



U.S. Department
of Transportation

1200 New Jersey Avenue SE
Washington, DC 20590

**Pipeline and Hazardous
Materials Safety
Administration**

Shannon M. Trevithick
Britton & Associates
Attorneys at Law
735 North Water Street, 16th Floor West
Milwaukee, WI 53202

MAR 21 2012

Ref. No.: 11-0217

Dear Mr. Trevithick:

This responds to your August 17, 2011 letter and follow-up telephone discussion regarding the transportation requirements for wet (electric storage) batteries in the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you request clarification of the loading and bracing requirements in § 173.159(e)(2), which require batteries to be loaded or braced so as to prevent damage and short circuits in transit. You provide a diagram and a proposed pallet production protocol that your client, Johnson Controls Battery Group, Inc. (JCI), requires shippers to comply with when creating pallets of wet batteries for highway transportation. You ask whether this diagram and these procedures comply with the loading and bracing requirements specified in § 173.159(e)(2). Finally, you indicate that JCI applied for, and was granted party status to DOT-SP 15161, which is a valid and current PHMSA special permit that authorizes the transportation in commerce of lead batteries from more than one shipper without voiding the exception in § 173.159(e).

As stated in the enclosed July 30, 2010 letter from Mr. Charles E. Betts to Mr. Robert N. Steinwurtzel (Ref. No.: 10-0129; copy enclosed), the requirement in § 173.159(e)(2) for the batteries to be loaded or braced so as to prevent damage and short circuits in transit is a performance requirement. Though the diagram and the proposed pallet production protocol described in your letter appear to satisfy the intent of the requirement, the shipper and the carrier must ensure that the palletized batteries are loaded or braced so as to prevent damage and short circuits in transit. Further, provided that JCI complies with the provisions of DOT-SP 15161 and this special permit is valid and current (i.e., no leakage and not expired), the transport vehicles would be permitted to carry material offered from multiple shippers.

Please note that motor carriers may be subject to additional requirements to protect against shifting and falling of cargo under the Federal Motor Carrier Safety Regulations in 49 CFR Part 393, Subpart I.

I hope this answers your inquiry. If you need additional assistance, please contact the Standards and Rulemaking Division at (202) 366-8553.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. El-Sibaie', with a stylized flourish at the end.

Dr. Magdy El-Sibaie
Associate Administrator for
Hazardous Materials Safety

Enclosure



U.S. Department of Transportation
**Pipeline and Hazardous Materials
Safety Administration**

1200 New Jersey Ave, SE
Washington, D.C. 20590

JUL 30 2010

Mr. Robert N. Steinwurtzel
Bingham McCutchen LLP
2020 K St., NW
Washington, DC 20006-1806

Ref. No. 10-0129

Dear Mr. Steinwurtzel:

This responds to your June 14, 2010 letter regarding the transportation requirements for wet (electric storage) batteries under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). You ask for clarification of the requirements for exception from regulation as Class 8 corrosive materials for wet batteries under § 173.159(e) of the HMR. Specifically, you ask for clarification of procedures that satisfy the requirement of § 173.159(e)(2) that batteries must be loaded or braced to prevent damage and short circuits in transit.

According to your letter, the Battery Council International (BCI) has published procedures on how to package used wet batteries on pallets (see *Used Battery Stack and Wrap Flyer* available at www.batterycouncil.org). The procedures include:

- (1) Pallet specifications (e.g., a maximum of three layers of batteries per pallet);
- (2) Instruction to place cardboard (waffleboard) between the pallet and layers of batteries to prevent damage, short circuits, and sliding;
- (3) Instruction to orient battery terminals in such a manner to prevent short circuits; and
- (4) Instruction to stretchwrap the batteries to the pallet to secure the batteries and prevent them from falling off the pallet.

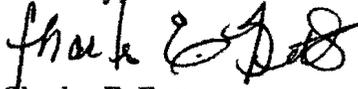
Additionally, you indicate an industry practice of loading a motor vehicle by placing pallets tightly against each other front to back and using standard load locks and/or straps at the front and rear of the load to secure the pallets from shifting forward or rearward on the motor vehicle. Depending on the configuration of the pallets, there may be void space between the pallets and the walls of the motor vehicle trailer. You request clarification that the combination of the BCI packaging procedures and industry loading practice satisfies the requirement of § 173.159(e)(2).

It is the opinion of this Office that the method of loading the wet batteries on a motor vehicle described in your letter satisfies the requirement of § 173.159(e)(2) so long as no damage or short circuit occurs in transit. However, this requirement is a performance standard, so that if the batteries are capable of shifting to the extent of causing damage or short circuit, this method of loading would not comply with § 173.159(e)(2).

Note that motor carriers may be subject to additional requirements to protect against shifting and falling of cargo under the Federal Motor Carrier Safety Regulations in 49 CFR Part 393, Subpart I.

I hope this information is helpful. If you have further questions, please contact this office.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles E. Betts". The signature is stylized and cursive.

Charles E. Betts
Chief, Standards Development
Office of Hazardous Materials Standards

Nickels
§173.159(e)(2)
Batteries
11-0217

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August 17, 2011

Magdy El-Sibaie
Associate Administrator
U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
East Building, 2nd Floor
Mail Stop: E21-317
1200 New Jersey Ave., SE
Washington, DC 20590

**REQUEST FOR CLARIFICATION OF BRACING UNDER
49 C.F.R. § 173.159(e)(2)**

Dear Dr. El-Sibaie:

This office represents Johnson Controls Battery Group, Inc. ("JCI"). JCI is a manufacturer of lead-acid batteries for public sale. JCI also arranges the pick-up and transportation of spent lead battery "cores" from customer locations to recycling facilities.

JCI ships the battery cores pursuant to the exemption contained at 49 CFR § 173.159(e). That exemption from the normal hazardous materials regulatory requirements applies to shippers/carriers of lead-acid batteries, as long as four conditions are met:

1. No other hazardous materials may be transported in the same vehicle;
2. The batteries must be loaded or braced so as to prevent damage and short circuits in transit;
3. Any other material loaded in the same vehicle must be blocked, braced, or otherwise secured to prevent contact with or damage to the batteries; and

4. The transport vehicle may not carry material shipped by any person other than the shipper of the batteries.

This letter seeks interpretation/clarification of subpart 2. of the exemption, the "loading and bracing" requirement.

JCI has developed a protocol for the "palletizing" of used lead-acid batteries for transportation. This protocol is designed to ensure that the batteries shipped by JCI are properly "braced" when they are placed upon transport vehicles. That protocol is provided to JCI customers and carriers with instructions on how to implement its use. JCI's protocol is to palletize used lead acid batteries as follows (from the bottom up):

- The pallet itself must be of reasonable quality—no protruding nails or split boards;
- Place a layer of thin cardboard on the pallet;
- Place a layer of used batteries on the cardboard
 - The batteries must be kept upright at all times (not tipped over);
 - The used batteries must be placed gently onto the pallet—not thrown or tossed upon it;
 - The batteries must be lead-acid only, no other types of batteries and no other hazardous materials such as separate acid packs;
 - Any side terminal batteries in the layer must have the terminals facing away from each other and not facing the outside of the pallet (away from the center);
 - The batteries in the layer cannot hang over the cardboard or the pallet;
 - The battery terminals in the layer must be stacked/placed so they do not touch each other or any metal objects;
 - The batteries in this first layer should be placed as level and close together as possible, in compliance with the other guidelines herein;
 - The battery terminals should be placed (upright) towards the outside edge of the pallet;

- Marine or golf car batteries with a single long post should be placed in this layer;
- Place a layer of 1" cardboard over the first battery layer
 - If there are marine or golf car batteries in the first battery layer, an additional layer of the 1" cardboard should be placed above the first battery layer;
- Place a second layer of used batteries on the cardboard
 - The batteries must be kept upright at all times (not tipped over);
 - The used batteries must be placed gently onto the pallet—not thrown or tossed upon it;
 - The batteries must be lead-acid only, no other types of batteries and no other hazardous materials such as separate acid packs;
 - Any side terminal batteries in the layer must have the terminals facing away from each other and not facing the outside of the pallet (away from the center);
 - The batteries in the layer cannot hang over the cardboard or the pallet;
 - The battery terminals in the layer must be stacked/placed so they do not touch each other or any metal objects;
 - The battery terminals should be placed (upright) towards the outside edge of the pallet;
- Place a layer of 1" cardboard over the second battery layer
- Place a third layer of used batteries on the cardboard
 - The batteries must be kept upright at all times (not tipped over);
 - The used batteries must be placed gently onto the pallet—not thrown or tossed upon it;
 - The batteries must be lead-acid only, no other types of batteries and no other hazardous materials such as separate acid packs;

- Any side terminal batteries in the layer must have the terminals facing away from each other and not facing the outside of the pallet (away from the center);
- The batteries in the layer cannot hang over the cardboard or the pallet;
- The battery terminals in the layer must be stacked/placed so they do not touch each other or any metal objects;
- The battery terminals should be placed (upright) towards the outside edge of the pallet;
- Any damaged batteries will be placed in the center of this layer after being placed in a container that will protect the damaged battery from any leakage during the conditions incident to normal transport
- Place a layer of thin cardboard over the third battery layer;
- The whole stack is then stretch-wrapped to secure its contents within the structure and to the pallet itself
 - The stretch wrap is intentionally pulled/caught over the corners of the pallet itself to ensure it is securely held fast to the pallet;
 - The stretch wrap is taken around the whole stack, numerous times;
 - The stretch wrap is taken over a large portion of the corners of the top cardboard to secure the top cardboard;
 - The stretch wrap used is recommended 80 gauge material;
 - The stretch wrap is “roped” around the layers by twisting the wrap as it is applied for additional security and strength;

Attached hereto is a diagram of this procedure for your review.

The completed pallets are then placed upon vehicles for transport. The pallets are placed in a specific manner to prevent movement of the pallets or their contents during transport.¹

JCI thus asks for PHMSA to clarify that its proposed pallet production protocol is in compliance with the "braced" requirement contained at 49 CFR § 173.159(e)(2).

Please advise in response to this request for interpretation/clarification.

Respectfully submitted,

BRITTON & ASSOCIATES, S.C.

A handwritten signature in black ink, appearing to read 'Shannon M. Trevithick', with a large, sweeping flourish extending to the right.

Shannon M. Trevithick
Enclosures

¹ The specific loading protocol is the subject of a separate request for clarification from PHMSA sent this same date.