



# National Transportation Safety Board

Washington, D.C. 20594

DEC 19 2008

Office of the Chairman

The Honorable Carl T. Johnson  
Administrator  
Pipeline and Hazardous Materials Safety Administration  
1200 New Jersey Avenue, S.E.  
East Building, 2nd Floor, PH  
Washington, D.C. 20590

Dear Mr. Johnson:

Thank you for the Pipeline and Hazardous Materials Administration's (PHMSA's) March 28, 2008, response, signed by Ms. Stacey L. Gerard, Assistant Administrator/Chief Safety Officer, to the National Transportation Safety Board regarding Safety Recommendations A-07-104 through -109, stated below. These recommendations were issued to PHMSA as a result of the Safety Board's investigation of the February 7, 2006, in-flight cargo smoke indication and subsequent fire after landing of United Parcel Service flight 1307, a McDonnell-Douglas DC-8-71F, at Philadelphia International Airport, Philadelphia, Pennsylvania.

A-07-104

Require aircraft operators to implement measures to reduce the risk of primary lithium batteries becoming involved in fires on cargo-only aircraft, such as transporting such batteries in fire resistant containers and/or in restricted quantities at any single location on the aircraft.

A-07-105

Until fire suppression systems are required on cargo-only aircraft, as asked for in Safety Recommendation A-07-99, require that cargo shipments of secondary batteries, including those contained in or packed with equipment, be transported in crew-accessible locations where portable fire suppression systems can be used.

In its letter, PHMSA stated that it is considering rulemaking to require packages of primary and secondary lithium batteries to be loaded aboard a cargo aircraft in such a manner that a crewmember or other authorized person can access, handle, or, when size and weight permit, separate such packages from other cargo during flight. In addition, PHMSA is also considering a limitation on the total number of lithium batteries that may be stowed in an inaccessible cargo location. PHMSA also stated that the International Civil Aviation Organization (ICAO) Dangerous Goods Panel is considering reducing the limits on the quantity of primary and secondary lithium batteries and cells that may be contained in each package transported on an aircraft and that PHMSA will include these new limits as part of a planned

rulemaking project to align the Hazardous Materials Regulations (HMR) with the newest version of the ICAO technical instructions. Finally, PHMSA reported that it is beginning a study to investigate the feasibility of using fire-resistant containers for the transport of lithium batteries.

Although the activities described are responsive to these recommendations, the Safety Board would like to know what specific actions are under consideration to address the unique hazards of each type of lithium battery (primary and secondary). Pending completion of the recommended actions, Safety Recommendations A-07-104 and -105 are classified "Open—Acceptable Response."

#### A-07-106

Require aircraft operators that transport hazardous materials to immediately provide consolidated and specific information about hazardous materials on board an aircraft, including proper shipping name, hazard class, quantity, number of packages, and location, to on-scene emergency responders upon notification of an accident or incident.

PHMSA stated that it is considering amending the HMR to require that emergency response information be provided "without delay" and that it plans to propose this change in an upcoming rulemaking. PHMSA is also initiating a research project to study and demonstrate ways that electronic transmission of emergency response and shipping information can enhance safety. Pending revisions being made to the HMR to require that aircraft operators provide, without delay, consolidated and specific information about hazardous materials on board an aircraft to on-scene emergency responders, Safety Recommendation A-07-106 is classified "Open—Acceptable Response."

#### A-07-107

Require commercial cargo and passenger operators to report all incidents involving primary and secondary lithium batteries, including those contained in or packed with equipment, that occur either on board or during loading or unloading operations and retain the failed items for evaluation purposes.

PHMSA stated that it plans to propose in an upcoming rulemaking a requirement that cargo and passenger operators report all incidents involving primary and secondary lithium batteries, including those contained in or packed with equipment. PHMSA also indicated that it is working with the Federal Aviation Administration (FAA) and the airlines to establish a cooperative program for effectively securing and preserving evidence and passenger information when incidents involving lithium batteries occur. PHMSA will develop a standard protocol to be used by aircraft operators in the event of such an incident. The actions planned by PHMSA are responsive to this recommendation; accordingly, pending completion of those actions, Safety Recommendation A-07-107 is classified "Open—Acceptable Response."

A-07-108

Analyze the causes of all thermal failures and fires involving secondary and primary lithium batteries and, based on this analysis, take appropriate action to mitigate any risks determined to be posed by transporting lithium batteries, including those contained in or packed with equipment, on board cargo and passenger aircraft as cargo; checked baggage; or carry-on items.

In its March 28, 2008, letter, PHMSA described the results of a recently completed analysis of 90 incidents that occurred between 1991 and 2008 involving both lithium and other batteries carried on aircraft. PHMSA stated that it comprehensively analyzed the root causes of all incidents involving lithium batteries that overheated or caused fires aboard aircraft, and it will use this information to refine mitigations of the risks associated with transporting lithium batteries. In the investigation report of the February 7, 2006, accident in Philadelphia, the Safety Board described a 2006 review that was conducted of the reported battery incident data for the previous 10 years. This review showed that the number of incidents involving both primary and secondary lithium batteries has been increasing. Specifically, from February 2001 to February 2006, secondary lithium batteries were involved in four aviation incidents compared to one incident in the previous 5-year period. Data from February 2006 to July 2007 showed nine incidents involving secondary lithium batteries, nearly double the number of incidents compared to the previous 10 years. Similarly, primary lithium batteries were involved in three incidents from February 1996 to 2001, four incidents in the following 5-year period, and six incidents from February 2006 to July 2007. The Safety Board appreciates receiving the information about the analysis that PHMSA prepared but believes that PHMSA's analysis must also consider the factors causing the significant increase in the number of these incidents. The Board asks that PHMSA describe what actions it will take as a result of its additional analysis. Pending the completion of actions to mitigate risks posed by lithium batteries, Safety Recommendation A-07-108 is classified "Open—Acceptable Response."

A-07-109

Eliminate regulatory exemptions for the packaging, marking, and labeling of cargo shipments of small secondary lithium batteries (no more than 8 grams equivalent lithium content) until the analysis of the failures and the implementation of risk-based requirements asked for in Safety Recommendation A-07-108 are completed.

In its March 28, 2008, letter, PHMSA stated that it plans to complete a formal assessment of the costs and benefits associated with eliminating the regulatory exceptions for small lithium batteries and will identify regulatory and other approaches based on that assessment. The Safety Board recognizes that the cost/benefit study that PHMSA plans to complete is a necessary step in making the regulatory change recommended. Pending revision of the regulations to eliminate

exemptions for the packaging, marking, and labeling of cargo shipments of small secondary lithium batteries, Safety Recommendation A-07-109 is 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