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Working Party on the Transport of Dangerous Goods

Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ADN Safety Committee)

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Item 4 (b) of the provisional agenda

**Proposals for amendments to the Regulations annexed to ADN:
Other proposals**

Flame-arrester only when protection against explosions required

Transmitted by the European Barge Union (EBU)¹

Introduction

1. In ADN, the requirements relating to the construction of vessels ought in principle to be relevant to the goods transported. This means that the hazardous properties of goods ought to determine the requirements applied to the vessel transporting those goods.

Where it is provided in column (17) of Table C that anti-explosion protection is required, the relevant equipment should be installed. Where anti-explosion protection is not required, some equipment may be dispensed with.

In line with this principle, several provisions of ADN relating to construction have now been amended to make such distinctions (e.g., 9.3.x.22.5, Vapour pipe). In the cases noted below, this principle has not yet been applied.

¹ Distributed in German by the Central Commission for the Navigation of the Rhine under the symbol CCNR/ZKR/ADN/WP.15/AC.2/2013/26.

2. In 1.2.1 Definitions, “sampling opening” is defined as follows:
“*Sampling opening* means an opening with a diameter of not more than 0.30m fitted with a flame arrester plate stack, capable of withstanding steady burning and so designed that the opening period will be as short as possible and that the flame arrester plate stack cannot remain open without external intervention. The flame arrester plate stack shall be of a type approved by the competent authority for this purpose;”
3. 9.3.x.22.4 (a) (Pressure relief device) states as follows:
“(a) Each cargo tank or group of cargo tanks connected to a common vapour pipe shall be fitted with:
 - safety devices for preventing unacceptable overpressures or vacuums. When anti-explosion protection is required in column (17) of Table C of Chapter 3.2, the vacuum valve shall be fitted with a flame arrester capable of withstanding a deflagration and the pressure-relief valve with a high-velocity vent valve capable of withstanding steady burning.

The gases shall be discharged upwards. The opening pressure of the high-velocity vent valve and the opening pressure of the vacuum valve shall be indelibly indicated on the valves;
 - a connection for the safe return ashore of gases expelled during loading;
 - a device for the safe depressurization of the tanks consisting of at least a fire-resistant flame-arrester and a stop valve which clearly indicates whether it is open or shut.”
4. 9.3.x.20.4 (Ventilation of cofferdams) states as follows:
“The ventilation openings of cofferdams shall be fitted with a flame-arrester capable of withstanding a deflagration.”

Proposal

5. EBU submits the following proposal.
6. In 1.2.1 Definitions, amend the text on sampling openings as follows:
“*Sampling opening* means an opening with a diameter of not more than 0.30m. If anti-explosion protection is required under chapter 3.2, Table C, column (17), it should be fitted with a flame arrester plate stack, capable of withstanding steady burning and so designed that the opening period will be as short as possible and that the flame arrester plate stack cannot remain open without external intervention. The flame arrester plate stack shall be of a type approved by the competent authority for this purpose;”
7. In 9.3.x.22.4 (a) (Pressure relief device), amend the text as follows:
“(a) Each cargo tank or group of cargo tanks connected to a common vapour pipe shall be fitted with:
 - safety devices for preventing unacceptable overpressures or vacuums. When anti-explosion protection is required in column (17) of Table C of Chapter 3.2, the vacuum valve shall be fitted with a flame arrester capable of withstanding a deflagration and the pressure-relief valve with a high-velocity vent valve capable of withstanding steady burning.

The gases shall be discharged upwards. The opening pressure of the high-velocity vent valve and the opening pressure of the vacuum valve shall be indelibly indicated on the valves;

- a connection for the safe return ashore of gases expelled during loading;
- a device for the safe depressurization of the tanks by means of a valve arrangement whose position clearly indicates whether it is open or shut. Where anti-explosion protection is required under chapter 3.2, Table C, column (17) it should be equipped with ~~Consisting of~~ at least a fire-resistant flame-arrester ~~and a stop valve which clearly indicates whether it is open or shut.~~

8. In 9.3.x.20.4 (Ventilation of cofferdams) amend the text as follows:

“The ventilation openings of cofferdams shall be fitted with a flame-arrester capable of withstanding a deflagration, where anti-explosion protection is required under chapter 3.2, Table C, column (17).”

Justification

9. The provisions on anti-explosion protection by means of flame arresters capable of withstanding steady burning are applied by ADN for *all* goods that may be transported. Construction specifications should in principle take account of the various types of goods, but ADN makes no distinction on the grounds of relevance or otherwise of this equipment to the safety of *all* goods transported. In cases where anti-explosion protection is not required, flame arresters are not required.

10. This distinction is already made in various places in ADN and is needed also in the cases referred to above, in order to prevent the installation in the future of devices that are not required in practice.
