

## Treating Electronics As Hazardous Materials?

*Law360, New York (February 11, 2010)* -- On Jan. 11, 2010, the U.S. Department of Transportation proposed a rule that would dramatically alter requirements for shipping lithium metal and lithium ion batteries and cells, such as those used in cell phones, laptops and other common electronic equipment, on both passenger and cargo flights. See 75 Fed. Reg. 1302 (Jan. 11, 2010).

The stated purpose of these new packaging and stowage requirements is to reduce the risk of fire on board flights, but the extent to which safety would be improved is uncertain at best.

Balanced against this uncertainty, the proposed rule would impose significant new compliance costs for lithium battery and cell manufacturers, electronic device manufacturers, and passenger and cargo aircraft operators alike.

This article describes the regulations currently applicable to shipments of these goods, DOT's proposed changes and the significant implications for companies subject to the regulations. DOT is accepting comments on the proposed rule only through March 12, 2010.

### Key Points of the Current Regulatory Scheme

- Lithium batteries and cells are regulated in the Hazardous Materials Transportation program as Class 9 materials; i.e., as materials that are hazardous during shipment but not otherwise.
- Lithium batteries and cells must be engineered and packaged to meet the requirements of the UN Manual of Tests and Criteria, standards designed to ensure materials will withstand the rigors of shipment.
- Lithium batteries and cells must be built and packaged to prevent ruptures and dangerous electric malfunctions such as short circuits.
- Subject to specific exceptions, as Class 9 materials, lithium batteries and cells must be marked and labeled as hazardous materials; shipments of these goods must be accompanied by hazardous materials documentation; and these goods must be packaged according to strict DOT criteria.
- Small lithium metal — as opposed to lithium ion — batteries and cells generally may not be transported by passenger aircraft unless they are packaged in or with equipment. Medium lithium metal batteries and cells are prohibited from transport by passenger aircraft under all circumstances.
- Other than prohibited lithium metal batteries and cells, small lithium batteries and cells shipped by any method, including air, are exempt from the Class 9 marking, labeling and documentation requirements, as well as DOT's

specific packaging requirements. If a shipment contains more than two batteries or 24 cells, it must meet minimal documentation, weight limit and packaging durability requirements.

- Medium lithium batteries sent by motor carrier or rail, but not by air, are exempt from the Class 9 marking, labeling and documentation requirements, as well as DOT's prescribed packaging requirements, only if certain minimal marking, documentation, weight limit and packaging durability requirements are met.

### **DOT's Proposed Changes**

DOT is proposing several significant changes to the existing regulatory scheme applicable to lithium batteries and cells. They include the following:

- Manufacturers of lithium batteries and cells and goods containing these products would be required to retain documentation of satisfactory testing. Additionally, the proposed rule would require further testing if the design of the lithium battery or cell is materially altered. DOT is also considering requiring successfully tested lithium batteries to bear a standardized mark.

- The proposal would dramatically narrow the exemption from Class 9 marking, labeling and documentation requirements, as well as specific packaging requirements, for small lithium batteries and cells shipped by air.

Very small and low-energy lithium batteries and cells packed with or in equipment would remain exempt, but only if the ratio of batteries to equipment is at or less than three-to-one. As always, such batteries would need to be protected against short circuit.

Other lithium cells and batteries packed with or in equipment may be exempt from only the enhanced packaging requirements if, and only if, (1) they are packaged in a way to prevent short circuiting and (2) the ratio of batteries to equipment is at or less than three-to-one. Standard Class 9 marking, labeling, and documentation would apply if shipped by air.

Otherwise, all transportation of lithium cells and batteries by air will need to meet Class 9 marking, labeling and documentation requirements, as well as specific packaging requirements.

- Shipment by air of lithium batteries and cells, including lithium batteries and cells packaged with or contained in equipment, would be allowed only if one of the following conditions applies:

- 1) the goods are loaded in a manner accessible to crew;
- 2) the goods are packaged in an FAA-approved fire-resistant container;
- 3) the goods are carried in a cargo compartment equipped with an FAA-approved fire suppression system; or
- 4) subject to size, energy and minimal safety requirements, the goods are carried by passengers or crew members in carry-on baggage for personal use.

- The proposal would restrict the means by which damaged, defective, or recalled batteries, batteries for disposal or recycling, and batteries meant to power vehicles may be transported.

### **Worth the Cost?**

The safety improvements that would flow from DOT's proposed rule are not certain, and in light of the substantial costs and challenges that the proposed rule would create for lithium battery makers, electronic device manufacturers and shipping companies, the value of the proposal as a matter of policy is unclear.

Indeed, it may be very difficult, if not impossible, for shipping companies to comply with the new requirements for shipments by air, particularly when one considers the number of lithium batteries and battery-containing devices in commerce.

Also, many passenger or cargo aircraft are not equipped with a DOT-approved fire suppression system, packing every package of batteries or devices in a fire-resistant container is likely infeasible, and stowing every package of batteries or devices so that it is accessible to the flight crew will create substantial logistical challenges.

Additionally, battery and device manufacturers will be required to completely redesign and test their packaging and may even need to redesign their products to comply with the new regulatory requirements. Even DOT concedes that these obligations will cost affected entities tens of millions of dollars, but asserts that both safety data and cost-benefit analysis justify the proposed rule.

To support this proposal, DOT cites 44 incidents aboard aircraft involving lithium batteries since 1991. DOT acknowledges that "each single incident may appear relatively benign," and that "the overall numbers may appear small when compared to the total number of lithium batteries transported by aircraft each year."

Nonetheless, DOT takes the position that "the incidents illustrate the short circuit and fire risks posed by lithium batteries and the potential for serious incident ..." DOT also points to a February 2006 incident at the Philadelphia International Airport, in which a cargo plane was destroyed and lithium batteries were a suspected — but not confirmed — cause.

DOT's reliance on this data seems to suggest that all of the incidents of which DOT has record would have been prevented by the proposed regulation. In fact, this may not be the case.

Indeed, DOT bases its cost-benefit calculation on the belief that up to three incidents will occur per year in the absence of the proposed rule and that zero will occur if the rule is promulgated.

Presumably, DOT concludes that roughly three incidents per year could be expected because, since 1991, a total of 44 incidents have been recorded. Of those, however, 16 involved carry-on luggage on a passenger aircraft.

Because lithium batteries carried on by passenger and crew would be largely exempt from the proposed rule (and because the minimal protections required for such carry-on batteries would be incredibly difficult to publicize and enforce), it is likely that the proposed regulation would not have prevented any or all of these 16 incidents.

Thus, DOT's estimate of three avoided incidents per year is arguably inaccurate, suggesting that the safety and financial benefits of the proposed rule are overestimated. Along similar lines, DOT's estimated average cost per incident deserves close scrutiny from the industries affected by the proposed rule.

### **Moving Forward**

By its own terms, DOT's proposed rule is intended to have "the net effect of moving a discrete number of shipments of lithium cells and batteries that are currently handled as general cargo into the hazardous material transport system."

If adopted, shipping companies would need to dramatically reconfigure their operational procedures and systems in order to handle the literally billions of lithium batteries and cells moved through commerce annually in a manner consistent with this new rule.

Similarly, the makers of these batteries, cells and the devices containing them would need to evaluate and potentially redesign both their products and packaging. Even DOT anticipates millions of dollars in compliance costs for regulated entities, but the need for and benefits of the proposed regulation are not entirely clear.

Thus, it is critical that regulated entities consider the impacts to their business and make DOT aware of those impacts through formal comments. Again, such formal comments are due by March 12, 2010.

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