



**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**

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Item 2 (i) of the provisional agenda

Explosives and related matters: miscellaneous**Amendments to the provisions applicable to transport of
Class 1 articles packed in limited quantities****Transmitted by the Sporting Arms & Ammunition Manufacturers'
Institute (SAAMI)¹****Introduction**

1. When Limited Quantities (LQ) of 1.4S were introduced they were differentiated from other Division 1.4 Compatibility Group S entries by two methods. Test Series 6(d) was applied and also the LQ exceptions were modified to retain specification packaging requirements for these entries.
2. Experience has been gained in the global shipment of limited quantities of 1.4S, and SAAMI proposes to eliminate the specification packaging requirements, which are impeding implementation. In light of the 6(d) test and the robust nature of articles, these requirements are superficial.
3. Considerable testing in Test Series 6(d) has been done with cartridges, and patterns in the results have become apparent. It may be possible to establish alternate requirements to apply in lieu of the test for packaging configurations adhering to certain requirements.

¹ 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).

Discussion

4. Exceptions similar to the LQ system have been applicable to UN 0012 and 0014 since 1985 in the United States of America, under a system known as ORM-D. Combination packagings with strong outer packagings are required, but Test Series 6(d) and specification package testing are not required. Around 200 billion cartridges have been transported under this system with no injury, fire or explosion. The remaining 1.4S LQ entry in the UN Model Regulations, UN 0055, is not regulated as dangerous goods in the United States of America.

5. The United States of America has some additional requirements and exceptions for cartridges shipping as LQ:

(a) Calibers are limited to 12.7 mm bullet diameter and below;

(b) Except for those cartridges listed in (d) below, the primers of cartridges must be protected against contact by other cartridges, i.e. the bullet of one cartridge may not touch the primer of another cartridge without a layer of intervening packaging;

(c) The normal exception for LQ to ship in trays without an outer package is not allowed;

(d) Cartridges for tools, blank, Cartridges, power devices which are used to project fastening devices, Cases, cartridge, empty with primer, and 22 caliber rim-fire cartridges may be packaged loose in strong outside packagings, i.e. with no inner packaging(s).

6. SAAMI proposes to align UN LQ requirements with the United States of America system. There are three decades of experience at high volumes, and safety would be improved by harmonizing the two existing systems. The three limitations above would be added for cartridges transported under LQ provisions. Specification packaging requirements would be removed in favour of normal LQ packaging requirements, with the exception of the prohibition of shipping in trays. This is because the protection ensured by the Test Series 6(d) is achieved using a strong outer packaging.

7. Special Provision 364 was drafted so that the package must only be capable of the passing Test Series 6(d), and not be required, except at the discretion of a competent authority. However, industry has found that carriers may require written government certification on a per shipment basis. This effectively implements the test for all packages, and unnecessarily impedes commerce.

8. Experience in conducting Test Series 6(d) has shown that results can be predicted based on the type of cartridge and packaging configuration. Test results will be supplied in an informal proposal which support the following conclusions.:

- Shot shell cartridges, cartridges for tools, blank, and empty cartridge cases with primers do not cause hazardous effects outside the package.
- Smaller pistol cartridges will pass the test in industry standard configurations. The projectiles of larger cartridges do not cause hazardous effects outside the package, but pressures may rupture packages and allow unignited cartridges to leave the package. This requires interpretation of the term “hazardous effect”. It is known that Test Series 6(d) criteria are currently written to control all effects outside the package, but could be re-aligned with original intent and the definition of 1.4S to control only hazardous effects outside the packaging, and not non-hazardous effects.
- The above statements for pistol cartridges are true for rifle cartridges, with one additional provision. Rifle cartridges should be configured so that when bullets are

present (i.e. UN 0012, not UN 0014) they will point inward towards other cartridges. This mitigates the possibility of projectiles.

9. Therefore an equivalent level of safety to Test Series 6(d) would be achieved for all cartridges by a rationalized approach to orient centerfire rifle and pistol cartridges so that projectiles point inward. This could be implemented by a new special provision.

10. Special Provision 364 could be retained for packages which do not comply with the requirement above but which pass Test Series 6(d) by alternate means, for example packing in a wooden or metal outer packaging. It is also logical to maintain Special Provision 364 in anticipation of future designations as LQ of other 1.4S products not related to ammunition. For these reasons a new special provision is proposed, rather than a revision to Special Provision 364.

Proposal 1

11. Modify Section 3.4.2 of the Model Regulations as follows. Section 3.4.3 is also replicated to show the limitations for Division 1.4, Compatibility Group S that would remain:

3.4.2 Dangerous goods shall be packed only in inner packagings placed in suitable outer packagings. Intermediate packagings may be used. ~~In addition, for articles of Division 1.4, Compatibility Group S, the provisions of section 4.1.5 shall be fully complied with.~~ The use of inner packagings is not necessary for the transport of articles such as aerosols or “receptacles, small, containing gas”. The total gross mass of the package shall not exceed 30 kg.

3.4.3 Except for articles of Division 1.4, Compatibility Group S, shrink-wrapped or stretch-wrapped trays meeting the conditions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 are acceptable as outer packagings for articles or inner packagings containing dangerous goods transported in accordance with this Chapter. Inner packagings that are liable to break or be easily punctured, such as those made of glass, porcelain, stoneware or certain plastics, shall be placed in suitable intermediate packagings meeting the provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8, and be so designed that they meet the construction requirements of 6.1.4. The total gross mass of the package shall not exceed 20 kg.

Proposal 2

12. Add a new special provision SP ***, to read as follows:

“Configurations meeting the following provisions need not be subjected to Test Series 6(d) and may be transported in accordance with Chapter 3.4:

(a) Size is limited to 8 gauge for shotshells, or 12.7 mm projectile/neck diameter for all other cartridges;

(b) Centerfire rifle and pistol cartridges with inert projectiles must be oriented so that no projectile is adjacent to the outer package or directly contacts the primer of another cartridge; and

(c) Cartridges for tools, blank; cases, cartridge, empty with primer; and rim-fire cartridges with projectiles not exceeding 6 mm diameter may be packaged un-oriented without inner packagings.

13. Apply this special provision in the Chapter 3.2 Dangerous Goods List of the UN Model Regulations to UN numbers 0012, 0014 and 0055.