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**Research Article** 

## MEDICAL EXAMINATIONS OF TRANSPORT WORKERS: TRADITIONS AND INNOVATIONS

### Yuliya I. Klepalova

Russian State University of Justice (Northwestern Branch) (St. Petersburg) ORCID ID: 0000-0003-4842-3531

Vehicles represent a source of increased danger, and therefore any issues related to ensuring safety in this area are of particular practical importance, because they carry a significant risk of adverse consequences both for society as a whole and for its individuals. However, in the science of labor law, there is currently no complete and comprehensive study devoted to medical examinations of workers of various modes of transport from the perspective of the scope of their activities and the characteristics of the labor function that they perform. The purpose of the study is to formulate the problems of legal regulation of medical examinations of workers related to transport traffic, as well as to identify trends in legal regulation in this area, in particular in the context of the development of high-speed traffic. Currently, the legal regulation of the procedure for conducting medical examinations of workers is not uniform since it is regulated by a large number of by-laws of various ministries and departments, and the introduction of telemedicine technologies in the field of protecting the health of citizens is perceived ambiguously by various departments. I believe that in this situation it is necessary to adopt a universal regulatory act, which should apply to all transport workers without exception, regardless of its type, should reflect the conceptual requirements for the procedure for conducting medical examinations, including listing cases in which the use of remote, digital technologies. Based on this act, departmental acts should already be formed regulating the procedure for undergoing medical examinations in relation to workers of certain types of transport. Such a solution to the issue will make it possible to formulate a uniform approach to conducting medical examinations, taking into account the specifics of modes of transport, thereby facilitating not only law enforcement practice, but also more quickly making changes to this act, which is especially important in the context of the development of digital technologies.

Keywords: medical examinations, transport workers, digitalization, high-speed traffic

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# МЕДИЦИНСКИЕ ОСМОТРЫ РАБОТНИКОВ ТРАНСПОРТА: ТРАДИЦИИ И НОВАЦИИ

### Ю. И. Клепалова

Северо-Западный филиал Российского государственного университета правосудия (Санкт-Петербург) ORCID ID: 0000-0003-4842-3531

Транспортные средства представляют собой источник повышенной опасности, в связи с чем любые вопросы, связанные с обеспечением безопасности в этой сфере, имеют особую практическую значимость, ибо несут в себе существенный риск возникновения неблагоприятных последствий как для общества в целом, так и для отдельных его индивидов. Однако в науке трудового права в настоящее время отсутствует полное и всестороннее исследование, посвященное проведению медицинских осмотров работников различных видов транспорта с позиции сферы их деятельности и характеристики трудовой функции, которую они выполняют. Цель исследования – сформулировать проблемы правового регулирования проведения медицинских осмотров работников, связанных с движением транспорта, а также выявить тенденции правового регулирования в этой сфере, в частности в условиях развития высокоскоростного движения. В настоящее время правовое регулирование порядка проведения медицинских осмотров работников является не единообразным поскольку регулируется большим количеством подзаконных актов различных министерств и ведомств, а внедрение телемедицинских технологий в сфере охраны здоровья граждан неоднозначно воспринимается различными ведомствами. Полагаю, что в данной ситуации необходимо принятие универсального нормативного акта, который должен распространятся на всех без исключения работников транспорта, вне зависимости от его вида, должны найти отражение концептуальные требования к порядку проведения медицинских осмотров, в том числе перечислены случаи в которых допускается использование дистанционных, цифровых технологий. На основании данного акта, уже должны формироваться ведомственные акты, регулирующие порядок прохождения медицинских осмотров в отношении работников отдельных видов транспорта. Подобное решение вопроса позволит сформировать единообразный подход к проведению медицинских осмотров, учитывающий специфику видов транспорта, тем самым облегчить не только правоприменительную практику, но и более оперативно вносить изменения в этот акт, что особенно актуально в условиях развития цифровых технологий.

**Ключевые слова:** *медицинские осмотры, работники транспорта, цифровизация, высокоскоростное движение* 

## Introduction

The sphere of transportation is one of the most important spheres from the point of view of economy, as well as public interests and public safety, what accounts for strict requirements not so much to legal regulation, but also to persons engaged in this sphere, and that probably results in a rather detailed legal regulation.

This is because vehicles are a source of increased danger, especially in the context of a large variety of modes of transportation, including air, railways, roadways, inland water transportation, as well as off-street transport, which includes the subway, monorail, cable



railway, cableway<sup>1</sup>. Thus, any issues related to the sphere of transportation are of particular practical importance, because they carry a significant risk of adverse consequences both for society as a whole and for its individuals.

Social relations arising in the sphere of transportation are a multifaceted phenomenon regulated by different branches of law. One of them is labor law, which fixes regulatory considerations for labor of transport workers. However, it should be noted that among transport workers there are workers, whose labor function is related to the traffic or traffic control of vehicles, and those who are not involved in it directly.

Vehicle driving safety is ensured by various requirements, including those at recruitment, and these are vocational selection, occupational training, preliminary, and subsequently, or periodic medical examination. The state of health for this category of workers is a business quality that should meet special requirements.

It is fundamental that, according to parts 1, 3 of Article 220 of the Labor Code of the Russian Federation dated 30.12.2001 No. 197-FZ, employees engaged in work related to the transport traffic, undergo compulsory preliminary (when entering employment) and periodic (during employment, for persons under 21 years of age – annual) medical examinations to assess the fitness for work, i. e. the capacity of these employees to perform the assigned work and to prevent occupational diseases. Certain categories of workers may also be subject to compulsory pre-shift (pre-trip) and post-shift (post-trip) medical examinations, medical examinations during the working day (shift), and medical examinations before performing certain types of work.

In the opinion of public health authorities, the purpose of medical examinations is dynamic monitoring of health, prevention of complications, maintaining fitness for work under the conditions of intensive technologies in transport, which raises the requirements to the state of health [Golysheva, 2004; Timoshina, 2005].

It should be noted that given the relevance of this issue, the science of labor law currently lacks a complete and comprehensive study dedicated to medical examinations of employees in various types of transport with regard to the sphere of their activities and the characteristics of the labor function they perform. Some studies in relation to aircraft staff, employees of roadway, railway, underground transport consider the issues of medical examinations, legal status of employees [Klepalova, 2007; Khizbullin, 2016; Panov, 2013; Grechukha, 2016]. Moreover, under the digitalization, the need for a single comprehensive study is in demand, as the procedure for conducting medical examinations is changing, they start to be conducted 'remotely', using hardware and software solutions [Chernyaeva, 2019; Shcherbakova, 2021].

One of the reasons for such a scientific gap is that the legal regulation of medical examinations of workers of different types of transportation is within the purview of different ministries and government agencies. This naturally determines a large array of regulations that do not have a single framed registration, but which need to be studied.

#### **Materials and Methods**

Pursuing the goal set in this research work predetermined the use of such general scientific and scientific methods of research as scientific analysis, as well as inductive and deductive method, system structural analysis, comparative legal method and technical legal method. The author studied the main aspects of scientific discussion on the topic of the study, analyzed Russian labor legislation, used foreign experience in the regulation of medical examinations, made generalizations and independent conclusions.

<sup>&</sup>lt;sup>1</sup> Article 4 of the Federal Law 'On off-street transportation and on amendments to certain legislative acts of the Russian Federation' dated 29.12.2017 No. 442-FZ



### Results

Taking into account the specifics of each type of transport, the relevant regulatory framework regulating medical examinations of employees driving vehicles has been developed and is now in place. However, it was updated for the overwhelming number of types of transport in 2020–2021, at the same time, the procedure for pre-shift, pre-trip and post-shift, post-trip medical examinations of employees of roadways and off-street transport is still governed by the regulatory act of 2014. The list of professions of ship personnel of marine and inland water transport, the instruction on conducting compulsory and periodic medical examinations was approved in 1989<sup>2</sup>, and canceled in 2012. Since then there is no special normative regulation of this issue. In fact, ship personnel of marine and inland water transport and periodic medical examinations, guided by the general procedure for medical examinations of workers employed under the harmful and (or) hazardous working conditions, without taking into account industry specifics<sup>3</sup>.

At present, in Russia the use of hardware systems during medical examinations is provided for by the current legislation of the Russian Federation in respect of the cabin crew of civil aviation. "Remote" medical examinations are not allowed for employees performing work directly related to the operation of railway rolling stock, engaged in the transportation of passengers and dangerous cargos. One of the prospects for the development of legislation is the emergence of special norms establishing special examinations or additional procedures required for admission to work in high-speed traffic.

#### Discussion

In connection with the focus on digitalization set by our state, one of the goals of the transport system development is, among other things, the digital transformation of the industry and the accelerated implementation of digital technologies<sup>4</sup>. Undoubtedly, progress in the transport industry is associated with the development and implementation of new technologies, including information technologies. In order to achieve strategic objectives, it is expected to intensify the transportation process, increase the speed of traffic, the intensity of traffic flows, the level of automation of processes and operations.

We believe that all these changes significantly add to the human factor effort. The speed of perception of information signals increases, therefore the requirements to physiological and psychological aspects of the employee's performance raise, hence, the requirements to his / her health condition will change. However, the legal regulation of the procedure for medical examinations of transport workers does not fully take into account modern trends and the active implementation of digitalization in this process.

On the one hand, the legal basis for the provision of medical care with the use of telemedicine technologies<sup>5</sup> was enshrined in 2017. On the other hand, at the legislative

<sup>&</sup>lt;sup>2</sup> Order of the Ministry of Health of the USSR 'On improvement of organization of medical and sanitary provision of workers of sea, river fleet and fishery' dated 06.09.1989 No. 511

<sup>&</sup>lt;sup>3</sup> Order of the Ministry of Health of the Russian Federation 'On Approval of the Procedure for Compulsory Preliminary and Periodic Medical Examinations of Workers Provided for by Part Four of Article 213 of the Labor Code of the Russian Federation, the list of medical contraindications to work with harmful and (or) dangerous production factors, as well as work where compulsory preliminary and periodic medical examinations are carried out'.

<sup>&</sup>lt;sup>4</sup> Executive Order of the Government of the Russian Federation dated November 27, 2021 No. 3363-r 'On the Transport Strategy of the Russian Federation up to 2030 with a forecast for the period up to 2035'.

<sup>&</sup>lt;sup>5</sup> Federal Law dated July 29, 2017 No. 242-FZ 'On Amendments to Certain Legislative Acts of the Russian Federation on the Application of Information Technologies in the Sphere of Health Protection' amended by the Federal Law dated November 21, 2011 No. 323-FZ 'On the Fundamentals of Health Protection of Citizens in the Russian Federation' with regard to the regulation of telemedicine technologies. A separate



level there is no list of types of medical activities, where the use of telemedicine technologies would be prohibited or restricted, or a list of types of medical activities that allow the use of these technologies. In connection with the above, certain types of medical activities are subject to control as to the possibility of using telemedicine technologies.

Thus, pre-trip medical examinations of employees of road transport, off-street, railway and air transport are carried out in order to detect conditions and diseases that prevent the performance of labor duties, signs of alcohol, drug or other intoxication<sup>6</sup>. It is possible to find these conditions only by establishing the relevant changes in physiological and other indicators of vital signs of the human body. [Melnik, Nikiforov, Bonch-Bruevich, et al. 2020] Consequently, the use of telemedicine technologies cannot prevent from making right diagnoses, but does not allow to reveal the presence of psychotraumatic situations and factors that impair working capacity [Bakutkin, Bakutkin, Zelenov, 2021], that can be found during the pre-trip medical examination of railway transport workers who carry out production activities directly related to the train traffic and shunting work, which does not meet the requirements of transport safety and can only be carried out by a medical worker.

Following the possibility of conducting medical examinations of car drivers using medical devices that provide automated remote transfer of information on the health of employees<sup>7</sup>, it became possible to conduct pre-flight (pre-shift) medical examinations of air transport employees (aircraft crew members or air traffic controllers)<sup>8</sup>. However, in case of their disagreement with the results of the automated medical examination, the medical re-examination is carried out by a medical worker.

In railway transport, 'remote' medical examinations are not allowed for employees performing work directly related to the operations of railway rolling stock engaged in the transportation of passengers and dangerous cargos. Such position of the legislator, on the one hand, seems more balanced and reasonable, since post-trip examinations will also become compulsory. This will undoubtedly bring more discipline to the workers who are on a trip. The list of those examined in this way excludes drivers and their assistants engaged in the transportation of passengers and dangerous cargos (explosives, poisonous gases, radioactive substances, etc.), as good health of these persons during transportation will allow to eliminate irreparable consequences for society<sup>9</sup>. On the other hand, we believe

article 36.2 'Peculiarities of medical care provided with the use of telemedicine technologies' was included in the Federal Law 'On the Fundamentals of Health Protection of Citizens in the Russian Federation'. Also, in paragraph 22 of Article 2 of the Federal Law 'On the Fundamentals of Health Protection of Citizens in the Russian Federation' the definition of telemedicine technologies was stated as information technologies that ensure remote interaction of medical workers among themselves, with patients and (or) their legal representatives, identification and authentication of these persons, documentation of their actions during case conferences, consultations, remote medical monitoring of the patient's health condition. In order to regulate the issues of the mechanism of application of telemedicine technologies, the Order of the Ministry of Health of the Russian Federation dated November 30, 2017 No. 965n approved the Procedure for the organization and provision of medical care with the use of telemedicine technologies.

<sup>6</sup> Paragraph 2 of the Order of the Ministry of Health of the Russian Federation 'On Approval of the Procedure for pre-shift, pre-trip and post-shift, post-trip medical examinations' dated December 15, 2014 No. 835n.

<sup>7</sup> Order of the Ministry of Health of the Russian Federation dated May 30, 2023 No. 266n 'On Approval of the Procedure and frequency of pre-shift, pre-flight, post-shift, post-flight medical examinations, medical examinations during the working day (shift) and the list of tests included in them'.

<sup>8</sup> Order of the Ministry of Transport of the Russian Federation 'On Approval of the Procedure for preflight and post-flight medical examinations of civil aircraft crew members, as well as pre-shift and postshift medical examinations of air traffic controllers' dated December 10, 2021 No. 438

<sup>9</sup> Rules for Transportation of Dangerous Goods by Railways, approved at the 15<sup>th</sup> meeting of the Railway Transport Council (as amended and supplemented by the minutes of the Council meetings dated November 23, 2007, May 30, 2008, May 22, 2009.



that such legislative regulation does not adequately protect the interests of employers that are companies of railway transport and the state. This is because the employees engaged in freight traffic and go on a trip, when they are not ready for the proper performance of labor duties, can cause significant damage to shippers, carrier, as well as the environment and society, incomparable to the savings of funds spent on the organization of 'faceto-face' medical examinations. Taking into account the short period of the possibility of using telemedicine technologies, including in the course of medical examinations<sup>10</sup>, we believe that an effective methodology of conducting examinations, as well as the criteria for conducting them, could not be developed by now yet.

The course for the transition of railway transportation to speed and high-speed traffic<sup>11</sup> has now become relevant<sup>12</sup> again. With the commissioning of new railways, it is expected that the number of train drivers and their assistants, who are subject to strict requirements in the field of occupational safety and compliance with safety measures in the operation of high-speed trains<sup>13</sup>, will increase many times over. However, while labor protection issues<sup>14</sup> have already been regulated, there are no regulations on medical examinations for employees whose job function is related to the traffic of speed and high-speed trains. As of today, the regulatory acts governing medical examinations of workers related to the traffic of vehicles do not contain special norms establishing special examinations or additional procedures required for admission to work in high-speed traffic. We believe that with the commissioning of new sections of railways connecting major cities in different parts of our country, involving high-speed traffic at international standards (250–300 km/h and more)<sup>15</sup>, the regulations, governing the procedure for medical examinations, may be revised.

Due to the fact that the issues of digitalization and its application in the process of medical examinations of transport workers are relevant not only for our country, but also for other countries, the appeal to their experience is especially relevant. For example, we can turn to the experience of the Republic of Belarus, as our states have a common history, a common economic space, and in the past a common regulatory framework for transportation.

Thus, at present, the legislation of the Republic of Belarus lacks prerequisites for medical examinations with the use of telemedicine technologies. Firstly, the use of such technologies is possible only to ensure interaction of medical workers among themselves and with patients; secondly, medical examinations are not listed<sup>16</sup> among the cases of possible application of these technologies.

For example, a driver is admitted by a motor carrier to perform road transportation of passengers after passing a compulsory medical re-examination and a pre-trip medical

<sup>&</sup>lt;sup>10</sup> Federal Law 'On Amendments to Certain Legislative Acts of the Russian Federation Concerning the Application of Information Technologies in the Sphere of Health Protection' dated July 29, 2017 No. 242-FZ. <sup>11</sup> Strategy for the Development of Railway Transport in the Russian Federation until 2030, approved by

the Executive Order of the Government of the Russian Federation No. 877-r dated June 17, 2008. <sup>12</sup> With the speed of wind: Putin gave a start to the construction of high-speed highways to different

points of the country, available at: https://tass.com/economy/1759343. <sup>13</sup> High-speed passenger trains should have a route speed of not less than 91 km/h with the allowed

speeds in the range of 141–200 km/h. <sup>14</sup> Rules for Occupational Safety and Health in the Maintenance of Speed and High-Speed Railway Lines of Russian Railways, JSC (Executive Order of Russian Railways, JSC dated June 25, 2010 No. 1362r); Instruction on Occupational Safety and Health for Locomotive Brigades of Speed and High-Speed Traffic (including without an assistant driver) (Executive Order of Russian Railways, JSC dated December 9, 2013 No. 2694r).

<sup>&</sup>lt;sup>15</sup> Council Directive of July 23, 1996 96/48/EC on the interoperability of the trans-European high-speed rail system

<sup>&</sup>lt;sup>16</sup> Article 37.7 of the Law of the Republic of Belarus of June 18, 1993 No. 2435-XII 'On Health Care'.



examination before starting work<sup>17</sup>. Pre-trip and other examinations of drivers are conducted by a medical worker trained in pre-trip medical examination<sup>18</sup>. However, the regulatory acts do not specify that medical examinations are carried out by a medical worker in person, without the use of hardware and technical devices. This paves the way for the development and practical application of various equipment that allows to conduct medical examinations remotely with the use of measuring equipment of a special terminal of remote examinations, when the medical worker is in a medical organization, and the employee is at his/her place of work<sup>19</sup>. We believe that the practice of 'remote' medical examinations in transport, especially road transport, should be treated with great caution. In terms of the number of accidents, the most dangerous type of transportation is road transport. Medical examinations of employees driving vehicles are meant, among other things, to ensure the safety of the transportation process. Given the possible technical imperfection of hardware and software systems used in conducting 'remote' medical examinations, the fact the Belarusian legislator does not use them for conducting medical examinations of drivers of motor vehicles seems reasonable.

As for the procedure for medical examinations of railway transport workers in Belarus, the current legislation does not provide for such examinations using telemedicine technologies. Preliminary and periodic medical examinations are compulsory for employees working under harmful and (or) hazardous conditions, as well as workers who directly ensure the transportation process<sup>20</sup>.

Thus, for example, the fact of sending an employee for examination is formalized by the employer's order, the time spent at the examination is confirmed by a certificate of the medical commission, and employees get a single-ride ticket<sup>21</sup> for travel to a medical institution. In addition, a number of examinations, such as, for example, ultrasound examinations, electrocardiography, cannot be carried out with the use of hardware and software systems. As for the pre-trip and pre-shift examinations, the employee should come to the place of examination, to present the driver's route, to provide reliable information about the state of his/her health, to follow the instructions of the specialist<sup>22</sup>. It should be noted that the automated system of pre-trip medical examination is only an experiment. The paramedic's office is supplied with the equipment that evaluates functional and psycho-emotional state of health, which allows the medical worker to carry out prompt and objective control over the examination, changes in physical parameters of body systems and occupational risks. However, even in this case, medical examination is carried out with the participation of a medical worker in direct contact<sup>23</sup> with him / her.

<sup>&</sup>lt;sup>17</sup> Paragraph 25 of the Resolution of the Council of Ministers of the Republic of Belarus of June 30, 2008 No. 972 'On Some Issues of Road Transportation of Passengers'.

<sup>&</sup>lt;sup>18</sup> Paragraph 1.3 of the Resolution of the Ministry of Health of the Republic of Belarus of April 28, 2016 No. 65 'On introducing amendments and additions to the Decision of the Ministry of Health of the Republic of Belarus of 03.12.2002 № 84'; paragraph 4 of the Instruction on the procedure of pre-trip and other medical examinations of drivers of wheeled tractors and self-propelled machines, approved by the Resolution of the Ministry of Health of the Republic of Belarus of May 8, 2008 No. 87.

<sup>&</sup>lt;sup>19</sup> For example, the system 'Pre-flight inspection'.

<sup>&</sup>lt;sup>20</sup> Order of the Head of the Belarusian Railway of April 4, 2018 No. 116N 'On the organization of compulsory medical examinations in the state association of Belarusian Railway and organizations that are part of it'.

<sup>&</sup>lt;sup>21</sup> Paragraphs 16–19 of the Instruction on the organization of preliminary, periodic and extraordinary compulsory medical examinations, compulsory medical examination (re-examination) in the state association of Belarusian Railway, approved by the order of the head of the Belarusian Railway of April 4, 2018 No. 116N.

<sup>&</sup>lt;sup>22</sup> Ibid, paragraph 5.

<sup>&</sup>lt;sup>23</sup> Health-conscious.





## Conclusions

At present, the legal regulation of the procedure for medical examinations of workers related to the transportation can hardly be called unified and clear for a number of reasons. Firstly, the procedure for medical examinations of workers related to the transportation is governed by a large number of regulatory acts of various ministries and agencies with no priority of their application. At the same time, there are still gaps in the legal regulation of this issue. For example, to date, there is no special legal regulation of the procedure for medical examination of ship personnel of marine and inland water transport. Secondly, the implementation of telemedicine technologies in the sphere of public health care is ambiguously perceived by various agencies, not all of them are in a hurry to replace real medical workers with new digital technologies, and if they do, they use the methods provided for medical examinations by medical personnel. The situation is complicated because of the development of high-speed transportation, and its legal regulation does not yet cover the need for strict health requirements for workers related to such transportation.

I believe that in this situation, under the conditions of chaotic legal regulation of the procedure of medical examinations of employees in various types of transportation, as well as the use of remote, digital technologies for medical examinations, it is necessary to adopt a universal regulatory act. This universal regulatory act, which should apply to all transport workers without exception, regardless of the type, should reflect the conceptual requirements for the procedure of medical examinations, including the list of cases when the use of remote, digital technologies is allowed. On the basis of this act, acts of other government agencies regulating the procedure for medical examinations of employees of certain types of transportation should be formed. At the same time, the universal regulatory act should define the power of government agencies to establish their own rules in respect of the issues concerning the procedure of medical examination, which would reflect the special features of medical examination, taking into account the special features of a particular type of transport. Such solution to the issue will allow to form a unified approach to medical examinations, taking into account the specifics of modes of transportation, and thereby not only facilitate compliance practices, but also make changes to this act in a timely manner, which is especially important in the context of the digital technologies development.

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## Информация об авторе

Юлия Игоревна Клепалова – кандидат юридических наук, доцент кафедры гражданского права Северо-Западного филиала Российского государственного университета правосудия (e-mail: klepalova.yulia@yandex.ru).

# Information about the author

**Yulia I. Klepalova** – Candidate of Juridical Science, Associate Professor of the Department of Civil Law, Russian State University of Justice (North-Western Branch) (e-mail: klepalova. yulia@yandex.ru).

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