



# National Transportation Safety Board

Washington, D.C. 20594

Office of the Chairman

JUN 27 2000

Honorable Kelley S. Coyner  
Administrator  
Research and Special Programs Administration  
Washington, D.C. 20590

Dear Ms. Coyner:

Thank you for the Research and Special Programs Administration's (RSPA) March 29, 2000, response to the National Transportation Safety Board's Safety Recommendations A-99-80 through -84, stated below. These recommendations were issued to RSPA as a result of the April 28, 1999, fire in the Northwest Airlines cargo facility at Los Angeles International Airport (LAX) in Los Angeles, California.

#### 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 (UN Test Manual)*, 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.

RSPA reports that, in coordination with the FAA, it is re-evaluating the hazards posed by lithium batteries in air transport and the safety measures necessary to protect an aircraft and its occupants, including an evaluation of the current testing requirements of the United Nations' *Transport of Dangerous Goods Manual of Tests and Criteria* and current regulatory requirements. RSPA further reports that in recent meetings with battery industry representatives, RSPA requested information on battery resistance to mechanical and heat damage and the hazards presented by damaged batteries.

The Safety Board appreciates RSPA's actions thus far. However, the Board is concerned that these actions do not include testing or consideration of rough handling, including being crushed or abraded open. This condition was specifically mentioned in the recommendation and was a factor in the incident that prompted the recommendation. Pending the results of RSPA's evaluation of the hazards and safety measures necessary for lithium battery shipment in air transport, including damage from rough handling such as being crushed or abraded open, Safety Recommendation A-99-80 is classified "Open—Acceptable Response."

#### A-99-81

Pending completion of your evaluation of the fire hazards posed by lithium batteries in an air transportation environment, prohibit the transportation of lithium batteries on passenger-carrying aircraft.



RSPA reports that it cannot justify an immediate prohibition on the transportation of lithium batteries on passenger-carrying aircraft nor can it justify the immediate imposition of a requirement to mark and label packages containing lithium batteries. Among the factors that RSPA reports that it considered were the hazards that lithium batteries present in transportation, the unusual nature of the LAX incident that prompted the recommendation, the number of lithium batteries that have been transported safely aboard passenger-carrying aircraft, and the potential economic consequences of a ban—particularly with regard to the consumer products industry. Although RSPA agrees that the LAX incident demonstrates that lithium batteries may present a risk to an aircraft, it believes that the risks presented by lithium batteries can be mitigated if the batteries are appropriately packaged and handled in transportation and if the hazards of damaged lithium batteries are understood by cargo handling personnel.

RSPA plans to initiate alternative actions to address the risk lithium batteries present in air transportation. First, with the assistance of the FAA, RSPA plans to develop and distribute information aimed at shippers and airline personnel on the potential hazards of lithium batteries, highlighting the hazards that lithium batteries present when they have been damaged. Second, based on the findings of its evaluation, RSPA plans to initiate rulemaking action as necessary to address the classification, hazard communication, packaging, and operational controls needed to manage the risks associated with the transportation of lithium batteries aboard aircraft.

The Safety Board is disappointed that RSPA does not believe that the risk posed by shipment of lithium batteries is sufficient to justify a prohibition on their shipment by passenger-carrying aircraft or a requirement to mark and label packages containing lithium batteries. Given the circumstances of the LAX incident, the evidence cited in the safety recommendation letter that aircraft pallets containing large quantities of batteries may be unusually susceptible to overturning, and the concern that lithium batteries damaged during handling and placed in a cargo compartment may result in an in-flight fire, the Safety Board believes that lithium batteries should not be excepted from identification as a hazardous material when transported by air. The possibility of any in-flight fire is not acceptable. Therefore, pending the prohibition on the transportation of lithium batteries on passenger-carrying aircraft, Safety Recommendation A-99-81 is classified “Open—Unacceptable Response.”

#### A-99-82

Require that packages containing lithium batteries be identified as hazardous materials, including appropriate marking and labeling of the packages and proper identification in shipping documents, when transported on aircraft.

As mentioned in its response to Safety Recommendation A-99-81, RSPA believes that the risks presented by lithium batteries can be mitigated if the batteries are appropriately packaged and handled in transportation and if the hazards of damaged lithium batteries are understood by cargo handling personnel. Based on the findings of its evaluation being performed in response to Safety Recommendation A-99-80, RSPA reports that it will initiate rulemaking action to address the classification, hazard communication, packaging, and operational controls needed to minimize the risks associated with the transportation of lithium batteries aboard aircraft.

The Safety Board is pleased that RSPA is taking the action recommended. Pending the results of RSPA's evaluation and the initiation of rulemaking, Safety Recommendation A-99-82 is classified “Open—Acceptable Response.”

A-99-83

Pending completion of your evaluation of the fire hazards posed by lithium batteries in an air transportation environment, notify the International Civil Aviation Organization's Dangerous Goods Panel about the circumstances of the fire in the Northwest Airlines cargo facility at Los Angeles International Airport on April 28, 1999. Also pending completion of your evaluation of the fire hazards posed by lithium batteries in an air transportation environment, initiate action through the Dangerous Goods Panel to revise the *Technical Instructions for the Safe Transportation of Dangerous Goods by Air* to prohibit the transportation of lithium batteries on passenger-carrying aircraft.


A-99-84

Initiate action through the Dangerous Goods Panel to revise the *Technical Instructions for the Safe Transportation of Dangerous Goods by Air* to require that packages containing lithium batteries be identified as hazardous materials when transported on aircraft.

RSPA reports that in a United Nations working group meeting held March 13-15, 2000, in Ottawa, Canada, RSPA recommended that the United Nations Recommendations on the Transport of Dangerous Goods (UN Recommendations) be revised so that all lithium batteries be subject to the UN Test Manual and that small lithium batteries be regulated as hazardous materials. RSPA also reports that it is taking steps to notify the International Civil Aviation Organization (ICAO) Dangerous Goods Panel of the LAX incident. RSPA further reports that it will initiate any additional proposals to amend the international requirements for the transportation of lithium batteries, including the ICAO *Technical Instructions on the Safe Transport of Dangerous Goods by Air*, consistent with any amendments to the Hazardous Materials Regulations.

The Safety Board is pleased that RSPA is taking the actions recommended. Pending revision to the UN Recommendations so that all lithium batteries are subject to the UN Test Manual and so that small lithium batteries are regulated as hazardous materials, and pending notification of the ICAO Dangerous Goods Panel about the LAX incident, Safety Recommendations A-99-83 and -84 are classified "Open—Acceptable Response."

Sincerely,



Jim Hill  
Chairman

cc: Mr. Robert Clarke, Safety and Health Team Leader  
Office of Transportation Policy Development