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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

#### Sixty-third session

Geneva, 27 November-6 December 2023

Item 2 (h) of the provisional agenda

**Explosives and related matters: Miscellaneous**

## Net explosive weight

### Transmitted by the expert from Spain\*

#### I. Introduction

1. In document ST/SG/AC.10/C.3/2023/2 presented by Spain at the last session of the Sub-Committee, amendments to the note under 1.2.2.1 were proposed to eliminate the use of kg as a unit of force. Additionally, consequential amendments were analysed in further proposals. Proposal 6 of document ST/SG/AC.10/C.3/2023/2 proposed to delete in the definition of net explosive mass the reference to net explosive weight.

2. The amendments to the note under 1.2.2.1 were adopted, and the language related to the net explosive mass is further analysed in this document. The proposed amendments take into account the comments received during the previous discussions in the last plenary session of the Sub-Committee, the discussions in the explosive working group and the comments received afterwards in written form.

#### II. Analysis

3. The present definition for “net explosive mass” in 1.2.1 is the following:

“*Net explosive mass (NEM)* means the total mass of the explosive substances, without the packagings, casings, etc. (*Net explosive quantity (NEQ)*, *net explosive contents (NEC)*, or *net explosive weight (NEW)* are often used to convey the same meaning.)”

4. This definition of “net explosive mass” indicates an equivalency of the concepts of net explosive mass and net explosive weight; even if the concepts are related, they do not represent the same concepts, as mass is measured in (kg) and the weight is the force created by that mass, measured in (N); the relationship in between both units is as  $1N = 1kg \cdot \frac{m}{s^2}$ .

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\* A/77/6 (Sect. 20), table 20.6



5. Both the mass and the weight are concepts clearly defined with their corresponding units, included into paragraph 1.2.2.1 of the *Model Regulations*, and are part of the International System of Units.
6. Therefore, the present definition of “net explosive mass” in the *Model Regulations* is in conflict with the definition of units in 1.2.2.1. The indication that “net explosive weight” has the same meaning than “net explosive mass” should be removed from the definition of “net explosive mass” in 1.2.1.
7. The “net explosive weight (NEW)” is introduced in 1.2.1, but not used in the *Model Regulations*, so deleting NEW from the definition of 1.2.1 has no further consequences for the *Model Regulations*.
8. Nevertheless, it seems that in some parts of North America “net explosive weight” is used to refer to the net explosive mass, but measured in pounds (lb). This use for “weight” is not in accordance with the international system of units, and the general definitions in the *Model Regulations*, but is used in the United States industry of explosives. And therefore, they would like to retain a reference to NEW in the *Model Regulations*.
9. The aim of the *Model Regulations* is to prepare a harmonized regulation, that can be applied in all parts of the world. Maintaining a reference to the “net explosive weight” in the *Model Regulations* would be counterproductive to this goal, when reading “net explosive weight”, the “international system unit-reader” would think about a force measured in N, while the “North American reader” would think about a mass measured in pounds. This different interpretation is not good to be backed up by the *Model Regulations*; if there is a very specific use for the concept of “net explosive weight” in one region, it would perhaps be better to regulate this concept in the regional regulation.
10. Therefore, the expert from Spain proposes to delete “net explosive weight” in the definition for “net explosive mass”, as shown in paragraph 11 below. The expert from Spain seeks the opinions of the Sub-Committee and its Explosive Working Group on this proposal.

### III. Proposal

11. Amend the definition of “*net explosive mass*” in 1.2.1 to read as follows (new text in **underlined bold**, deleted text ~~stricken through~~):

“*Net explosive mass (NEM)* means the total mass of the explosive substances, without the packagings, casings, etc. (*Net explosive quantity (NEQ)*; **or** *net explosive contents (NEC)*, ~~or net explosive weight (NEW)~~ are often used to convey the same meaning.)”

### IV. Justification

12. Ensuring a more systematic approach and a better rationale in the *Model Regulations* helps to create clearer legal texts and to avoid different criteria among different countries and inspection services, and thus helps to implement target 16.6 of the 2030 Agenda for sustainable development (*Develop effective, accountable and transparent institutions at all levels*).
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