



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Avenue, SE  
Washington, DC 20590

March 28, 2023

Mr. Steven Charles  
Global Transportation Manager  
Generac Power Systems, Inc.  
245 Lasa Drive, Unit 307  
St. Augustine, FL 32084

Reference No. 22-0135

Dear Mr. Charles:

This letter is in response to your December 13, 2022, email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to lithium ion battery powered ride-on lawn mowers. In your email, you describe a lithium ion battery powered lawn mower commonly referred to as a “zero-turn” mower. Specifically, you ask whether your zero-turn mower may be described as “UN3171, Battery-powered vehicle, 9” and transported under the provisions of § 173.220.

The answer is yes. The entry “UN3171, Battery-powered vehicle *or* Battery-powered equipment” applies to the transportation of battery-powered machinery and equipment equipped with wet batteries (including non-spillable batteries), sodium batteries, or lithium batteries. Requirements for transporting machinery or equipment containing lithium batteries are specified in § 173.220(c) and (d). As described in § 173.220(c), batteries must be securely fastened in the battery holder of the vehicle, engine, or mechanical equipment, and be protected in such a manner as to prevent damage and short circuits. Battery-powered vehicles, machinery, or equipment including battery-powered wheelchairs and mobility aids are not subject to any other requirements of the HMR—except § 173.21 (Forbidden material and packages)—when transported by rail, highway, or vessel.

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

Sincerely,

A handwritten signature in blue ink that reads "T. Glenn Foster".

T. Glenn Foster  
Chief, Regulatory Review and Reinvention Branch  
Standards and Rulemaking Division

**From:** [INFOCNTR \(PHMSA\)](#)  
**To:** [Dodd, Alice \(PHMSA\)](#); [Hazmat Interps](#)  
**Subject:** FW: Request for Letter of Interpretation  
**Date:** Tuesday, December 13, 2022 4:49:29 PM  
**Attachments:** [130162 \(1\).pdf](#)  
[RIDE ON MOWER POWERED BY LI-ION BATTERY.docx](#)

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Hi Alice and team,  
Please see the LOI request below. Thank you.  
Rachel (HMIC)

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**From:** Stephen Charles <Stephen.Charles@generac.com>  
**Sent:** Tuesday, December 13, 2022 11:42 AM  
**To:** INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>  
**Cc:** Tyler Wormus <Tyler.Wormus@meangreenproducts.com>  
**Subject:** Request for Letter of Interpretation

**CAUTION:** This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear Sir/Madam:

We are requesting a formal letter of interpretation of the requirements in the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180), similar to the one that your department issued to John Deere company in July 2013 (attached).

A formal interpretation is needed to clarify if 173.220 (c) is applicable to zero turn, ride on mowers powered by a lithium ion battery. The lithium ion battery is the sole source of power for the ride on mower. There is no internal combustion engine or other power source. A photo of our ride on mower is included.

The batteries are secured from movement, protected from short circuiting and isolated through a controller (Battery Management system) to prevent activation when not in use.

Discussion has taken place with PHMSA Info Center personnel regarding the potential applicability of 173.220 (c) and verbally, they did confirm this.

We are seeking a formal interpretation, based on HMR regulations as they apply today.

Sincerely

*Steve Charles*

Steve Charles  
Global Transportation Manager- International

Global Logistics  
Generac Power Systems, Inc.  
245 Lasa Drive, Unit 307  
St. Augustine, FL. 32084  
Cell Phone: 262-289-5969



U.S. Department  
of Transportation

**Pipeline and Hazardous  
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Administration**

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

OCT 18 2013

Mr. Mike Moetsch  
Manager DG/HM Transportation & Phytosanitary Measures  
Deere & Company WW Supply Management Compliance  
3400 80<sup>th</sup> Street  
Moline, IL 61265

Reference No.: 13-0162

Dear Mr. Moetsch

This is in response to your August 6, 2013 email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the transportation of tow behind agricultural equipment or machinery containing lead acid batteries but not containing an internal combustion engine or electric motor for propulsion or power source. You state that these batteries are required to provide additional power in instances when the power unit does not have sufficient electrical power and also function as a back-up power source to prevent accidental shutdown during operations. Specifically, you ask if this equipment could be classed as "UN3171, Battery-powered equipment" and whether the provisions of § 173.220(c) would apply to this equipment or machinery.

The answer is yes. The entry "UN3171, Battery-powered equipment" applies to the transportation of battery-powered machinery and equipment equipped with a wet battery (including a non-spillable battery), a sodium battery or a lithium battery. Requirements for transporting machinery or equipment containing a wet electric storage battery (e.g., lead acid batteries) are set forth in § 173.220(c). The battery must be securely installed, fastened in an upright position, and protected against short circuits and leakage. When transported by rail, highway, or vessel, shipments conforming to the requirements in § 173.220(c) are not subject to the requirements of the HMR except for those described in § 173.21. When transported by aircraft, shipments conforming to the requirements in § 173.220(c) are excepted from marking, labeling, placarding, and emergency response telephone number requirements as provided in § 173.220(h)(2), however, all other applicable requirements of the HMR apply, including shipping papers and emergency response information, notification of pilot-in-command, general packaging requirements, and the requirements specified in § 173.27.

I trust this information is helpful. If you have further questions, please do not hesitate to contact this office.

Sincerely,

Delmer Billings  
Senior Regulatory Advisor  
Standards and Rulemaking Division

Wiener  
§ 173.220(c)

**Drakeford, Carolyn (PHMSA)**

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**From:** INFOCNTR (PHMSA)  
**Sent:** Tuesday, August 06, 2013 4:57 PM  
**To:** Drakeford, Carolyn (PHMSA)  
**Subject:** FW: Formal Letter of Interpretation Requested

Applicability  
13-0162

Hi Carolyn,

This caller requested we submit this e-mail as a formal letter of interpretation.

Thanks,  
Victoria

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**From:** Moetsch Michael P [<mailto:MoetschMichaelP@JohnDeere.com>]  
**Sent:** Tuesday, August 06, 2013 1:38 PM  
**To:** INFOCNTR (PHMSA)  
**Cc:** Moetsch Michael P; Trumbull Timothy D; Meierotto Connie  
**Subject:** Formal Letter of Interpretation Requested

Office of Hazardous Materials Standards  
Pipeline and Hazardous Materials Safety Administration

August 6, 2013

Dear Sir/Madam:

I am requesting a formal Letter of Interpretation of the requirements in the Hazardous Materials Regulations (HMR: 49 CFR Parts 171 – 180).

A formal interpretation is needed to clarify if 173.220 (c) is applicable to tow behind agricultural equipment or machinery where the equipment or machinery includes lead acid batteries but does not have an internal combustion engine or electric motor for propulsion or power source? In addition does this equipment or machinery meet the definition of (battery-powered equipment or machinery) as listed in 173.220 (c)?

The batteries are secured from movement, protected from short circuiting and isolated through a controller to prevent activation when not in use. These batteries are required to provide additional power in instances when the power unit does not have sufficient electrical power and are also a back-up power source to prevent accidental shutdown during operations.

Discussion has taken place with PHMSA Info Center personnel regarding the potential applicability of 173.220 (c). Two Letters of Interpretation 02-0229 and 11-0150 were reviewed for possible clarification. Neither Letter of Interpretation closely resembles our scenario. Both interpretations focus on equipment or machinery with an internal combustion engine or electric motor for propulsion or an internal combustion engine as a power source.

Sincerely,

**Mike Moetsch**  
**Deere & Company WW Supply Management Compliance**  
**Manager DG/HM Transportation & Phytosanitary Measures**  
3400 80th Street, Moline, IL 61265  
Phone: 309-765-3552  
Cell: 309-716-6025

Fax: 309-749-3958

[MoetschMichaelP@JohnDeere.com](mailto:MoetschMichaelP@JohnDeere.com)

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