Lithium Battery Air Transportation

- Lithium batteries are more than 2X better than the next closest battery technology and continue to improve.

- Lithium batteries are integral to almost every electronics device that is portable and most devices that are rechargeable.
  - Enable many small electronic devices, such as iPod, iPhone, and Blackberry by providing enough energy in a small package.

- Billions of lithium cells are safely shipped globally by air each year as bulk freight.

- The manufacturing world is working on Just In Time inventories to manage costs.
  - Most use airfreight because the cost of capital (i.e. cash on hand) is more important than the increased cost of shipping via airfreight.

- **Eliminating Exceptions to Class 9 transportation of lithium batteries on-board aircraft will have the following impact on commerce:**

  - E-Z Pass, home security sensors, watches, **pace-makers**, **defibrillators**, laptops, cell phones, iPods, power tools and other portable devices, will be shipped by ocean freight from Asia and Europe and truck freight across America.

  - Increased cost due to Class 9 fees of $30 to $150 per shipment or shipping delays for small quantities of products. When a small quantity of products needs to be moved from one location to another (i.e. from wholesale to retail) the increased transportation time (estimated to be 3-4 times longer), or if shipped by Air as Class 9 will result in much higher costs.

  - Small businesses will bear a large part of the burden because they will be shipping small quantities at high freight rates and/or in a slow manner, impacting their most critical business issue; cash flow.

  - If the U.S. lithium battery regulations are far more stringent that other countries, it will put small battery businesses at a significant disadvantage over their competetors overseas who will not be subject to the higher haz mat fees.

  - Reduced business productivity due to increased transportation time for individual replacement items, which will come via truck freight only or at much higher costs as Class 9.

  - Manufacturers may find the new regulations too onerous and switch back to low tech solutions like NiMH, NiCd, or primary batteries. This will severely limit device performance and increase the environmental impact due to increased battery consumption by devices.

    - Environmental impact will be increased recycling of heavy metals based batteries. NiMH and NiCd batteries last less than ½ as long so potentially total volume goes up

by factor of 2. Since recycling is not 100%, there will be some disposal of these heavy metals batteries.

- More regulation would require significant new enforcement costs – hundreds or thousands of new inspectors would be required, potentially. This represents a huge cost to the Government, without a large benefit.

- Chinese manufacturers are likely to ignore the regulations, as they do today, for their national manufacturers and enforce it strictly for the external suppliers, creating a more imbalanced marketplace for U.S. corporations.

- Economic growth of the electronics market will slow dramatically without access to a readily available supply of Lithium batteries.

❖ An exception to allow individuals to carry lithium battery powered electronics on-board aircraft undermines the effectiveness of the regulations, as those devices have triggered the present safety concerns.
- Restricting freight, while allowing passenger transport, provides a feel good solution without addressing the proven problem.

Questions to Consider

- Does PHMSA have adequate resources to enforce existing laws with regard to lithium batteries and dangerous good shipments? [there are very few inspectors covering a huge market]

- In tracking battery incidents on aircraft, have Lithium batteries significantly outnumbered incidents involving other battery technologies? [a similar number of incidents has been observed across other battery technologies]

- How many incidents involving aircraft fires have been documented to be the result of lithium batteries
  - transported as freight? [several rumored, none documented or proven]
  - transported in aircraft cabins? [22 and counting]

- Would upgrading of the fire-fighting systems in cargo bays reduce the impact of cargo fires on aircraft, including lithium battery fires? [yes, but costly for the airline industry]

- What are the battery manufacturers doing about this issue?
  - Special labeling, education efforts, better packaging.
  - Higher standards of acceptance of products.
  - Working with PHMSA to find the best ways to regulate transportation.

- What is the cost to manufacturers of lithium battery related recalls? [more than $1 billion absorbed by the industry to date]

- How does this proposed regulation reconcile with the Administration's support of the lithium battery manufacturing industry? [recent DOE investment of $1.5 billion to create a robust U.S. lithium battery manufacturing industry]