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Transport of dangerous substances in the Republic of Macedonia

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Abstract

Dangerous substances are substances whose the nature of composition or properties in the storage, transportation, loading, unloading, repackaging and similar manipulations can lead to phenomena that are harmful and dangerous for the environment and wildlife.

The aim of this paper is to show the transport of dangerous substances in the Republic of Macedonia, the legislation for it and it's complementarily with the ADR convention. It also covers the customs services in Macedonia to combat the illicit conduct and carriage of dangerous substances for import, export and transport are also covered.

Research is conveyed to determine the handling of dangerous substances in the process of their manipulation. The research snowed the transport of dangerous substances in the Republic of Macedonia is conducted within certain legal framework. The Government of Macedonia insists that the Law on transport of dangerous substances by road and rail traffic complements and fits in fully with European standards.

It also showed lack of equipment and competent authorities for the timely detection of illegal import of hazardous substances and lack of institutional capacity. Improvement of legislation, and more sophisticated technical equipment, the establishment of a cooperative body for hazardous substances at the national level and specifically trained personnel and services for transportation and handling of dangerous substances is recommended.

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Keywords: dangerous substances, ADR Convention, transport, Law on carriage of dangerous substances

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1. Introduction

The transport of dangerous substances can't be treated as any other transport of any goods. In case of accident or collision of vehicles used for transport of dangerous substances, despite the loss of human lives and material damage, which commonly occur, environmental contamination with the dangerous substance transported also occurs.

Despite the achievements in advanced technology research, it is very difficult to assess the depth of penetration of the hazardous substance in soil, whether it has penetrated and how it contaminated groundwater, and what is the amount of concentration of hazardous matter in the soil after its discharge. Modern instruments can't always detect impacts on water or soil, and furthermore, surely no one can predict the damage caused by hazardous substances on plants, animals and most importantly, on people. Because of the specificity of the problem, there are many regulations in the world concerning the transport of hazardous substances, and main purpose is to protect the entities directly involved in this kind of transport (carriers, forwarders), and all those who occasionally are involved indirectly (as members of emergency services and the general public of course). With the existing regulations, duties and responsibilities for all previous participants are established in order to provide knowledge about what to do to reduce the risk of incidents and to ensure effective response to them.

Republic of Macedonia joined in the process of providing safe transportation of hazardous substances, by bringing an array of laws and bylaws, which coincide with those of the European Union as far as this type of road transport is covered. It points to the fact that today, hazardous substances in the Republic of Macedonia are not taboo - subject, however, detailed knowledge of their technical - technological features, of their packaging, storage, manipulation, as well as transporting them from one place to another, the equipment and technical conditions which they over to possess the carriers, as well as vehicles are necessary precondition for the proper handling of them and avoiding unwanted consequences. This paper shows the transport of dangerous substances in the Republic of Macedonia, the legislation for it and it's complementarily with the ADR convention. It also covers the customs services in Macedonia to combat the illicit conduct and carriage of dangerous substances for import, export and transport are also covered.

Any leakage of vehicles transporting such substances, either for export or import from and to Republic of Macedonia requires tremendous expertise and knowledge of hazardous substances and does not stand any error. The knowledge of hazardous materials is important for ensuring their transportation.

The Government of Macedonia insists that the Law on transport of dangerous substances by road and rail traffic complements and fits in fully with European standards. (Government of the Republic of Macedonia, Ministry of Interior, 2007). Namely, because the basic insurance risks in transporting goods, does not cover the risks incurred as a result of the natural features of the goods and hazardous substances are precisely like that, they are insured of special and other risks. In the compulsory insurance, however, MTPL of vehicles carrying dangerous substances, and for damages caused by death, body injured and health damage after harmful event, regardless of the number of injured persons, the minimum amount of insurance is 300,000 euro's, while for damages due to destruction or damage after a harmful event, regardless of the number of injured persons, the minimum amount of insurance to 150,000 euro's (Law on transport of dangerous substances by road and rail traffic, 2007).

Traffic and other accidents related to over loading and manipulation of dangerous substances; require the organizer and the carrier to take special precautions in order to protect that transport. So today, anywhere in the world, including Europe, honing measures are taken to comply with existing regulations brought for the transport of hazardous substances, with their constant replenishment. With the specific regulations established, among other things, hazardous substances can be transported only if their packaging, means of transport and handling, provide sufficient guarantee for maximum security. Research is conveyed to determine the handling of dangerous substances in the process of their manipulation. The research showed the transport of dangerous substances in the Republic of Macedonia is conducted within certain legal framework.


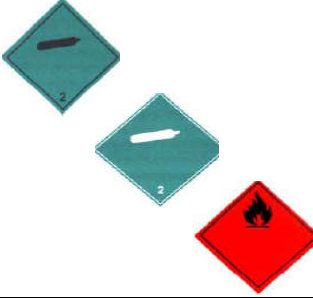



Improvement of legislation, and more sophisticated technical equipment, the establishment of a cooperative body for hazardous substances at the national level and specifically trained personnel and services for transportation and handling of dangerous substances is recommended.




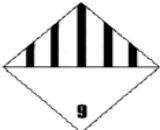
2. Classification and markings of dangerous substances

Dangerous substances are all substances in solid, liquid or gaseous state which because of nature of their composition or properties during storage, transportation, loading, unloading, repacking and similar manipulations can penetrate the area and directly harm the life or human health, cause damage or destruction of property and to cause harmful effects on living and working environment. The dangerous substances are toxic, carcinogenic, irritating and oxidative, radioactive, infectious, explosive, inflammable substances or substances causing ignition in contact with other substances.

According to the regulations for transporting hazardous materials the security measures are brought and depending on their characteristics and type of hazards that they cause hazardous substances are classified into 9 major classes as follows (Rechkoska, 1997):

Table 1: Dangerous substances classification and codes

Class	Type of material	Figure
I class	Explosives	
	Objects filled with explosives	
	Means of ignition, fireworks	
	Chemical reactions	
II class	Substances in the gaseous state from 20 ⁰ C and atmospheric pressure not greater than 1.013 bar	
	Vapor pressure of 50 ⁰ C and greater than 3 barrels	
	Bruised - compressed gases, gases translated into liquid and gases distilled - dissolved under pressure	
III class	Flammable liquid substances and dissolving solids with melting point of 60 degrees	
	Substances that have ignition temperature exceeding 60 degrees	
	Diesel fuel, a mixture of gas and crude oil	
IV class	Flammable solid substances	
	Substances that are self - flammable	
V class	Substances which in contact with water release flammable gases	
	Oxidizing substances	
	Organic peroxides	

VI class	Toxic substances	
	Infectious substances	
VII class	Radioactive substances	
VIII class:	Corrosives	
IX class	Other dangerous substances and objects	

Source: Rulebook for List of Explosive Materials in land and rail traffic (Official gazette of Republic of Macedonia 1 No. 122, 10/2007)

Codes for hazardous materials in transport are license for security, and are set in order to facilitate identification and safe handling of dangerous substances. They are mandatory set on packing and each transport vehicle. They are cast in the form of a sticker on which a particular symbol or display type for the dangerous substance is assigned on the packed product or hazardous cargo. Labels to some extent may vary in different countries, but more or less they are similar to one kind of danger.

Depending on the type of danger the labels show a certain danger in a given color, and dimensions in international trade are 4 "x 4" (101 x 101 mm).

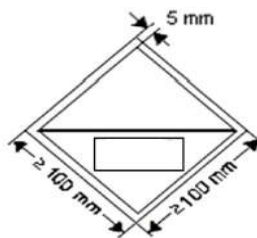


Fig. 1: International dimensions label for Dangerous substances

Source: Jovanov D-r Blagoja "Road transport security" Labkom, Skopje, 2006

3. Packing and packaging dangerous substances

In order a product to be delivered to the consumer it must be placed in a container, wrapper, frame, or packaging. The packaging concept comes from the French word emballage, which means wrapping, packing, package, or equipping of product turnover. The process of placing the product is called packaging. The importance of packaging, especially during transport and storage of dangerous substances

is regulated by legislation depending on the type of means of transport and type of transportation. Legislation on the means of transport is very similar to each other and in line with European agreements on international transport.

For easy handling and packing about 93% of dangerous substances are packed in barrels, no matter how they are transported or on the length of transport. The maximum volume allowed by the European Convention on international transport of dangerous substances by road is 450 liters. However, barrels with a volume of 220 liter are easier and safer to operate and the most commonly used.



Fig. 2: UN barrel approval for transport of dangerous substances

Source: http://www.gls-group.eu/276-I-PORTAL-WEB/content/GLS/BE01/EN/401226_-hazardous-goods-service.htm

Packaging must conform to the structure and guidelines listed in European international convention. The strength of metal barrels must be tested and approved by the United Nations with the imprinting mark that guarantees a successful testing. In cases of easily - flammable liquids the barrels must never be completely filled. Empty space around 50mm should be left, because when external temperature increases, the volume of liquids increases too, i.e. they are expanded. For filling the barrels special pumps should be used because re pour fluids that contain hazardous substances from one barrel to another is not very practical and there is great danger of an accident. Of particular importance is the separation of liquid and solid material depending on the type of the dangerous substance (Rechkoska, 2006)

In cases where hazardous substances are not possible to be transported in barrels, you can use metallic cartridges that will be at least 1.1 times the volume of the volume of liquid contained therein. But this may be only for temporary security measures and not as a package. Damaged barrels, as well as the leaking ones and who do not meet the legislation under European rules and regulations for transporting hazardous materials must be stored and transported in barrels for protection. In this case measures are taken to prevent any movement of the barrel in a protective barrel, and a sufficient amount of absorbent material is added so liquid that is poured from the inner barrel can be absorbed.

4. Handling the transportation of dangerous substances and loading transportation

Handling the transport of dangerous substances to the mean of transport is particularly significant. Professionals responsible for the transport of dangerous substances by means of transport, must measure the packed barrels, and it should preferably be measured by a mobile meter on the spot, making it easier to plan the transportation of waste.

On the lid of the barrel or container important information should be listed (Jacob & Mongrain, 1989):

- ✚ content
- ✚ name of the location from where dangerous substances are packaged
- ✚ date
- ✚ weight and signature

Barrels whose lid opens should be tightly closed with safety belts. Filled barrels should be cared by carriers for safe transfer, forklift or crane. If a crane is used then there are special pliers for safe handling barrels. Just checked and cleaned barrels can be taken to remove or temporary storage.

The type of packaging and transportation of hazardous materials depends on the chosen method and can be of different. And it should be taken into council fraction that despite national and international

regulations for packaging special specifications must be respected of the plant for waste disposal. Before each barrel is filled should be checked whether there is possible damage. The barrels should be handled carefully (Lowe, 2005).

When it's a long-distance transport it is important to check that the load is not moving. The burden should ideally be provided with optimal use of protective measures such as fastening belts, wooden boards against sliding and airbags. Also it's important the weight of any special packaging or container in the truck is equally placed. The total cargo weight that varies in different countries must be determined. If transport container with the number 20 is used then there is room for 36 barrels according to international convention in a row. Containers should be loaded in two rows and the total should be 72 barrels in a container.

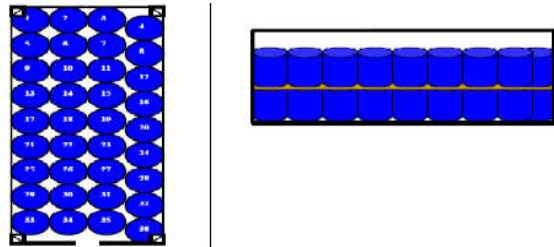


Fig. 3: Barrel proper placement

Source: <http://www.tib.si/eng/prograni-kemikalije.html>

When transporting solids which have liquid radioactive substances, solid items, must be well fitted by a sufficiently strong belt loops fixed to the boot. Filling is easy if you use containers which can be opened from above. But these containers should be protected from rain with tarpaulin.

5. Rules for international transport of dangerous substances by road: The case of Republic of Macedonia

The introduction and development of modern - integrated transport of dangerous substances is made in order to get to the reduction of hazardous substances and its weight. Therefore certain rules and regulations are established by the United Nations which in 1954 formed an expert team that made recommendations according to what rules and regulations the transport of dangerous substances should be respected. When hazardous materials are exported to other countries the procedures of the Basel Convention should be followed or transportation should be done only after prior written notification by the competent state institutions for export, import and transit in accordance with the international legal regulations for cross - border transport of dangerous substances.

All European Union countries are parties to the European agreement concerning the international carriage of dangerous substances by road (ADR, 2005). The ADR Agreement applies to international carriage of dangerous substances by road and its provisions do not usually differ much from domestic regulations. Pursuant to the Agreement, it is possible to conclude multilateral agreements on particular issues between individual parties to the agreement. (UN, 2010). The European Union has also regulated the carriage of dangerous substances by road through a Council Directive 94/55/EC of 21 November 1994 based on the ADR Agreement. This Directive was followed by another directive (Council Directive 95/50/EC of 6 October 1995) regarding uniform procedure for checks on the transport of dangerous substances by road. The Directive has given the European Commission the right to make regular changes to the technical provisions or to grant exceptions (EU Commission Directive 2005). It's very important during the transport of dangerous substances by land apart from safety measures in the transport of dangerous substances under the provisions of the European Agreement concerning the international carriage of dangerous substances by road - ADR, the legal provisions of the country from which dangerous substance comes should be respected, the transit country and the country that is considered the ultimate destination.

The transport of dangerous substances in Republic of Macedonia is regulated by Law on transport of dangerous substances by road and rail traffic (Official gazette of Republic of Macedonia No. 92, 07/2007). The law provides for mandatory labeling of vehicles carrying dangerous substances with orange plates and stickers of danger. Also, it is mandatory proper labeling of containers of vehicles carrying dangerous substances in order to alert other traffic participants. Basic condition to transport the dangerous substances is possession of a permit, issued by the Ministry of Transport and Communications of Republic of Macedonia at the request of the company or individual that performs the transport. In addition to approval, it is necessary to possess and provide the following documents: Transport document from the sender to the carrier (ADR-Document); written instructions for dangerous goods that are shipped; ADR Certificate of professional competence of the driver of the dangerous substance. Depending on the type of substance, despite approval by the Ministry of Transport and Communications, it is necessary to have additional approval from the Ministry of Interior in transporting explosives of Class 1; approval from the Ministry of Health for transportation of poisons and infectious substances of Class 6; and, Approval of Radiation Safety for radioactive substances transport of Class 7th (Law on Ionizing Radiation Protection and Safety (Official gazette of Republic of Macedonia No. 48/02, 06/2002)

In the vehicle that carries dangerous substances other people should not be found besides the driver, assistant driver and companion, substances that may cause fire and should not be carried out repairs that can lead to causing fire or explosion. Also during the transport of these substances smoking is forbidden.

The driver must handle the vehicle with care and the speed of the motor vehicle must not exceed 80% of the maximum permissible speed depending on the types of roads in accordance to traffic rules and regulations, but never faster than 70 km per hour, and to hazardous materials that contain toxins not more than 60 km per hour. The driver from the time of receipt until delivery of the dangerous substance should not be away from the vehicle. In case of accident or fire collision assistant driver or companion must notify the competent authorities in the shortest possible time, and if the driver is alone someone who noticed the accident should do it.

Vehicles for transport of dangerous substances that transport flammable gases or flammable liquids with a starting temperature below 55°C should have devices that divert electricity or plugged drains in the sand, which will prevent to the combustion and electric roundabouts.

Dangerous substances can be transported in international transportation by motor vehicles and trailers that are specially designed for transport of dangerous substances and correspond the legislation, while the domestic shipping transport can be carried in a van - vehicles, cars, tractor trailer with wheelbarrows, but always must be careful not to be close with others who are in the motor vehicle. The vehicle that transports hazardous materials must have two signs the vehicle that transports dangerous substances, and identification numbers of the dangerous substance must be written. If for the transport of hazardous materials besides motor vehicle some trailers are used, they must have a label that they have hazardous substances.

If in the transport of hazardous substances a trailer is used, it must have a special device, which emits an audible or light signal to warn the driver that the air pressure dropped more than 20%. Vehicles loaded with hazardous substances must not stop or be parked on the road, but only in places marked for stopping a motor vehicle that transports dangerous substances. Not following any regulation entails criminal responsibility and criminal fine by type of infraction.

6. Customs procedures for transport of dangerous substances in Republic of Macedonia

Given the fact that customs officials in performing their duties, come into daily contact with hazardous substances and taking into account the physical and chemical properties of the same, and with the cause to avoid the possibility of explosion, fire, spills of hazardous substances or other disaster, and thereby endangering the life and health, environment, material goods and traffic safety, the Customs Administration of Republic of Macedonia has adopted a series of guidelines dealing with hazardous substances import and export from the Republic of Macedonia, according to the ADR Convention.

Namely, companies and other entities and individuals who transport or give for transport dangerous substances and perform actions on that transport, as well as individuals that directly handle or otherwise come into contact with dangerous substances during shipping, ought to take preventive protective

measures, which ensure protection of life and health, the environment or property, or traffic safety. When entering the dangerous substances in the territory of the Republic of Macedonia, they must be accompanied by a document of carriage, issued by the Ministry of Transport and Communications, in cooperation with the Ministry of Interior (ADR under the Convention). For certain types of hazardous substances approvals from competent authorities (e.g. explosives, approved by the Ministry of Interior, for toxic substances, approved by the Ministry of Health for radioactive materials, approval of the Radiation Safety) are required.

During the transport of dangerous substances, vehicle or cargo, or its packaging should be marked with appropriate international danger signs, given at the beginning of this section. Heads of internal and border customs offices, on customs terminals, should notify the responsible parties, where real conditions are for it, take the following actions (Law on transport of dangerous substances by road and rail traffic, 2007 & MCA, 2009):

1. Vehicles transporting dangerous substances must be parked on a special (marked) position;
2. In the immediate vicinity of the marked parking place for vehicles transporting hazardous substances there must be appropriate HTZ equipment, according to legal regulations;
3. Vehicles carrying hazardous materials are to be allocated the appropriate safe distance from other vehicles, carrying other goods

On the border crossing, however, customs officials, in contact with vehicles transporting dangerous substances are obliged to act according to the following guidelines (MCA, 2009 and MVR, 2009):

1. Vehicles carrying dangerous substances at border crossings, at entry and at exit, to be allocated the appropriate safe distance from other vehicles, in cooperation with the responsible person at the crossing to regulate traffic and security at the border crossing - MVR, and in order to take appropriate measures, not led to any adverse consequences;
2. Customs officers at border crossings on entry and exit, if necessary, depending on weather conditions (high temperatures), should give priority to vehicles carrying dangerous substances;
3. On the border crossings, where there are conditions for it, the head of the Customs office should determine the separate line control of vehicles carrying dangerous substances, in cooperation with the responsible person at the crossing to regulate traffic and security at the border crossing - MVR, to take appropriate measures in that direction;
4. On the border crossing, near the place where control of the vehicles that transport hazardous materials is taken should, have adequate HTZ equipment, according to legal regulations

Heads of customs offices should introduce the specified information to all the customs officers. Also, for all actions taken and implemented, and the deficiencies that are noticed by the persons responsible for the management of customs terminals, heads of customs offices should notify the department of customs and legal issues within the Customs Administration within 15 days. In its handling of dangerous substances, customs authorities are obliged to carry about that own and the safety of other persons who are directly involved. Also, customs officials can request assistance from the skilled person, whenever they come into contact with hazardous substances, which is in accordance with the Customs Law.

7. Equipment of customs services in the Republic of Macedonia to control the transport of dangerous substances

Transport of dangerous substances, as very specific area, brings with it self an obligation for mandatory possession of the necessary equipment to control it by the services who first encounter the site with these goods - customs services. If you consider the huge negative consequences that could result in wide scale, from any inadvertent leakage due to improper control, or lack of adequate equipment with which hazardous materials are detected, then you need to fully justify the effort for better equipment but also expertise and knowledge by employees of the Customs Administration of Macedonia.



What does the practice show? Customs Administration of Republic of Macedonia has a laboratory, which in 2009 was equipped with additional equipment, worth 40 thousand euro, which is designed for testing and storage, among other things, for certain types of hazardous substances. For example, the digester is installed, cabinets for storage of flammable and corrosive chemicals and shelves in warehouses for storage of samples and chemicals, and other equipment are awaiting supply of gas and is scheduled to perform qualitative and quantitative analysis, mainly of petroleum products, including: chemical composition of oil, down the content by weight of flavouring and non - flavouring ingredients, identification of marker and colour in oil, analysis of organic products, separation of a mixture of chemicals (MCA, 2009).

In the past period of time, the laboratory has carried out its analysis in accordance with analytical methods of laboratory guide of the World Customs Organization (base of harmonized analytical methods used by customs laboratories of the European Union), consultation with out laboratories to find methods for preparing samples for testing, as well as methods for instrumental analysis. One of the efforts of the Customs Administration of Republic of Macedonia is a separate customs laboratory as an independent organizational unit that represents one of the basic conditions for its accreditation as such. In addition to laboratory equipment, what is certainly just as important is the existence of special, electronic detectors for hazardous substances located at border crossings. What deserves special attention, of course is that recently, the Customs Administration of Macedonia, received a donation from the European Union, worth 300,000 euro's, which consists of 7 specially equipped cars for customs dogs to detect drugs and 6 highly sophisticated electronic detectors for the detection of dangerous substances, weapons of mass destruction, drugs and precursors, as well as assistance in training of dogs abroad, in specialized institutions and with top trainers (EU, 2010).

This equipment is intended for use at border crossings, and by special, mobile customs teams, as the most modern technical devices, according to high European standards. Such equipment is successfully used in most countries of the European Union, showing good performance in the fight against smuggling, illegal trade and preventing illegal transport of dangerous substances.

In the context of the previously mentioned, only for illustration, we emphasize that the registration of hazardous waste, which is characterized by levels of radiation above the permissible level at border crossings, in Macedonia panel radiation detectors that respond to the presence of hazardous substances within a radius of fifty meters from the object that is controlled are being used. The maximum amount of radiation should be between 0.25 to 0.3 microsieverts per hour. Everything above that level is considered dangerous for human health.

For better organization in the fight against illegal attempts to import into or transit through the territory of Macedonia in 2009, the Customs Administration of Republic of Macedonia adopted the following guidelines (MCA, 2009)

-  Guidelines for work in detecting elevated levels of ionizing radiation;
-  Guidelines for procedures in detecting hazardous and harmful substances,

That provides strategies for action by the customs officers in case of detection of radioactive and other hazardous substances. Unfortunately, because of the high degree of confidentiality of these documents and their availability to the public, there is no opportunity for their more detailed elaboration.

8. Cases of inadequate transport and import of dangerous substances in the Republic of Macedonia

Like many countries in the world, the Republic of Macedonia is not avoided by attempts inappropriate for transport of dangerous substances through illegal importation or transit of the same in and around its territory. Many of them remain only a statistical figure, but what is more important is how many of those attempts were successful or were not taken timely measures to prevent them?

The public still remembers June 2008, when three Bulgarian trucks, five days were a lively threat at the border crossing Blace, due to the inability of Macedonian laboratories (which is really hard to believe) to determine exactly what was in the barrels loaded on trucks, which passed several Asian and European borders to get to Macedonia. Or as one which preceded a few weeks before the previously mentioned

case, when the radioactive waste from Kosovo, which Greece missed border crossing Evzoni was returned and two days travelled through the country. During the investigation it was established that the truck payload containing europium, a hazardous chemical element.

In most cases, attempts for illicit import of dangerous substances of Class 1 - explosive substances and objects, and pyrotechnic products, which themselves represent a danger to general health. Some of them, accounting for ammunition (bullets) for firearms, which also belong to this class.

Table 2: Illicit import and inappropriate transport of dangerous substances - I class - Explosive materials and object

CASE 1 Illicit import and inappropriate transport on gun ammunition (bullets)	On 03.08.2009, at the border crossing Delcevo on entry in R. of Macedonia, Macedonian citizens try to import illicit dangerous substances, classified in I class - explosive materials - firearms
CASE 2 Illicit import and inappropriate transport on ammunition (bullets)	On 20.08.2009, at the border crossing Kafasan on entry in R. of Macedonia, two Macedonian citizens try to import illicit dangerous substances, classified in I class - explosive materials - bullets calibre 7.26mm packet in bag
CASE 3 Illicit import and inappropriate transport on pyrotechnic products - rackets	On 01.01.2010, at the border crossing Tabanovce Macedonian citizens try to import illicit 12 packets pyrotechnic products - rackets (204 pieces)
CASE 4 Illicit import and inappropriate transport on pyrotechnic products	On 11.01.2010, at the border crossing Tabanovce Macedonian citizen from Gostivar try to import illicit 3 boxes pyrotechnic products
CASE 5 Illicit import and inappropriate transport on pyrotechnic products	On 20.04.2010, at the border crossing Tabanovce, MCA prevented import illicit on pyrotechnical products - mark Famous dragon
CASE 6 Incompetent production and trade with dangerous substances	On 13.11.2010, at the border crossing Tabanovce one Macedonian citizen try to import illicit 60 pieces pyrotechnical products - mark Umarex boxes
CASE 7 Incompetent production and trade with dangerous substances	On 14.05.2011, at the border crossing Tabanovce, MCA in car found 240 pieces rackets

Source: own researching, based on information from MCA, daily newspaper and TV

One of the riskiest and with the longest and the most devastating power are hazardous substances, placed in Class 7 - Radioactive material. According to information of the Customs Administration only in 2008, for entrance into Macedonia were detected 6 cases of significantly elevated level of radiation than allowed, and in collaboration with the Radiation Protection, appropriate measures to prevent harmful consequences were taken. In 2009, there was a case of increased level of radiation above allowed, during entry into Macedonia. TMV, with escort, was returned to the territory of the exporting country.

According to the knowledge of the customs authorities of the Republic of Macedonia, due to blockade at the border crossing, the vehicle two days earlier was parked at the side of the exporting country, intending to enter the territory of the Republic of Macedonia, but thanks to the intervention of the customs services, the threat is detected early and the vehicle is returned back to the exporting country.

9. Conclusion

Regulation for the transport of dangerous substances in Macedonia is in line with European or is carried out under the law for carriage of dangerous substances by road and rail traffic as well as amendment of the Law on transport of dangerous substances by road and rail traffic, which complementary to the European Convention for the ADR - transport of dangerous substances by road traffic. Although in Macedonia for a long time there was an ignorant attitude towards the issue of

exceptional importance and until recently was apply an old law on the carriage of dangerous substances from the former Yugoslavia, it is safe to conclude that now, after the Law on transport of dangerous substances by road and rail traffic was accepted, and with the intention of the Government of the Republic of Macedonia for an amendment to this law, we are on track for inclusion in the global regulation of this area, and thus to investment to a healthier environment

According Law to transport of dangerous substances by road and rail traffic and ADR - Convention, hazardous substances are classified into nine classes according to their technological characteristics. Therefore, precisely is defined which dangerous substances and products are included and which are excluded from a particular class. The classification of dangerous substances is completely aligned with that of the ADR-Agreement.

All hazardous substances, without exception, during their transport must be placed in appropriate containers, and to be marked with labels (signs) of danger in order to accurately to know what type of dangerous substance are shipped, but what is more important, to warn all parties involved in the traffic, and all road users in general, of the consequences that particular dangerous substance can cause on human health and the environment.

The law provides for mandatory labeling of vehicles carrying dangerous substances with orange plates and stickers of danger. Also, it is mandatory proper labeling of containers of vehicles carrying dangerous substances in order to alert other traffic participants. Basic condition to transport the dangerous substances is possession of a permit, issued by the Ministry of Transport and Communications of Republic of Macedonia at the request of the company or individual that performs the transport. In addition to approval, it is necessary to possess and provide the following documents: Transport document from the sender to the carrier (ADR - Document); written instructions for dangerous goods that are shipped; ADR Certificate of professional competence of the driver of the dangerous substance. Depending on the type of substance, despite approval by the Ministry of Transport and Communications, it is necessary to have additional approval from the Ministry of Interior in transporting explosives of Class 1; approval from the Ministry of Health for transportation of poisons and infectious substances of Class 6; and, Approval of Radiation Safety for radioactive substances transport of Class 7th.

The equipment available to the Customs Administration of Republic of Macedonia is a relatively new occurrence and for its usage, training of customs officers is organized. Nevertheless, it seems insufficient, or insufficiently known, taking into account the present day examples of unsuccessful eradication of illegal importation or transit of vehicles transporting dangerous substances through Macedonia.

Based on field research, data is obtained for cases of effectively preventing the illegal import of hazardous substances in the Republic of Macedonia, by the customs services. However, the confidentiality of such data led to the inability to elaborate in detail the cases involving customs authorities, and also having the strategies used to combat illegal activities with dangerous substances. How the Republic of Macedonia will be able to implement modern European and world trends in the transport of dangerous substances depends primarily on informing the competent authorities in Macedonia, but also on the real desire and perseverance in building capacity and investing in skilled personnel. Because, however, what the most important is the fact that hazardous substances do not affect only a specific group of people.

Rather, it concerns all of us and therefore, in no case we must not close our eyes to the harsh reality of huge casualties and consequences caused by ignorance of basic technological properties during transport of these substances as well as, and prescribed rules and procedures that follow. What is safe to do, is to face the fact that information on hazardous substances and regulations covering, is the surest path to creating an environment that will secure a safe place of many future generations.

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