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 **15 November 2013**

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Item 2 (c) of the provisional agenda
Listing, classification and packing: miscellaneous

Comments on the IATA (ST/SG/AC.10/C.3/2013/59) proposal for Special Provision 240

Transmitted by the European Association for Advanced Rechargeable Batteries (RECHARGE)

Introduction

1. In the working paper ST/SG/AC.10/C.3/2013/59, IATA reminds the UN Sub-Committee that for lithium batteries, and by extension, to equipment assigned to UN 3091 or UN 3481, the provisions of paragraph 2.9.4, Special Provision 230 and packing instruction P903 all apply. For air transport the provisions of the Technical Instructions extend the requirements of the Model Regulations further by imposing a mass limit per package on the quantity of lithium batteries that may be consigned by air.

2. IATA's paper also states that none of these provisions apply to UN 3171, which applies to vehicles such as cars and motor bikes, and if applicable, vessels and aircraft. IATA believes there is an expectation that these vehicles, when licenced or approved for use, will have undergone some form of crash or certification testing and the lithium battery will be afforded a degree of protection by being installed in the vehicle.

3. According to IATA, the same cannot be said for items such as e-bikes, wheelchairs, battery powered skateboards and surfboards where the degree of protection for the lithium battery may be non-existent, or at best limited and there is no, or minimal regulatory approval process.

4. Therefore, IATA is proposing to differentiate between various types of vehicles that are mentioned as examples under Special Provision 240. In particular, IATA is proposing to revisit the wording of Special Provision 240 to limit vehicles containing lithium batteries to those that have received regulatory approval from the appropriate national authority for road, waterway/maritime and aviation. IATA is proposing to delete reference to battery assisted bicycles, wheelchairs and lawn tractors as examples of vehicles and to move them to being examples of equipment.

5. RECHARGE would like to bring to the attention of the Sub-Committee that currently the EU Legislation regulates the approval of certain types of pedal cycles with an electric motor and E-motor vehicles. In particular, pedal cycles powered by an electric motor beyond 25 km/h and/or of a maximum continuous rated power superior to 250W are of the type approved for road circulation. The details of the EU Legislation are supplied in Annex I to this INF paper.

6. RECHARGE does not support IATA's proposal to change the classification of "Electric bicycles" from vehicles (UN3171) to lithium ion batteries contained in equipment (UN3481). If the Sub-Committee agrees with IATA that batteries installed on E-bikes should be compliant with Chapter 2.9.4 of the UN Model Regulation, it seems appropriate to re-evaluate the proposal of IATA in light of the existing Legislation on vehicles in order to avoid misunderstanding in the implementation of the required safety measures for batteries installed on such vehicles.

7. The proposal of RECHARGE is to evaluate with the Sub-Committee the way to confirm that all manufacturers and shippers supplying Lithium-ion batteries installed on electric bicycles (pedal cycles with an electric motor) and other vehicles of this type (e.g. self-balancing vehicles or vehicles not equipped with at least one seating position) are shipping batteries that are compliant with the requirements of Chapter 2.9.4. of the UN Model Regulations, e.g. by introducing this provision in Special Provision 240 as noted below.

Proposal

8. The Sub-Committee is invited to consider the following amendments to Special Provision 240 as shown:

> This entry only applies to vehicles powered by wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries and equipment powered by wet batteries or sodium batteries which are transported with these batteries installed.
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> For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are electrically-powered cars, motorcycles, scooters, three- and four-wheeled vehicles or motorcycles, **bicycles (pedal cycles with an electric motor),** and other vehicles of this type **(e.g. self-balancing vehicles or vehicles not equipped with at least one seating position),** wheel chairs, lawn tractors, boats and aircraft. Examples of equipment are lawnmowers, cleaning machines or model boats and model aircraft.
>
> **Lithium cells and batteries shall meet the provisions of 2.9.4.**
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> Equipment powered by lithium metal batteries or lithium ion batteries must be consigned under the entries UN 3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT or UN 3091 LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT or UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, as appropriate.
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> Vehicles or equipment that also contain an internal combustion engine must be consigned under the entries UN 3166 ENGINE, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or UN 3166 ENGINE, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or UN 3166 VEHICLE, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FLAMMABLE LIQUID POWERED, as appropriate.
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> Hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed, must be consigned under the entries UN 3166 VEHICLE, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FLAMMABLE LIQUID POWERED, as appropriate.

Vehicles or equipment powered by a fuel cell engine must be consigned under the entries UN 3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED, or UN 3166 ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3166 ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED, as appropriate.

Annex

ANALYSIS of the TYPE APPROVED two and three-wheeled Electric Vehicles in Europe.

By RECHARGE and ETRA

1. Introduction

From January 15th, 2013, a European Regulation has entered into force which governs the approval and the market surveillance of two- or three-wheeled vehicles and quadricycles (Regulation (EU) N° 168/2013.

This regulation shall apply to all two- or three wheel vehicles and quadricycles as categorized in Article 4 of the Regulation, among others:

Categry L1e vehicle: light two-wheeled powered vehicle sub-categorised into

- L1e-A vehicle (powered cycle)
- L1e-B vehicle (two-wheeled moped)

Furthermore the Regulation 168/2013 covers two-wheeled motorcycles, powered tricycle, light quadricycle and heavy quadricycles…

The L-categories are further classified in accordance with the propulsion of the vehicle e.g. vehicles propelled by an electric engine…

In Article § 2 (h) it is indicated that the scope of the Regulation does not apply to

(h) pedal cycles with pedal assistance which are equipped with an auxiliary electric motor having a maximum continuous rated power of less than or equal to 250 W, where the output of the motor is cut off when the cyclist stops pedalling and is otherwise progressively reduced and finally cut off before the vehicle speed reaches 25 km/h;

In Article § 2 (i) it is indicated that the scope of the Regulation does not apply to

– Self-balancing vehicles

In Article § 2 (j) it is indicated that the scope of the Regulation does not apply to

– Vehicles not equipped with at least one seating position

2. Requirements of the functional safety of the vehicle (Article 22).

As mentioned in Article 22 of the Regulation type approved vehicles must fulfilled a list of safety criteria.

> 3. Manufacturers shall ensure that vehicles, systems, components and separate technical units comply with the relevant requirements set out in Annexes II and VIII and comply with the test procedures and performance requirements as laid down in a delegated act adopted pursuant to paragraph 5.

In its technical annexes II and VIII the Regulation makes reference to the electrical safety of the vehicle which is mentioned as a separate criteria but without specific reference to the safety aspects of the battery.

3. Conclusions.

Despite the fact that such type approved vehicles have to pass sucessfully “safety criteria”, it is not indicated in the Regulation that batteries which are supplied as a part of the electrically powered vehicle are subject to dedicated safety tests in accordance with other Regulation, e.g. the international multimodal Regulation on the Transport of Dangerous Goods.

4. Comment on the IATA proposal.

By declassifying the electric bikes from a type of approved vehicle into a category of equipment, the IATA proposal will add confusion in the classification of such vehicles.

In particular, importers will have to comply with the shipment of equipment but will not be alerted that these vehicles have to be of a type approved.

Similarly, motorcycle which are of the type approved may still be carried with a battery exempted under UN 3171 and SP 240.

5. Industry Proposal

Rather than changing the classification of E-bikes the proposal should be made to confirm that the batteries installed on E-bikes (and other two-wheeled, three-wheeled and quadricycles) have to be of the type tested in accordance with the requirements of the Chapter 2.9.4. of the UN Model Regulation. This would remove any ambiguity about the safety requirements that applies to such batteries.

Recharge and ETRA propose to change the term E-bikes into “pedal cycles with an electric motor” to avoid confusion and to ensure that the battery of all types of pedal cycles, whether or not they are subject to type-approval are made subject provisions of 2.9.4.

Furthermore, Recharge and ETRA propose to explicitly mention self-balancing vehicles and vehicles not equipped with one seating position because these vehicles are excluded from type-approval but still need to be made subject to the provisions of 2.9.4.

Who we are

RECHARGE aisbl. www.rechargebatteries.org

RECHARGE is the European Association for Advanced Rechargeable Batteries.

The membership is covering all aspects of the rechargeable battery life cycle. RECHARGE members are manufacturers of a wide range of battery technologies for portable, industrial, electric-mobility and renewable energy applications, constantly working on new battery technologies and the conservation of natural resources.

The membership of RECHARGE includes suppliers of primary and secondary raw materials to the battery industry, rechargeable battery manufacturers, original equipment manufacturers, logistic partners and battery recyclers.

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ETRA is the European professional association for independent bicycle, moped and motorcycle retailers. www.etra-eu.com

ETRA's aim is to group these retailers in Europe and to defend and further their interests. ETRA represents nearly 7,000 companies, which employ approximately 17,500 people in Belgium, the Czech Republic, Denmark, France, Germany, Ireland, the Netherlands and the United Kingdom.

Furthermore, ETRA has a large number of associated members in 7 EU member states (Belgium, Bulgaria, France, Germany, the Netherlands, UK and Sweden) as well as in countries outside the EU, e.g. Canada, Republic of Korea, New Zealand, Switzerland and USA.

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