure rise that could dislodge the aircraft cargo compartment liners or breech the cargo container (ULD).

- **Require a minimum and maximum state of charge for Lithium-ion Batteries and Cells during transport.**

  The results of tests conducted at the FAA Technical Center demonstrated that propagation of thermal runway did not occur for the majority of cells tested when the state of charge was reduced to 30%. We believe regulatory standards should be created allowing battery manufacturers to demonstrate through testing a state of charge where cell-to-cell thermal runaway propagation does not occur.

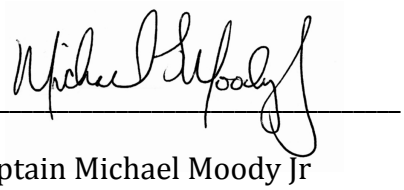
  Other scientific testing has also highlighted the potential danger of very low state of charge Lithium-ion Batteries. This knowledge should be incorporated into the new standards.

- **Require all Operators engaged in the transport of Lithium Batteries to only carry such packages within an aircraft compartment, or container, with an active fire suppression system (or other proven means of mitigating the risk of a Lithium Battery thermal event).**

  Testing has demonstrated the inadequacy of Class C compartments to always extinguish Lithium Battery thermal events. Coupled with the knowledge that most Lithium Batteries are carried in Class E (no fire suppression at all) compartments on cargo aircraft, new regulations should require that Lithium Batteries be carried only within proven effective active suppression areas. This requirement is necessary in addition to any new packaging standards as an external fire could breech the package and allow the Lithium Batteries to contribute to the severity of the fire.

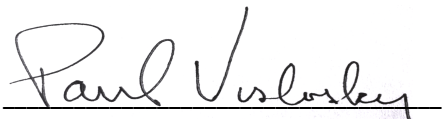
Thank you for the opportunity to submit these comments. The pilots from the Independent Pilots Association are deeply committed to improving aviation safety.

Sincerely,



Captain Michael Moody Jr

Chairman IPA Safety Committee



Paul Vislosky

IPA Director of Airline Safety