



National Transportation Safety Board

Washington, DC 20594

Office of the Chairman

August 18, 2016

The Honorable Marie Therese Dominguez
Administrator
Pipeline and Hazardous Materials
Safety Administration
1200 New Jersey Ave. SE
Washington, DC 20590

Dear Administrator Dominguez:

Thank you for your June 6, 2016, letter to the National Transportation Safety Board regarding Safety Recommendations A-16-1 and -2. We issued these recommendations to the Pipeline and Hazardous Materials Safety Administration on February 9, 2016, as a result of our participation in the investigation conducted by the Republic of Korea's Aviation and Railway Accident Investigation Board (ARAIB) of the July 28, 2011, in-flight fire and crash of Asiana Airlines flight 991, a Boeing 747-400F, into international waters about 130 kilometers west of Jeju International Airport, to which the flight crew had attempted to divert after reporting an in-flight cargo fire.

A-16-1

Require that Class 3 flammable liquids and fully regulated Class 9 lithium batteries be physically segregated when stowed on board an aircraft such that packages containing these materials may not be placed on the same or adjacent pallets or ULDs.

We note that temporary measures to mitigate the hazards of lithium battery transport by cargo aircraft—including segregating lithium batteries from other dangerous goods, such as flammable liquids—were proposed to the International Civil Aviation Organization (ICAO) Dangerous Goods Panel (DGP). We further note your position that, given the complex nature of the associated safety problem, segregation may not constitute the ultimate solution, and we note that the ICAO DGP is considering other measures in addition to, or in lieu of, segregation, including alternatives that take into account that all operators do not use the same mitigation tools, which are based on the size of the operation and the types of cargo compartments and fire suppressions systems available on the particular aircraft. We understand that possible alternatives the ICAO DGP is considering include fire containment covers, fire-resistant containers, and unit load devices (ULDs) that could contain or suppress a fire. We also

understand that you will consider adopting any new DGP guidelines within your Hazardous Materials Regulations (HMRs) as soon as possible.

You stated that recent measures approved by the ICAO Governing Council, which you plan to incorporate into the HMR as an interim final rule, may provide an alternative approach that would satisfy Safety Recommendation A-16-1. Among these are three measures, effective April 1, 2016, that (1) prohibit the transport of lithium-ion batteries as cargo aboard passenger aircraft, (2) require lithium-ion batteries to be transported at not more than a 30-percent state of charge, and (3) limit small lithium batteries to be shipped in no more than one package per consignment.

Our purpose in issuing Safety Recommendation A-16-1 was to encourage you to act even if the ICAO guidelines were not revised; however, we acknowledge the safety benefit that will result from a consistent international set of guidelines and regulations regarding segregation if they are enacted by the DGP. We encourage your continued participation and advocacy in the DGP, but if it does not act, we believe that this safety problem must be addressed sooner rather than later, as the Asiana accident illustrates. We will consider whether alternatives developed by the DGP satisfy this recommendation, but we point out that—

1. We believe that segregation is the least expensive, most readily and quickly implemented, and most effective mitigation to address the hazardous materials safety issues associated with carrying lithium batteries in conjunction with other flammable materials as cargo on aircraft.
2. The measures adopted by the ICAO Governing Council on April 1, 2016, are valuable, but they are not alternatives to satisfying Safety Recommendation A-16-1.

Pending your taking the recommended action, Safety Recommendation A-16-1 is classified “Open—Acceptable Response.”

A-16-2

Establish maximum loading density requirements that restrict the quantities of Class 3 flammable hazardous materials or Class 9 lithium batteries stowed on a single pallet or ULD, or on a group of pallets or ULDs, within an aircraft such that cargo fires can be effectively managed by on-board fire suppression capabilities.

We note that you concur with the intent of this recommendation and that you have been working with the Federal Aviation Administration to determine the specific actions you will take to satisfy it. Pending completion of the recommended action, Safety Recommendation A-16-2 is classified “Open—Acceptable Response.”

Please submit future updates electronically at correspondence@ntsb.gov regarding your actions to address these safety recommendations, and do not submit both an electronic and a hard copy of the same response.

Sincerely,

cc: Ms. Barbara McCann, Director
Office of Safety, Energy, and
Environment
Office of the Under Secretary for Policy