



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

AUG 02 2018

Ms. L'Gena Shaffer
Technical Consultant
COSTHA
10 Hunter Brook Lane
Queensbury, NY 12804

Reference No. 17-0081

Dear Ms. Shaffer:

This letter is in response to your August 4, 2017, letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171–180) applicable to luggage, containing lithium batteries, for carriage aboard passenger aircraft.

We have paraphrased and answered your questions as follows:

- Q1. You ask if a lithium ion or metal battery, contained in luggage, that provides power to another device must be treated as a spare battery in accordance with § 175.10(a)(18)(iv). You note that the purpose of the lithium ion or metal battery is to provide power to another device via a USB port, and it does not provide power to the luggage.
- A1. The answer is yes. If the battery's sole purpose is to provide power to another device, it must be treated as a spare battery in accordance with § 175.10(a)(18)(iv). Spare lithium ion batteries are not permitted to be carried in checked baggage and, therefore must be carried into the cabin of the aircraft with the passenger.
- Q2. You ask if the requirement for each spare battery to be "individually protected so as to prevent short circuits (e.g., by placement in original retail packaging, by otherwise insulating terminals by taping over exposed terminals, or placing each battery in a separate plastic bag or protective pouch)" is met when the spare battery (as described in Q1) is installed in the luggage.
- A2. The answer is yes, with the presumption that the design of the luggage protects the spare battery against short circuiting when installed in the luggage. Please note that the spare lithium batteries must meet all additional requirements for carriage of lithium batteries on passenger aircraft in § 175.10(a)(18).

- Q3. You ask if the battery in Q1 must be removed.
- A3. The answer is no. However, if the battery is removed, it must be protected from short circuiting and overcharging in accordance with § 175.10(a)(18), along with additional requirements for carriage of lithium batteries on passenger aircraft.
- Q4. In the event the battery in Q1 is not capable of being removed from the luggage and the luggage does not fit in the Federal Aviation Administration (FAA)-approved overhead bin, you ask if the luggage can be checked.
- A4. The answer is no. In accordance with § 175.10(a)(18), a spare battery may only be transported in carry-on baggage. If the luggage is not capable of being stowed as carry-on baggage and the battery cannot be removed, it is not authorized for air transportation under § 175.10 exceptions.
- Q5. You ask if a lithium ion or metal battery contained in luggage that provides power to another device, but also provides power to devices that perform additional functions such as power locking, GPS tracking, or propulsion, is considered a portable electronic device as described in § 175.10(a)(18).
- A5. The answer is yes. It is the opinion of this Office that a lithium ion or metal battery contained in luggage to power features such as locking, GPS tracking, or propulsion, in addition to providing power to another device, is considered a portable electronic device. Aircraft passengers or crew members may carry portable electronic devices powered by lithium batteries in either checked or carry-on baggage in accordance with § 175.10(a)(18).

You should be aware that FAA Information for Operators (InFO) 17008: “The Transportation Portable Electronic Devices (PED) in Checked Baggage” has been published regarding this issue and can be found on FAA’s website at www.faa.gov. The InFO advises that devices containing lithium batteries should be transported in carry-on baggage and not placed in checked baggage. When that is not possible, the devices should be completely powered down to the OFF position, protected from accidental activation, and packed so they are protected from damage.

It is also important to note that the International Civil Aviation Organization (ICAO) during the 26th meeting of the Dangerous Goods Panel in Montreal, Canada on October 16 thru 27, 2017, adopted a new requirement that will require luggage equipped with a lithium battery to be carried as carry-on baggage, unless the battery is removed from the luggage. This new requirement will become effective in the 2019–2020 Edition of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air. This implementation will be applicable for all international transportation and on any air

carriers that implement the ICAO or International Air Transportation Association (IATA) requirements as policy. You should always verify the air carrier policies prior to transportation.

In addition to the HMR requirements, you must comply with all applicable FAA requirements, including those in 14 CFR 91.21 that address operation of portable electronic devices aboard aircraft. Information and guidance to assist with compliance of this requirement can be found in Advisory Circular (AC) 91.21-1C, titled "Use of Portable Electronic Devices Aboard Aircraft." For additional information regarding the FAA requirements or if you seek an interpretation on whether your particular device meets electronic transmission requirements contained in 14 CFR 91.21, you may contact the FAA at the following address:

Federal Aviation Administration
Office of the Chief Counsel
Regulations Division
800 Independence Avenue SW
Washington, DC 20591

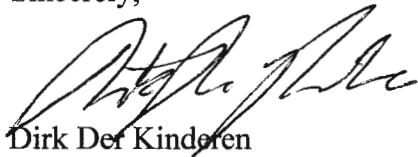
In addition to the transportation safety requirements pertaining to this device, there may be additional security requirements issued by the Transportation Security Administration.

- Q6. You ask how air carrier employees determine if luggage contains a lithium battery, the size and characteristics of the battery, and its carrying requirements.
- A6. It is the responsibility of the passenger and air operator to comply with all applicable conditions for passenger and crew exceptions in § 175.10.
- Q7. You ask if a lithium ion battery contained in a baby stroller that provides power to another device, but also performs additional features such as powering pathway lights and taillights, self-charging rear wheel generators, and an LCD dashboard to track distance, speed, calorie burn, temperature, time and battery level, is considered a portable electronic device as described in § 175.10(a)(18).
- A7. See A5.
- Q8. You ask if luggage that is designed for passengers to ride (such as the Modobag) and powered by a lithium battery meets the definition of a mobility aid.
- A8. Exceptions for passengers using "a wheelchair or other mobility aid equipped with a lithium ion battery" are provided in § 175.10(a)(17). While "mobility aid" is not defined

in the HMR, this wording is intended to mean that the mobility aid is related to an assistive need. Therefore, unless the passenger offering the luggage that is designed for passenger to ride has a mobility-related disability that is aided by the use of the device, it is the opinion of this Office that it would not meet the intent of an assistive device under Part 382 or the mobility aid exceptions for passengers in § 175.10(a)(17), and should be treated as a portable electronic device (see A5).

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dirk Der Kindoren', written in a cursive style.

Dirk Der Kindoren
Chief, Standards Development Branch
Standards and Rulemaking Division

Geller
§175.10(a)(18)
Batteries
17-0081

Dodd, Alice (PHMSA)

From: INFOCNTR (PHMSA)
Sent: Friday, August 04, 2017 1:27 PM
To: Hazmat Interps
Subject: FW: COSTHA request for interpretation - Baggage with lithium batteries/power source
Attachments: COSTHA Interp Request Luggage with Power Source.pdf

Hi Alice,

Please submit this as a letter of interpretation. Please let me know if you have any questions.

Thanks,
Jodi

From: L'Gena Shaffer [mailto:Lgena@costha.com]
Sent: Friday, August 04, 2017 9:50 AM
To: Kelley, Shane (PHMSA) <shane.kelley@dot.gov>
Cc: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>; Chris Yakush <Chris@costha.com>; lara costha.com <lara@costha.com>; L'Gena Shaffer <Lgena@costha.com>; Tom Ferguson <Tom@costha.com>
Subject: COSTHA request for interpretation - Baggage with lithium batteries/power source

Dear Shane,

Attached please find a COSTHA request for interpretation regarding the passenger and crew exceptions in § 175.10(a)(18) related to new passenger baggage types that contain lithium batteries.

We look forward to PHMSA's clarification.

Best regards,

L'Gena Shaffer, CDGP

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COSTHA 2018 Annual Forum & Expo ~ April 22-25 ~ Weston, FL



Council on Safe Transportation of Hazardous Articles

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This information is intended to provide interpretative and authoritative information in regard to the subject matter covered as a service to our clients and has been answered to the best of our ability based on the information provided to us. We do not guarantee the accuracy or completeness of any such interpretation or information, however, nor do we warrant that compliance with any advice we provide will guarantee compliance with any legal or regulatory requirements. Our statements

or opinions do not convey legal interpretation and government authorities or legal counsel should be contacted for such a response.



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Jim Wilterink
Manager - Transport Compliance
Amway Corporation

General Counsel
Richard Schweitzer, PLLC

August 4, 2017

U.S. Department of Transportation
PHMSA Office of Hazardous Materials Standards
Attn: PHH-10
East Building
1200 New Jersey Avenue, SE
Washington, DC 20590-0001
Phmsa.hm-infocenter@dot.gov

Dear Hazardous Materials Information Center,

COSTHA is requesting a letter of interpretation regarding application of the passenger and crew exception for personal use portable electronic devices (PED) in Title 49 Code of Federal Regulations, Part 175, Subpart A, Section 175.10- *Exceptions for Passengers, Crewmembers, and air operators*, to baggage with lithium batteries installed. We are specifically looking for clarification from the U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) as to when a passenger's luggage, or bag, should be designated as a power bank or a PED, which is excepted from certain Hazardous Materials Regulations (HMR; 49 C.F.R. Parts 171-180) and permitted in either checked or carry-on baggage aboard a passenger aircraft pursuant to 49 C.F.R. § 175.10(a)(18).

There are an increasing number of bags with uses beyond carrying a passenger's personal belongings. Some of these bags have GPS tracking, some charge external devices with electrical outlets or USB ports, some are designed to be mobile devices or ridden, and there is one bag manufacturer that uses lithium batteries to power the bag's locking mechanism. There are even baby strollers that include batteries for charging external devices.

Air operators are looking for detailed guidance on how to distinguish when § 175.10(a)(18) applies to bags with lithium batteries installed, such that the bag is considered a PED, from situations where the bag must be handled as a spare battery because it is used to supply electric power to separate equipment and therefore constitutes a power bank. We also request that PHMSA provide answers to the following questions and include in its response specific consideration of the identified products that are currently or soon to be made available on the market.

Council on Safe Transportation of Hazardous Articles

10 Hunter Brook Lane, Queensbury, NY 12804 • Phone: (518)761-0389 • Fax: (518)792-7781 • www.costha.com

1. If a passenger's bag contains lithium metal, lithium ion cells, or batteries for the primary purpose of providing power to another device and therefore must be handled as a spare battery in accordance with § 175.10(a)(18):
 - a. Does the battery's installation in the device meet the exception's requirement for spare batteries to be "*individually protected so as to prevent short circuits (e.g., by placement in original retail packaging, by otherwise insulating terminals by taping over exposed terminals, or placing each battery in a separate plastic bag or protective pouch)*"?
 - b. If the battery can be removed from the bag, must it be removed and carried in the passenger cabin as a spare battery or is it permitted to remain installed in the bag? For example, Travelmate Robotics' has a prototype fully autonomous and robotic suitcase that has a removable battery, which can be charged with wireless technology, USB port, standard electrical outlet, and removable GPS chip. See *Travelmate: A Fully Autonomous Suitcase and Robot*, <http://travelmaterobotics.com/>.
 - c. What is the required course of action for the bag when the battery cannot be removed and the bag is too large to fit in a Federal Aviation Administration (FAA) approved stowage location (i.e., the overhead compartment)? For example, Princess Traveler offers a bag equipped with a lithium battery for use as a general charging device that generally cannot be removed. See *Powerbox PET Collection-Power Collection*, PRINCESS TRAVELER, <http://princesstraveller.com/en/collectie/lijn/powerbox/?g=90>.
 - d. If the bag contains a power lock to secure the bag, or some other functionality, would the bag's exception status change under § 175.10(a)(18), such that the bag would qualify as a PED and be permitted in checked or carry-on baggage?
2. If a passenger's bag is designed with a lithium ion battery and only provides power to external devices via a USB port, or electric plug:
 - a. Is the bag considered a spare battery? For example, Away Travel Carry-On Luggage produces a bag that contains a built-in battery for the purpose of charging devices using a USB port, which while built to stay in place, can be removed by screwdriver after unzipping the interior lining. See AWAY TRAVEL, <https://www.awaytravel.com/>.
 - b. Would the bag's exception status change, such that it would qualify as a PED, if it was also equipped with GPS tracking, or other functionality? For example, the Bluesmart Series 2 Smart Luggage System has installed lithium batteries that can be used to charge 6 devices, but also includes a location tracker, digital scale, and remote lock. See *Bluesmart Series Smart Luggage System*, <http://www.bluesmart.com.>?)
3. How are air carrier employees to determine if a bag contains a lithium battery, the size and characteristics of the battery, and its carrying requirements when bags are being checked in or carried on board the air craft, particularly in instances where the passenger lacks information about the bag? For example, the CowaRobot Robotic Suitcase, which has a built-in battery to power external devices using a USB and is equipped with smart technology to allow the suitcase to travel beside the user, looks remarkably similar to other

bags and if not turned on is not distinguishable as a smart suitcase. See COWAROBOT, <http://cowarobot.com/>.

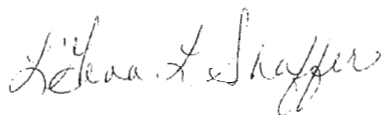
4. When a baby stroller is equipped with a lithium ion cell, or battery, to power external devices, will the stroller be considered a PED and approved for carriage in accordance with § 175.10(a)(18), provided the stroller satisfies all other requirements (e.g. the lithium ion battery has a Watt-hour (Wh) rating under 100)? See *4Moms* https://www.4moms.com/moxi?gclid=EAlalQobChMI49S04O-71QIVDTaBCh0xkA2MEAAAYASAAEgJ7UfD_BwE

Finally, we request clarification on when an air carrier can accept luggage under § 175.10(a)(18) that is designed with a motor for passengers to ride. Modobag, for example, offers motorized luggage, which can also be used as a carry-on, is equipped with a battery to charge two devices with dual USB ports, and has a built in GPS. See *Modobag: World's First Motorized, Rideable Luggage*, <http://modobag.com>. Although the International Air Transport Association (IATA) published guidance on smart luggage in May 2017, which addresses bags equipped with lithium batteries, this guidance indicates that smart luggage containing a lithium ion battery and motor allowing it to be used as a personal transportation device does not meet the criteria for a mobility device. *Smart Baggage with Integrated Lithium Batteries and/or Electronics*, IATA, (May 2017), <https://www.iata.org/whatwedo/safety/Documents/IATA-Guidance-on-Smart-Baggage-with-integrated-lithium-batteries-and-electronics.pdf>. However, because 14 C.F.R. § 382.3 defines a "battery-powered mobility aid" as "*an assistive device that is used by individuals with mobility impairments such as a wheelchair, a scooter, or a Segway when it is used as a mobility device by a person with a mobility-related disability*," it is unclear when a suitcase, which is designed for moving a passenger (i.e. rideable), will be considered a mobility aid instead of a bag equipped with a motor, or riding luggage. Further, if it does not qualify as a mobility aid, additional clarification of the exception in § 175.10(a)(18) is needed to properly assess whether the riding luggage can be handled as carry-on baggage.

As travelers become increasingly connected by portable electronic devices, manufacturers are working to meet consumers demand for portable power, leading to new and creative battery applications. Although air carriers are diligently attempting to evaluate each device type when presented, additional guidance on the exception in § 175.10(a)(18) and how it should be applied to bags with lithium batteries installed is needed to ensure proper application of the HMR.

We appreciate your review and prompt response. If you have any questions regarding this request, please feel free to call me at +1.518.761.0389, Ext. 206 or email lgena@costha.com.

Sincerely,



L'Gena Shaffer
Council on Safe Transportation of Hazardous Articles