

RULES FOR TRANSPORTATION OF DANGEROUS CARGO

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Анотація

Останнім часом у всіх країнах світу приділяється особлива увага при перевезенні небезпечних вантажів. Велика кількість аварій при перевезенні небезпечних вантажів різними видами транспорту, часто з дуже тяжкими наслідками, змусили міжнародне співтовариство й національні органи влади в окремих державах розробити спеціальні нормативно-правові акти, що регламентують перевезення таких вантажів. Перевезення небезпечних вантажів з мінімальним ризиком можливе тільки за умови дотримання встановлених вимог.

Ключові слова: безпека, вантаж, перевезення, перевезення відходів, закон.

Abstract

Recently, in all countries of the world, special attention is paid to the transportation of dangerous goods. A large number of accidents during the transportation of dangerous goods by various types of transport, often with very serious consequences, forced the international community and national authorities in individual states to develop special legal acts regulating the transportation of such goods. Transportation of dangerous goods with minimal risk is possible only if the established requirements are met.

Keywords: danger, cargo, transportation, transportation of waste, law.

Introduction

In modern conditions, the transportation of dangerous goods by road transport on the territory of Ukraine does not fully meet the requirements of the Rules for the Transportation of Dangerous Goods by Road Transport (PNGAT) and the European Agreement on the International Carriage of Dangerous Goods by Road (DOPNV), which entails a risk for the population and the environment in the immediate the impact of road traffic events, which mainly occur due to violations of the traffic rules of Ukraine.

Research results

Motor transport in terms of technical development occupies a leading place in the unified transport system of our country. Currently, road transport is an object-center of increased danger (accounts for about 75% of all cargo transportation in Ukraine in relation to rail, water and air transport), therefore certification and licensing are aimed at the safety of road traffic, the life and health of Ukrainian citizens, as well as the environment [1]. A very important factor that forces society to draw attention to the transport system as extremely important for the state is the sharply increased importance of transportation safety. Transport, which is known to be a source of increased danger, has been the focus of special attention of the National Police of Ukraine, deputies of the Supreme Council of Ukraine, owners of large transport companies, scientists and the public. The transport services market of Ukraine does not guarantee the unity of the interests of consumers and society with the interests of individual producers. The state structures of Ukraine play an important role, the main tasks of which are the demarcation of the legal space and the implementation of effective control and regulatory measures in accordance with the current legislation. A special and responsible role in this direction is assigned to the Ministry of Internal Affairs and the National Police of Ukraine. The experience of the leading countries of the world, Germany, France, Italy, Great Britain, Canada and the USA, demonstrates that the certification, which is carried out by an independent party, is the multifunctional component that makes it possible to effectively monitor the activities of operators of the motor transport services market for compliance with regulatory requirements, both international, as well as domestic.

International legislation on the transportation of dangerous goods is based on the recommendations of the Committee of Experts on the Transportation of Dangerous Goods of the Economic and Social Council of the United Nations for all types of transport. This Committee develops Recommendations for the transportation of dangerous goods in the form of the Model Rules for the Transportation of Dangerous Goods, also known as the "Orange Book", which are revised annually. At the same time, the Model Rules are a recommendatory document. But on their basis, international organizations and national authorities of various states develop regulatory documents regulating the transportation of dangerous goods by various types of transport. They assume the following [2]:

- the list of most frequently transported dangerous goods, their identification and classification;
- cargo dispatch procedures; procedure for applying labels, marking and preparation of transport documents;
- packaging standards, testing and certification procedures;
- standard requirements for containers for transportation by various modes of transport, procedures for conducting tests and issuing relevant documentation.

In addition, these recommendations propose a system of distribution of goods by categories depending on the type of risk associated with their transportation. The system of international regulation of transportation of dangerous goods includes a large number of conventions and agreements, the main ones of which are:

- Rules for safe transportation of radioactive materials;
- International Code of Sea Transportation of Dangerous Goods;
- International Convention on the Protection of Human Life at Sea;
- International Convention on Prevention of Pollution from Ships;
- Code of safe practice for transportation of non-grain bulk cargoes;
- Technical instructions on the safe transportation of dangerous goods by air;
- IATA DGR (IATA Rules for the Transportation of Dangerous Goods);
- European Agreement on the International Carriage of Dangerous Goods by Road (ADDR=ADR);
- Rules of international transportation of dangerous goods by railways (RID=RID);
- Appendix 2 of the Rules for the Transportation of Dangerous Goods to the Agreement on International Freight Transport (IFTA);
- Rules for the transportation of dangerous goods by railways, approved at the 15th meeting of the Council on Railway Transport of the Commonwealth Member States on April 5, 1996;
- European Agreement on the International Carriage of Dangerous Goods by Inland Waterways (ADN).

Currently, the Law "On Transportation of Dangerous Goods" (No. 1644-III of April 6, 2000) is in force throughout Ukraine [3]. The Law clearly defines terms that are used in the following sense:

- dangerous cargo – substances, materials, products, waste from production and other activities, which, due to their inherent properties, in the presence of certain factors, can during transportation cause an explosion, fire, damage to technical means, devices, structures and other objects, cause material losses and damage to the environment, as well as lead to the death, injury, poisoning of people, animals, etc. according to international treaties, consent to the obligation to fulfill which was given by the Verkhovna Rada of Ukraine, or according to the results of tests in the established order depending on the degree of their impact on the environment or people are assigned to one of the classes of hazardous substances. Dangerous substances are divided into the following classes: class 1 – explosive substances and products; class 2 – gases; class 3 – flammable solutions; class 4.1 – flammable solids; class 4.2 – substances prone to spontaneous combustion; class 4.3 – substances that emit flammable gases when interacting with water; class 5.1 – oxidizing substances; class 5.2 – organic peroxides; class 6.1 – toxic substances; class 6.2 – infectious substances; class 7 – radioactive materials; class 8 – corrosive substances; class 9 – other dangerous substances and products;
- the competent body for the transportation of dangerous goods – the body recognized as such by the Cabinet of Ministers of Ukraine for the implementation of international agreements of Ukraine in the field of transportation of dangerous goods;
 - the subject of the transportation of dangerous goods – an enterprise, institution, organization or individual that sends, transports or receives dangerous goods (senders, carriers and recipients);
 - the sender of dangerous goods – the legal entity (resident and non-resident) or natural person (citizen of Ukraine, foreigner, stateless person) specified in the transport documents, who prepares and submits this cargo for transportation;

- dangerous goods carrier – legal entity (resident and non-resident) or natural person (citizen of Ukraine, foreigner, stateless person) who transports dangerous goods;
 - the recipient of dangerous goods – the legal entity (resident and non-resident) or natural person (citizen of Ukraine, foreigner, stateless person) specified in the transport documents, who receives dangerous goods from the carrier;
 - transportation of dangerous goods – activity related to the movement of dangerous goods from the places of their manufacture or storage to the place of destination with the preparation of cargo, containers, vehicles and crew, reception of cargo, carrying out cargo operations and short-term storage of cargo at all stages of movement;
 - places for storing dangerous goods – specially equipped places, sites, warehouses and buildings where dangerous goods accepted before/after transportation are stored;
 - routes of transportation of dangerous goods – railway tracks, highways, inland waterways, sea and air space, where the movement of vehicles carrying dangerous goods is allowed;
 - international transportation of dangerous goods – transportation of dangerous goods from the territory of Ukraine to the territory of a foreign country; from the territory of a foreign state to the territory of Ukraine; transit through the territory of Ukraine.
- One of the types of hazardous cargo is solid industrial [4-6] and municipal waste [7-10].

Requirements for vehicles transporting dangerous goods

Vehicles transporting dangerous goods must meet the requirements of state standards, safety, occupational health and ecology, and in cases established by law, have appropriate marking and a certificate of admission to the transportation of dangerous goods. In the case of road transportation of such goods, relevant certificates are issued by the territorial bodies of the Ministry of Internal Affairs. This is stated in Article 19 of Law No. 1644. A vehicle for road transportation of dangerous goods, in particular in tanks, is a vehicle for specialized purposes. This is indicated by Article 1 of the Law of Ukraine "On Road Transport" dated 04/05/2001 No. 2344-III. The periodicity of mandatory technical control for specialized vehicles transporting dangerous goods, regardless of the period of operation, is twice a year. This is provided for in Article 35 of the Law of Ukraine "On Road Traffic" dated June 30, 1993 No. 3353-XII. Identification numbers of substances or products are used to mark dangerous goods during their transportation in accordance with UN recommendations; plates, tags and markings according to DSTU 4500-5:2005 "Dangerous cargoes. Marking" and DSTU ISO 780-2001 "Packaging. Graphic marking on the handling of goods" (Fig. 1).



Figure 1 – Marking of dangerous goods

For the transportation of municipal solid waste, which is a type of hazardous cargo, special cars are used – garbage trucks [11-14], as they are characterized by a variety of designs [15-17].

Complete set of transport units transporting dangerous goods

Each transport unit transporting dangerous goods must be equipped with the following equipment [18]:

1) regardless of the sample numbers of danger signs:

- at least one anti-rollback stop for each vehicle, which must correspond to the maximum weight of the vehicle and the diameter of its wheels;
- not less than two self-supporting warning signs/devices — cones with a reflective surface or self-powered flashing yellow lights or emergency stop signs.

The transport unit can be equipped with these warning signs in any combination;

- high-visibility signal vests with reflective elements for each crew member;
- protective gloves for each crew member;
- portable lanterns for each crew member. Lamps must be free of exposed metal surfaces capable of sparking;

- means of eye protection — for example, safety glasses — for each crew member;

2) during the transportation of all dangerous goods, except for dangerous goods, for which the numbers of danger sign samples 1, 1.4, 1.5, 1.6, 2.1 are specified in the List of dangerous goods, given in Table A of Chapter 3.2 of Appendix A to the Supplementary Regulations (hereinafter – the List) , 2.2 or 2.3, — additionally with liquid for washing the eyes;

3) during the transportation of dangerous goods, for which the sample numbers of danger signs 2.3 or 6.1 are specified in the List, – in addition, means of respiratory protection, necessary for emergency abandonment of the vehicle, for each crew member – for example, a panoramic mask with a combined anti-gas-aerosol filter type A1B1E1K1 -P1 or A2B2E2K2-P2, similar to the filter described in the European standard EN 14387:2004 + A1:2008;

4) during the transportation of liquid and solid substances, for which the sample numbers of danger signs 3, 4.1, 4.3, 8 or 9 are indicated in the List, in addition:

- shovel;
- coating for sewage collectors;
- a container for the remains of dangerous goods.

Transportation of waste

The transportation of waste is also regulated by national standards, in particular: DSTU 4462.3.01:2006 "Protection of nature. Waste management". The procedure for carrying out operations (application of standards) is voluntary [19].

According to this standard, waste is transported in undamaged packaging, using vehicles designed for waste of the corresponding hazard class, with compliance with the following requirements:

- they transport hazardous waste outside the enterprise if they have a license for handling it and a waste passport and according to the procedure defined by the current legislation on the transportation of dangerous goods;

- vehicles must be specially equipped in such a way as to prevent the loss of waste and their pollution of the environment and negative impact on people's health during their operation;

- the amount of transported waste should not exceed the cargo volume of the corresponding vehicle;

- all processes related to loading, transportation and unloading of the most dangerous waste (I-III classes) should be mechanized as much as possible. When transporting semi-liquid (paste-like) waste that flows, vehicles equipped with a hose device for draining are used;

- for solid, loose and dusty waste, vehicles equipped with an independent device or a container adapted for unloading with a truck crane are used. To prevent dust formation, waste is covered with polyethylene film, etc.; dusty waste must be moistened before loading, transportation and unloading;

- during the transportation of toxic waste, the presence of outsiders is prohibited, except for the driver, who has undergone a special briefing on safety techniques for handling hazardous, in particular, toxic waste, and the representative of the enterprise-owner (producer) of the waste, who accompanies the cargo. Vehicles transporting waste must have special markings characterizing their use.

General technical and organizational requirements are regulated by DSTU 4462.3.02:2006 "Nature Protection. Waste management. Packaging, labeling and disposal of waste. Waste transportation rules".

The packaging of waste used as raw materials or additives for the production of certain types of products must meet the sanitary and hygienic and other requirements of the relevant current regulatory documents.

Packaging of hazardous waste, depending on its chemical composition, aggregate state, hazard class, and toxicity, must ensure environmental safety and safety for public health (Fig. 2).



Figure 2 – Packaging of hazardous waste

Conclusions

The transportation of dangerous goods, regardless of the class, requires increased control. The conducted studies in the field of legal relations in the transportation of dangerous goods by road transport in Ukraine allow us to propose some additions to the Law of Ukraine "On the Transportation of Dangerous Goods" regarding Art. 16 "Competence of the Ministry of Internal Affairs of Ukraine, the National Police in the field of road transportation of dangerous goods": to provide mandatory escort of dangerous goods by employees of the National Police of Ukraine in the field of road transportation of dangerous goods; to issue, in the established order, approvals for vehicle traffic routes during the road transportation of dangerous goods only to an employee of the National Police of Ukraine in the field of road transportation of dangerous goods; to strictly establish the transportation of especially dangerous goods of peaceful purpose by road transport only by servicemen of the Armed Forces of Ukraine in accordance with section 8.1.5 of the Additional Act.

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