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U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
Office of Hazardous Materials Safety
Standards and Rulemaking Division
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Request for Interpretation - LT1200 Classification as UN3481, Lithium-ion batteries contained in equipment

To Whom It May Concern:

Liftra USA Inc respectfully requests a formal interpretation from the Pipeline and Hazardous Materials Safety Administration (PHMSA) regarding the appropriate classification under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) of the LT1200 Liftra Self-Hoisting Crane [LSHC] when offered for transportation in the United States. **Liftra requests confirmation that the complete LT1200 system, as described below, may be classified and described as UN3481, Lithium-ion batteries contained in equipment, Class 9, subject to all otherwise applicable requirements of the HMR.**

1. LT1200 Product Identity and Design

The LT1200 is a self-contained, battery-powered industrial machine designed for major component exchange and maintenance of wind turbines. It is engineered, manufactured, sold, documented, stored, and transported as a single commercial product/SKU. The complete system includes the nacelle system (with some crane-like functions), two installed lithium-ion power packs, electrical controls, winches and utility systems, dedicated structural supports, and a purpose-built container system which also functions as the transport enclosure.

The outer enclosure was originally derived from a 40-foot intermodal freight-container structure. It has, however, been extensively and permanently modified for the LT1200 system and is not used as a general-purpose freight container. The enclosure incorporates fixed electrical and battery equipment, dedicated hard mounts, brackets, restraint points, access provisions, and operating/support components designed specifically for the LT1200, known as the container system. No unrelated cargo or general freight is transported within the enclosure.

The LT1200 nacelle system is stowed and mechanically restrained inside this dedicated enclosure for storage and transportation. At the jobsite, the nacelle system is deployed directly from the container system for operation on the wind turbine. Following use, it is returned to the same enclosure and secured using the engineered transport mounting and restraint system. The nacelle system is not intended to be transported as an independent item outside of this dedicated LT1200 configuration.

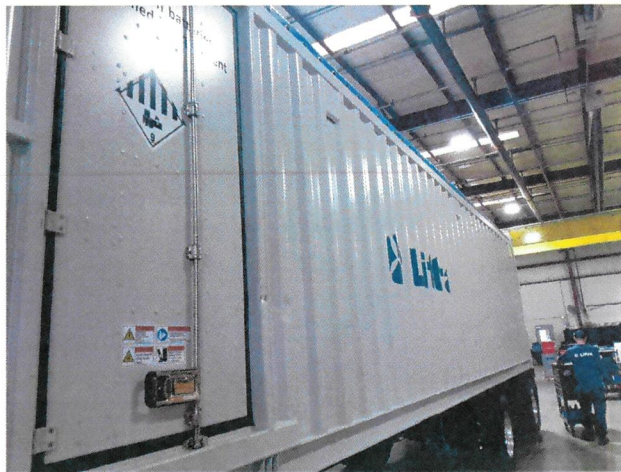


Figure 1. LT1200 dedicated enclosure positioned on a highway trailer.



Figure 2. Rear opening of the enclosure with the LT1200 crane stowed inside.

2. Installed Battery Systems and Energy Calculations

The LT1200 incorporates two lithium-ion power packs. Both power packs exist solely to operate functions of the LT1200 system. Neither power pack is intended or configured to supply electrical energy to a customer load, the electrical grid, another vehicle, external machinery, or any other external equipment. No battery power is supplied externally during transportation, and the LT1200 is placed in its transport configuration and safely secured for highway movement.

Power pack	Primary LT1200 function	Cells	Nominal cell energy	Calculated pack energy
Container Power Pack	Mainly powers the main winch, plus smaller LT1200 utility functions.	192	105 Ah x 3.2 V = 336 Wh	192 x 336 Wh = 64 512 kWh
Nacelle Power Pack	Mainly powers hydraulic crane functions, plus smaller LT1200 utility functions.	168	20 Ah x 3.2 V = 64 Wh	168 x 64 Wh = 10.752 kWh
Combined LT1200 system	All battery energy is dedicated to operation of the LT1200.	360	-	75.264 kWh total

Combined nominal installed battery energy: 75,264 Wh (75.264 kWh).

The Container Power Pack is fixed within the dedicated LT1200 enclosure because the main winch and related utility equipment are integral parts of the LT1200 operating system. The Nacelle Power Pack is installed is fixed on the nacelle system and primarily supplies its hydraulic functions. Although the packs are located in different parts of the system and serve different articulating functions, both are dedicated exclusively to the same LT1200 equipment and have no external power-supply purpose.

It is noticeable that the cell chemistry is specifically chosen to be Lithium Iron Phosphate (LiFeP04 / LFP), which is widely known to be the safest type of rechargeable battery cell type.

3. Basis for Classification as Equipment Containing Lithium-Ion Batteries

49 CFR § 173.185 defines "equipment" as *"the device or apparatus for which the lithium cells or batteries will provide electrical power for its operation."* The LT1200 fits this functional description because both installed lithium-ion power packs provide electrical power only for operation of the LT1200 itself.

PHMSA Interpretation Ref. No. 17-0080 (June 15, 2018) similarly explains that an installed lithium battery is considered contained in equipment when the primary purpose of the battery is to provide electrical power for operation of that equipment. In that interpretation, PHMSA also considered a hard-sided luggage assembly housing multiple electrically powered devices to be equipment where the battery served those devices. Liftra recognizes that interpretation letters are fact-specific; the cited interpretation is offered as analogous guidance regarding the functional meaning of "equipment."

The LT1200 is an industrial machine whose dedicated enclosure is part of the engineered apparatus. The enclosure is not used to transport unrelated packages or general freight, and its purpose is inseparable from the storage, restraint, deployment support, electrical infrastructure, and transportation of the LT1200 system. The presence of a transport enclosure around the machine does not change the function of the two installed battery systems: each battery system exists solely to operate the LT1200 and its integral system functions.



Figure 3. Fixed battery installation and dedicated structural/electrical modifications inside the LT1200 enclosure.



Figure 4. Integrated battery modules, BMS monitoring units, cabling, and LT1200 controls inside the Nacelle System.

4. Questions Presented

1. Based on the facts described above, does PHMSA agree that the complete LT1200 system - including the dedicated transport enclosure (container system), LT1200 Nacelle System, Container Power Pack, Nacelle Power Pack, electrical and hydraulic controls, winches, and associated integral components - constitutes "equipment" for purposes of 49 CFR § 173.185 and may be classified and described as UN3481, Lithium ion batteries contained in equipment, Class 9, provided all otherwise applicable HMR requirements are satisfied?
2. Does the presence of two installed lithium-ion power packs, each dedicated exclusively to operating different functions of the same LT1200 equipment, alter that UN3481 classification?

5. Liftra's Interpretation

Liftra believes the appropriate classification is UN3481, Lithium-ion batteries contained in equipment, Class 9. The LT1200 is a single industrial machine, and its batteries are installed for the primary and exclusive purpose of powering the operation of that machine. The batteries do not serve an external energy-supply function. The dedicated enclosure is an engineered part of the LT1200 system and is used exclusively to house, secure, support, store, and transport the LT1200 and its integral components.

This request seeks classification clarification only. Liftra understands that the applicable testing, design, packaging/protection, hazard communication, documentation, training, and other requirements of the HMR remain independently applicable to the extent required by the final classification and transportation configuration.

6. Supporting Information

Photographs illustrating the LT1200 transport configuration, nacelle system stowage, fixed battery/electrical installations, power controls, and operating configuration are included as Exhibit A. Liftra can provide additional information upon request, including engineering drawings, electrical one-line diagrams, battery cell and pack specifications, UN 38.3 documentation, restraint drawings/calculations, owner's manual provisions, transport procedures, and photographs of additional LT1200 configurations.

We respectfully request PHMSA's written interpretation of the questions above. Thank you for your consideration and assistance.

Respectfully,

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Product Group Manager of Self Hoisting Cranes

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Regulatory References

- [49 CFR § 173.185 - Lithium cells and batteries](#)
- [49 CFR § 172.101 - Hazardous Materials Table](#)
- [PHMSA Interpretation Ref. No. 17-0080 \(June 15, 2018\)](#)

EXHIBIT A

LT1200 System Photographs

The photographs below are provided to illustrate the physical identity of the LT1200 as a single, purpose-built nacelle system, its dedicated transport enclosure, its stowed transport configuration, and the integrated battery/electrical systems that serve the LT1200 system.



Exhibit Figure A-1. LT1200 dedicated enclosure positioned on a highway trailer, illustrating the normal transport form of the complete system.



Exhibit Figure A-2. Rear view with the LT1200 nacelle system stowed inside the dedicated enclosure for transport. Dedicated geometry and restraint features are visible around the crane.



Exhibit Figure A-3. LT1200 nacelle system outside the enclosure during workshop activity, illustrating the industrial machine that is stowed in the enclosure for transportation and deployed for wind-turbine operation.

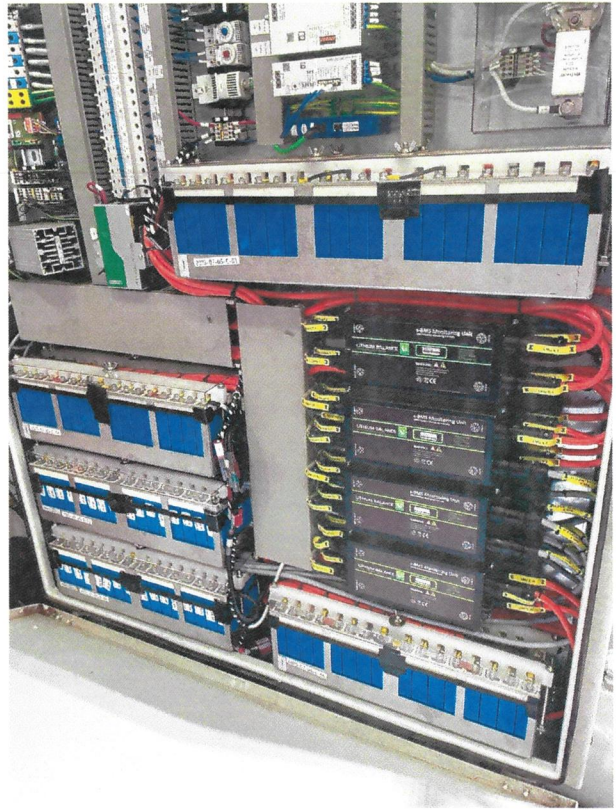


Exhibit Figure A-4. Interior views showing fixed battery modules, BMS equipment, high-voltage cabling, and structural/electrical modifications permanently dedicated to LT1200 functions.

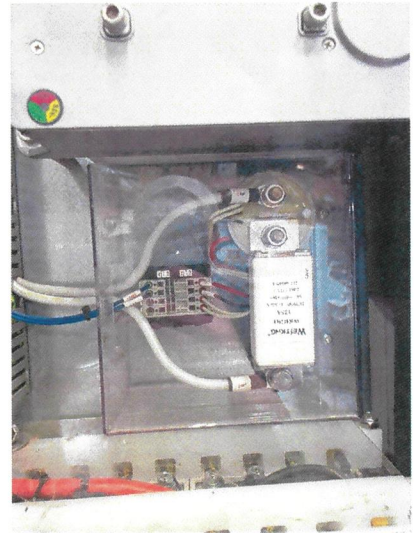


Exhibit Figure A-5. Representative LT1200 power/isolation controls and electrical protective components integrated into the LT1200 system.



Exhibit Figure A-6. LT1200 LSHC deployed on a wind turbine, illustrating the operating purpose of the LT1200 system.

Source: Liftra Self-Hoisting Cranes product brochure, Liftra.com