



National Transportation Safety Board

Washington, D.C. 20594

Office of the Chairman

JUN 15 2011

The Honorable Cynthia L. Quarterman
Administrator
Pipeline and Hazardous Materials
Safety Administration
Washington, DC 20590

Dear Administrator Quarterman:

Thank you for your October 13, 2010, letter 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) on December 17, 2007, as a result of (1) the NTSB's investigation of the February 7, 2006, in-flight cargo smoke indication and the subsequent fire after landing of United Parcel Service flight 1307, a McDonnell-Douglas DC-8-71F, at Philadelphia International Airport, Philadelphia, Pennsylvania, and (2) 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. Safety Recommendation A-07-106 was classified "Closed—Acceptable Action" on July 21, 2010, and, therefore, is not addressed here. I apologize for the delay in responding to your letter.

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 previously noted that PHMSA's notice of proposed rulemaking (NPRM), titled "Hazardous Materials: Transportation of Lithium Batteries," which was published at 75 *Federal Register* 1302 on January 11, 2010, would require primary lithium batteries located in inaccessible cargo compartments or freight containers to be transported in compartments or containers that are equipped with either an FAA-approved fire suppression system *or* an FAA-approved fire-resistant container. However, current FAA-approved suppression systems are ineffective in preventing fires involving primary lithium batteries. Therefore, we urged PHMSA to explicitly require that all shipments of these batteries be transported in FAA-approved fire-resistant containers until a fire suppression system that is proven to be effective becomes available.

The NTSB notes PHMSA and the FAA's ongoing research to better understand the fire behavior of primary lithium batteries; however, we remain concerned that the risk of these batteries' becoming involved in fires on board cargo-only aircraft has not been mitigated. We emphasize that the intent of this recommendation is to prevent primary lithium batteries from becoming involved in

hazardous conditions that may develop *outside* of freight containers used to transport these batteries on cargo-only aircraft. PHMSA indicated that metal packaging and depressurization were ineffective in *containing* fires involving primary lithium batteries; however, the NTSB asks whether metal containers or FAA-approved fire-resistant containers would protect primary lithium batteries from becoming involved in a runaway fire that occurred outside of the container.

The NTSB notes that PHMSA has also solicited comments on whether a limit on the number of primary lithium battery packages transported in a single airplane or single container would further enhance safety, yet PHMSA still has not proposed any requirements to mitigate the risks of transporting these packages. Accordingly, because PHMSA has indicated no plans to revise its NPRM to include a requirement for operators of cargo-only aircraft to (1) stop the practice of clustering shipments of primary lithium batteries and/or (2) use FAA-approved fire-resistant, or similar, containers for transporting all shipments of primary lithium batteries, Safety Recommendation A-07-104 remains 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 secondary lithium batteries that are located in areas of the aircraft that are not accessible to crews be transported in either (1) cargo compartments or freight containers equipped with either an FAA-approved fire suppression system or (2) FAA-approved fire-resistant containers. Accordingly, pending issuance of the final rule, Safety Recommendation A-07-105 remains 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.

The NTSB notes PHMSA’s proposal that would require persons reporting a transportation incident to provide, upon request by an authorized representative of the Federal, state, or local government agency, reasonable assistance, which would include providing reasonable access to the damaged items, if available. PHMSA indicated that the proposed requirement would allow the person reporting an incident to have discretion in the disposition of the damaged package or article consistent with protecting human health and the environment.

The NTSB remains concerned that this proposal would not require operators to retain failed lithium batteries or the devices containing them so that their failure modes might be accurately evaluated. Although a majority of operators already retain these items to assist government agencies, we believe that some operators might not retain these items unless they are required to do so for a prescribed period of time. However, if PHMSA can provide data to

indicate that a system is in place to ensure that all failed items from reported incidents are being retained, the NTSB would consider this to be an acceptable alternative to a requirement. Accordingly, pending action by PHMSA to ensure that operators retain failed batteries and equipment for a prescribed period of time, Safety Recommendation A-07-107 remains classified “Open—Unacceptable 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.

The NTSB is pleased to learn that an interagency agreement was reached between PHMSA and the U.S. Department of Defense Naval Surface Warfare Center (NSWC) and that the NSWC will test and examine lithium battery remnants and packaging from incidents and will analyze the probable cause.

So that we can verify that the program will result in comprehensive analyses of lithium battery failures, the NTSB requests a copy of the agreement between NSWC and PHMSA. In addition, we have the following questions regarding this document:

- When does the agreement become effective and for how long will it be in place?
- How many failed batteries will NSWC test? If not all, then what is the limit and what criteria will be used to determine which batteries will be tested?
- What types of tests will be conducted, and what will NSWC do with the data gathered?

Pending our receipt and review of this additional information, Safety Recommendation A-07-108 is classified “Open—Acceptable 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.

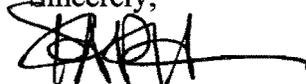
The NTSB notes PHMSA's ongoing efforts to develop guidance material to educate the air-traveling public and flight crews about the safe carriage of secondary lithium batteries and the electronic devices that contain these batteries on board passenger aircraft. We believe that the guidance developed thus far contains much useful information; however, we remain concerned that the guidance will not prove effective unless individuals and/or companies are already familiar with the dangers associated with the shipping of, and travelling with, these batteries. The NTSB believes that outreach efforts, such as those targeted at e-cigarette retailers, are an effective method for increasing the level of awareness among travelers and other companies that may otherwise be unfamiliar with the associated risks, and we would like to know how PHMSA determines when these additional efforts are necessary and whether any are planned for the future.

The NTSB previously requested additional information regarding the incident data being collected by PHMSA to assess changes in passenger and flight crew awareness and behavior with regard to safe transport of secondary lithium batteries. PHMSA had indicated that a method for evaluating the effectiveness of these efforts was being developed; however, we have received no information regarding the status of either of these efforts. Please share this data with us so that we may better assess your agency's efforts.

Because the guidance that PHMSA has developed to educate the public of the dangers of flying with lithium batteries, and with devices containing lithium batteries, contains useful information, Safety Recommendation A-08-1 remains classified "Open—Acceptable Response." However, because PHMSA has not provided the NTSB with (1) documentation to indicate that the guidance has been effective or (2) information about the methodology used to measure the effectiveness of this guidance, Safety Recommendation A-08-2 is classified "Open—Unacceptable Response."

The NTSB would like to schedule a meeting with PHMSA to discuss these safety recommendations and to address any concerns or questions that either agency may have regarding them. We will contact your office in the near future to arrange such a meeting.

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