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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****Thirty-eighth session**

Geneva, 29 November–7 December 2010

Item 5 of the provisional agenda

**Electric storage systems****Packagings for large lithium batteries****Transmitted by The Rechargeable Battery Association (PRBA)<sup>1</sup>****Introduction**

1. At the thirty-seventh session of the Sub-Committee, PRBA proposed in ST/SG/AC.10/C.3/2010/34 to add a large packing (LP) instruction for lithium ion batteries (UN 3480) and lithium metal batteries (UN 3090) because the existing Packing Instruction 903 does not authorize the use of large packagings in accordance with Chapter 6.6. PRBA proposed this change because batteries too large for packagings which must comply with the limits of 6.1.1.1 (net mass not more than 400 kg and capacity not more than 450 l) can only be shipped in packagings approved by a competent authority.
2. Large lithium ion batteries and battery assemblies designed for use in applications such as electric vehicles often have a net mass of more than 400 kg and therefore may not be authorized for transport under the current provisions of Packing Instruction 903.
3. Several members of the Sub-committee noted that PRBA's proposed large packing instruction in ST/SG/AC.10/C.3/2010/34 was inconsistent with the proposed changes to Packing Instruction 903 offered by Sweden, United Kingdom and IATA in ST/SG/AC.10/C.3/2010/26. Concerns also were expressed that such large packagings could be used to ship large numbers of small lithium batteries.
4. To address the issues raised at the thirty-seventh session, PRBA's proposal now follows the format proposed by Sweden, United Kingdom and IATA in

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<sup>1</sup> In accordance with the programme of work of the Sub-Committee for 2009-2010 approved by the Committee at its fourth session (refer to ST/SG/AC.10/C.3/68, para. 118 (c) and ST/SG/AC.10/36, para. 14).

ST/SG/AC.10/C.3/2010/26 and limits large packaging to no more than one battery and piece of equipment in transport

## Proposal

5. Add Large Packing Instruction 903 as shown below to Model Regulations

LP903	PACKING INSTRUCTION	LP903
<u>This instruction applies to UN Nos. 3090, 3091, 3480 and 3481.</u>		
<u>The following large packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met and no more than one battery and piece of equipment is contained in each large packaging offered for transport:</u>		
<u>(1) For cells and batteries:</u>		
<u>Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G);</u>		
<u>Boxes (4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);</u>		
<u>Jerricans (3A2, 3B2, 3H2).</u>		
<u>Cells or batteries shall be packed in packagings so that the cells or batteries are protected against damage that may be caused by the movement or placement of the cells or batteries within the packaging.</u>		
<u>Packagings shall conform to the packing group II performance level.</u>		
<u>(2) In addition for cells or batteries with a gross mass of 12 kg or more employing a strong, impact resistant outer casing, and assemblies of such cells or batteries:</u>		
<u>(a) Strong outer packagings, in protective enclosures (e.g., in fully enclosed or wooden slatted crates); or</u>		
<u>(b) Pallets or other handling devices.</u>		
<u>Cells or batteries shall be secured to prevent inadvertent movement, and the terminals shall not support the weight of other superimposed elements.</u>		
<u>Packagings need not meet the requirements of 4.1.1.3.</u>		
<u>(3) For cells or batteries packed with equipment:</u>		
<u>Packagings conforming to the requirements in paragraph (1) of this packing instruction., then placed with the equipment in an outer packaging; or</u>		
<u>Packagings that completely enclose the cells or battery, then placed with equipment in a package conforming to the requirements in paragraph (1) of this packing instruction.</u>		
<u>The equipment shall be secured against movement within the outer packaging.</u>		
<u>For the purpose of this packing instruction, “equipment” means apparatus requiring the lithium and lithium ion batteries with which it is packed for its operation.</u>		
<u>(4) For cells or batteries contained in equipment:</u>		
<u>Strong outer packagings constructed of suitable material of adequate strength and design, in relation to the packagings capacity and its intended use. They shall be constructed in such a manner as to prevent accidental operation during transport. Packagings need not meet the requirements of 4.1.1.3.</u>		
<u>Large equipment can be offered for transport unpackaged or on pallets when the cell or battery is afforded equivalent protection by the equipment in which it is contained.</u>		

Devices such as radio frequency identification (RFID) tags, watches and temperature loggers, which are not capable of generating a dangerous evolution of heat, may be transported when intentionally active in strong outer packagings. When active, these devices shall meet defined standards for electromagnetic radiation to ensure that the operation of the device does not interfere with aircraft systems.

**Additional requirement:**

Cells or batteries shall be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.