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COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the
Transport of Dangerous Goods
(Sixteenth session,
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agenda item 5 (j))

MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS
ON THE TRANSPORT OF DANGEROUS GOODS

Explosives

1.4 S Classification

Proposal to expand the scope of Series 6 type (a) test

Transmitted by the experts from Canada and Germany

Background

1. In document ST/SG/AC.10/C.3/1998/66 submitted to the fifteenth session of the Sub-Committee of Experts on the Transport of Dangerous Goods, the expert from Canada proposed a new test in Test Series 6 of the Manual of Tests and Criteria. This test was to be used to determine requirements resulting from the definitions of Divisions 1.4 and 1.4 Compatibility Group S given in paragraph 2.1.1.4 (d) of the Recommendations on the Transport of Dangerous Goods (ST/SG/AC.10/1/Rev.10). The document claimed that especially the 6(c) test is not suitable to determine how well effects from accidental functioning of a packaged substance or article are confined within the package. It was indicated that this test only looks at the behavior of substances or articles after the package has been degraded by fire.

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2. Although it was correctly pointed out by Canada that the aspect of confinement of hazardous effects to the package after accidental functioning of the product was not being properly addressed during testing, the Sub-Committee nevertheless agreed that this would not justify the addition of a new test. Rather, it was expressed that the problem raised could be solved by some amendments to the present text of chapter 16 of the Manual. In cooperation with the expert from Canada the expert from Germany offered to prepare a proposal to that effect.

3. Paragraph 16.1.1 of the Manual of Tests and Criteria already contains a reminder that the results from the three types of series 6 tests are also necessary to assess whether a product can be assigned to Compatibility Group S of Division 1.4. Also, the guidelines for testing presented in paragraph 16.2.2 underline the fact that the series 6 test regime must not be followed stringently in all cases. For example, it is possible to waive the 6(b) test if in the 6(a) test the exterior of the package is undamaged by internal detonation and/or ignition. Such a result in the 6(a) test may be taken as a first indication of 1.4 S behavior corresponding to the requirements of the definition given in paragraph 2.1.1.4 (d) of the Recommendations.

Proposal

4. In order to more clearly emphasize the fact that apart from the 6(c) test the 6(a) test is also an indispensable instrument for the determination of 1.4 S behavior and that the degrees of freedom in variation of the test details already allowed by the Manual should be more effectively used, the following amendments to Section 16 of the Manual of Test and Criteria are proposed:

(a) In paragraph 16.1.1, amend the phrase after "type 6 (a) -" to read: "a test on a single package to determine if there is mass explosion of the contents and if any hazardous effects arising from initiation or ignition of the contents are confined within the package".

(b) Amend paragraph 16.4.1.1 to read: "This is a test on a single package to determine if there is mass explosion of the contents and if any hazardous effects arising from initiation or ignition of the contents are confined within the package".

(c) At the end of paragraph 16.4.1.3.5 add: "Where a substance or article is being considered for assignment to Compatibility Group S of Division 1.4 at least one test should be performed without confinement of the package to determine whether any hazardous effects from initiation or ignition are confined within the package. If effects are registered outside the package to the extent defined in paragraph 16.6.1.4.5 the product is a candidate for Division 1.4 and a compatibility group other than Compatibility Group S".

(d) At the end of paragraph 16.4.1.4 add: "Confinement of hazardous effects within the package indicates a candidate for Compatibility Group S of Division 1.4. Evidence of such an indication includes:

no projections, blast effects or thermal effects outside the package
(exterior of the package not opened, punctured or scorched; no flame or incessant smoke outside the package).

If the product is a candidate for Compatibility Group S of Division 1.4 proceed to a test of type 6 (c)."

(Note: The test criteria of paragraph 16.6.1.4.5 are those presented in document ST/SG/AC.10/C.3/30/Add. 2)
