Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods **7 July 2010**

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)

Seventeenth session
Geneva, 23–27 August 2010
Item 5 (a) of the provisional agenda
Proposals for amendments to the Regulations annexed to ADN: Amendments for entry into force on 1 January 2013

Ventilation requirements

Transmitted by the EBU

Introduction

1. During the sixteenth meeting of Working Party AC.2, the Safety Committee considered that the question of the interpretation of 7.1.6.12 based on whether or not 7.1.4.12.2 was applicable should be assigned to an informal working group, which should study which gas concentration measurements were required, how they should be carried out in practice, how such measures might influence the application of provision VE02 and whether alternatives to such concentration measurements might be available to ascertain whether ventilation was necessary.

2. Over the course of the last years the inland container barging sector has been confronted by the regulatory bodies with the interpretation of ADN 7.1.6.12. This article contains specific ventilation regulations. The interpretation by some regulatory bodies has led to a responsibility of the carrier to identify whether dangerous goods are present on the vessel that have additional VE requirement in column 10 of table A. According to the interpretation the transportation company needs to comply with additional requirement VE02 when e.g. UN 2322 is loaded on board of a container vessel. For the crew this would mean that a measurement needs to be carried out in the applicable holds immediately after loading. Further, an additional measurement would need to be carried out one hour later for monitoring purposes. These results of the measurements need to be recorded in writing.

Background information

3. The effectiveness of current measurement techniques can be questioned when operating in an open cargo hold with containers stacked with a width of up to five. While performing such measurements the crew needs to operate in a hazardous surrounding with limited space available.

4. Every measurement technique, this either being a so-called PID measuring apparatus or gas detection tubes has their pros and cons. Gas detection tubes have a broad measurement spectrum however have a limited life span, need to be stored continuously in

a cooled surrounding and when using the results parameters like humidity and temperature need to be taken into account in the calculation. A commonly used tube is the polytest tube. This tube is relatively cost efficient and measures approximately 80% of the dangerous goods mentioned above.

5. Exotic tubes run up to more than 100 EUR per measurement with the chance of never using these tubes on board. At this moment it is not communicated by the consignor whether substances are carried on board with these additional requirements. A technique using a PID apparatus is more user friendly. However it is not able to measure a significant number of dangerous goods due to the chemical characteristics. A PID does not cover a relatively large group of class 6 products. The crew on board container vessels has a significantly less amount of knowledge regarding gas detection and by using calculation tables by the crew submitted by the manufacturers of the measurement apparatus in order to get a clear and reliable result may lead to misleading indications due to the multiple dangerous goods on board with a broad variety of chemical characteristics. Further, existing regulation is in place to prevent entering the cargo hold due to the fact that measurements need to be carried out when entering the cargo hold. 7.1.3.1.6.

> "7.1.4.12.2 On board vessels carrying dangerous goods only in containers placed in open holds, ventilators do not require to be incorporated but must be on board. Where damage of the container or release of content inside the container is suspected, the holds shall be ventilated so as to reduce the concentration of gases given off by the cargo to less than 10% of the lower explosive limit or in the case of toxic gases to below any significant concentration."

6. The informal working group[1] which was formed by experts of Germany and the Netherlands and supported by NGO's CIPA and EBU discussed possible alternatives to the current regulation. The results of consultancy firm "Berenschot" were presented and discussed. This consultancy agency reported that this regulation has a compliance burden of approximately 3.4 mln EUR on an annual basis and was based on 1350 container vessels having 52 journeys annually. Each alternative was discussed in detail regarding the pros and cons which are stated below.

Option 1 – Delete the current VE requirements. Measurements will need to be carried out when entering the cargo tank and when damage of the container or release of content inside the container is suspected. At this moment no incidents are known among the members of the working group that were to be linked to a breach of the current regulation.

Pro	*Con*
Reduction of the amount of measurements	Decrease of safety level
Reduction of the amount of labour	
Reduction of costs	

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Mr. R. Tieman – representative of EBU
Mr. A. Schroot – representative of EBU
Mr. F. Mooyaart – representative of EBU
Mr. T. Hoving – representative of the Netherlands
Mr. H.J. Braun – representative of CIPA

Option 2 – Delete VE02

Since most hydrocarbons can be measured using a PID or Gas detection tubes problems arise when toxic gases need to be measured.

Pro	*Con*
Reduction of the amount of measurements	Decrease of safety level
Reduction of the amount of labour	
Reduction of costs	

Option 3 – When the measurements indicate that the LEL (Lower Explosion Limit) exceeds 10% one needs to ventilate the cargo holds. If one decides to run the ventilation continuously during the journey one is exempted of the measurement requirements in VE 01 to VE04.

Pro	*Con*
Reduction of measurement costs and the amount of labour	Environmental burden (increase of energy usage and noise)
Maintenance of safety level	
Flexibility – option to choose	

Option 4 – Measurement requirement of each container when VE02 is required by the consignor and/or loader.

Pro	*Con*
Reduction of measurement and labour costs by the vessels owner/operator	Shift of compliance burden to the shore side
Increase of safety level	Increase of administrative burden

Option 5 – Measurement devices (including gas detection tubes)are put at the disposal of the vessel's crew by the shipper/loader.

Pro	*Con*
Costs are placed with the party responsible for the transport	Logistical burden of expensive measuring equipment
Decrease of measuring costs for the vessel	

7. The informal working group was not unanimous with regards to which option is the most suitable. In the discussion a clear preference was given to option 3 and secondly – aware of the less promising needs of the coordination with consignors/loaders - to option 4.