

Features of Railway Transport Insurance in Russian Federation

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Abstract— The article analyzes the role of insurance in the practice of railway transport. The railway industry is of particular importance for the Russian Federation due to its geographical position and long distance. Given the importance for the country and the pace of development of the transport industry, the insurance field in this segment, in our opinion, is almost not covered. All this suggests that the current practice of insuring railway transport does not cover all the interests of the organizations in the transport industry. Proposed directions for the further development of railway transport insurance.

Keywords— *risk management, railway transport, insurance*

I. INTRODUCTION

Rail transport is one of the most economically significant sectors for the Russian Federation. It plays an important role in ensuring the existence of various regions of the country. It should be noted that improving the sustainability of rail transport, as well as its competitiveness, most often depends on the effectiveness of risk management. Therefore, it is necessary to study the risks that can lead to real losses and affect the decrease in the efficiency of rail transport. The solution to this problem is very important.

The risk management system includes the process of determining the likelihood of an event occurring, determining the degree and magnitude of risk, analyzing the environment, choosing a risk management strategy, choosing risk reduction methods (management methods), and developing a strategy necessary for this purpose. The organization of risk management is a set of measures aimed at the use of risk management elements in a single process, involving their rational combination. To solve it, first, it is necessary to identify the risks of rail transport. In the future, it is also necessary to take measures to minimize the negative impact on the financial performance of the railways. One of the risk reduction mechanisms is insurance. Therefore, the study of this particular risk management method, given the large number of voluntary programs of insurance companies, is of great scientific interest.

II. MATERIALS AND METHODS

Fairly large amount of scientific literature is devoted to the analysis of the risks of railway transport, as well as the choice of the optimal method of managing them [1].

V.A. Eliseev stresses that the loss, damage or complete loss of rolling stock as a result of a fire, a crash is a natural phenomenon when it comes to such a high-risk facility as a railway. At the same time, illegal actions of third parties, accidents, disasters and other financial incidents (not to mention reputation) occur in this industry. All this can be a shock situation that disrupts the normal functioning of the railway. According to the author, insurance is an effective tool to counter risks and prevent the risk of financial collapse [2].

The study of D.I. Nogayev is devoted to the improvement of insurance legislation and the need to make changes to the existing legal framework. The author emphasizes that rail transportation is the basic industry for the Russian Federation. In this regard, when considering changes in the insurance legislation, it is necessary to carefully study not only the positive aspects, but also the negative ones, which may entail additional costs. It is necessary to carefully weigh and calculate everything to avoid a situation where only the potential benefits of such changes can outweigh the obvious disadvantages [3].

O. O. Matusевич and co-authors analyzed the risks of rail transport and finalized the general classification of passenger traffic. They also determined the functions of insurance in rail transport and analyzed the rules of voluntary insurance in rail transport by various insurance companies. Based on the general risk classification of rail transport for passenger traffic and taking into account the specific conditions of rail transport, an improved classification of factors affecting the efficiency of passenger rail traffic was developed. Such an approach to the use of key factors affecting the efficiency of transportation allows building the basis for expanding the line of insurance products and improving the insurance legislation [4].

Solskaya I.Yu. and co-author analyze insurance protection in the holding of JSC “Russian Railways” as a whole and as an example in organizing work on insuring locomotives and restoring locomotives from insurance compensation funds. The role of organizing the mapping of the insurance process in increasing its efficiency is shown. The functions implemented by the central finance department of Russian Railways OJSC within the framework of the insurance process for locomotive rolling stock are identified [5].

However if we analyze the absolute figures, the picture is quite optimistic. The growth rate of insurance premiums is higher than the same indicator for insurance payments. Because of this, the level of payments has been decreasing for three years in a row. For the insurance business, this is a positive thing. Such a rise in insurance premiums, in our opinion, is due to the rapid development of life insurance, namely investment life insurance, which in recent years has been increasingly promoted by both insurers and banks as an alternative to bank deposits [6].

Khaletskaya S.A. and co-author analyzed the role of rail transport in ensuring national economic security [7].

The importance of insurance for railway transport is also indicated by the fact that a separate place is given to insurance in the annual report of Russian Railways. The business concept provides for a unified approach to the organization of insurance protection of subsidiaries as well. Subsidiaries of Russian Railways (about 80 companies) establish the procedure for interaction with participants of the insurance market, the procedure for planning insurance coverage, concluding and supporting insurance contracts in accordance with the legislation of the Russian Federation and the legal documents of Russian Railways. Each year, work is carried out to provide special voluntary reinsurance in such leading and major foreign companies as Swiss Re, Munich Re, Allianz, Zurich Insurance Company, etc [8; 9].

III. RESULTS

Vast territories and a diverse geographical position put Russia in the development of various means of transport a special priority. A well-functioning transport system allows ensuring uninterrupted supply of various types of cargo to various territories, to support the activities of various economic entities and access of all interested parties to various transportation hubs and junctions. Rail transport is of particular importance in the unique geographical conditions of our country. The length of railways increases every year, which has a positive effect on the development of remote areas (Fig. 1).

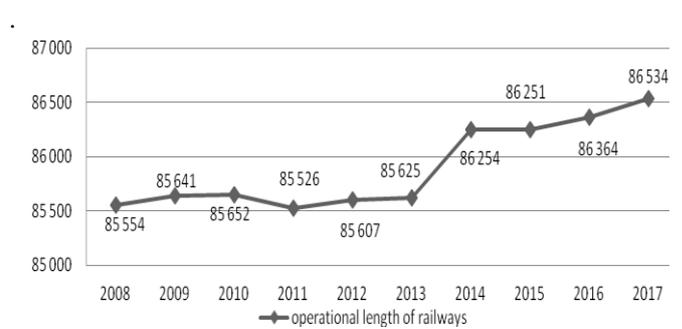


Fig 1. Dynamics of the operational length of railways in Russia in 2008-2017, km

The railway is one of the main methods of export and import operations related to the delivery of various finished goods.

The increase in the length of railways is a logical consequence of the growth in rail traffic (Fig. 2). The graph shows that during the period of the financial crisis, the volume of rail transportation decreased slightly. However as the domestic economy recovers, this indicator again shows a positive trend.

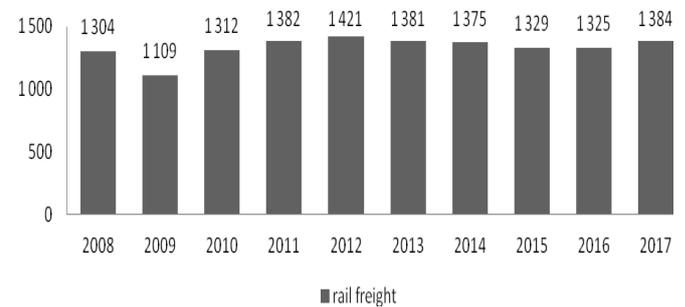


Fig 2. Dynamics of rail transportation in Russia in 2008-2017, million of tons

For entrepreneurs, rail transportation is one of the most reliable and affordable, second only to road transport. Given this, the development of rail transport is a very pressing issue at present.

The volume of the domestic railway fleet increases with each year (Fig. 3). Such dynamics is quite reasonable, given the efforts of the state to develop the transport industry.

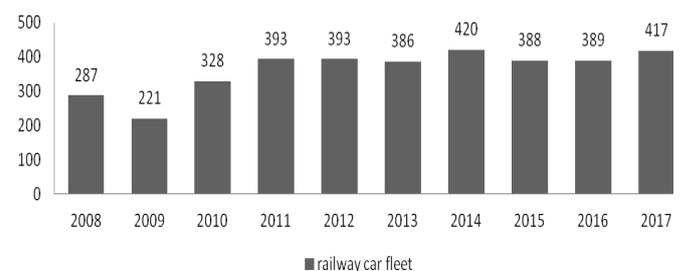


Fig 3. Dynamics of availability of railway cars in Russia in 2008-2017, thousand pieces

In addition, a significant share in the cargo transportation is occupied by rail transport (Table 1).

The presented data allow observing that cargo transportation by rail is second only to transportation by pipelines. This is due to the specifics of the domestic economy, aimed at the export of extracted natural resources to other countries. At the same time, the pipeline is the most convenient means of transportation.

The development of railway transport in the country is impossible without an effective insurance system, within the framework of which the guarantee of covering possible losses that arise in the event of the occurrence of adverse events is ensured. With the effective functioning of such a system, economic entities are confident in the protection of their property interests, which allows them managing the available financial resources more intelligently.

TABLE I DYNAMICS OF CARGO TRANSPORTATION IN RUSSIA IN 2016-2017

Type of transport	2016		2017	
	Amount, billion tons / km	weight, %	Amount, billion tons / km	weight, %
railway	2 344	45,1	2 493	45,5
car	248	4,8	253	4,6
pipeline	2 489	47,9	2 615	47,7
nautical	43	0,8	46	0,8
inland water	67	1,3	67	1,2
air	7	0,1	8	0,1
Total freight turnover	5 198	100,0	5 482	100,0

At the same time, railway transport remains one of the most important ways of transporting goods, which indicates the importance of the development of the entire transport industry in Russia. It is the significance of a developed insurance market that largely determines the level of development of the entire economy of any country.

IV. DISCUSSION

In Russia, the insurance market is much less developed than in foreign countries. Despite the impressive positive dynamics of annually collected insurance premiums (Fig. 4), in quality terms, the insurance market is at a low level.

Thus, the level of insurance penetration (the share of insurance premiums in GDP) in 2018 was only 1.4%, which is much lower than in economically developed countries. In addition, there is a high proportion of premiums on compulsory types in total insurance premiums and the widespread promotion of “voluntary-compulsory” insurance products (as a rule, this happens when lending to various economic entities). This suggests that the voluntary demand for insurance services in Russia is rather low, which indicates the low quality of the domestic insurance market.

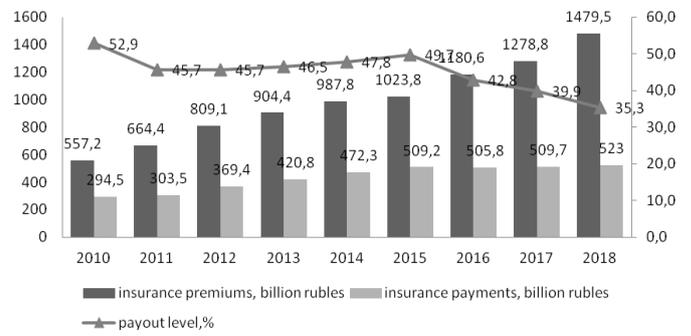


Fig 4. Dynamics of insurance premiums, insurance payments and the level of payments in the insurance market as a whole for 2010-2018

Thus, the share of life insurance premiums in 2010 was only 4%, and in 2018 they accounted for the majority of all insurance premiums - 31% (Fig. 5 and Fig. 6)

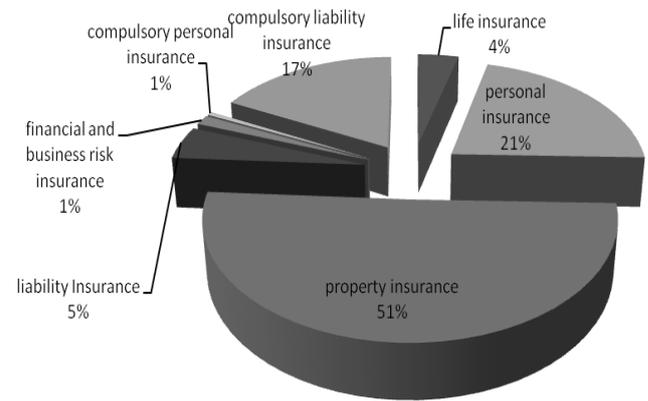


Fig 5. Structure of insurance premiums by types of insurance in 2010, %

As a result of this, the share of property insurance (in this sub-sector insurance premiums for railway transport are taken into account) accounts for less and less insurance premiums. Over the past nine years, from 2010 to 2018, this figure fell from 51% to 24%.

This does not mean that property insurance did not become in demand in the domestic insurance market, it is just that the main increase in insurance premiums fell on other types of insurance, leaving the property insurance sub-sector in a relatively stable position.

Throughout the history of the development of the domestic insurance market in the structure of property insurance premiums, the overwhelming share is occupied by the premiums on insurance of means of transport (Fig. 7). In turn, among these premiums, the largest share belongs to premiums for the insurance of motor vehicles, but for the analyzed period of time their share decreased by two percentage points. This was affected by the increase in the share of premiums for the insurance of air transport.

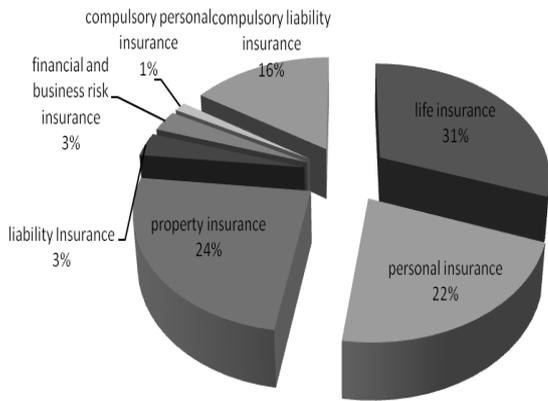


Fig. 6. Structure of insurance premiums by type of insurance in 2018, %

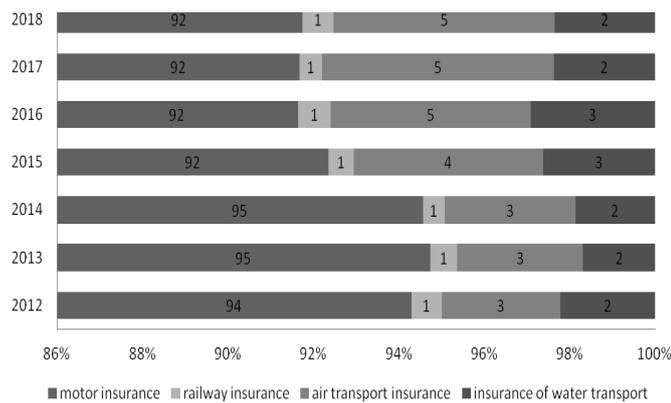


Fig. 7. Dynamics of insurance premiums for vehicle insurance in 2012-2018, %

Over the past seven years, the share of premiums on insurance of railway vehicles has remained unchanged and extremely low - only 1% of the total number of premiums on insurance of transport vehicles. This indicator indicates that this type of insurance is practically not developed in our country.

In domestic practice, insurance of railway transport applies to:

1. Cargo rolling stock (covered wagons, gondola cars, vehicles for transportation, dump cars, tanks, grain-carriers, mineral-carrying vehicles, fitting platforms, soda carriers, cement trucks, container carriers, conveyors, refrigerators wagons, "thermoses", etc.).
2. Traction rolling stock (electric locomotives, diesel locomotives, locomotives, gas turbine locomotives, motor rolling stock (electric trains, diesel trains), etc.)
3. Track equipment (railway cranes, snow machines, etc.).
4. Passenger rolling stock (sedentary, second-class, compartment, staff cars, SV, metro, trams, etc.)

As a rule, the following events are covered under an insurance contract:

- crash, accidents of railway vehicles;
- explosion, fire;
- illegal actions of third parties;
- natural disasters;

Any other events (list of risks not named in the contract). In case of loss - the insurance indemnity is paid in the amount of the insurance sum of the means of railway transport.

In the event of damage - insurance compensation is paid in the amount of incurred or potential costs for the restoration of railway rolling stock, which include:

- expenses for repair work;
- expenses for the purchase of materials and spare parts for repairs;

The costs of transporting materials and / or SLT to the site;

- other expenses agreed upon in writing with the insurer, necessary to bring the insured transport to the state in which it was before the insured event.

The amount of insurance payment is determined without taking into account the depreciation of the insured railway vehicles.

The insurance premium depends on:

- number, type, year of manufacture of the rolling stock;
- term of insurance;
- availability and size of the franchise;
- insurance territory;
- insurance coverage;
- other parameters taken by the insurance risk.

Thus, it can be said that within the framework of the insurance contract a guarantee is provided for the protection of all property interests associated with the possession, use and disposal of railway vehicles.

The dynamics of insurance premiums for this type of insurance is rather variable (Fig. 8).

However next year, in 2017, the market sank even more than during the crisis. The fall in insurance premiums was 35%. In 2018, the volume of insurance premiums increased again, but did not reach maximum values. All this testifies to the low demand for this type of insurance from consumers. The dynamics of insurance payments are not so uneven.

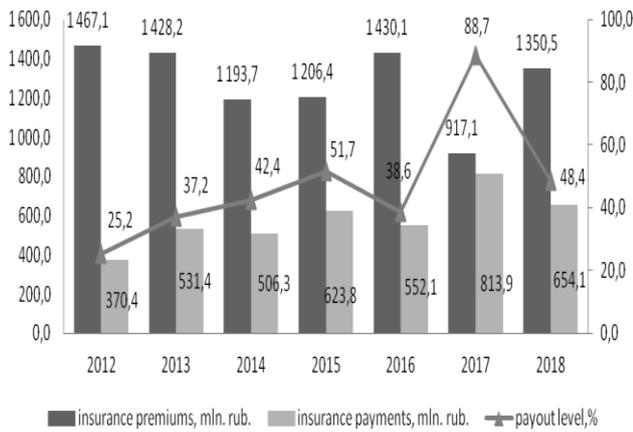


Fig 8. Dynamics of insurance premiums and payments for insurance of railway vehicles, mln. rub

That is what influenced the growth of the level of payments in the same periods. In 2017, the level of payments reached almost 90%, which is not typical for this segment of the risk insurance market in Russia.

We believe that the decrease in insurance premiums in 2018 compared with the figures for 2013 and 2016 is associated with a decrease in the number of insurance contracts for insurance of railway transport (Fig. 9).

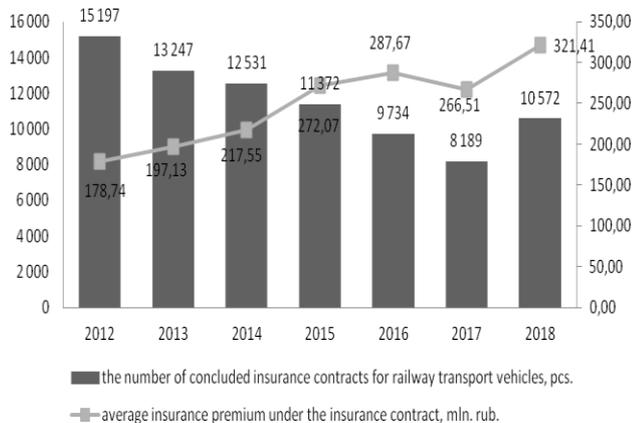


Fig 9. Dynamics of the number of railway insurance contracts and the average insurance premium for these contracts for 2012-2018

The figure clearly shows that within six years, from 2012 to 2017, the number of contracts is constantly decreasing. However at the same time, the size of the average insurance premium under the contract increased. From 2012 to 2016, this indicator increased by one and a half times, which allowed the growth of total insurance premiums for railway transport insurance. In 2017, the average insurance premium under the contract decreased, which immediately resulted in a sharp drop in the total volume of insurance premiums by 35%, as mentioned above.

A slight increase in the number of concluded insurance contracts and the average insurance premium also allowed the volume indicators of the market increasing to some extent, which is easily seen in the simultaneous analysis of Figures 8 and 9.

Along with the increase in the number of concluded contracts for the insurance of railway transport, the amount of responsibility assumed by insurers is also growing (Fig. 10).

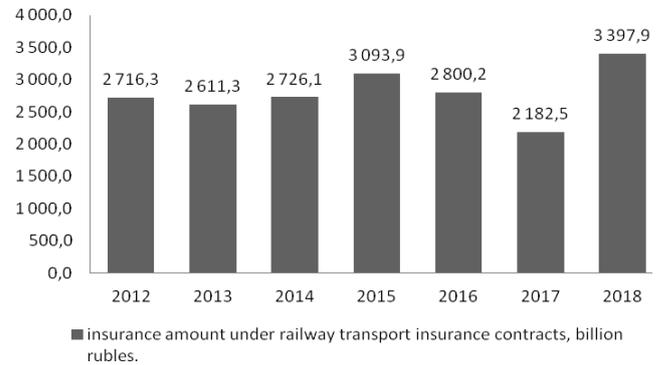


Fig 10. Dynamics of the total insurance amount under railway insurance contracts for 2012-2018, billion rubles

The total insurance premium for railway transport insurance increased significantly in 2018, well ahead of previous years. This is due to the increase in the value of the property to be insured, which also affected the growth of the average insurance amount. This indicates that insurers have become more involved in protecting the interests of organizations working in the transport industry. The effectiveness of railway transport insurance, as one of the most important risk management tools in the transport industry, in our opinion, is evidenced by the dynamics of reported insurance claims (Fig. 11).

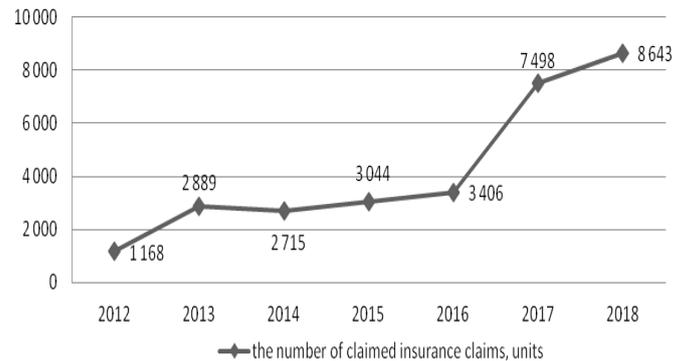


Fig 11. Dynamics of stated insurance claims under railway transport insurance agreements, units

It is also worth mentioning that the railway transport insurance market is very concentrated, almost the entire amount of insurance premium is collected by ten insurance organizations (Table 2).

TABLE II LEADERS OF THE RUSSIAN RAILWAY TRANSPORT INSURANCE MARKET IN 2018 YEARS

Name of insurance organization	Insurance amount, mln. Rub.	Market share, %.
<i>SOGAZ JSC</i>	592,3	43,86
<i>PJSC IC "Rosgosstrakh"</i>	295,8	21,90
<i>AlfaStrakhovanie JSC</i>	132,9	9,84
<i>SPAO "Ingosstrakh"</i>	112,4	8,32
<i>LLC "IC" Accord "</i>	70,9	5,25
<i>SPAO "RESO-Garantia"</i>	53,9	3,99
<i>SAO "VSK"</i>	40,6	3,01
<i>LLC insurance company "VTB Insurance"</i>	22,7	1,68
<i>JSC IC "Alliance"</i>	19	1,41
<i>JSC IC "ZhSF"</i>	5,4	0,40
<i>Other insurance organizations</i>	4,6	0,34

The growth of this indicator suggests that insurers are actively involved in the elimination of various losses that may arise as a result of the implementation of various adverse events.

As a rule, such events during the operation of railway transport, as a result of which the activities of transport organizations are disrupted, include:

- derailment of cars or the entire train from the rails;
- hitting trains to other modes of transport;
- fires and explosions;
- natural phenomena.

The participation of insurers in covering such losses allows more efficient response to downtime in the activities of organizations of the transport industry, as well as to provide more complete coverage of losses. As a result of this, the reproduction process is practically not disturbed, which allows such organizations carrying out their activities more effectively. The two leaders in this segment account for more than 60% of all insurance premiums for this type of insurance. The top five accumulate almost 90% of all insurance premiums.

V. CONCLUSION

This alignment is unique to the domestic insurance market. In this situation is virtually impossible no other segment. This allows making an assumption about the high specificity of insurance of railway transport, which affects the desire of domestic insurers to enter into agreements on it. This is logical, since the activity in the field of railway transport is associated with the high adaptability of all processes, special associated risks, a high proportion of human factors and other features.

On the basis of the presented and analyzed material, it can be concluded that in Russia the insurance of railway vehicles is practically not developed.

Given the importance for the country and the pace of development of the transport industry, the insurance field in this segment, in our opinion, is almost not covered. In our opinion, this is due to two reasons: the high cost of insurance services and the high degree of depreciation of fixed assets of organizations of the transport industry. The high cost of an insurance policy is very often an argument in favor of refusing to use insurance as a way to manage risk in railway transport. The high degree of depreciation of fixed assets is for the insurers themselves the reason for the refusal to enter into an insurance contract.

However, this market is quite unprofitable. If we compare the level of payments in this segment and in the insurance market as a whole, then the difference is 10 percentage points. This makes this type of insurance uninteresting for domestic insurers. This, in our opinion, is one of the main reasons for such a high concentration of the railway insurance segment.

All this suggests that the current practice of insuring iron-rail transport does not cover all the interests of the organizations of the transport industry. In our opinion, the main directions for the further development of railway transport insurance may be:

- increased competition by insurers in the insurance market in this segment, which will allow lowering the insurance rate and attracting more insured customers;
- measures taken by the state to develop railway transport will lead to the renewal of the fleet of railway vehicles, thus making it more attractive for the insurance market in Russia. Thus in the Decree of the President of the Russian Federation of 07.05.2018 No. 204 "On the national goals and strategic objectives of the development of the Russian Federation for the period up to 2024":

In the implementation of the national program "Digital Economy of the Russian Federation" to the government of the Russian Federation to provide in 2024. The transformation of priority sectors of the economy and the social sphere, including transport and energy infrastructure, financial services through the introduction of digital technologies and platform solutions. The solution of these problems will lead to the further progressive development of the two most important sectors of the economy, such as the insurance market and the railway industry.

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