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Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods (Bern, 23 - 27 March 2015)

Item 2 of the agenda: Tanks

Temperature regimes for the transport of petroleum products

Transmitted by the Russian Federation

SUMMARY

<i>Executive summary:</i>	Harmonisation of the provisions concerning the degree of filling of tank-containers in RID/ADR and SMGS Annex 2.
<i>Action to be taken:</i>	Possibility of setting a lower or higher temperature for the maximum mean temperature of the load (t_r) for carriage under moderate or extreme climatic conditions.
<i>Related documents:</i>	Informal document INF.3 from the fourth session of the RID Committee of Experts' standing working group; Report of the fourth session of the standing working group (OTIF/RID/CE/GTP/2014-B); Document ECE/TRANS/WP.15/AC.1/2015/3; GOST 2517-2012. International standard. Oil and petroleum products. Sampling methods. (Petroleum and petroleum products. Methods of sampling).

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Introduction

1. The OTIF secretariat's report on the decisions of the OSJD Commission on Transport Law concerning the provisions relating to the transport of dangerous goods (Warsaw, 27-31 October 2014) (see informal document INF.3 submitted to the fourth session of the RID Committee of Experts' standing working group (Madrid, 17-20 November 2014)), contains the following paragraphs:

"4.3.2.2 Degree of filling

18. The representatives of the OSJD Member States decided for the time being not to take over from RID the wording of 4.3.2.2.1 and 4.3.2.2.2 concerning the degree of filling. This was because in the formulae in RID for calculating the degree of filling, a fixed value of 50°C is used for the maximum average temperature of the goods loaded, instead of the variable t_r .
19. The representative of the Russian delegation pointed out that the wording of both paragraphs in RID did not take any account of carriage under extreme climatic conditions."

Background

2. According to 4.11.1 GOST 2517-12, in the Russian Federation and in another 7 countries that are members of the international system of standardization, spot samples of oil or oil products from rail tank-wagons or road tank-vehicles are taken using a portable sampler from a level located at a height of 0.33 of the diameter of the tank from the bottom of the tank inside the shell. To measure the average temperature and density of the oil or oil product, the sampler must be kept at the above-mentioned depth for not less than 5 minutes until the sample is taken. (See Fig. 1).

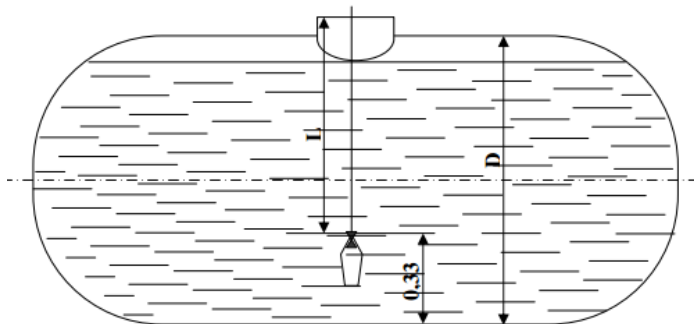


Fig.1

3. The Russian Federation and other CIS countries carried out experimental mass transport of crude oil, petrol, diesel fuel in the direction of Western Siberia – North Kazakhstan – Central Asia – Far East in order to study the temperature regimes of loading and unloading, and to collect systematic data on the physico-chemical nature of the liquid loads. It was found that the unloading temperatures of the products in the refineries are fairly stable throughout the year and are mainly in the range of 20 to 35 °C (see. Fig. 2). The unloading temperature of light oil products from petroleum storage facilities and loading points adjacent to oil pipelines is lower than the temperature of consignments from refineries and vary according to the season. Thus, we can conclude that the maximum difference between the temperature of the cargo at the loading and unloading points can reach 35 to 40 °C. At the same time, in the cold season, when carrying products from refineries, the cargo temperature at loading is usually higher than the temperature of the cargo at unloading.

4. According to the results of research and experiments differentiated standards for loading crude oil and light oil products were developed and approved in the regions of Central Asia, Kazakhstan, the North Caucasus and the Far East. The standard contains the procedure for determining the limit (maximum) amount and degree of filling of liquid cargo, depending on the month of the year, for 29 types of tank sizes. The introduction of differentiated standards allowed more efficient loading and use of tanks, to eliminate waste of cargo during transport and to minimize the occurrence of accidents. A well designed workplace for loading allows the said software to be integrated into the technological processes at oil terminals.

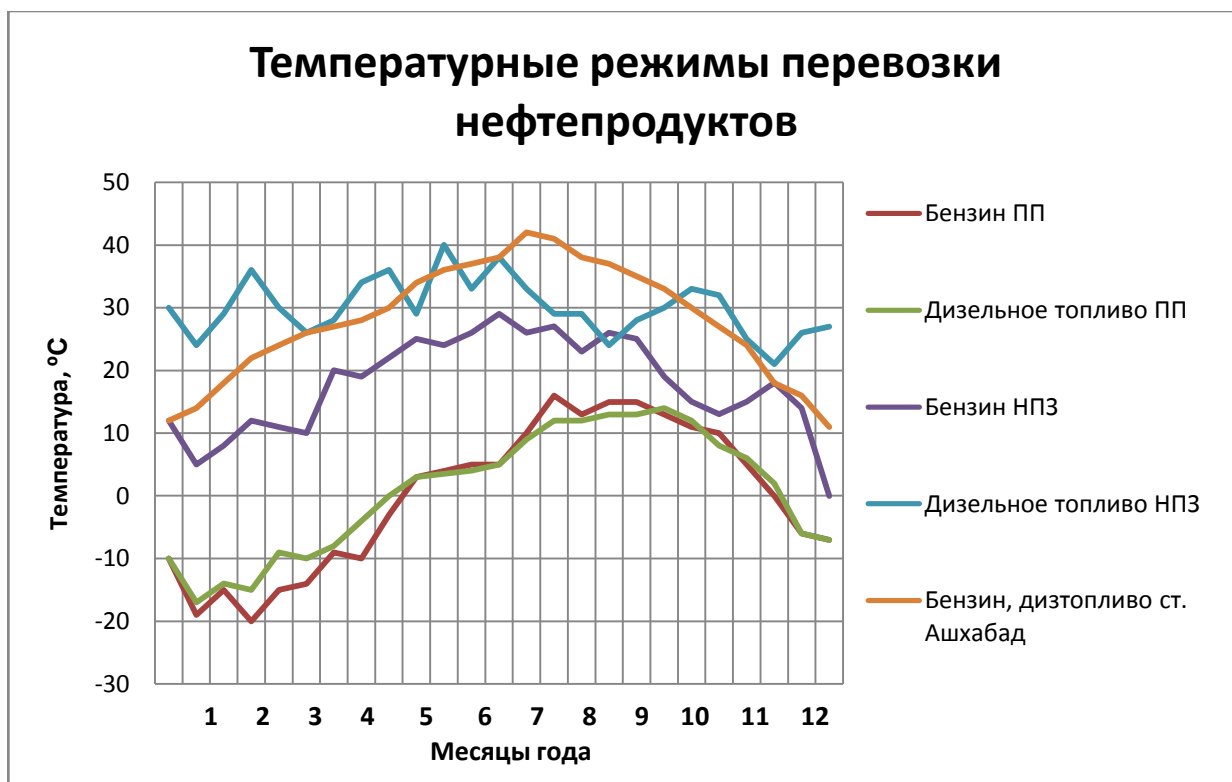


Fig. 2. Temperature regimes for transport of petroleum products

Бензин - petrol;

Дизельное топливо - diesel fuel;

ПП - product pipeline;

НПЗ - refinery;

Ашхабад - Ashgabat.

Proposal

5. The Russian Federation supports the proposal by the secretariat of OTIF on the above subject.