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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

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EXPLOSIVES AND RELATED MATTERS

Classification of sporting cartridges and associated power device cartridges

Transmitted by the Sporting Arms and Ammunition Manufacturers' Institute (SAAMI)¹

Introduction

1. Currently small arms cartridges are classified in Division 1.4S and are assigned to UN 0012, CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS, and to UN 0014, CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK.

2. The explanation given in the glossary of terms in Appendix B includes ammunition not larger than 19.1 mm and shot-gun cartridges of any calibre. Blank cartridges are a subset of small arms cartridges which do not contain a projectile, and are sealed by a thin metallic gas check or foam insert. Small arms cartridges are also distributed with only a primer and no powder or bullet; these are called empty primed cases and are assigned to UN0055, CASES, CARTRIDGE, EMPTY, WITH PRIMER. Small arms cartridge factories also make cartridges

¹ 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 (a) and ST/SG/AC.10/36, para. 14).

for technical use. These are 1.4S power device cartridges which are assigned to either UN 0014, or to UN 0323, CARTRIDGES, POWER DEVICE. They are made to the same design on the same production lines as sporting cartridges. The use of UN 0012 and UN 0014 for these products vary throughout the world and may add to existing confusion. This illustrates that there is a need to clarify the present system for classifying cartridges.

3. This paper focuses on two options: the reclassification of sporting cartridges and associated products; and allowing them to be transported as limited quantities. Sporting and technical cartridges are a sub-set of small arms cartridges sold for public, commercial and government use with a maximum size of nominal 12.7 mm or 8 gauge for shotgun cartridges.

4. Major producers of these products exist in most countries. Over 11 billion rounds are produced and sold each year internationally for consumer use. Associated power device cartridges include an additional 3.2 billion rounds. In Europe alone, approximately 200,000 construction workers use these types of power device cartridges in the construction of metal buildings to apply fastening devices. These power device cartridges are also used in the agriculture and food industry and as electrical circuit breakers.

5. Increasingly, the assignment in Class 1 for ammunition used for sport and hunting, as well as for technical use, is leading to denial of shipment or unnecessary restrictions beyond existing transport regulations. Outside the UN experts, there is a prevalent perception amongst various authorities that all Class 1 has a mass explosion hazard. This is illogical because there is an excellent safety record for small arms cartridges. However, the industry is constantly experiencing delay and denial, for example:

- (a) Multi-day trucking delays in Europe from routine roadside inspections until compliance is verified;
- (b) Bans and quantity limitations in Mediterranean ports;
- (c) Excessive restrictions for segregation onboard vessel;
- (d) Excessive restrictions on quantity per passenger aircraft; and
- (e) Denial of shipment by operators/ insurers whose perception of Class 1 is disproportionate to the hazard.

6. There is no evidence on which to base these negative perceptions. There is a lack of significant incidents in trucks, ports or aircraft. To the contrary, the ICAO Technical Instructions already allow “cartridges, small arms” in checked luggage, 5 kg per passenger, up to 19.1 mm size, with no adverse impact.

7. Sporting cartridges have a long and safe history in the transport chain. Where incidents have occurred, effect has been minimal, for example occasional spill clean-ups caused by accidents or very rough handling. Injury is negligible. Fire and fatalities are non-existent. Statistics from the US DOT show zero fires, injuries or deaths. Both the risk and consequence in transport are low. These products are subjected to classification tests, so test data is widely available and understood by competent authorities. SAAMI’s fire training video “Sporting

Ammunition & The Fire Fighter” has been made available to experts to demonstrate the minimal risk and consequences associated with these products. In addition to the available classification data, the video demonstrates that sporting ammunition outside a firearm:

- (a) Is unlikely to ignite under extreme conditions of impact;
- (b) Will not propagate in a chain reaction;
- (c) Will not be the source of a fire;
- (d) Is slow to ignite in a fire;
- (e) Does not mass explode when subjected to prolonged fire;
- (f) Projections do not pierce walls;
- (g) Is not dependent on packaging; and
- (h) May be controlled by fire fighters using standard techniques and protective gear.

8. Competent authorities already use discretion provided in the Model Regulations to allow transport outside Class 1:

- (a) In road transport in Europe there is no quantity limitation (ref ADR 7.5.5.2.1). These products are excepted from security, placarding, instruction in writing, vehicle requirements, loading and unloading restrictions in public places, special vehicle construction, written instructions to the driver, or driver training (ref. ADR 1.1.3.6.2 and 1.1.3.6.3). When transporting mixed loads of explosives, 1.4S may be loaded with any explosive except the ones classified under compatibility group A and L, and the amount of 1.4S is not counted against the net mass load restrictions for Class 1 (ADR 7.5.5.2.2);
- (b) Since 1984, these products have been classified in the United States of America as ORM-D. By ground they are only subject to incident reporting, marking, strong packaging and training. By air they have been transported in unlimited quantities as cargo on passenger aircraft, with the additional requirement of a transport document. Zero incidents have occurred, other than spills;
- (c) “Cases, cartridge, empty with primer” are de-regulated in the United States of America.

9. The current classification puts packaging containing cartridges for sport and hunting, as well as the technical cartridges, under the same regime as explosives only regarded as having limited risk because of their packagings. Tests have shown that cartridges for sport and hunting as well as technical ammunition have very little effect outside their packagings. They are designed only to function when used in specialized equipment. Sporting cartridges and associated products are set apart from Class 1 because they are inherently safe, and are:

- (a) Not dependent on their packaging to avoid explosion. They actually burn slower when all packaging is removed. The fire is maintained primarily from plastic components when applicable;

- (b) Safe for accidental initiation (however unlikely), without the benefit of outer packaging;
- (c) Unable to propagate or mass explode in any transport scenario regardless of quantity; and
- (d) Analogous or less hazardous than other Class 9 products, including air bag modules and seat belt pre-tensioners etc.

Option 1 - Reclassification

10. Based on the above discussion, SAAMI is preparing to bring forward a proposal to address frustrated shipments. Option 1 would assign sporting ammunition and associated products containing small quantities of explosive substances (currently in UN 0012, UN 0014, UN 0055, UN 0323) to Class 9 using three new UN numbers and proper shipping names. The need for new proper shipping names are caused by the fact that the current UN 0012 embraces all ammunition not greater than 19.1 mm, which is far above the actual calibres used for sport, hunting and technical purposes. The proposed new UN numbers and proper shipping names would be:

UN xxxx, CARTRIDGES, SPORTING, which are cartridges for use in small arms, not exceeding nominal 12.7mm for metallic cartridges or 8 gauge for shot-gun cartridges, having an inert projectile or no projectile (blank).

UN yyyy, CARTRIDGES, SPORTING, EMPTY WITH PRIMER, which are sporting cartridges with no propellant or projectile, being a case with primer inserted.

UN zzzz, CARTRIDGES, TECHNICAL which are cartridges of similar design to blank sporting cartridges, characterized by their use in consumer or commercial tools.

11. As a safe guard to ensure these products are properly classified in perpetuity, and verified to have the safety characteristics represented above, SAAMI will recommend that the current classification test regime be left in place.

12. There may be concern about security in transport. However, small arms cartridges as a whole are only subject to the basic security requirements now in Chapter 1.4. They are not included in the indicative list of high consequence dangerous goods. The new UN numbers would assist authorities in adding these products to lists of substances or articles subject to supply and import controls.

Option 2 – Transport as Limited Quantities

13. Option 2 would allow the transport of UN 0012, UN 0014, UN 0055 and UN 0323 as limited quantities for articles of nominal 12.7mm caliber and below. SAAMI would propose a 5 kg limit for Column 7(a). SAAMI would not propose any change to the code in Column 7(b) for excepted quantities.

14. Allowing the transport of these products as Limited Quantities would:
- (a) Reduce delay and denial problems;
 - (b) Retain markings in accordance with Chapter 3.4;
 - (c) Apply requirements for air and marine transport in Chapter 3.4;
 - (d) Restrict the inner package quantity allowed for transport; and
 - (e) Retain current UN numbers and shipping names.
15. Options to further reduce delay and denial by vessel and allow normal air shipments would be explored. A special provision may be considered.

Summary

16. SAAMI invites the Sub-Committee to indicate what further evidence they would require to consider either assignment to Class 9 or Limited Quantities exceptions. We recognize this may be controversial for some, but given the relatively low risk in transport, it is important to facilitate free movement. Additional data will be brought to the Sub-Committee in an informal paper.
