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**Committee of Experts on the Transport of Dangerous Goods  
and on the Globally Harmonized System of Classification  
and Labelling of Chemicals****Sub-Committee of Experts on the Transport of Dangerous Goods****Forty-ninth session**

Geneva, 27 June – 6 July 2016

Item 4 (d) of the provisional agenda

**Electric storage systems: miscellaneous****Provisions for lithium batteries installed in closed cargo  
transport units****Transmitted by the Rechargeable Battery Association (PRBA)<sup>1</sup>****Introduction**

1. At its forty-eighth session the Sub-Committee considered PRBA document ST/SG/AC.10/C.3/2015/56, in which proposals for new provisions for transportable lithium battery power systems were offered. As explained in that document, these units generally consist of banks of lithium ion or lithium metal batteries, electrically connected and with the necessary battery management systems, which are secured to racks, cabinets, or similar structures which, in turn, are securely attached to the interior structure of closed cargo transport units (typically either freight containers or freight vehicles). Thus, in effect, the closed cargo transport unit is the casing for a very large lithium battery. These battery systems are used in a variety of electric grid and similar applications, such as storage of energy generated by farms of large wind turbines, and also as a source for emergency power.

2. The Sub-Committee, recognizing the need to address the growing transport of such systems, was generally supportive of establishing appropriate provisions for transportable lithium battery power systems in the Model Regulations. However, a number of comments were offered in relation to the provisions proposed by PRBA. PRBA welcomes these

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<sup>1</sup> In accordance with the programme of work of the Sub-Committee for 2015–2016 approved by the Committee at its seventh session (see ST/SG/AC.10/C.3/92, paragraph 95 and ST/SG/AC.10/42, para. 15).

comments and suggestions, and after having considered them in this document offers revised proposals for transportable lithium battery power systems.

3. In the course of the discussions at the prior session, some Sub-Committee members suggested that a separate entry for transportable lithium battery power systems might be appropriate. Others suggested that the new packaging instruction proposed was unnecessary, and that all relevant requirements could be specified in a new special provision in much the same manner as the current entry for “vehicles” (UN3166) is formulated. PRBA remains unconvinced that a separate entry is needed, but also recognizes that a separate entry could afford certain advantages in terms of distinguishing these large power systems installed in a cargo transport unit from cargo transport units in which lithium batteries are loaded as cargo. Therefore, this document offers two options for consideration by the Sub-Committee. The first is simply to add a new Special Provision XXX, which would prescribe all relevant requirements, to the entries for lithium ion or lithium metal batteries (UN3480 and UN3090). The second option is to create a new Class 9 entry “TRANSPORTABLE BATTERY POWER SYSTEM, lithium battery powered” to which the new Special Provision XXX would be assigned. This new entry would be modeled after the “vehicle” entry (UN3166) in that no packing instruction would be indicated and the relevant requirements prescribed via a special provision. The Sub-Committee is invited to elect one of these two options.

4. The proposed new Special Provision XXX prescribes all relevant requirements for the transportable lithium battery power system. The proposed requirements are taken largely from those which in PRBA’s earlier document had been included in a proposed new packing instruction and which based on the Sub-Committee’s comments appear to be generally appropriate and acceptable. As explained in PRBA’s prior document, these systems frequently are fitted with fixed fire suppression systems (fire extinguishers) and internal cooling systems (refrigerating machines) that, owing to being charged with liquefied gases, are themselves items of dangerous goods. Although PRBA had proposed certain requirements relating to these ancillary dangerous goods, several Sub-Committee members suggested that an approach similar to that taken in Special Provision 385 as assigned to UN3166 would be preferable, and PRBA has adopted that approach in this proposal. Therefore, the new Special Provision XXX would provide simply that when fitted, dangerous goods necessary for the safe and proper operation of the transportable battery power system, such as fire extinguishing systems and air conditioning systems, be securely installed in the closed cargo transport unit and would not otherwise be subject to the provisions of the Model Regulations.

5. In consideration of the foregoing, the Sub-Committee is invited to consider the following proposals.

## Proposals

6. In the Dangerous Goods List in Chapter 3.2, either:
- a) For UN3090 and UN3480 add special provision “XXX” in column (6).
- or
- b) Add a new entry to read as follows:

UN No.	Name and description	Class or division	Subsidiary risk	UN packing group	Special provisions	Limited and excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
								Packing instructions	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
35AB	TRANSPORTABLE BATTERY POWER SYSTEM, lithium battery powered	9			XXX	E0	0	NONE			

7. In Chapter 3.3, add new Special Provision XXX to read:

“XXX Assembled lithium ion or lithium metal batteries conforming to the requirements of 2.9.4(a) to (e) are authorized for transport when installed within a closed cargo transport unit (e.g., a freight container or freight vehicle) so as to constitute a transportable battery power system. The assembled batteries and the batteries of which they are comprised shall be secured within the closed cargo transport unit (e.g., by means of placement in racks, cabinets, etc.) in such a manner as to prevent short circuits, accidental operation, and significant movement relative to the closed cargo transport unit under the shocks, loadings and vibrations normally incident to transport. When fitted, dangerous goods necessary for the safe and proper operation of the transportable battery power system, such as fire extinguishing systems and air conditioning systems, shall be properly secured to or installed in the closed cargo transport unit and are not otherwise subject to these Regulations.”