



Review of Cargo Wagon Interchange Activity in Russia (1892 Publication), Part 1

ABSTRACT

Press archive

This material is the first in a series of publications of a fairly detailed article by A. Pavlovsky, published in several issues of the journal «Zheleznodorozhnoe Delo» in 1892.

More than 130 years later, the topic of utilizing cargo cars belonging to various (in modern parlance) operators remains relevant.

The very fact that this issue was being addressed just a few years after Russian railways had

surpassed their first half-century watershed is of interest.

Some proposals have undoubtedly outdated by this time and may seem overly simplistic, but some approaches still retain a grain of truth, at least in their formulation of the questions.

The original punctuation, vocabulary, and abbreviations used at the time are preserved untouched as much as possible.

Keywords: *railways, history of science and technology, wagons, wagon interchange.*



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The original text of the archive article in Russian is published in the first part of the issue.
Текст архивной статьи на русском языке публикуется в первой части данного выпуска.

I.

Government decrees and published opinions on the interchange of wagons

On July 1, 1889, at the request of the Ministry of Railways, the mutual use and interchange of wagons was established across the entire Russian railway network connected by the same track gauge. For this purpose, a General Agreement between Russian Railways and Technical Inspection Instructions were issued, replacing the previous separate conventions and instructions of each of three railway groups.

The group congresses for the purpose of uninterrupted service were replaced by a General Congress of Representatives of Russian Railways. Thus, three separate group offices, representing three additional bodies of the Ministry of Railways, were replaced by a single body, which, sooner or later, will be transformed from external to internal one, and will enrich the Ministry with a new department. The «additional instructions» and «explanations» issued by the Standing Committee of the General Congress, in accordance with § 17 of the General Agreement, are a periodical publication and represent the former correspondence of three groups.

Central spare parts warehouses were established, significantly simplifying the interchange of spare parts.

A unified numbering system for wagons has been introduced across the entire Russian railway network. Following the introduction of single, uninterrupted service, the «Album of Spare Parts for Cargo Wagons of Russian Railways» was published, by resolution of the 29th General Congress, facilitating interchange and simultaneously serving as the basis for developing a common cargo wagon type.

The new procedures brought about by these innovations have, among other things, resulted in what should be the primary concern of wagon management and what mutual interchange leads to: improved wagon quality. This can be confirmed by removal from direct service of wagons on Kursk-Kharkov-Azov Railway with axis pins thinner than 80 mm¹, and the general improvement in the condition of Group III wagons. There's no doubt that the mutual

¹ As far as is known, these wagons were withdrawn from direct service before the introduction of the new regulations outlined here by the author. Ed. note [of «Zhelezнодорожное дело»].

interchange and use of wagons will force each railway to both improve the quality of the materials used to manufacture the wagon fleet components they order and to adopt certain minimum size limits, developed through theory and practice.

This government decree was somewhat preceded by a brochure we published entitled «*Wagon Question in Russia*», in which we set out to elucidate the abnormal state of the existing technical conditions of the mutual interchange of wagons and the resulting administrative, technical, and financial harm to the railway system. We formulated our findings from practical observation as follows:

«We inspect wagons not because a wagon has covered a certain mileage or because defects are noted, but only because it changes owners. Wagon inspection and repair have become commodities and are subject to all the laws and pitfalls of free competition. The commercial principle underlying the wagon interchange process has led to abuses in technical inspection. Overall, there is a waste of labour and materials, resulting, according to a rough estimate, in approximately 2 million Rubles lost in unproductive expenses».

To this review of the state of the wagon facilities, we have added a discussion on the benefits of purchasing the entire cargo wagon fleet by the treasury – but we must admit that this discussion was not the only natural and necessary conclusion to be drawn from this review of the situation. This cannot even be considered as a possible, acceptable solution, as it lacked the necessary comprehensiveness, which, incidentally, is stipulated in our brochure, in the lines stating, «So we consider our work an idea, not a project» (P. 31).

The brochure elicited several critical responses, of which we consider the most serious to be an article in «*Engineer*» (Kiev)² signed by A. B. and an editorial in issue 4.939 (November 27, 1889) of the newspaper «*Novoye Vremya*» [New Time], written by an unknown author. Characteristically, both articles, while acknowledging the equally accurate presentation and elucidation of the technical aspects of the wagon business, diverge completely in their opinions regarding the method of eliminating

² January, 1890.



existing deficiencies through the purchase of wagons by the treasury. We will focus on these articles, which have authority – the first written by a prominent railway figure, the second published by the most widely circulated Russian newspaper.

Mr. A. B. considers the proposal to buy railway wagons by the state treasury «naïve», and our brochure served him well in this regard as a clinical case study. In the leading article in the same issue 1 of «*Engineer*», which undoubtedly originates from the same author, he makes general comments about the disadvantages of state-owned operation and government centralisation in railroading, and then, in the *Bibliography* section, applies these same comments to the idea of buying railway wagons. The author of these two articles in «*Engineer*» is thus a principled opponent of state-owned railroading, and from this perspective, he examined the specific case we discussed in the brochure. His short note contains no specific objections; this is regrettable, as the objections of an outstanding, experienced engineer and administrator would have been very useful.

However, the opinion expressed by Mr. A. B. hardly represents the opinion of the majority of practical specialists. Practice has already developed a certain understanding of the benefits of building railways by the treasury, and if it has not yet given decisive indications of the benefits of public management, although the roads that have been transferred to the treasury over the past decade have improved their affairs, then it must be noted that public management of railways in Russia has developed only over the last 10 years.

The most brilliant set of arguments in favour of public management must be considered the one featured in the speeches and projects of Prince Bismarck when he advocated the purchase of four major German railways in the Reichsrat in 1878. However, we will not touch on this and will limit ourselves to examining the issue of the wagon fleet, regarding which the author of the article in «*Engineer*» states the following:

One can dispute the author's figures, but the overall picture of the situation is quite accurately depicted by the author, and it leads him to an equally correct conclusion – the need to consolidate the wagon fleet, or, as we would say,

to depersonalise the cargo wagons of the Russian network. We would also add that another solution readily suggests itself: reducing the number of transfer points by merging small railways into large companies owning several thousand versts.

Here the author cites examples from large companies in England, France, Italy, North America, and the Southwestern Railway Society in Russia, and then finds that «depersonalisation of wagons could prove particularly useful in developing the Russian network in Siberia. Indeed, the author says, one cannot long tolerate the current state of wagon business, which requires, for example, the useless transfer of a wheel set or a wagon from Odessa to Ufa (and in the near future, we hope, to Irkutsk) only to replace the tire on the wheel set and conduct an urgent inspection of the wagon at a cost of 20 Rubles per unit. Clearly, it is time to consider introducing uniform types of wagon spare parts and depersonalisation of wagons».

We will have to return to this review, which fully characterises the state of the wagon business; here we will simply say that the expression «*depersonalise*» remarkably aptly generalises the task.

Let us note, by the way, that the author, with his demand for the introduction of uniform types of spare parts and the unification of small railways into large companies, is introducing something positive into the solution of the problem proposed in our brochure and is not limiting himself to just criticising it.

The author of the «*Novoye Vremya*» article takes a completely different view of the state-owned rolling stock; from his article, it appears that my attitude toward the idea of a state-owned wagon fleet is not only not *naive*, but rather *timid*.

Leaving aside, says the critic in «*Novoye Vremya*», the question of the most convenient means for the treasury to acquire wagon fleet, the very idea of dividing the railway system into two parts, less or no independent of each other, must be recognised as interesting and, in practice, truly promising many advantages. Under such a differentiation, the track and steam power would belong to one party, and the wagons operating on that track would belong to another. Engineers would, as before, manage the track and locomotives, while the movement of wagons, their distribution in specific areas, depending on

trade needs, troop mobilisation, or other general considerations, would be managed – at least by the Ministry of Finance, if we don't soon see a Ministry of Industry and Trade, which would be best placed to handle cargo operations on the railways. The advantages of exploiting the entire wagon fleet to meet the needs of the moment are needless to mention, as these advantages are obvious. Of course, with the transfer of wagon fleet of all railways to the state, many currently difficult industrial issues, such as oil, coal, and grain exports, will then find their simplest possible solutions. Moreover, once the idea of the complete separation of railway and wagon fleet ownership permeates the general consciousness, currently obscured by the close ties between each railway and its rolling stock, the further development of our railway network can be accomplished without regard for rolling stock. On the other hand, it is to be expected that the specialisation of wagons for the most advantageous transportation of precisely this range of goods – coal, grain, oil, live fish, etc. – will be significantly more developed than it is today, when private individuals are forced to enter into special agreements with the railway owners over which they need to transport their specialised wagons.

Once the railways receive payment for the distance travelled per pood-verst on their own tracks and with their own locomotives, no one will need any agreements, and everyone can operate the wagon that is most convenient and profitable for the given goods.

Since the purpose of railways is to simplify and enhance the movement of all kinds of valuable cargo by ensuring uninterrupted movement, the idea of an independent wagon fleet was bound to emerge naturally. This is what we see today in the motley jumble of wagons that too often have to travel dozens of miles on another's tracks for every single mile travelled on their own. And our slow-moving railway owners are already familiar with borrowing, hiring, and leasing wagons from the treasury's reserves, or from each other. Only in these cases, the competition between railways (often vicious), instead of facilitating and accelerating the movement of goods from within the country to the port, hinders it and causes losses for both the railway and the shippers. With a common wagon

fleet (especially a state-owned one), none of this will happen. Finally, the harmful tariff manipulation, with both overt and covert refractions favouring certain shippers, will also cease to exist³. The railway will simply have to charge for fast, express, medium, and slow journeys – all remaining tariff differences in the cost of transporting goods should be concentrated within the wagon fleet. Here, wagon rental prices can vary widely, with the sole purpose of ensuring that the overall balance of the wagon operation, while repaying the capital, generates appropriate interest and covers all the costs of maintaining the fleet and its operation.

Thus, the idea of a common wagon fleet, truly natural under the current conditions, is an excellent one. The wagon issue, therefore, lies primarily not in this idea, the benefits of which are clear to all, but in the means by which it can actually be implemented. And from this perspective, immediate state takeover of the entire railway fleet is hardly necessary. Reform can be achieved gradually, gradually replacing railway wagon fleet with wagons representing state property, beginning precisely with those lines where the potential for cargo backlogs is greatest. The same method by which private wooden buildings are being driven out of large cities can be applied to this matter. First, they are prohibited from being built on certain streets, and then they are not allowed to repair those previously built on streets adjacent to these. This method further and further pushes wooden houses away from the city centres and toward the outskirts. The same gradual and reliable method could be applied to solving the wagon issue without resorting to heroic and economic violence. New wagons should be built only at the expense of the treasury, and the old ones should be left to natural wear and tear and gradual destruction by time.

I have repeated the above lines verbatim, as they partially develop the idea I advanced in my brochure, *«The Wagon Question in Russia»*. Not content with a review, the author, as evident from the preceding excerpt, expressed a view entirely sympathetic to the idea. Alongside this sympathy, the author's caution is evident, most clearly evident in those lines in which he finds no need

³ This issue was resolved by the actions of the Railway Department of the Ministry of Finance, established in 1890; criticism in *Novoye Vremya* was published earlier.



to resort to heroic measures, but rather proposes a gradual, slow transition. One cannot but agree with this author's view, despite the fact that he fails to point out even the immediate and greatest difficulties that might be foreseen in the event of the use of a heroic measure – which would be the purchase of the entire existing fleet of wagons by the treasury. Let us note, therefore, that under the current concessionary procedures, which sanction the full right of ownership of private railway companies to wagons, the alienation of wagon fleet to the treasury could influence, if not directly, then indirectly, the share price and give rise to claims and disputes between the companies and the treasury – in a word, it could ultimately affect the profitability of the railways guaranteed by the government, to the disadvantage of the state treasury.

Currently, wagons released to private railways from government reserves are, if necessary, added to the inventory of the railway that borrowed them and then often become the property of the latter. With a change in the general system, such a distinction between the property of the treasury and that of a private company would ultimately be out of the question, and on newly constructed railways, if they were built by companies that no longer exist, there would immediately be no distinction. However, one would have to deal with several categories, namely: 1) government wagons on government railways, 2) government wagons on private railways, 3) government and private wagons on private railways, 4) only private wagons on private railways.

In the summer of 1890, a rumour slipped through the newspapers that a commission had been formed in the Ministry of Railways to develop a project for the organisation of a common wagon fleet, presumably for state-owned railways, which, in view of the absence of fundamental obstacles, the implementation of this idea, in our opinion, is entirely possible.

This newspaper report should be contrasted with the attempts by private individuals to form a private company to assemble a wagon fleet and lease them to railways based on their needs. Whether this idea (which, as we have heard, is recommended by experienced railway officials and outside industrial entrepreneurs) is beneficial from the standpoint of private enterprise is

another matter, and to clarify it, we should turn to the example of the North American *Wagon Builders Association*, discussed later. However, from a national perspective, such a private enterprise is hardly desirable. Even assuming that, for its own benefit, it would be able to promptly and quickly satisfy demand in its area of operation, one wonders whether it wouldn't be a new, superfluous private railway company that would have to be curbed, just like the existing ones. It seems to us that if a common fleet is to be resorted to, only a state-owned one should be considered rational.

Mr. Georgievsky touches upon the same issue we have raised in the February 1891 issue of *«Engineer»*.

Mr. Georgievsky disagrees with the advisability of our proposed state-owned fleet, repaired at public expense by private companies. In his opinion, *«depersonalisation*, while maintaining the existing order in all other respects, will render the Russian wagon fleet completely unusable in the very near future. To avoid this, he proposes: pursuing the same objective as depersonalisation, i.e., simplifying wagons' turnover, leaving the wagons in private ownership, granting the right to repair the fleet as they please and to anyone they please, and to conduct urgent inspections at the expense of the railway to which the fleet belongs, excluding damage due to accidents, at a rate established by the railway junctions for each locality; all work performed should be recorded in a special booklet that inseparably accompanies the fleet, i.e., the wagon certificate».

Mr. Georgievsky's arguments against a state-owned fleet boil down to the following.

Firstly, there's a lack of competition in wagon repairs, since they've been transferred to the treasury; secondly, individual interchanges are impossible due to the different values of wagons – for example, a poor-quality wooden wagon and a good iron one. According to the author, good wagons are now being «fished out», and once wagons are depersonalised, no one will bother overhauling a wagon so that someone else can reap the benefits of its good condition.

Moving on to defending the certificates, the author paints the current overhaul system in the bleakest terms, claiming that wagons currently released from overhauls in workshops are found

to be defective the same day and sent to the nearest depot for minor repairs. This stems from ignorance of the wagons' weak points, as well as the reason why the machinery hook sometimes breaks two buffer bars one after the other, as the coil springs in the buffer springs were and remain inactive. All of this should disappear with the introduction of certificates.

In analysing the above opinions, one is immediately drawn to a comparison of two passages in Mr. Georgievsky's article: namely, the passage where he speaks of «fishing out» wagons, despite the reasonable team [*artel's*] system of repair bonuses, with the passage where he describes the methods of completely inadequate wagon repairs in the main workshops. From this, the reader gets the impression that where fate has placed Mr. Georgievskii, the entire virtue of the wagon master and inspectors lies in «catching» and, concurrently, in abusing repairs. While this is entirely consistent, it is a local phenomenon, and under no circumstances should the issue of state-owned wagon fleet be viewed through the prism of these phenomena. After all, bonuses for wagon repairs have been introduced on one or two Russian railways; therefore, poor but cheap repairs, alongside the capture of good wagons, may be the preserve of one or two depots, but not the entire Russian network. And once they become the preserve of the entire Russian network, then catching wagons will no longer be an evil, but merely a sign of poor repairs, if they are indeed poor.

We positively find it difficult to imagine a repeat of the incident cited by the author as an example. It's unthinkable that, when replacing a buffer bar, no one would bother to inspect the coil springs. Every time wagons are received at the transfer stations, inspectors test each buffer plate, and if the rod enters the holder more than two inches without spring resistance, the buffers are considered inoperative. If it's possible that the buffers weren't functioning before a hook broke one buffer bar, and then after installing a new one, it was broken by the same hook, then this is precisely what's called «ignorance of the wagon's weak points and its individual and typical defects». Certificates, therefore, won't help in this matter.

After this discussion, considering the presumed time and place in which Mr.

Georgievsky was when he wrote his article, we ventured to make a relevant retort:

Would the railways really be better at repairing a wagon belonging to any other railway than a state-owned wagon? After all, a certificate doesn't change the fact that the wagon doesn't belong to me, but to someone else. If, in the author's opinion, no one could seriously desire to overhaul a state-owned wagon, then how could such a desire arise for any other railway's part, since in both cases, someone else would equally benefit from its good condition? Why is a wagon «state-owned» simply because it's state-owned, «impersonal», while if it belongs to X.Y.Z. Railway, it's not «impersonal»? In our view, the issue isn't who owns the wagon, but who is legally responsible for its condition and repairs. Based on this premise and recognising that wagon repairs may prove to be the most pressing issue in the state-owned wagon fleet, in our view, not only do certificates fail to represent a new solution to the dilemma we envision with regard to the state-owned fleet and which Mr. Georgievsky opposes, but, on the contrary, Mr. Georgievsky's proposal is a useful detail in the development of a project specifically for the state-owned fleet. Certificates can be of great service in the state-owned fleet, but now they are completely useless.

Furthermore, the author contradicts himself by painting such a bleak picture of major repairs in the main workshops. Indeed, if true, it couldn't be worse than what he writes. In the brochure «Wagon Question», we had to prove that current repairs have become a commodity or speculation and are no longer a means of properly maintaining rolling stock. We have not had to discuss cases of poor repairs, and in our view, they no longer constitute a common sore point, as Mr. Georgievsky portrays. On the contrary, they are often unnecessary. The question is precisely whether introducing a state-owned fleet wouldn't be more beneficial in this regard. Nowadays, there's a real incentive to waste time repairing wagons, because they're yours, and many people want to show off. Traffic safety and protection of goods from damage don't require much of what's being done now. A lot of money is currently spent on show, but then, even if it's not done well – which, according to Mr. Georgievsky, is still the practice – at least the money won't be wasted.



The wagon might deteriorate sooner, but its maintenance will be cheaper. Nowadays, it's important for wagons of all classes to be equal in quality – this has almost been achieved, and wagons are increasingly becoming common property. Perhaps cheaper wagon maintenance (excluding traffic and goods safety issues) would, along with faster wagon turnover, be a merit of the state-owned fleet and contribute to increased profitability for our railways. This naturally comes to mind when you compare the profitability figures of our railways and those of foreign countries, and next to this you compare the general appearance of Russian cargo wagons with German ones, and most importantly, French ones – ours are much more beautiful and better maintained.

Then, moving on to specifics, we note that Mr. Georgievsky, objecting to interchanging wagons based on value (and no one has ever proposed such a thing), says that this would require no fewer than the current number of transfer agents. Meanwhile, he overlooked the fact that certificates under the current system, where wagons are the property of each railway, also complicate the clerical procedure. After all, what's written in the certificate must be recorded somewhere other than on the certificate; otherwise, if the certificate is lost, the wagon knows «neither father nor mother». Furthermore, since the wagon is my property, I must personally check its condition, even if urgent conventional repairs are being carried out three thousand versts away. The state would have to waste far less time and money on maintaining the certificates and monitoring repairs and the general condition of the wagon than private companies do now, because a state-owned wagon is always at home, while for private companies, the essence of the matter remains the same: with or without a certificate, the wagon changes hands. Private companies are even worse off, because the wagons need to be inspected upon delivery, along with the registration documents. The challenge of our time is to have just one owner per wagon, instead of 50.

We also cannot agree with Mr. Georgievsky's casual observation that repairs and standard inspections can be performed by anyone at the owner's expense, with the exception of damage resulting from accidents, in which case repairs must be carried out at the user's expense. This

proves that the author is unfamiliar with the results of older, more experienced railways striving for simplification. We have so far imitated the German railways in this regard, but for over ten years now, French railways have been returning a damaged wagon to the owner, no matter what its condition; and it is believed that no railway will remain indebted to another, even if it does not pay for such a wagon. And they are right – nowhere can accidents be the sole responsibility of a railway.

As a result, we must conclude – and we are convinced of it – that wagon certificates are completely inadequate as a means of reducing the cost and improving repairs, or as a means of speeding up and simplifying wagon turnover into privately owned wagons. They can only make sense if the entire fleet becomes the property of the treasury and thus only complement the idea of a state-owned fleet.

Comparing the opinions of «*Novoye Vremya*» an expert (the author of the article in No. 4939 should undoubtedly be considered such), who openly defends the state-owned wagon fleet, with the opinions of Messrs. A. B. and Georgievsky, who, each for their own reasons, oppose state-owned wagons, it is very appropriate to recall that the idea of a common wagon fleet was already in circulation ten years earlier, in 1879.

Even then, a controversy arose between engineer Demchinsky and E. D. Zlotnitsky, the essence of which can be summarised as follows.

Mr. Demchinsky⁴ points out that useless wagon mileage amounts to 40 % of the total wagon mileage, that wagon turnover could be accelerated by 20 %, and by reducing cargo delivery time by 20 %, a tremendous national benefit could be achieved by accelerating capital turnover by 20 %. He even suggests a location for establishing central workshops. However, Mr. Demchinsky also points out the impossibility of transferring wagons to railways that are not part of the common fleet, and, most importantly, warns that repairs should not be allowed to be carried out at the common expense, as the railways would present exorbitant bills. Mr. Demchinsky claims to have a document proving that the cost of one flat wagon, according to bills for railway repairs, was 6000 Rubles.

⁴ Zh. M. p. s. [Here and further on abridged title of the Journal of the Ministry of Railways], November, 1879.

G. Zlotnitsky⁵, while sympathetic to the idea of a common wagon fleet, doubts that a common wagon fleet can accelerate wagon turnover: he rightly (under the circumstances of the time) notes: «Has the impact of a common wagon fleet on accelerating wagon turnover been studied?» To prove that his opponent is wrong in believing it possible to accelerate turnover by 20 %, he argues: the time required to move cargo is made up of the following components:

- 1) loading, unloading, and reloading,
- 2) mileage and absolutely necessary stops, and
- 3) transfer from one track to another.

Of all the factors, only reloading and transfer can reduce turnaround time, but reloading at transfer stations is eliminated, regardless of the wagon fleet, by agreements on uninterrupted wagon travel (which had already begun to be implemented at that time). Transfer on long tracks will account for only 20 % of the cargo movement time. Consequently, it is impossible to reduce turnaround time by 20 %; otherwise, technical inspection would have to be eliminated. Therefore, it is clear – in Mr. Zlotnitsky’s opinion – that the overall cargo movement time is completely independent of the wagon fleet.

Let’s add that Mr. Zlotnitsky immediately states:

«Assuming that technical inspection of wagons is not abolished, then only three hours are allocated for this procedure on Group II roads».

This remark is characteristic, as it suggests that Mr. Zlotnitsky hoped to see technical inspections abolished someday. Despite all this, Mr. Zlotnitsky found that:

«The benefit of a common wagon fleet is expected and can consist primarily in the possibility of expanding direct service, in reducing the unnecessary mileage caused by sending wagons to the owner’s railway, and, finally, in eliminating some of the inconveniences caused by the interchange of spare parts».

The latter inconvenience has now been significantly reduced by the establishment of central depots.

Messrs. Demchinsky and Zlotnitsky ultimately acknowledge the feasibility of a common wagon fleet. But this was written about

⁵ Zh. M. p. s., January, 1880.

12 years ago, when the wagon fleet industry was nowhere near as generalised, simplified, and coordinated as it is now, after it has largely been reduced to a single denominator.

Currently, a common state-owned fleet seems to us like a cure for two ills, or a means to two benefits:

1) Accelerating wagon fleet turnover and the ability to concentrate them (as far as track capacity allows) where they are needed, avoiding backlogs. This would reduce the number required, and direct service would benefit from speed, affordability, and simplicity.

2) Cheaper wagon operation and the elimination of the source of technical, and most importantly, financial losses and abuses that constitute «transfers». This does not prejudge the question of whether the fleet would be in a more serviceable condition, but undoubtedly its repair would cost comparatively less than it does now, because the dispatch of wagons to the railway to the owner and the shipment of spare parts would be eliminated, the number of transfer personnel would be reduced and all unnecessary repairs now carried out due to the change of the owner of the wagon would be eliminated.

In peacetime, both of these tasks encompass a third, but in wartime, they are absorbed by the third task: maintaining a wagon fleet at the treasury’s disposal in case of mobilisation, which, at this moment, determines the success of the war. This was given far less attention 12 years ago than it is now.

At that time, more attention was paid to the first of these tasks – that is, accelerating wagon turnover – despite the fact that 1879 was now following a wartime period when our cargo wagons were covering a distance of 18719 versts (1877) and outpacing the then-current wagon mileage of German, Austrian, and French railways. There was almost no discussion then about eliminating transmission deficiencies⁶.

⁶ The extent to which arbitrary rule and profiteering among minor employees in this branch of the railway industry reached is evident in the following fact: in Vitebsk, the depot manager of Oryol-Vitebsk Railway accepted wagons with defects that impeded traffic, but forced his neighbor, from Dinaburg-Vitebsk Railway, to pay 4 rubles for axle replacements and 4 rubles for a burned axlebox. Thus, in one year, Dinaburg-Vitebsk Railway overpaid Oryol-Vitebsk Railway an additional 36.000 rubles. Such incidents led to a rule in the convention stating that no payment is due for defects not listed in the convention.



Mr. Zlotnitsky's reference to the agreement and the uninterrupted movement of wagons constitutes only a tiny fraction of what was accomplished by the General Agreement of July 1, 1889, and the subsequent unifying measures in the wagon industry. The only remaining feature of the then-current dispatch of empty wagons to the owner's railway is the dispatch of wagons for the standard biennial inspection. This, assuming an average mileage of 1.000 versts per wagon per year, amounts to only 500 versts of excess mileage per car, costing approximately 20 Rubles. Furthermore, the interchange of spare parts remains, albeit significantly simplified, although the number of spare part types still reaches 700. Overall, the conditions under which Russian cargo wagons now operate are incomparably better than they were then, in terms of accelerating turnover, and the issue of accelerating turnover, in the sense of that time, can now be considered, perhaps, resolved. But even now it's astonishing that, after such an experienced railway official as Mr. Zlotnitsky considered technical inspections perhaps avoidable, they grew to monstrous proportions and became an issue whose very nature overshadowed other issues in the smooth running of cargo traffic. There were abuses and rudeness back then, but there was no pettiness elevated to the level of law, and none of the Talmud of commentary that was compiled over the next decade, through conventions and private agreements. The current agreement, with its accompanying instructions, explanations, acts, telegrams, and individual written agreements, also represents a complex machine, although far simpler than before 1889.

Almost ten years after the controversy between Messrs. Demchinsky and Zlotnitsky, an article by N. K. Antoshin appeared in the same journal of the Ministry of Railways⁷, entitled «*Comparison of the provisions on the mutual use of wagon on Swiss railways with those practiced on our railways*».

The author introduces us to the Swiss system of mutual wagon assistance and the system of several distribution bureaus with one central one. The benefit of mutual assistance is reduced to the maximum possible utilisation of cargo wagons. The agreement included (at the time described

by the author, April 1, 1887); each railway that entered into the agreement declares for mutual use only that portion of wagons that is either profitable for it or necessary to declare for the transportation of goods in external traffic. In this way, each railway can regulate its participation in the maintenance of distribution bureaus, in wagon assistance to other roads, and, to a certain extent, even in the costs of paying for the mileage of other wagons on its own railway and for the maintenance of wagons. A railway whose trains contain a wagon from an allied railway pays the railway owner 1 centime per 100-kilometre.

With the introduction of the Swiss system on our roads, says Mr. Antoshin, we will either have to transfer all cargo wagons for mutual use, and assign the distribution bureau to distribute wagons, even for domestic traffic. Or we will have to allow some ambiguity, leaving the distribution of wagons for domestic traffic to the railway administration and designating a separate fleet accordingly; for other cargo, the task will be delegated to the distribution bureau.

Here lies the idea of a shared, impersonal fleet of wagons, but in a partial, most primitive form.

If we look at Mr. Antoshin's proposed system from a distance, it becomes clear, first of all, that the entire system is too local in nature and hardly worthy of imitation. The seven Swiss railways, whose length barely equals that of Libau-Romny Railway alone, due to purely local conditions, in which their topography (namely, their branching) plays a major role, impose a condition that may actually be beneficial for them. But it would be quite a different matter if our roads, comparatively very long and rarely intersecting, followed the example of this small network, especially with the duality of the system recommended by the author. It's unlikely to result in anything other than confusion. For us, this system could serve as a lesson to the traffic controllers of each major road, providing them with some good principles for guidance. They, our traffic controllers or department heads, act as distribution bureaus, but for a single road. Extend this system to several roads, and given the duality (and only duality is possible), it would lead to unimaginable confusion. Specifically, this system contains a principle that is unacceptable in Russia: empty wagons must be promptly returned to the railway of their owner and loaded in the direction of the

⁷ № 10 for 1888.

railway of their owner. N.K. Antoshin considers this measure to be an advantage of the Swiss system, as if recommending its imitation, because, in his opinion: «neither the convention nor the internal structure of the roads have done anything to facilitate the return of wagons to the roads of their owners, and, meanwhile, at every congress there are complaints from all sides that we do not see our wagons, that we do not work with them at all».

A return to proprietary railways is a necessary evil of this system; with or without them, our complaints are completely unfounded, and as long as they persist, we cannot expect a change for the better. Time takes its toll, and with each passing day it becomes clearer that operating solely with one's own wagons is an anachronism.

This system, however, has fundamental merits in its details that can be emulated, unlike the entire system and its idea of mutual assistance and immediate return. We believe it is necessary to transfer the positive features of the Swiss agreement to the general agreement, since the need for them is ripe in our country, and nothing prevents their introduction immediately.

The first positive detail that should be introduced here concerns the acceleration of wagon turnover in accordance with § 6 of the Swiss Convention.

No railway is obliged to accept wagons on its trains that do not meet these conditions (safety for traffic). If the receiving railway recognises the car, due to such defects, as dangerous for traffic and subject to reloading, then the costs of reloading fall on the railway that delivered the car.

Consequently, Swiss railways impose the following conditions: 1) the wagon must be safe for traffic; 2) a wagon dangerous for traffic (especially one incorrectly rejected) on trains is not rejected by the receiving railway, but is accepted and reloaded. Then, once the goods have departed for their destination, a dispute may arise over who should bear the cost of the reloading; 3) apparently, wagons are accepted directly onto trains at transfer stations, not onto station tracks, and, according to § 3 of the agreement – which states «the actual time of arrival of a wagon at the transfer station is considered to be the same as the time of delivery of the wagon to the next railway»—no additional

time is allowed for this transfer. These are three very significant details related to speeding up turnover.

Let's move on to the details of the Swiss agreement that simplify the repair procedure and repair reporting.

The key here, as is evident from the preceding lines, is that unnecessary repairs are not carried out, as everything is reduced to the strictly necessary, to traffic safety. However, since the railway that receives a wagon is fully responsible for it (except in cases of fire or damage to axles and wheels), other damage is also taken into account. All damage must be recorded on a red ticket affixed to the car. These tickets significantly reduce the time spent inspecting wagons upon handover. If new damage occurs that wasn't noted on the red ticket, it is only recorded in the reports if the cost of repairs for a given wagon exceeds 10 francs. This measure, which constitutes the fourth detail that can be introduced without hindrance in our country, has been in use in France since 1877.

According to a Swiss agreement, cargo wagons are subject to a thorough inspection by the railway owner every two years. It is also stipulated that if repairs to another wagon require more than one day, the railway owner must be notified immediately, stating the reasons; otherwise, the wagon will be charged as rent. This time limit for minor repairs eliminates wagon downtime awaiting repairs and, secondly, expedites the repair itself.

To summarise, we believe that, while the general idea of this convention – mutual assistance and prompt return – is inappropriate for the Russian network, it is equally useful and immediately applicable:

1) Reducing the required wagon serviceability to the degree necessary for traffic safety; i.e., as we have proposed for mobilisation, limiting the requirements to serviceability of the running gear, with the addition of provisions for protecting the goods from damage (roof, hatches, door locks).

2) Recording damage worth at least 3 rubles per wagon in the report.

3) Limiting the time period for repairs to both your own and another car.

4) A wagon that is technically defective for any reason is accepted commercially and



reloaded on the receiving railcar. The validity of the defect and the question of who should bear the blame for it are then determined.

In early 1891, an article by A. A. v. Wendrich, «*The Use of Cargo Wagons in Russia*», appeared in the journal of the Ministry of Railways (February–March). In this article, the author, citing a lithographed note by N. K. Antoshin, advocates mutual assistance with wagons and express returns, as practiced in Germany, Switzerland, and other Western countries, and strongly advocates the establishment of a central control and distribution body in Russia overseeing cargo wagons across the entire Russian network. We examined the extent to which the body recommended by Mr. Wendrich is applicable to the Russian wagon industry and the advisability of mutual assistance and prompt return in an article published in the same journal for July–August 1891. However, in this rejoinder, we touched only on matters pertaining to the traction service and ignored the author's crucial point (in support of N.K. Antoshin's opinion) that technical defects in wagons have now become quite insignificant, amounting to only 3 %, or at most 10 %, of the number of wagons provided for delivery. We thus remained silent about the role of the traction service in this matter, despite the fact that the fact cited by A.A. v. Wendrich contradicts everything we have said about technical transmission in our brochure, «*The Wagon Question in Russia*». We deliberately postponed speaking about this until another time, since our brochure was written before the introduction of the General Agreement and it was necessary to check in practice whether, in fact, after the introduction (July 1, 1889, and A. A. v. Wendrich's article appeared in March 1891) of the General Agreement, over the course of $1\frac{3}{4}$ of the year, such enormous successes were achieved in the matter of technical rejection of wagons.

In pointing out that now only 3 % of the provided wagons are rejected, N.K. Antoshin and A.A. v.-Wendrich were obviously guided by the book of wagon rejections, in which wagons are entered that are subject to repair in workshops and cannot be accepted on the same day, overlooking the fact that in addition to it, inspectors compile initial lists of defects provided for delivery of wagons, and that these lists often

include even all the wagons provided for delivery, and from 50 to 75 % of the wagons of the entire train is a common thing. Since repairing these minor defects, which are not included in the rejection register, requires at least 2–3 hours of time, which is not stipulated at all in the agreement (one hour is stipulated for inspection – § 18 of the agreement, and three hours for commercial inspection – § 24), and the handing over railway cannot correct these defects before presenting them for inspection⁸, these defects are the reason for the delay in handover, and they necessitate the maintenance of an additional staff of inspectors and craftsmen, which imposes an enormous burden on the costs of technical handover, as we have indicated in our brochure. Of course, the general agreement simplified many things, easing the requirements regarding wooden parts, allowing them to be repaired, including springs. But this has had the greatest impact on the conservation of wooden material, while the loss of time and labor for technical handover remains the same, and no one will say that with the introduction of the general agreement, the technical personnel of handovers (inspectors, craftsmen) will be reduced anywhere. This is why we maintain that A. A. v. Wendrich's supposedly successful claim of a defect rate that supposedly falls short of 10 % is inconsistent with reality. Only 3 % of such wagons are defective, recorded in the defect log and retained for at least 24 hours, while defective wagons, requiring 2–3 hours of repair time per train, account for 75 % of the train's total⁹.

The idea of a central control and distribution body, raised again by A. A. von Wendrich in 1891¹⁰, had already been touched upon in our technical literature much earlier, namely in 1880, in a brochure by Mr. Hugo Carlyle (director of Dinaburg-Vitebsk Railway), entitled: «*Note on a central railway clearing house in England and the benefits of establishing a similar office in Russia*». (*Translated from English*).

⁸ Because he doesn't know whether these or other shortcomings will be noticed and demanded to be corrected; this is the competition between two owners.

⁹ Currently, technical inspections are carried out at the receiving railway station simultaneously with commercial inspections. Ed.

¹⁰ He had raised the issue earlier, namely in 1888. Furthermore, in 1882, a report by the same author, «*Comparison of Cargo Wagon Use Systems in Russia and Abroad*», was read at the Imperial Russian Technical Society in Moscow.

Having listed the requirements without which fast and uninterrupted transportation of passengers and cargo is impossible, Mr. Carlyle states:

The best means of achieving such a state would be the merger of all railways into a single enterprise, under the supervision of a single management. «Many believe», Mr. Carlyle continues, «that this goal can be achieved by concentrating all the country's railways in government hands, with the management of their operation and the general conduct of railway affairs vested in crown officials. Such a central administration», Mr. Carlyle notes, among other things, «would create a vast monopoly, not only hostile to foreign interests (?) but generally harmful (?), and would hardly inspire the thrift and active service that are essential in railway affairs».

Recognising, therefore, that government control of all roads is inappropriate, the author makes a review of the most important shortcomings and inconveniences that hinder the widespread development of «direct communication», and advises the establishment in Russia of an agency similar to the English central office, Clearing House, founded in 1842 by Kenneth Morrison.

Among the shortcomings of the existing system in 1880, Mr. Carlyle notes that:

Roads do not accurately communicate with each other the mileage of each other's cargo wagons, and even when they do, the information is not always reliable; there have even been instances of some roads secretly managing other people's wagons, bordering on abuse. Similarly, a very significant shortcoming in direct service (in Mr. Carlyle's opinion) is the formalities involved in transferring wagons from one railway to another; these formalities cause such a loss of time that the roads incur enormous losses from the need to maintain a special staff of employees to carry out these formalities, and a significantly larger number of wagons than necessary, in order to make up for their unproductive downtime at transfer points.

The author describes all the intricacies of technical inspection and grading of wagons in remarkable detail and aptly. Pages 38, 39, and the following few pages of this brochure will forever represent the transmission procedures in

1880, and we deeply regret that we were not familiar with this brochure when we printed ours in 1889. Both of these brochures complement each other in this regard and prove that nothing has changed in the wagon issue regarding technical transmission over the past decade (1879–1889).

After indicating the role of the Clearing House in England, the author states that:

I am firmly convinced that the introduction of a central clearing office in Russia would have the same beneficial effects as abroad, namely:

1) cargo transportation could be carried out twice as fast as now, even without changing the train schedule;

2) cargo would be safer;

3) the need for wagons would decrease;

4) wagon fleet would be better maintained;

5) direct communication and settlement would be simplified;

6) travel could become cheaper;

7) each railway, in particular, would acquire the ability to more effectively monitor and direct the actions of its agents.

We haven't mentioned that Mr. Carlyle expected the central clearing house to improve tariff matters, but we haven't mentioned it because this issue has already been resolved by other measures, namely, the establishment of a railway tariff department within the Ministry of Finance.

As for the intermediary functions of the office proposed by the author, they are partially fulfilled, and quite successfully, by the permanent office of the General Congress of Representatives of Russian Railways. But the author's main expectations – namely, accelerated wagon turnover, a reduced demand for wagons due to their more efficient operation, and the elimination of arbitrary technical inspections – all this remains a pipe dream. In our opinion, which we developed in detail in our response to A. A. von Wendrich's article, no central office can eliminate these shortcomings to the desired degree (we won't say completely) as long as the wagons belong to private companies and do not constitute a single, impersonal state-owned fleet. Everything we have said on this matter regarding A. A. von Wendrich's central control and distribution body applies to the same functions of Hugo Carlyle's central clearing office, since the former is only



a more specialised and limited modification of the latter, English one.

Here we will allow ourselves to dwell on a characteristic view expressed regarding the moral side of train wagon disturbances. One of the most active representatives of the wagon fleet service, interested in the matter and having worked extensively for its benefit, wrote to me the following upon receiving the brochure «The Wagon Question in Russia»:

In your brochure, I was very surprised by the conclusion expressed on page 24: «everyone is deceiving each other».

A look of disappointment, a loss of faith in the possibility of a bright day ahead; it is extremely sad to read this view expressed by someone directly involved in the interchange process. I can assure you that there is no such antagonism at other transfer points, and I would very much like to hope that you have chosen too bright a picture to paint of the transfer at one point. There was a time when the rudeness of transfer agents influenced the senior railway agents; There was a time when senior agents at congresses were unwilling to place the slightest trust in one another, and when they devised ways to guarantee, or at least protect themselves from theft and deception of their neighbors, but, thank God, that time has passed. Here is proof. You remember how, in the 1st group, it was forbidden to repair someone else's springs with any other steel, as it was issued by the railway owner. You remember how, in almost all groups, any repair of wheel rims was prohibited; how, in the 2nd group, bearings had to be issued by the railway owner, and old ones returned to it, and so on, and so forth. In the coming days you will receive (written March 27, 1889) new general technical conditions and regulations on central warehouses, on the procedure for issuing spare parts, etc., and in these new regulations a ray of mutual trust will clearly be discerned. We've had to talk at length about the absurdity of the old order – at length, but not in vain! Likewise, the crude morals on transfers, where they still persist, will likely soon give way to the new trend, and now, more than ever, the cooperation of those who find this crudeness disgusting is urgently needed; one more patient onslaught, and the crudeness will vanish!

These words of a respected senior colleague are so full of inspiration that they are a fitting example for us younger ones; but we cannot,

unfortunately, agree that «a ray of mutual trust is clearly visible in the new provisions», «that at the present time the assistance of those who are disgusted by this rudeness is urgently needed, more than ever». What kind of trust can there be when your every step is framed by a certain paragraph – when the new agreement is three times longer than the previous provisions of the same content; when this Talmud is now periodically commented on in the form of «Explanations of the Standing Committee of the General Congress»; when the heads of the wagon fleet service smile at the sight of the correspondence they receive from this committee; and when, despite all this extensiveness, one actually had to wonder what to do, and when in response to an inquiry one received the answer: «proceed according to the instructions», or «correct the deficiency»—the mistrust has increased. We agree that there are fewer opportunities for cheating, but the commercial, purely competitive spirit has forced us to simplify formalities and abandon distrust in the repair process; it will also force us to go further in the *interchange* itself.

On the same topic, we were surprised to read the following official appeal, published in the minutes of the meetings of the Second Technical Commission of representatives of the wagon fleet and traction service and representatives of the traffic service in St. Petersburg (September–October 1889).

«The chairman of the technical commission on September 29, 1889, opening the meeting, drew the attention of the railway representatives present to a welcome development that first emerged during the discussion of the training program. Yesterday, this commission recognised the fairness of being guided, in its future work, by the principle of trust in the activities of railway workshops. This made it possible to significantly simplify¹¹ the technical conditions for the interchange of wagon fleet in direct, untransferred service, eliminating from the general agreement a whole series (not visible in Protocol No. 2) of confusing and restrictive rules regarding design features that had caused endless correspondence

¹¹ The minutes of the September 28 meeting show no significant simplification; only Libau-Romny Railway's demand to attach invoices from the railway's workshops for the roof it had restored and which the railway owner was presenting for payment was denied.

and burdened agents at transfer points. These rules had been introduced into old conventions under the pretext of guaranteeing each railway that cargo wagons on the user railways were in good repair and properly maintained.

This expression of trust by the representatives present in the workshops' activities is so important to the proper functioning of the business served by all members of this commission that the chairman proposed leaving a note of it in the minutes of the commission's meetings and communicating it to both the heads of the railway workshops, along with the commission's expression of gratitude, and to the agents at the transfer points. The latter, unfortunately, are still overly enthusiastic in their efforts to protect the interests of their railways, often achieving counterproductive results».

«After hearing the conclusion of this statement (?), the representatives present unanimously resolved to include it in the minutes of the commission meeting, expressing the hope that the agents at the railway transfer points, through their work in this complex matter, will justify the technical commission's trust in them».

After reading these words, we involuntarily ask ourselves: is permission to repair springs the result of a long-established mutual trust, or, conversely, is the expression of trust the result of the need to authorise spring repairs...

Alongside these beautiful, yet platonic words, reality continues to reveal something quite different: alongside the commission members' trust in the workshops' work, a mistrust of the railway for the railway persists. And this mistrust cannot but exist as long as the roads, with respect to each car, are divided into the railway *owner* and the railway *user*.

The deep roots of this moral mistrust, or, in other words, commercial caution, which is entirely understandable in the current state of affairs, lie in the following. The very same respected chairman of the technical commission, who so sensitively addressed the principle of trust in the workshops in his article, which we examined above¹², is a supporter of returning the wagons to the railway to the owner without any real need, but directly because they are his own wagons.

¹² Zh. M. p.s., No. 10, for 1888. «Comparison of the provisions on the mutual use of wagons on Swiss railways with those operated on our roads».

«Discussing the technical side of the convention», says N. K. Antoshin, «the roads are under the pressure of the idea that the wagon that each of them accepts is not for a week or two, but for a long (?) period of time – and in order to avoid fiddling with the wagon and repairing it, it must be accepted in the best possible condition. Such a desire, which does not contain anything bad in itself, causes harmful consequences; if a wagon is accepted in good condition, then there is no need to worry about rushing to return it. Our conventions recommend loading wagons in the direction of the owner road; but if there is no such cargo, then the return of the wagon to the owner railway may take place – either by luck or upon expiration of the conventional inspection period. Neither the convention nor the internal structures of the roads have done anything to facilitate the return of wagons to the owner roads. Meanwhile, at every congress, complaints are heard from all sides that we don't see our own wagons, we don't work with them at all, and therefore repairs of other people's cargo wagons are slow (due to a shortage of spare parts), and their average annual work is low. According to our convention, the interchange of empty wagon fleet is not mandatory, but can be carried out by mutual agreement if empty wagons from a neighboring line are available at adjacent stations; according to the Swiss convention, the return of empty wagons to the original line within a specified timeframe is mandatory (!), and when returning a car, it is recommended to load it with cargo along the car's route and without delays exceeding one day».

The question arises: isn't it time to expand the boundaries of trust, which, at present, is solemnly expressed only to workshops? Isn't it time to abandon the idea of working primarily with our own rolling stock? – It turns out not! If the Ministry hadn't categorically demanded a mutual interchange of wagons across the entire Russian network, it might not have been implemented even now, depending on the railway representatives. We have the right to assert this because, six months before the introduction of the general interchange, N. K. Antoshin considered it desirable to follow the example of Switzerland and even in Russia allowed for the short-term return of empty wagons to the railway owner. We understand that Switzerland, connected by a uniform track with almost all of



Europe except Russia, could have pushed for such a measure; otherwise, the wagon might have ended up outside the network of roads allied with the Swiss, and searching for the wagons would have been prohibitively expensive. Defending the ownership of one's wagons against the encroachment of another state or its subjects does not mean defending the property of Syzran-Vyazma Railway against Dinaburg-Vitebsk Railway. Only an international railway union can regulate the relations between the former, but you can't force all Western railways to join it, and there will still be railways outside it, which will operate the union's railways.

It's quite different within the borders of a single state, Russia, where there can be no international issue regarding railwagons. Therefore, it seems to us that a «declaration» (?) of confidence in the technical commission is useless, unless the commission members are convinced of the idea.

II.

Main contentious issues and unification of wagons.

From the above, it follows that the idea of a *common*¹³ wagon fleet is recognised as rational by all the authors we have mentioned, with one exception. A. P. Borodin, author of the article in «*Novoye Vremya*», and Messrs. Zlotnitsky and Demchinsky express this explicitly. N. K. Antoshin seems inclined to implicitly endorse this idea, as can be concluded from his recommendation of a collective fleet managed by distribution bureaus. Messrs. Carlyle and v. Wendrich recognise the need for unifying measures that could bring unity to the matter, given the impossibility of creating a single common fleet, a point clearly stated by Mr. Carlyle.

The views of these authors on the fundamental principles of the question of a common wagon fleet can be summarised as follows:

A. P. Borodin, proposing to *depersonalise* wagons, considers it necessary, first of all, to introduce a uniform type of spare parts: this implies the need to introduce a uniform type of a cargo car. A.P.'s indication of a way out of the current state of affairs by uniting small roads relates to the general state of the railway business

¹³ In our brochure «Wagon Question in Russia,» we spoke in favor of a state-owned wagon fleet.

and has only an indirect connection with the issue that concerns us, since, in our opinion, the roads can be left in private hands, but the wagon fleet can still be made state property.

The author in «*Novoye Vremya*» proposes a gradual transition to a common state-owned rolling stock. New wagon fleet should be built exclusively at public expense, while old wagon fleet should be left to natural wear and tear and gradual destruction by time. It goes without saying that the wagon fleet would be built according to a single, generally accepted design.

G. Georgievsky, believing it would be beneficial to leave the wagon fleet owned by private companies, proposes allowing anyone to repair the wagon fleet and conduct emergency inspections at the expense of the railway owner, and that all work should be recorded in the wagon fleet registration document that always accompanies the rolling stock.

G. Antoshin, recommending following the example of the Swiss agreement, acknowledges the following advantages. Technical inspection requirements are limited to traffic safety, meaning they are significantly reduced compared to ours (the presence of certificates, in our opinion, does not simplify matters). Damage must be recorded in the report, at a minimum cost of 3 rubles per car. Limit the time for minor repairs to other wagons. Wagons must be inspected after acceptance, and reloaded immediately, before any disputes arise. Wagons must be accepted directly onto trains.

G. Zlotnitsky, although he doubts that a common wagon fleet could speed up wagon turnover and expects that this can be achieved through technical inspection, acknowledges that a common wagon fleet could benefit from reducing wasted mileage caused by sending wagons to the owner's railway and eliminating some of the inconveniences caused by the interchange of spare parts.

G. Demchinsky, advocating for the need to reduce useless wagon mileage and acknowledging the benefits of a common wagon fleet, even suggests a place for central (district) workshops, but warns that repairs should not be carried out at the expense of a common fund, as the roads would present exorbitant bills.

H. Carlyle acknowledges the shortcomings we have identified but seeks ways to eliminate

them in a central clearing house, which, incidentally, would also handle wagon matters.

Finally, A. A. v. – Wendrich recommends establishing a central control and distribution body specifically for wagons and, agreeing with N. K. Antoshin, supports the idea of mutual assistance with wagons and prompt return. N. K. Antoshin's opinions, cited by A. A. v. – Wendrich, contain several detailed recommendations that are easily implemented and very useful.

Comparing all these opinions directly relevant to the contemporary needs of our question, we have discarded those that are outdated, given the existing general, seamless interchange of railwagons and the many simplifications that have occurred in recent years.

We now turn to a consideration of the technical aspects of possible and desirable reforms that are most closely related to them. The fundamental concepts touched upon by the specialists we mentioned, as we have seen, are essentially as follows:

1. Consolidation of wagons. Depersonalization of wagons. State wagon ownership.

2. Uniform types of wagons and spare parts.

3. Construction of wagons at the expense of the treasury.

4. Wagon certificates (when they are useful).

5. Reducing the requirements during transfer down to safety conditions for movement and for the integrity of the goods (edition of the instructions, what type of instructions it is for inspectors, drawings in it, templates, fractions should be discarded, another one – for engineers with interpretation).

6. Protocols; what is the cost of repairs per wagon? Not taken into account in the event of an accident (as in France).

7. Time limits for minor and major repairs in district and private workshops.

8. Establishing control over the downtime of each wagon at transfer stations.

9. a) First acceptance, and then rejection, i. e. establishing the transfer of cargo, but not the car, or vice versa, first rejection. b) Minor repairs are carried out by the receiving, but not the handing over road, but at the expense of the latter.

10. Combining commercial and technical formalities. This measure is less important than coordinating cargo trains on adjacent roads.

11. Urgent inspection, its types; intervals; at whose expense; who should do it; there is no need to send wagons to the railway owner at all.

12. Cost of repairs in district or existing railway, state-owned, or private workshops. Price list. Should spare parts be sent at all? Spare parts interchange.

13. Transfer by trains or by periods.

14. The question of trust in workshops; in roads.

15. The burden on the roads of carrying out current formalities and keeping extra staff (its norm).

16. Mutual assistance with wagons.

17. Urgent return.

18. Central Clearing House (in England).

19. Central wagon control and distribution body (in Germany and Switzerland), recommended for Russia.

In examining the above-mentioned controversial fundamental propositions, we will try to keep in mind the existing agreements and instructions on this subject that we have been able to gather. This comparative method will allow us to sometimes highlight, in examining each proposition, what is best in the agreements and instructions being compared, and by this inductive process, arrive at a set of desirable reforms in the current state of affairs.

The following agreements and instructions will be compared:

1) «General Agreement between Russian Railways on the Mutual Use of Cargo Wagons» (1891 edition). This agreement came into force on July 1, 1889.

2) «Agreement on the mutual interchange of wagons between the roads that are part of the German Railway Union»¹⁴, which came into effect on October 1, 1887.

3) «Agreement on the mutual use of cargo wagons on Swiss railways»¹⁵, in force since July 1, 1887.

4) «Technical Rules for Mutual Interchange of Wagons and Liability for Damage» for French and foreign railways that entered into an

¹⁴ This agreement is placed in the book *Der Eisenbahn-Werkmeister* von I. Bock and W. Scholz, 1888, p. 116, Leipzig.

¹⁵ Journal of Ministry of Railways, 1888, No. 10. Article by N. Antoshin. Due to circumstances beyond the author's control, the supplementary rules (pp. 9–11) are broken off at paragraph 9, therefore there is no full translation in print, nor here.



agreement with them and formed the «International (presumably French) Union of Railways for the Interchange of Rolling Stock». These rules came into force on January 1, 1877¹⁶.

5) «A draft set of rules governing the condition and repair of cargo wagons interchanged between roads in direct communication» and was to come into force (after approval by the executive committee of the society at a meeting scheduled... for May 9 (April 27, 1886), from August 1, 1886. This is also an agreement, but not of a railway union, but of a wagon builders' society (Master wagon Builders Association) in the United States of North America, and applies to cargo wagons intended for interchange between roads¹⁷.

Our instruction begins with the sacred words that the mutual use of wagons is established to eliminate the transshipment of goods required by the Ministry of Railways. These words contain written proof of the grave error of all those who claim that *in Russia* the interests of commercial enterprises contribute much more quickly and successfully to the progress of industry and trade than government intervention. Perhaps this is true elsewhere, but in Russia this rule in the field of railway affairs is not supported, and § 1 of the general agreement serves as clear evidence of this. The interests of three groups of railways had long been at odds, and finally a ministerial order put an end to this abnormal situation, which was harming the interests of direct communication throughout this vast country¹⁸.

The agreement is *binding*, it continues (§ 2), on all roads; but individual groups of roads or roads may have private supplementary agreements, which must not, however, contradict

¹⁶ We use the order for the next movement No. 2253, and for the next traction No. 298 (they are one and the same) of the management of *Chem. de fer du Nord* company from April 16, 1877, kindly delivered to us in August 1889, in Paris, by the late D. Banderalli, head of wagon fleet and traction service of this road.

¹⁷ We extracted this from the New York weekly publication *The Railrailway Gazette*, but cannot provide the issue number. We know that the extract was made in late 1885 or early 1886. The contents of this agreement, in a slightly modified form, were published in *The Engineer*, No. 4, 1891.

¹⁸ Perhaps the groups did not converge for a long time, defending their interests, but there is no doubt that their long, uninterrupted work on direct communication and wagon interchange prepared the Ministry for a successful outcome of its directive regarding uninterrupted service. The Ministry undoubtedly chose the right moment to make this demand – when the groups themselves were ready to fulfill it.

this general agreement. On this basis, roads can now establish a wagon fleet fleet, which will constitute the common property of several roads. But they will not establish one until the Ministry compels them, or itself consolidates the wagon fleet depot under its control; and the main distinction of the Russian agreement lies precisely in the fact that in our country it was brought into being by government measures and is a merit of the government, while in Germany, France, Switzerland, and America it is the result of the commercial development of the railway industry. This fact alone is sufficient to disagree, with regard to our railway industry, with the opinion of A. P. Borodin and others of the same kind, that private enterprise understands the needs of trade better than the treasury. It may understand, but it is unwilling to renounce, in their favor, its own advantage, which it places above that of society and the state.

In Germany, an agreement, which is the result of a voluntary agreement, is binding on each participating railway until it wishes to withdraw from the agreement and the alliance. Withdrawal must be made with three months' notice and can only occur at the beginning of any quarter of the year. The agreement applies to wagons belonging to union railways, private wagons assigned to railway depots, and *wagons that are the common property of several administrations*. Such wagons exist in Germany.

The Swiss agreement, concluded between seven railways, is binding until it is revoked in whole or in part by a declaration. Withdrawal requires a six-month advance notice, and withdrawal can only occur after the end of the calendar year. For other Swiss railways that have not joined this agreement, the agreement of April 1, 1878, remains in effect.

Under the French agreement, no union railway (any railway that has joined the agreement must be part of an international union) may withdraw from the agreement without giving six months' notice.

Under the American agreement, any railway company, *individual, or private company* may participate in the agreement by notifying the secretary of the *Master Wagon Builders Association* through one of its senior agents. Withdrawal from the agreement is similarly permitted. However, participants are bound by

all the rules of the agreement and any subsequent amendments, and consent, as well as refusal to participate, extends to all the rules. In the revision of these rules, which takes place at the annual convention of participants, each railway company, individual, and company is entitled to one vote for every 1.000 eight-wheeled or 2.000 four-wheeled wagons (or the greater part of a thousand or two thousand) owned by them or in the process of being purchased. The verification of the eligibility of voters is made by the secretary on the basis of the latest edition of the Poor's Manual.

1) Consolidation and depersonalization of wagons. State-owned wagon ownership.

Following the historical development of wagon production, we encounter the idea of depersonalising wagons in recent times, a result of the development of railways in general, and in particular the demands of trade for the accelerated movement of goods. This necessitated eliminating overloading, accelerating wagon turnover, reducing unproductive mileage, and thereby reducing the possibility of backlogs – the most striking sign of the unsatisfactory state of not only railway capacity but also wagon production.

The ideal situation would be one in which the required number of wagons, based on the amount of cargo, would be readily available upon request. A wagon loaded at one end of the country would be unloaded at the other, and would then be reloaded in any direction, never requiring a fixed time at a specific destination. When a wagon's inspection were conducted at intervals determined by experience, based on technical data, without any extraneous considerations about its brand or the change of temporary owner, and when repairs were performed where needed, without any considerations other than technical ones. In short, when a wagon could serve no more than a crate in relation to the goods; and this crate, which – as a guarantee of the goods' complete preservation in quantity and quality – is readily and cheaply available everywhere. An ordinary crate always belongs to an owner, but a crate in commerce is impersonal, and damage to the crate is disregarded as long as the goods are intact.

The most desirable condition, from a legal, technical, and commercial standpoint, would be that of a simple crate nailed together from the

cheapest boards. Of course, such a condition is a fiction, considering that both the Ministry and many prominent figures strive to maintain our wagons in pristine condition. These and similar demands, coupled with the low cost of labor, have led to wagons being maintained for show, and much of the work done to them is not justified by a simple calculation of the mileage a loaded wagon must travel to recoup its cost. The realisation of this fiction, even with a less demanding (as, for example, in France) view of wagon condition, is hindered by two factors: technical and legal. The former concerns the impossibility of building a wagon so inexpensively yet so durable that one can neglect its future service life, just as one might neglect a crate. The second obstacle stems from the principle of wagon ownership, which is a valuable asset that plays a major role in the inventory of every railway. The entire art of wagon construction should consist precisely in overcoming this technical obstacle to advantage and circumventing the legal obstacle arising from ownership.

Without touching on the technical side for now – we will discuss this when we touch on the repair of wagons and the types of spare parts – we believe it is most appropriate to explain the legal side here.

Historically, the role of a car, as an item of property belonging to each railway, evolved in the following order. Initially, goods were reloaded at each transfer from one railway to another. Then, reloading was eliminated in the area of each of three groups and certain, strictly defined, direct connections. Finally, «at the request of the Ministry», a general mutual interchange of wagons was introduced for all railways of the Russian network, connected by continuous rail lines.

The next step, demonstrated by both practice and theoretical reasoning, is undoubtedly the unification of the wagon fleet, in other words, depersonalisation of a wagon in relation to each of our more than 50 railways.

In our opinion, this step is justified by the abnormal phenomena that constitute the backlog, the still-useless mileage of wagons and wagon parts, and the technical problems we attempted to outline in our brochure «Wagon Question in Russia», regarding technical inspections. These abnormal phenomena, as we have seen, are also



confirmed by the opinions of all specialists who have addressed this issue. But even if this is a contentious issue, and even if time permits, there is no doubt that by abolishing fifty legal property rights and replacing them with a single one, we will achieve a significant simplification of the matter.

Having recognised the benefits of consolidation, we then face the question of what form of consolidation is possible, which would amount to depersonalisation of wagons.

Practice provides examples of the following forms: 1) lease, 2) gratuitous mutual rental, 3) mutual rental but with payment; 4) co-ownership; 5) trading partnership (America). Furthermore, theoretically, one could imagine: 6) public fleet, 7) state-owned fleet, 8) private, i.e., specialised wagons, 9) large corporations.

1. *Leasing*, the simplest and most specific form of wagon ownership, is common in our country. Due to a shortage of rolling stock, railways lease wagons from the state and other railways for a fixed daily fee. This form of wagon ownership replaces what, in smaller territories abroad, where wagons are more frequently needed, has taken the form of chronic leasing, known (not entirely appropriately) as mutual wagon assistance.

2. *Free mutual rental*. The wagons are the strict property of each road, but, in view of the ministry's requirement *not to overload* them, a mutual interchange is being introduced. This is a purely Russian form of wagon ownership. Previously, in groups, there was a hint of an alliance, since it was possible to join or leave a group, but now, with a common interchange, the roads do not form any alliance, since they are obligated to interchange. This is not a trading partnership engaged in the rental of wagons, nor is it communal ownership, because the wagons are not owned by the allotment and cannot be taken away at the will of the one who allocated them. This is not a lease, not a rental, not a quitrent. It is some new form of enormous servitude, or a loan for goods, without interest, a form, in any case, of communist or communal use. Most likely, a transitional form, leading to state-owned monopoly wagon ownership. It should be noted that the first paragraph of the general agreement states: «for the purpose of eliminating the overload of goods as requested

by the Ministry of Railways»... The Ministry, obviously, didn't even demand *the interchange*, lacking the right to violate the principle of ownership without the intervention of the supreme authority. It merely demanded the elimination of the overload, and with this demand, it achieved a goal tantamount to legislatively depriving some property rights. Here, therefore, the intention was to uphold the principle of ownership, but something else resulted, bordering on communist exploitation.

3. The rental is mutual, but with a fee. Fees are charged either based on mileage or the time the wagon spends on the other's track. Previously, in one of our groups, we also used this method – payment was made only based on mileage – but it was later abandoned. This method operates in Switzerland and on the railways that are part of the German Railway Confederation, in conjunction with the express return system. Express return is an integral part of this system, since each railway could trade in union wagons, even with non-union railways, in secret agreements, and thus benefit itself, to the detriment of other union railways.

This form (mutual rental with payment) in Switzerland took the form of mutual assistance on a certain group of roads. Mutual assistance cannot exist without central and local distribution bureaus. Mutual assistance is characterised by the fact that the roads that have entered into an agreement for the mutual use of cargo wagons, although they pay each other for the car's mileage, are jointly responsible (through mutual guarantee) for any penalties that must be paid due to the late delivery of wagons (§ 5)¹⁹. If a wagon belonging to an allied road, sent to foreign roads, does not return, the resulting losses are borne by the participating roads (§ 10). This agreement specifically applies to wagons; characteristically, the roads participating in the agreement provide for common use as many wagons as they wish, but not all of them. Our authors call this form «mutual assistance», an inappropriate term. The roads participating in the agreement do not constitute an alliance. This form seems applicable only to a small, very dense network of a single state. A. A. von Wendrich proposed introducing mutual assistance in Russia.

¹⁹ German agreement.

In Germany, this form of cooperation is not mutual assistance, but rather a form of mutual rental for a fee, based on the «Union of Railway Administrations», which encompasses not only car-related matters but also other conventional matters. Members of the union include not only German railways but also those abroad (relative to Germany). Here, the most important requirement is the strictest, most immediate return of wagons to the owning railway, regulated down to the smallest detail, so as to prevent one railway from earning a single kopeck more than it deserves. Each member, not the entire union, is responsible for sending wagons outside the union and for any damages and losses. *The Wagenregulat* (Wage Regulations) that guide the union is well-developed, and its guiding principle was to ensure the proper interchange and settlement of accounts between railways belonging to different countries. The geographic and political interrelationships of the allied railways forced them to impose strict emergency return regulations, but there is no reason to follow this example in Russia. In Prussia, since 1881, local and one central control and distribution body have been established to oversee the emergency return of wagons from allied and other countries²⁰.

4. *Co-ownership*. Whether this represents a loosely defined form of mutual assistance is a matter of inference. Literally, it appears that in Germany there are wagons owned simultaneously by several railway administrations. It is difficult, however, to accept that these are truly jointly owned wagons; rather, they are likely small auxiliary depots of several railways, forming a natural group. Consequently, this is not co-ownership, but rather the joint use of portions of one's own depots. These are so-called auxiliary wagon depots (but not a single common depot). A. A. von Wendrich recommended this form of ownership in Russia²¹.

5. *A trading partnership*. *The Master Wagon Builders Association* is a unique form of partnership, which, however, may include, in addition to private individuals and companies, also railways. Therefore, with this form of wagon ownership, the concept of public liability is present; liability may be joint or separate from

railway management. This mixture in the wagon industry is natural in America, where railway companies operate other enterprises alongside the railway, with the railway serving as an auxiliary industry. In this form, wagons serve as movable assets contributed by the participants for general circulation. In France and Germany, associations include only railways, so there is no question of a third party between the railway and the public. In the American form of wagon ownership, the idea of a share partnership is consistently implemented, right down to the recognition of voting rights based on the number of wagons – one vote for every 1.000 eight-wheel share wagons.

6. *Public wagon ownership*. In addition to the above, one could theoretically imagine a common wagon fleet, in which roads participate in kind or through monetary contributions. The wagons would no longer be the property of individual roads, but rather common property²². Each railway's inventory would include their value instead of wagons. This form of wagon ownership necessitates a central and distribution body. Under current private wagon ownership, these bodies would constitute a superfluous authority, but under a common wagon fleet, they are not only necessary but also useful theoretically and practically. The role of such a body could be entrusted to an institution, the type of which should be chosen. The English *GLEARING HOUSE* is too railway an institution. A central control and distribution body with private agencies would be required. But both would have possessed broader powers than those proposed by L. A. v. Wendrich, since his body was intended to manage the wagons transporting the private property of each railway, where they would constitute common property under the authority of the body. Besides these two types, these functions could be entrusted to our existing Standing Committee of the General Congress. This institution arose through the natural development of railway affairs, and the most appropriate solution would be to transform it into the body that could manage the common wagon fleet. It goes without saying that now we would have to distinguish two groups of wagons: state-owned and privately owned.

²⁰ Urgent returns are currently used in Russia, but in extremely limited quantities and in a small number of cases.

²¹ See Zh.M.P.S. – February 1892, March, p. 7 и 8.

²² Similarly, N.K. Antoshin's proposal is to assign a common loan for the maintenance of wagon fleet for several independent railways, which would lead to the same results as the establishment of a single common workshop.



7. *State-owned wagon ownership and large corporations.* Since a single, shared wagon fleet would, in any case, be subject to the authority of a single institution, at whose discretion the wagons would circulate throughout the entire network and, as needed, be temporarily assigned to one or another railway, and since the existing division between state-owned and private wagons complicates the matter of unification, the simplest and most useful means of unification is undoubtedly a single, shared, state-owned wagon fleet of cargo wagons. This form of wagon ownership does not preclude private ownership in certain cases, which will eventually become more common and develop. We are speaking of private passenger wagons, whether those owned by individual railways or companies, such as sleeping wagons and Pullman saloon wagons on lightning trains, or privately owned special wagons, such as those for transporting bulk oil and kerosene (tank wagons), refrigerator wagons for meat and dairy products, beer wagons, aquarium wagons for transporting live fish, and the like; special wagons also include, to some extent, coal gondolas and flat wagons for transporting long timber and iron, as well as for transporting very bulky items. The Ministry of the Court's wagons and mail wagons are also considered special. Since the construction of special wagons is undoubtedly the result of private, commercial enterprise, and without it, special wagons would probably not have appeared anytime soon, we do not intend to limit or hinder private enterprise in this regard. The general state-owned wagon fleet should consist solely of all non-specialised cargo wagons, which would total approximately 150.000. If, over time, passenger wagons are equipped with standard spare parts and a standard braking system, so that they operate in direct service, they could also be included in the general state-owned fleet. The same applies to kerosene tank wagons and coal wagons, the most common special wagons. The state would become the owner of a kind of special car – a normal cargo car, needed everywhere and required to operate everywhere, unlike a privately owned, truly special car.

Since we are for unification and depersonalisation of cargo wagons, but not for the treasury to necessarily become the owner of the wagons, we propose state wagon ownership

only because it is the simplest, most comprehensive and promising the greatest number of advantages. In Russia this measure has a much greater *raison d'être* than in any other country, for the following reasons: 1) in relation to centralisation of government organs; 2) the habit of the population and the commercial world of peremptory measures of the government (for example, tariffs); 3) the absence of political division of the country; 4) uniformity, with few exceptions, of the width of the track; 5) the enormous space over which the railway network is spread in Europe and Asia, requiring special care to ensure that a uniform type is introduced in the means of transportation; 6) the conditions of defence of a huge country, requiring speed of movement. All these conditions make it easy to embark on a reform such as concentrating the cargo wagon fleet in the hands of the treasury and compel its desire. But despite all these arguments, there are three serious views that cast doubt on the advisability of implementing this measure not only radically, but even with the gradualism my critic in «*Novoye Vremya*» suggests.

The first consideration is that our roads, under concessions, must sooner or later be transferred to the treasury, and in fact are gradually being transferred. Consequently, the question boils down to what is more likely to occur – the transfer of the majority of the roads to the treasury, or the gradual formation of a common treasury rolling stock. Wouldn't it be sufficient, in new concessions that may be issued now, to determine the possibility of taking wagon fleet into the treasury before the concession expires²³. This question is not difficult to answer.

Data published in the Statistical Digest of the Ministry of Railways indicates that the end of the concession and the free transfer of all private railways to the treasury will occur, on average, in 60 years, with very few exceptions ranging from 44 to 74 years. If this point is taken as the deadline for the transfer of railwagons to the treasury, then the same transition could be accomplished much earlier – more than twice as soon, in fact – through gradual acquisition of the railwagons, without resorting to expropriation, but directly through the construction of new railwagons at the treasury's expense.

²³ Was this done when the concession was issued in 1891?

But if we take into account another period, namely, the one after which the treasury's right to buy out the roads begins, then, as is evident from the same information in the Collection, this period will begin, on average, for all roads in 6 years, and only for four roads (Dinaburg-Vitebsk – 18 years, Oryol-Vitebsk – 15 years, Nikolaevskaya – 9 years, Ivangorod-Dombrovskaya – 9 years), comprising in total 1.800 versts, this period is more than 6 years. Considering that the treasury, with a few exceptions, has taken advantage of this buyout period in the last decade, it can be assumed that, under favorable circumstances, in 6, or at least 10 years, it will own almost the entire network of Russian railways, and in that case there is no need to resort to the gradual acquisition of wagons, which could not be completed before 20 years. A radical expropriation would have to be carried out before the six years were up, which is hardly advisable, since the freight wagon and its spare parts will hardly be able to be brought up to standard even after six years. Such a one-time forced transfer would only be advisable if the treasury is unable or unwilling to exercise its right to purchase the roads, which became effective for the vast majority of roads around 1895.

Another consideration that speaks against the state-owned wagon fleet is the one expressed by my reviewer in «Engineer», namely, that it is possible to reduce the number of transfer points by merging small roads into large companies owning several thousand versts.

It goes without saying that this is an indirect path for the wagon business, since it is not because of this that a merger can occur. If this is at all possible in our country at the present time (in view of the fact that the treasury is buying up the roads for which the right of redemption has expired), then, of course, the wagon business would be simplified by this route, but only in the sense that the number of transfer points would be reduced. Although Mr. Antoshin is quite right in finding that an improvement in the use of wagons cannot be achieved by simply reducing the number of transfer stations²⁴, this would nevertheless be a significant improvement. By merging the railways into five large companies, the transfer of wagons in France has been significantly simplified; but there, alongside this means, a very important

²⁴ Article by A.A. von-Wendrich. Zh. M. p.s. 1891 February-March, page 8.

and perhaps decisive role was played by the fact that technical inspection was reduced to only what was necessary for traffic safety – the roads refused to include any trivial details in the reports, rejected everything that led only to the protection of petty property rights, destroyed the endless entries in pencil in notebooks made by inspectors, decided to return wagons that had suffered a wreck to each other without any accounts, but directly attributing these losses to major forces, which are the same everywhere, etc., etc.

This argument by our reviewer, therefore, does not resolve the issue of state-owned wagon ownership in the negative sense. In another country, formation of large companies might have been a decisive step, as it was in France; in our country, however, it would, in any case, be only a transitional stage – even if it had any chance of being realised. However, it must be assumed that, given the current direction of the railway system, judging by the measures and actions of the treasury, it has no chance.

Thus, of two arguments we have cited against state-owned wagon ownership, only the first carries weight – the imminent purchase of all railways, and with them, the wagons. Once all the roads are owned by the state, there can be no doubt that a special central authority and local bodies, district workshops, wagon certificates, etc., will be established for wagons. It is quite interesting that N.K. Antoshin's note, mentioned by A. A. v. Wendrich, contains these considerations regarding a single, common state-owned fleet. We should add that whether or not a common state-owned fleet is imminent, in any case, for the current state-owned wagons, unifying measures would be introduced regarding their maintenance and repair (but not distribution and use), which would pave the way for a common state-owned fleet for the entire network, which, one way or another, must emerge over time.

The third serious argument that may make one consider whether urgent measures to concentrate all rail wagons in treasury hands are necessary is the fact that whenever we experience a shortage of rail wagons at a given point, there is a simultaneous and parallel *shortage of railway capacity*. In the case of backlogs, the first issue is to obtain more rail wagons and locomotives, and immediately after, once rail wagons have been found, it becomes necessary to find routes



that can transport these rail wagons to their destinations, since most of our long-distance lines have only one track and are unable to handle a sufficient number of trains per day. Such a case occurred in 1888, when the Supreme Authority granted to V. M. Verkhovsky was required to eliminate backlogs in the south. The same thing happened again on Riga-Tsaritsyn Line in the winter of 1890–1891, when the junction commission, meeting in Gryazi, sought alternative routes from Gryazi to Libau, even via Moscow. The same thing happened in the winter of 1891–1892, when grain from the Northern Caucasus had to be sent from Rostov to areas affected by crop failure, along several routes, even through Bryansk, and the grain shipments had to be transported via these detours. It is known that due to careless regulations, 11.000 train wagons accumulated on the roads along which these shipments were initially routed, as the shortest route, and they could not be cleared in a timely manner²⁵.

It goes without saying that this third argument against concentrating wagons in treasury hands holds some weight until the capacity of the railways increases. And even with the current state of capacity, it's better for it to be the sole culprit of our railway system than for it to be joined by another culprit – the slow turnover of wagons due to the organisation of wagon operations. In essence, capacity and organisation of cargo wagon fleets are two independent issues, the overlapping of which is merely accidental.

The concept of «unification and depersonalisation of wagons» comes closest to communal wagon ownership. But to implement communal wagon ownership means removing wagons from the ownership of private individuals and the treasury and allocating them to the railways, based on established principles and regulations. This is an unthinkable task. If,

²⁵ This was indeed the case; but it would not have been so if the condition of the access roads to the stations had not required the delivery of almost the entire harvest at once, and if the stations where the backlogs formed had had sufficient covered storage facilities for freight, instead of storing them in wagons collected from all over the network, which cluttered the stations, not because of a shortage, but because the capacity of the roads was inadequate for such traffic. In most cases, the formation of cargo backlogs on the railways is, in our opinion, not due to the wagon fleet, but to the arrangement of station facilities, and even more so due to the condition of the access roads. Ed..

with regard to communal land ownership, it's true that no one has an interest in fertilising the soil, then with regard to railrailway wagons, the fear is even greater: no one would care about their *maintenance and repair*, but everyone would think about their *distribution and use*. Unification and depersonalisation, represented by a single large company owning the entire railrailway fleet, regardless of its ownership of the railroads, is unthinkable, as is a private monopoly.

From a consideration of all the above-mentioned forms under which unification and depersonalisation are possible, it follows that it can be realised in Russia only under the guise of a state-owned wagon fleet.

Considering that the construction of new roads by concessionary means, that is, with private capital, may continue indefinitely, even when the entire existing railway network is transferred to treasury ownership and state operation, it seems necessary to immediately develop the principles of a common wagon fleet, so that its organisation will include wagons from private roads, which will be opened and operated by private enterprise. Furthermore, concessions must immediately provide for the transfer of wagons to the treasury or the supply of wagons to newly constructed roads by the treasury from government reserves. These wagons would, in any case, form an integral part of the common state wagon fleet from the very opening of the road.

If we assume that all the Empire's railways will sooner or later become, in any case, state-owned and operated, then the consolidation of the rolling stock, regardless of the tracks, into state hands is a temporary measure; but until this is accomplished, it is possible that the majority of the roads will belong entirely to the state.

This consideration, however, cannot and should not prevent anyone from immediately finding and organising a means of transitioning to a unified state-owned rolling stock.

(The final part is to be published in next issues)

A. Pavlovsky.
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