National Transportation Safety Board

Washington, D.C. 20594

Office of the Chairman

JUL 0 6 2005

Ms. Stacey Gerard
Acting Chief Safety Officer
Pipeline and Hazardous Materials
Safety Administration
400 7th Street, S.W., Suite 8410
Washington, D.C. 20590

Dear Ms. Gerard:

Safety Recommendation A-99-80, stated below, was issued to the Research and Special Programs Administration (RSPA) on November 16, 1999, as a result of the National Transportation Safety Board's investigation of an April 28, 1999, fire that destroyed freight, including lithium batteries, on two aircraft cargo pallets at the Northwest Airlines cargo facility at Los Angeles International Airport, Los Angeles, California. Because RSPA has been divided into two agencies, this recommendation has been transferred to the newly created Pipeline and Hazardous Materials Safety Administration (PHMSA) for action.

A-99-80

> With the Federal Aviation Administration [FAA], evaluate the fire hazards posed by lithium batteries in an air transportation environment and require that appropriate safety measures be taken to protect aircraft and occupants. The evaluation should consider the testing requirements for lithium batteries in the United Nation's *Transport of Dangerous Goods Manual of Tests and Criteria*, the involvement of packages containing large quantities of tightly packed batteries in a cargo compartment fire, and the possible exposure of batteries to rough handling in an air transportation environment, including being crushed or abraded open.

The Safety Board notes that on December 29, 2004, RSPA issued an interim final rule to prohibit the shipment of primary lithium batteries as cargo on board passenger-carrying aircraft. The interim final rule also establishes restrictions for shipping on board passenger-carrying aircraft equipment containing or packed with primary lithium batteries. Under the interim final rule, the number of lithium batteries contained or packed in such equipment cannot exceed the number of batteries needed to power the equipment, and the lithium content of each battery cannot exceed a specified threshold. Further, the gross weight of the package containing the equipment item cannot exceed 5 kg (11 lbs). The ban applies to all U.S. carrier flights and those of foreign carriers into and out of the United States. The Board further notes that this ban was based on a study documented in a June 2004 report published by the FAA titled *Flammability Assessment of Bulk-Packed, Nonrechargeable Lithium Primary Batteries in Transport Category*

Aircraft, DOT/FAA/AR-04/28 by Harry Webster. This report documents the results of a study conducted at the FAA's William J. Hughes Technical Center that evaluated the fire risk posed by shipment on airplanes of primary lithium batteries. The study found that such shipments pose a significant fire risk. The RSPA rulemaking and the FAA study complete this recommendation with respect to *primary* lithium batteries.

However, the risks posed by the shipment of *secondary* (rechargeable) lithium batteries remains unclear. Different chemistry is involved with operation of these batteries, and both the RSPA regulation and the FAA study excluded secondary lithium batteries. However, in the new regulation, RSPA stated in Section IV D, "Secondary Lithium (Rechargeable/Lithium Ion) Batteries and Cells," that RSPA and the FAA have concerns with secondary lithium batteries, but the risks of shipping these batteries with respect to their ability to burn in an atmosphere containing Halon (the fire extinguishing agent used in aircraft cargo holds) are unclear. That section also states that RSPA and the FAA will continue to study the hazards associated with shipment of secondary lithium batteries. The Safety Board is currently investigating an incident involving a fire in a package of secondary lithium ion batteries that occurred August 7, 2004, at the FedEx terminal in Memphis, Tennessee.

Although RSPA and the FAA have fully responded to this recommendation with respect to primary lithium batteries, the question of the fire risk posed by secondary lithium batteries remains. Pending investigation of the fire risks posed by the shipment of secondary lithium batteries, and appropriate rulemaking as a result, Safety Recommendation A-99-80 remains classified "Open—Acceptable Response."

Sincerely,

Mark V. Rosenker
Acting Chairman

cc: Ms. Linda Lawson, Director
Office of Safety, Energy, and Environment
Office of Transportation Policy