



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

MAY 21 2019

David Sternlight
Chief Executive Officer
Cabeau Inc.
21700 Oxnard Street, Suite 900
Woodland Hills, CA 91367

Reference No. 19-0002

Dear Mr. Sternlight:

This letter is in response to your November 7, 2018, email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to lithium ion batteries. Specifically, you ask about a device that is powered by a lithium ion battery, and attached to the outside of a piece of luggage, as it applies to carriage aboard passenger aircraft as either checked or carry-on baggage. You note that the device enters hibernation mode at a point when the aircraft speed exceeds 150 mph or is idle for more than five minutes. Additionally, you provide the following specifications for the lithium ion battery that powers the device:

- 680 mAh
- Input 3.7 v/2/1 amps
- 2.5 Watt-hours
- Distance between battery and outside casing is 7 mm (versus 5 mm for consumer electronic devices)
- Three battery enclosures to provide shock protection and isolation of antennas

We have paraphrased and answered your questions as follows:

- Q1. You ask whether the device you described is considered a portable electronic device (PED) as described in § 175.10(a)(18), for the purposes of carriage aboard passenger aircraft.
- A1. The answer is yes. Based on the information provided regarding the batteries and device, it is the opinion of this Office that a lithium ion (or metal battery) contained in a device, which is attached to the outside of a piece of luggage, is considered a PED. Aircraft passengers or crew members may carry PEDs powered by lithium batteries in either checked or carry-on baggage in accordance with § 175.10(a)(18).

Note that in addition to the HMR requirements, all applicable FAA requirements must be complied with, including those in 14 CFR § 91.21, that address operation of PEDs aboard aircraft. Information and guidance to assist with compliance of this requirement can be

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, S.W.
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.

- Q2. You ask whether the device you described is a PED for the purposes of carriage aboard passenger aircraft under the 2019-2020 edition of the International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions).
- A2. ICAO amended the Technical Instructions requirements for dangerous goods carried by passengers or crew by adding provisions for baggage equipped with lithium batteries. It is the opinion of this Office that, for the purposes of the provisions for the carriage of dangerous goods by passenger aircraft, in accordance with the 2019-2020 edition of the ICAO Technical Instructions (see 8-1-1, Table 8-1), the device, when it is attached to or installed in a piece of luggage, is best described as “baggage with installed lithium batteries.”
- Q3. You ask this Office to clarify how the provisions of the HMR pertaining to PEDs may be impacted by related changes to the ICAO Technical Instructions and upcoming PHMSA rulemakings.
- A3. On November 28, 2018, PHMSA published a Notice of Proposed Rulemaking (NPRM), entitled, “*Hazardous Materials: Harmonization with International Standards*” (HM-2150, 83 FR 60970), which proposes to amend the HMR to maintain alignment with international regulations and standards provisions, including the 2019-2020 ICAO Technical Instructions. In that NPRM, PHMSA proposes to amend § 175.10(a)(18) to require that when PEDs powered by lithium batteries are in checked baggage, they be completely switched off (not in sleep or hibernation mode) and protected to prevent unintentional activation or damage.

Further in the HM-2150 NPRM, PHMSA proposes to allow passengers to check or carry-on baggage equipped with lithium batteries provided the lithium content does not exceed 0.3 grams (for lithium metal batteries) or 2.7 Watt-hours (for lithium-ion batteries). Baggage equipped with a lithium battery exceeding the lithium content or watt-hour limit would be required to be carried as carry-on baggage, unless the battery is removed from the checked bag and carried as a spare battery in the aircraft cabin.

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

Sincerely,



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

CC: Gregory S. Walden



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Via email

November 7, 2018

Mr. Duane Pfund
International Program Coordinator
Standards and Rulemaking Division
Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Avenue SE
Washington, DC 20590

Dear Mr. Pfund,

Cabeau, Inc. (“Cabeau”) seeks clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to luggage with a Global Position System (“GPS”) tracking device powered by a lithium ion battery attached on the outside of a piece of luggage, for carriage as checked baggage, or carryon, on board passenger aircraft.

Cabeau, in collaboration with its technology partner Go Plug Bags, Inc. has designed and is in the final stages of launching a GPS tracking luggage lock called “Track & Shield” that will ensure passengers can track the location of their luggage at all necessary times, from the moment the passenger checks the luggage until the passenger picks up the luggage at baggage claim. It also can also provide a record of any instance when the lock (and presumably the luggage) was opened and where. The Track & Shield device is powered by a lithium ion battery with the following specifications:

- 680 mAh
- Input 3.7 v/2/1 amps
- 2.5 Watt-hours
- Distance between battery and outside casing is 7 mm (versus 5 mm for consumer electronic devices)
- Three battery enclosures to provide shock protection and isolation of antennas

The Track & Shield device goes into hibernation mode at a point when aircraft exceeds 150 mph or is idle for more than 5 minutes. In essence, the device goes into “airplane mode” like a cell phone.

The Track & Shield device is TSA-compliant with a key slot and meets FCC and CE requirements. The body of the Track & Shield device consists of a die cast zinc body with stainless steel rope hasps; it is waterproof and shock resistant. The battery is thus protected from damage, short circuit and accidental activation.

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Cabeau seeks confirmation that its lithium ion battery-powered Track & Shield device is a "portable electronic device" per HMR 173.21(c) ("electronic device"), 173.85 ("equipment"), 175.10(a)(18) ("portable electronic devices"), and thus luggage with the Track & Shield device affixed on the outside may be carried in either checked or carry-on luggage.

The lithium ion battery has been proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, Sub-section 38.3 (Sixth edition) and is well under the 100 Watt-hour limit.

We are aware of electronic transmission requirements in 14 CFR 91.21. This request for clarification pertains only to the HMR.

Thank you for your time and attention.

Sincerely,

A handwritten signature in black ink, appearing to read "David Sternlight", with a long horizontal flourish extending to the right.

David Sternlight
CEO
Cabeau, Inc.