

Lithium Battery Air Safety Advisory Committee Meeting Minutes

November 7, 2024

I. Call to Order

Chairman Bob Brown called the tenth meeting of the Lithium Battery Air Safety Advisory Committee to order at 9:11 AM EST on November 7th. The meeting was held virtually via Microsoft Teams. Duane Pfund from PHMSA served as the Designated Federal Officer (DFO), and Richard Hill from FAA served as the Alternate Designated Federal Officer (ADFO).

II. Quorum

Chairman Brown surveyed those in attendance to determine the presence of a quorum. Twenty two of the twenty-two Committee members were in attendance:

EVA AMES, DSV Air & Sea Inc.

BOB BROWN, Chairman, Coalition of Airline Pilots Associations

DOUG CARR, National Business Aviation Association

JAMES DAVIS, AccuFleet Testing

DOUG FERGUSON, Boeing

MICHAEL HENISSEE, Amazon

GEORGE KERCHNER the Rechargeable Battery Association (Alternate)

JENNIFER LITTENBERG, Hawaiian Airlines

TODD MACKINTOSH, General Motors

BRANDON MARTIN, Outdoor Power Equipment Institute

DINKAR MOKADM, Association of Flight Attendants- CWA

KATHLEEN O'SHEI, Integer

BILL REESE, Commercial Vehicle Safety Alliance

PAUL ROGERS, International Association of Fire Fighters

TIM ROGERS, UPS Airlines

STEPHANE ROSSETTI, Medtronic

ALICIA SAENZ, Apple (Alternate)

SCOTT SCHWARTZ, Airline Pilots Association, Int'l

TIM SHEPPARD, Samsung Electronics America

MICHAEL TOBIN, Alaska Airlines

VERONICA WILSON, Walmart

DAVID WROTH, Underwriters Laboratories

III. Welcome

DFO Pfund provided welcoming remarks and meeting logistical and safety briefing information. Chairman Brown opened the meeting with a roll call.

IV. Previous Meeting Minutes and Agenda Adoption

Chairman Brown noted that the minutes from the previous meeting and the agenda for this meeting were recently provided to all and made available on the Committee's webpage and asked for any feedback. Mr. Schwartz requested that points raised concerning mitigation measures for prototype battery shipments under special permit during the NTSB recommendations discussion should be included. It was agreed that Mr. Schwartz would provide the comments to be added as an addendum to the previous meeting minutes. Chairman Brown asked for a motion to adopt the minutes. A motion was received from Member Reese and a second from Member Ames. In response to a request to adopt the agenda for the meeting a motion was received from Member Wroth and a second from Member Reese. Noting no objections to the agenda or minutes as presented, the agenda and previous meeting minutes were approved.

V. Meeting Overview and Current Events

Chairman Brown highlighted recent lithium battery incidents in the maritime and trucking industries. As a result of a domestic highway incident, a bill was introduced in congress, the Thermal Runaway Reduction Act, which includes mitigation by state of charge limits for all modes of transportation. FAA recently issued a safety alert on batteries in cargo shipments. The presentation discussed recent work of UL Standards and Engagement research which found that lithium battery incidents are at the highest point in five years of data collection, that the average passenger brings four rechargeable devices onboard, and that rechargeable devices are being packed in checked luggage. Cabin “fire bags” are being marketed as FAA approved although there is no approval process for them nor do the majority meet the UL 5800 standard. These devices may or may not work as advertised in the event of a cabin fire. There are currently two products in the marketplace that have met that UL 5800 standard. Chairman Brown noted that the Committee will have one more meeting before the May 2025 sunset and that the expectation is that a draft report to Congress with recommendations will be completed by April 2025.

Representatives from DOT’s Office of Aviation Consumer Protection provided a presentation on the Air Carrier Access Act (ACAA) and the ACAA Advisory Committee. The ACAA Advisory Committee was established in 2019 and has been extended to September 2028. The Committee is tasked with researching, discussing, and developing recommendations related to three areas: (1) ticketing practices and seating accommodations; (2) stowage of assistive devices; and (3) assistance at airports and related training. The ACAA Committee will be reviewing regulations related to lithium ion battery powered wheelchairs and mobility aids and is expected to provide recommendations to DOT via a new sub-committee. Members of the Lithium Battery Air Safety Advisory Committee expressed interest in providing information to and participating with the ACAA Committee in areas of overlap of the two Committees. DOT staff from the ACAA Advisory Committee welcomed a science based approach to

addressing safety concerns for transporting battery powered assistive devices on airplanes and encouraged interested Committee members to reach out to provide inputs to their Committee.

VI. Guest Presentation: Stories from the Supply Chain

Mr. Paul Horner from the Dangerous Goods Safety Group (UK) Ltd. presented “Stories from the Supply Chain” that highlighted actual problems experienced in the supply chain. Mr. Horner noted that one of the biggest problems is the lack of third party or independent verification for lithium batteries which has an impact on consumers. Mr. Horner noted several incidents involving lithium batteries such as a refurbished replacement e-bike battery that started a home fire while charging resulting multiple fatalities. In the incident aftermath there has been an increase in the awareness of lithium battery risks and there is currently a bill going through the UK parliament system to impose additional restrictions on the sale of lithium batteries. Mr. Horner also discussed the difficulties related to: (1) recalls of e-bike batteries; (2) application of airline safety risk assessments from a cargo perspective when cargo transported is from non-traditional channels, and (3) misdeclared cargo shipments.

VII. Sub-Committee Reports

The Sub-Committee Chairs provided the Committee with an update on work undertaken by their groups since the last Committee meeting.

- a. A Data Collection & Analysis Sub-Committee update was provided by its Chair David Wroth. Mr. Wroth provided updates on TRIP data that covered thermal incidents primarily for the first three quarters of 2024, 5 year trends, incidents by device type, and incidents by location. Mr. Wroth noted that there has been a significant increase in the number of TRIP participants since the previous meeting bringing the total to 34.

During 2024, through September 30th, the TRIP program has captured 68 thermal incidents from 15 different carriers with more than 80 percent occurring on the passenger side. The most common devices involved in these incidents are e-cigarettes followed by power bank, cell phones, and laptops. During the same time frame an average of one cargo incident per month was reported. Mr. Wroth noted that for the first time in at least five years a majority of incidents involving cargo were related to UN 3480 shipments of standalone batteries instead of batteries contained in or packed with equipment UN 3481, and they are still working to understand this change.

The presentation then went over the possibility of using the data to drive regulatory change through recommendations by the Committee and the development of a framework on how the data should be utilized. Mr. Wroth noted that during 2024, the data shows that roughly two-thirds of incidents have reported that a thermal containment product of some type was used in responding to that incident. This ties into the other discussions of the committee on standards and testing of containment devices.

- b. A Supply Chain Safety and Integrity Sub-Committee update was provided by its Chair Veronica Wilson. Ms. Wilson noted the IATA lithium battery guidance document

detailing 2025-26 updates to state of charge requirements applicable to lithium batteries 'packed with' and 'contained in' equipment. Ms. Wilson noted that many retailers in the supply chain are using the WERCSmart compliance platform operated by UL Solutions which provides data points to retailers to assist in execution of their respective programs concerning handling, storage, transport and disposal of products including lithium batteries. Ms. Wilson noted the platform allows retailers to gather inputs from suppliers, implement shipping conditions based on inputs, and pass along information to others in the supply chain. Currently 55 Retailers representing 120 brands with over 7,000 global manufacturers/suppliers participate in WERCSmart and is in the process of being updated to include relevant state of charge requirements.

- c. A presentation was provided by Dan Kessler from the FAA under the Hazard Analysis Sub-Committee. Mr. Kessler provided an update on planned FAA testing on batteries contained within equipment conducted used phones and tablets, with hope to conduct testing on laptops as well. The tests will attempt to replicate realistic packaging layouts with the portable electronic devices (PEDS) stored in original manufacturer packaging if possible and currently determining how PEDs are packaged in bulk transport configurations versus individual retail boxes.
- d. A presentation from Regulations and Gap Analysis Sub-Committee Member Jennifer Littenberg was provided. Ms. Littenberg provided insights on the continued difficulties that the air carrier industry is facing with mobility aid issue due to lack of limitation on battery size and appropriate operator mitigation measures. Ms. Littenberg noted the earlier presentation provided by the ACAA Advisory Committee staff and welcomed the opportunity for aviation hazardous materials experts to contribute to this work.

VIII. Working Group Updates

The Education and Outreach Working Group provided the Committee with updates on work undertaken by their groups since the last Committee meeting.

- a. Ms. Rohrbaugh with UL Standards & Engagement gave a presentation about passenger awareness and behavior concerning lithium batteries and highlighted updated research data from UL's Lithium-Ion Battery Safety and Aviation Safety Survey. Over 18,000 unique participants have been surveyed so far. This survey's quantitative research includes passenger factors including travel frequency, business, and personal travel, and those traveling with families. Ms. Rohrbaugh described that the research shows that there is vast gap between how safe people feel and how much they actually know about the risks. This safety gap creates a unique challenge for safety professionals. This survey indicated that 44% of respondents admitted to knowing nothing about lithium ion batteries. Two in five admitted to being unaware of thermal runaway risks such as fire or explosion. This lack of basic knowledge has direct implications on the approach for passenger education and risk mitigation strategies. The survey indicated that 60% respondents were not aware that lithium batteries power every day rechargeable and technology products. More than 30% of respondents are not concerned about thermal runaway risks on airplanes. She noted that people are starting to pay attention. More than half of U.S. adults have heard about at least one thermal runaway incident in the

past year. The average passenger brings about four rechargeable devices on board, but 41% do not recall seeing signage or battery related safety messaging. Ms. Rohrbaugh also provided detailed survey data about travelers understanding of power banks and electronic cigarette requirements and actual passenger actions with these items such as continued placement in checked bags despite industry-wide efforts and warnings. The ethnography research observed that passengers regardless of their travel frequency tend to filter out nonessential information during the boarding process with a single focus of boarding the plane. The reports can be found on ULSE.org.

- b. Mr. Martin provided an overview on where lithium battery education and awareness should be focused. This includes refined communications strategies for travelers, and expanded training for airline employees. The Working Group is looking for ways to expand the use of already published training materials with consistent messaging across the broader supply chain as well encouraging TRIP participation among more cargo airlines. Future outreach should consider successful benchmark concepts from existing campaigns such as the “Be Cigarette Safe”, “Check the Box”, and “Be Safe Buy Real”. The presentation concluded with a slide highlighting the Working Group’s recommendation to outline a comprehensive approach for awareness about lithium ion battery safety through a combination of educational strategies, partnerships, community engagement, and being consistent with messaging.

IX. International Update

DFO Duane Pfund provided an update on some of the larger projects that are underway internationally related to lithium batteries. As a result of a number of serious incidents caused by fires on vessels originating from vehicles, the International Maritime Organization has been conducting a multi-year review of transport provisions for vehicles. New provisions that will be considered in the next edition of the IMDG Code may include a state of charge requirement for lithium battery powered vehicles, and a consignor assessment of vehicle operating condition. The ICAO instructed the Dangerous Goods Panel to continue to consider provisions related to batteries in equipment, continue to assess the risk, and determine if additional mitigation measures necessary. With the recent publication of the G27 AS6413 standard for testing focused on smaller cylindrical batteries, the ICAO has recognized the standard test scheme and is considering adding it as guidance to competent authorities to use as a condition for approval. Mr. Pfund provided an update on ICAO job card lithium battery related issues and an update on lithium battery related papers, including provisions for lithium batteries in cargo transport units, to be considered at the upcoming 65th session of the UN Sub-Committee on the Transport of Dangerous Goods.

X. Final Committee Report

Chairman Brown provided a presentation outlining inputs for the final report to Congress highlighting the following topics:

- Technology to determine state of charge
- Taking custody of devices

- Performance standards for fire containment equipment
- Investigations of thermal runaway events
- Mobility device batteries
- Education and outreach

XI. Adjournment/Closing Remarks

Chairman Bob Brown thanked everyone for a productive meeting and particularly for their commitment to collaborative work. Chairman Brown noted that the next meeting would be in approximately six months. The meeting was adjourned at 4:14 PM EST.

At this moment, I certify that the preceding minutes are accurate and complete to the best of my knowledge.

A handwritten signature in black ink that reads "Bob Brown". The signature is fluid and cursive, with a long, sweeping line extending from the end of the name.

Bob Brown, Chairman
Lithium Battery Air Safety Advisory Committee

December 10th, 2024