



Office of the Chairman

National Transportation Safety Board

Washington, D.C. 20594

JUL 21 2010

The Honorable John D. Porcari
Deputy Secretary of Transportation
Department of Transportation
Washington, DC 20590

Dear Mr. Porcari:

Thank you for the Department of Transportation's July 21, 2009, and October 16, 2009, responses to the National Transportation Safety Board (NTSB) regarding Safety Recommendations A-07-104 through -108 and A-08-1 and -2, stated below. These recommendations were issued to the Pipeline and Hazardous Materials Safety Administration (PHMSA) as a result of the NTSB'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, and the NTSB's concerns about the increasing number of incidents documented by the Federal Aviation Administration (FAA) involving overheating and fires initiated by secondary (rechargeable) lithium batteries.

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.

The NTSB has reviewed PHMSA's notice of proposed rulemaking (NPRM), titled "Hazardous Materials: Transportation of Lithium Batteries," published at 75 *Federal Register* 1302 on January 11, 2010. The proposed rule would require inaccessible cargo compartments and freight containers in which shipments of primary or secondary lithium batteries are being transported to be equipped with an FAA-approved fire suppression system; the batteries may alternatively be transported in an FAA-approved fire-resistant container. However, current FAA-approved suppression systems are ineffective in preventing fires involving primary lithium batteries. Until a fire suppression system proven to be effective against fires involving primary lithium batteries becomes available, the NTSB urges PHMSA to explicitly require that all shipments of primary lithium batteries be transported in FAA-approved fire-resistant containers.

The NPRM also indicates that PHMSA is considering whether a limit on the number of primary lithium battery packages transported in a single airplane or single container would further enhance safety. Although it acknowledges the cumulative effect and potential risks of

packaging thousands of small primary batteries in close proximity, PHMSA does not propose any requirements to mitigate those risks.

The NPRM is not responsive to Safety Recommendation A-07-104 because it does not completely address the unique hazards of shipping primary lithium batteries. Accordingly, pending issuance of a revised NPRM requiring operators of cargo-only aircraft to (1) stop the practice of clustering shipments of primary lithium batteries and (2) use FAA-approved fire-resistant containers for transporting all shipments of primary lithium batteries, Safety Recommendation A-07-104 is classified "Open—Unacceptable Response."

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.

The NTSB is pleased that PHMSA's NPRM would require that inaccessible secondary lithium batteries be transported either (1) in cargo compartments or freight containers equipped with an FAA-approved fire suppression system or (2) in FAA-approved fire-resistant containers. Accordingly, pending issuance of the final rule, Safety Recommendation A-07-105 remains 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.

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.

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.

The NTSB has reviewed PHMSA's final rule, titled "Hazardous Materials: Revision to Requirements for the Transportation of Batteries and Battery-Powered Devices; and Harmonization With the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organization's Technical Instructions." This final rule, published at 74 *Federal Register* 2200 on January 14, 2009, requires that aircraft operators provide, without delay, consolidated and specific information about hazardous materials on board an aircraft to on-scene emergency responders. PHMSA's actions fully satisfy the intent of Safety Recommendation A-07-106. Accordingly, the recommendation is classified "Closed—Acceptable Action."

Although this final rule included a requirement to report incidents involving failed lithium batteries and devices containing them, it did not include a requirement to retain the failed batteries and equipment. The January 11, 2010, NPRM requested comments about how retention of failed batteries and equipment might be achieved and a proper analysis conducted. This document also indicated that available incident data suggest the most likely causes of lithium battery incidents comprise the following:

- External short circuiting (an exposed battery terminal contacts a metal object)
- In-use situation (improper charging or discharging conditions associated with the use of equipment, including inadvertent activation and overheating)
- Noncompliance (faulty battery design, false certification, or improper packaging)
- Internal short circuit (foreign matter within the cell or battery, or physical damage)

Because PHMSA does not discuss the reliability of the data used to determine these causes, the NTSB is concerned that such determinations are being made without retaining and analyzing failed batteries. In the absence of sound failure analyses, the establishment of appropriate and effective transportation requirements is questionable, and, without the implementation of a regulatory requirement to retain failed batteries and a program to analyze the retained batteries and equipment, the NPRM fails to fully address Safety Recommendations A-07-107 and -108. Accordingly, pending action by PHMSA to require operators to retain and analyze failed batteries and equipment, Safety Recommendations A-07-107 and -108 are classified "Open—Unacceptable Response."

A-08-1

In collaboration with air carriers, manufacturers of lithium batteries and electronic devices, air travel associations, and other appropriate government and private organizations, establish a process to ensure wider, highly visible, and continuous dissemination of guidance and information to the air-traveling public, including flight crews, about the safe carriage of secondary (rechargeable) lithium batteries or electronic devices containing these batteries on board passenger aircraft.

A-08-2

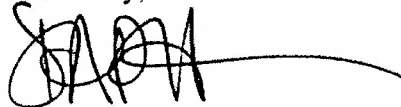
In collaboration with air carriers, manufacturers of lithium batteries and electronic devices, air travel associations, and other appropriate government and private organizations, establish a process to periodically measure the effectiveness of your efforts to educate the air-traveling public, including flight crews, about the safe carriage of secondary (rechargeable) lithium batteries or electronic devices containing these batteries on board passenger aircraft.

PHMSA indicated that it plans to address these two recommendations under a separate rulemaking; because of the proliferation of personal electronic devices carried by the traveling public, the NTSB urges it to expedite this effort. PHMSA's efforts to educate the public about potential hazards related to the air transportation of lithium batteries appear to be responsive to Safety Recommendation A-08-1; however, the NTSB has not received sufficient documentation to determine that the process established has succeeded in achieving the goals of the recommendation. Accordingly, pending our review of documentation that PHMSA's efforts have ensured wider, highly visible, and continuous dissemination of guidance and information to the air-traveling public, including flight crews, about the safe carriage of secondary (rechargeable) lithium batteries or electronic devices containing these batteries on board passenger aircraft, Safety Recommendation A-08-1 remains classified "Open—Acceptable Response."

Regarding Safety Recommendation A-08-2, before closing the recommendation, the NTSB needs additional information regarding the methodology used to measure the program's effectiveness. Accordingly, pending the NTSB's review of (1) documentation that the program has been effective in informing the public of the dangers of flying with lithium batteries and devices containing lithium batteries and (2) information about the methodology used to measure the program's effectiveness, Safety Recommendation A-08-2 remains classified "Open—Acceptable Response."

Thank you for your assistance in these matters.

Sincerely,



Deborah A.P. Hersman
Chairman

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