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## ENSURING THE SAFETY OF ROAD TRANSPORTATION OF GOODS

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*The article investigates Russian and foreign regulatory documents, governing the issues of cargo securing in road transport, and sets out recommendations to ensure the safety of road transportation of goods by means of their attachment.*

**Keywords:** *road freight transportations; securing of cargo; security of transport.*

### Introduction

Road freight transportation is a source of increased danger. However, not only the vehicle poses a threat to the safety of others, improper stowage and securing of cargo in the vehicle does no less harm. Improper placement and securing of cargo affect its safety and the timeliness of its delivery, the safety of the vehicle, as well as endanger the live sofa driver and third parties, the property, may cause harm to the environment. According to the opinion of independent experts, the cause of 70% of unsafe carriages of goods is inadequate cargo securing. Moreover, the cause of 40% of road accidents involving one vehicle, is the loss of control of vehicle due to shifting of improperly secured cargo [1].

A lot of things depend on the decisions made within the framework of the process of organization of safe road transportations. Not only such an important issue as the preservation of wealth (transported items, vehicles), but also the safety of the driver and other road users are among them.

One of the ways to organizing a safe road transportation is the correct stowage and securing of transported goods.

### **State regulation of securing of cargo**

According to the Federal Law №259-FZ of November 8, 2007 (ed. By 06.11.2011), “Statute of road transport and urban land-electric vehicles” [2] the obligation to prepare the cargo for transportation rests on the shipper. Organization of cargo handling and shipping must ensure the safety and security of cargo, as well as prevent damage to the vehicle. The Statute of road transport refers to the general conditions of the organization of transportation, however, it does not regulate the issues of cargo securing technology.

Questions concerning securing of cargo on road transport are partially regulated by the RF Government Decree of April 15, 2011 №272 (ed. From 03.12.2015) “On approval of the Rules of cargo transportation by road transport” [3]. The Rules give advice about selecting the means for securing cargo in the back of the vehicle, which are necessary to ensure traffic safety, security of cargo and the vehicle, and also lists the attachments which aren’t allowed to use. Responsibility for the securing of cargo rests on the shipper if the contract of carriage doesn’t (the provision of freight forwarding services) provide otherwise.

It’s pointed out in the traffic rules, approved by the RF Government Decree of 23.10.1993 N 1090 (ed. By 30.06.2015) [4] that before and while driving the driver must control the placement, fastening and condition of the goods in order to prevent them from falling and creating disturbances to traffic (p.23.2). It should be noted that in this document the sequence of actions of the driver on validation fastening and stowage is not registered. Thus, the driver must control the condition of the goods at his discretion.

A complete list of legal acts, which addresses the issues of cargo securing, is presented at Table 1.

Table 1.

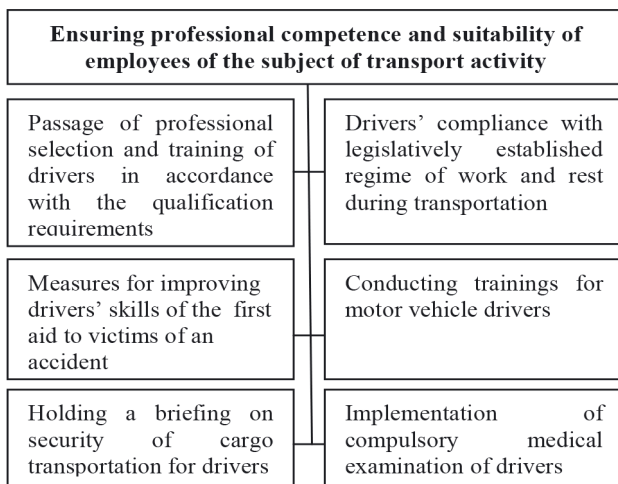
**Legal acts which address the Securing of cargo**

<b>№</b>	<b>Name of legal act</b>	<b>Legal regulation of carriage of goods</b>	<b>Lashing regulation technology</b>
1	The Civil Code of Russian Federation (chapter.40)	<ul style="list-style-type: none"> <li>indicates the general provisions on the carriage of goods and passengers;</li> <li>regulates the conditions of conclusion and execution of contracts of carriage</li> <li>determines the carrier's liability for breaches of obligations</li> </ul>	<ul style="list-style-type: none"> <li>load securing issues are not affected</li> </ul>
2	Statute of road transport and urban land-electric vehicles (Federal Law №259-FZ of November 8, 2007 (ed. of 13.07.2015)	<ul style="list-style-type: none"> <li>regulates relations arising at rendering of services;</li> <li>defines the general conditions of carriages by trucks</li> <li>regulates the obligations for preparation of goods for carriage</li> </ul>	<ul style="list-style-type: none"> <li>shipping and handling operations should provide:               <ul style="list-style-type: none"> <li>➤ safety and security of cargo</li> <li>➤ no damage to the vehicle</li> </ul> </li> <li>the issues of cargo securing technology are not regulated</li> </ul>
3	RF Government Decree of April 15, 2011 №272 (ed. of 03.12.2015) «On approval of the Rules of cargo transportation by road transport»	<ul style="list-style-type: none"> <li>establishes the procedure for the organization of transportation of various cargoes</li> <li>regulates the conditions of transportation of goods and the provision of vehicles for the transportation of goods</li> </ul>	<ul style="list-style-type: none"> <li>sets out recommendations of the choice of means of securing of cargo in the vehicle body</li> <li>the issues of cargo securing technology are not regulated</li> </ul>
4	Rules of the Road (the RF Government Decree of 23.10.1993 N 1090 (ed. by 30.06.2015)	<ul style="list-style-type: none"> <li>establishes a common procedure for the traffic on the entire territory of the Russian Federation</li> </ul>	<ul style="list-style-type: none"> <li>it sets the duties of the driver:               <ul style="list-style-type: none"> <li>➤ to control the placement of cargo in the body of a vehicle</li> <li>➤ to control the attachment and the conditions of the goods</li> </ul> </li> <li>the algorithm of driver's actions on verifying the accuracy of placement and fastening of cargoes is not established</li> </ul>
5	GOST (State Standard) 26653-90 "Preparing of general cargoes for transportation. General requirements»	<ul style="list-style-type: none"> <li>establishes general requirements for the preparation of general cargoes for transportation</li> </ul>	<ul style="list-style-type: none"> <li>preparation of cargo for transportation should provide:               <ul style="list-style-type: none"> <li>➤ safety and security of cargo</li> <li>➤ ease of freight operations, fixing and placing in vehicles</li> </ul> </li> <li>the funds, schemes and methods of cargo securing are not shown</li> </ul>

*End of the Table 1.*

6	Transport strategy of the Russian Federation for the period up to 2030 (approved by the RF Government of 22.11.2008 №1734-p)	<ul style="list-style-type: none"> <li>• defines the priorities of the state transport policy of the Russian Federation</li> <li>• determines the main directions of development of transport infrastructure of the country</li> <li>• examines the main problems of development of the transport system and the directions of their decisions separately for every mode of transport</li> </ul>	<ul style="list-style-type: none"> <li>• It indicates the need to work out the requirements to means of securing of cargo on vehicles</li> </ul>
7	Technical Regulations of the Customs Union «On Safety of Wheeled Vehicles» (TR CU 018/2011) (approved by the decision of the Commission of the Customs Union of 9.12.2011 №877)	<ul style="list-style-type: none"> <li>• specify the requirements for vehicles in service</li> </ul>	<ul style="list-style-type: none"> <li>• then extissues are not allowed: <ul style="list-style-type: none"> <li>➢ damage and loose of some parts of the cargo securing</li> <li>➢ the destruction of carcasses of boards and devices for securing of cargo</li> <li>➢ the absence or non-functional state of fastening mechanisms</li> </ul> </li> <li>• the funds, schemes and methods of cargo securing are not shown</li> </ul>
8	The Rules for ensuring the security of transportation of passengers and goods by road and urban land-electric vehicles and a list of measures for preparing workers of legal entities and individual entrepreneurs engaged in transportation by road and by urban land-electric vehicles for safe operation and the vehicles for safe exploitation (the Order of the Ministry of Transport of the Russian Federation of 15.01.2014 №7)	<ul style="list-style-type: none"> <li>• defines the main objectives and requirements for ensuring the security when organizing and implementing the transportations of goods by road</li> </ul>	<ul style="list-style-type: none"> <li>• describes the requirements for the selection of means of securing</li> <li>• lists the factors which are to be considered when determining the methods of cargo securing</li> <li>• the methodology for determining the amount and type of securing devices is not written</li> </ul>

The most far-reaching document, which details the issues of cargo securing, describes the requirements for the selection of means of cargo securing and lists the factors that should be considered when determining the methods of cargo securing is the order of Ministry of Transport of Russia from 15.01.2014 N 7 “On approval of the Rules of ensuring the safety of passenger and freight transportations by road and by urban land-electric vehicles and of a list of measures to prepare workers of legal entities and individual entrepreneurs engaged in transportation by road and by urban land-electric vehicles for safe operation and the vehicles for safe exploitation “(Registered in the Ministry of Justice of Russia 05.06.2014 N 32585) [5].



**Fig. 1.** Measures for ensuring professional competence and suitability of the employees of the subject of the transport activity

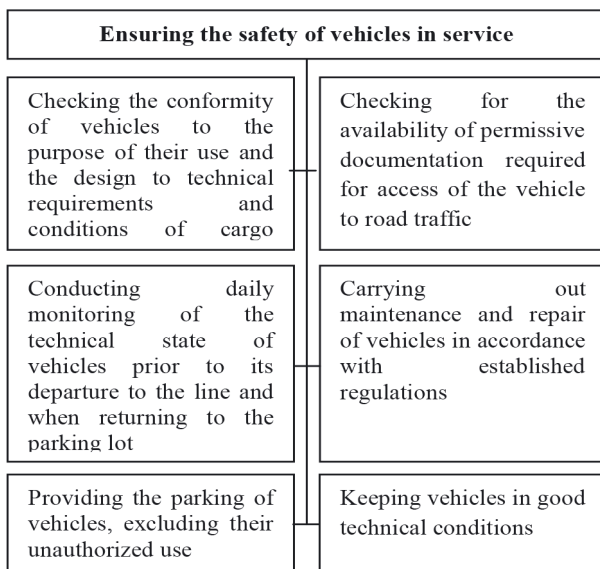
It follows from the legal act mentioned above that in order to ensure safe transportation of goods by means of attachment you must meet the following requirements:

- firstly, the maintenance of professional competence and suitability of employees of the subject of the transport activities;

- secondly, ensuring the safety vehicles in use;
- thirdly, ensuring safe conditions for transportation of goods.

The list of activities aimed to ensure professional competence and suitability of the employees of the subject of the transport activity is represented as a block diagram in Figure 1.

Measures to ensure the safety of vehicles in use are shown in block diagram form in Figure 2.



**Fig. 2.** Measures for ensuring the safety of vehicles in service

In order to ensure safe conditions of cargo transportations it is necessary to perform activities described in the flowchart of Figure 3.

Analyzing foreign experience in regulating of safe fastening of cargo on road transport it can be concluded that a number of countries have their own legislation, which establishes the rules of cargo fastening. Documents of several countries [6 ... 8] governing the issues of securing of cargo on road transport are presented in a block diagram in Figure 4.

Providing safe conditions for cargo	
The maximum authorized weight of the vehicle and the axle load should not exceed the limits specified in the passport of the vehicle	When placing goods on vehicles it is necessary to exclude damaging of goods, of packaging, as well as of vehicles
When placing the goods in the vehicle the values of weight and dimensions must be observed	It is not allowed to use for transportation of goods bodies with inoperative closures
During the cargo transportation the driver must check the serviceability of the fastening devices on the vehicle after bringing them into working condition, as well as during transportation of cargo	When organizing safe road transportations airborne platforms, cargo area for placement of cargo and bodies must be equipped with devices for alignment and securing of cargo

Fig. 3. Measures for ensuing safe conditions for transportation of goods

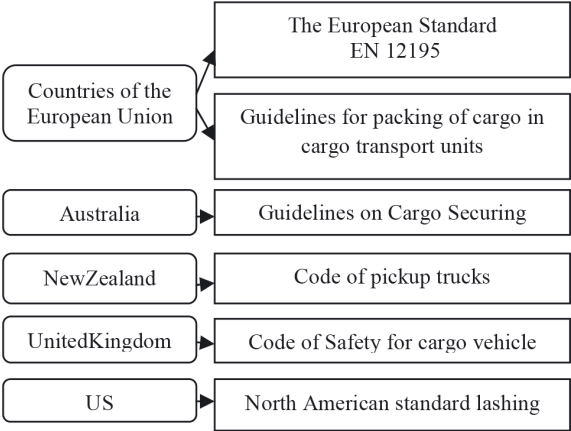


Fig. 4. Foreign experience of regulation of safety on road transport by means of freight attachment

### **Conclusion**

In accordance with the foregoing in order to provide safe road transportation of goods by means of their attachment you need to:

- undertake a detailed review and analysis of the existing foreign experience in the field of safety of road transportation of goods by means of their fastening;
- use vehicles for transportations of goods which meet the requirements of their safe exploitation;
- develop national regulations on securing of cargo on vehicles, maximally harmonizing them with the existing foreign analogues, taking into account the characteristics of goods and the conditions of their transportation;
- develop a control system for securing of cargo and to specify measures of responsibility for violation of the established requirements;
- work out measures for ensuring professional competence and professional suitability of employees of the subject of transport activities in terms of securing of goods;
- legislate the basic requirements on stowage and securing of cargo, requirements to the professional competence of a driver and other persons responsible for performing loading and unloading works, in placing and securing of loads.

Thus, the implementation of recommendations mentioned above will improve the level of safety of transportation of goods by road.

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