



Report of O. A. Struve, Candidate for the Chairmanship of VIII Department. Part 2



News from the archives
The final part of the article, first published in Rail Business [Zheleznodorozhnoye Delo] journal 110 years ago, introduced to the readers the report of O. A. Struve, presented at the Solemn General Meeting of the members of the Imperial Russian Technical Society on April 15, 1911, on the occasion of the seventy-fifth anniversary of the emergence of railways in Russia, chaired by the Honorary Chairman of the Society His Imperial Highness Grand Prince Alexander Mikhailovich.
The second part of the report refers to always relevant issues of calculation of transport accessibility of the regions and connectivity of the country, of cooperation and not competition between railways and water transport, social or commercial nature of investments in transport infrastructure. As figuratively noted the author of the report, «there is no any doubt that each rouble invested in construction of railways while it is a rouble buried in the ground add the value to this ground by much more than this rouble costs».
The first part of the report was published in the previous issue of the journal (Vol. 19, Iss. 4 (95)).

Keywords: railway, history, railway density, connectivity.

The railway network of a given country can be imagined in the form of a certain schematic regular network consisting of a number of mutually perpendicular lines forming rectangular square cells, provided that the total length of these lines equals the length of the railways of a given country, and the space covered by them would correspond to the area the same country.

The larger or smaller size of the side of such a cell will serve as a visual indicator of the density of the network.

A simple calculation shows that the side of such a cell, expressed in kilometres or versts, is equal to 200 divided by the network density factor, i.e. by the length of roads per 100 sq. versts or kilometres.

On this basis, the side of the cell of the network will be determined:

For France	as 22,5km
For Germany	as 18,5 km
For England	as 16,9 km
For Austria	as 30,0 km

finally, for European Russia, excluding northern regions, as 140 versts or 148 kilometres.

This size of the sides of a schematic cell can, of course, only with some approximation serve as a comparative measure for assessing the average distance of a horse-drawn carriage to the railways (which, theoretically speaking, would be equal to one-sixth of the side of the cell), but still these figures eloquently indicate the need for significant thickening of our

For citation: Report of O. A. Struve, Candidate for the Chairmanship of VIII Department. Part 2. World of Transport and Transportation, 2021, Vol. 19, Iss.5 (96), pp. 242–244. DOI: <https://doi.org/10.30932/1992-3252-2021-19-5-14>.

Acknowledgments. The editorial board expresses their gratitude to the staff of the library of Russian University of Transport for their assistance in preparing the publication.

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

network and its further expansion and development.

However, the provision of Russia with railways in some of its parts is far from uniform. Leaving aside the vast expanses of Siberia, the Central Asian region, and the Steppe Territory, where the existing and projected main railroads should serve as the basis for the future railway network, we will only note that even within European Russia, railway availability varies greatly as per individual regions. The least served are the Upper Volga and Kama Territory, which is quite natural, since the water system is significantly developed in it, and therefore this land, in terms of the time it was divided by railways, had to give way to areas that are less rich in terms of waterways. But nevertheless, the time has come now for it also, the time when the construction of railways must be considered absolutely urgent.

In the rest of European Russia, it is possible to note, mainly, two wide bands, less served, both stretching from the north-east to the south-west. The axis of the first, eastern, strip stretches approximately from Simbirsk to Novorossiysk, the second, western, from Vologda through Mogilev to Rovno. Between them there is a more serviced strip oriented from Moscow to Yekaterinoslav.

Obviously, in the most graphic way, the degree of railway service in European Russia in parts could only be depicted by physical means. For this purpose, the interdepartmental Commission formed under the Ministry of Ways of Communication for development of a program of railway surveys for the coming years has published cartograms, that were allocated by Organising Committee a place at the anniversary exhibition. They indicate, more fully than any report, the relative intensity of railway services in individual provinces.

We have already noted how widely the railway construction should still progress in order for Russia to equalise with neighbouring states in this respect.

The figures given by us could not but seem impressive and the task is gigantic.

But if we remember that 2 050 versts were built during first twenty-five years, 22 250 versts during second, and 36 415 versts during third twenty-five years, which is now being completed, then there can be no doubt that the fulfilment of the planned major task will be within the capabilities of our vast Fatherland.

We must not forget that vast areas are still far from the railway tracks and cannot come out with their still untouched wealth to the world market at the excessive cost of transportation expenses. From the common space of European Russia of 4 227 000 sq. versts, excluding areas north of the 62nd parallel, terrain with a total surface of 1 780 000 sq. versts or 42 % are further than 30 versts from the railways, terrain of the surface of 1 120 000 sq. versts or about 25 % are further than 50 versts.

Indeed, we still suffer from the excess of distance.

Some point out the water-rich river routes, as a mighty opportunity for transportation of bulk cargo; however, one of the main conditions for the broad development of industry and trade are the routes ensured by the continuity of action, and here, namely, the railways should act as allies of the river routes, working together for the benefit of common goals.

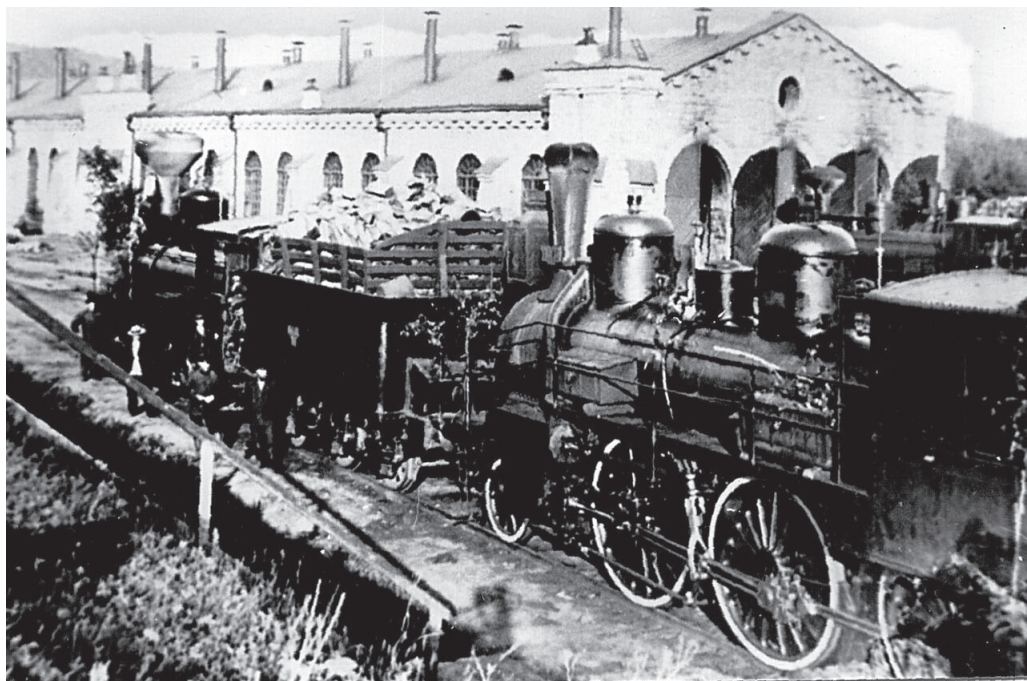
When for the first time mankind began to have at its disposal a new powerful instrument of transportation – the railway, which opened communication routes in directions not predetermined by nature, but chosen for considerations conform with emerging needs, it is quite understandable that all efforts, all costs were directed towards the creation of these new land communications.

These paths did not stop in front of mountain barriers and manual streams, they worked continuously, awakening productive forces everywhere, creating trade, raising the welfare of the region. Having ploughed up the fields lying in vain, raising the mountain wealth hidden in the bowels of the earth, opening up access to new sales markets, the railways created a previously unheard-of totality of cargo, which in the end was unbearable for them. And then the temporarily forgotten waterways rushed to their rescue.

The need for enhanced arrangement and development of waterways was a direct consequence of the tremendous cultural work of the railways, and we see that in the west serious concerns now refer to expanding old and creating new water communications. The same should be with us, and our railways will create a need for movement of an enormous abundance of goods, and waterways, already now being prepared for the tasks ahead of them, will come to their aid, not in the form of rivals to the railways, but as an allied force.

In conclusion, let me touch on one issue. There are fears that widespread railway





construction may threaten the financial well-being of the country, that the capital spent on construction of railways will not pay off and will require annual surcharges, that railway losses will have to be covered from other resources, from tax funds.

But is it correct to evaluate railways with a measure applied to commercial enterprises, to proceed from the scale of their self-sufficiency? Are they not rather a means for a broad rise in the general welfare of a vast state economy, a means like a special access way built for a large industrial enterprise, without which the enterprise could not develop, could not extract income from the sale of its products, due to the impossibility or because of a high cost of their delivery to the markets?

It is enough to dwell on one consideration. As mentioned, within European Russia, in its part to the south of parallel 62°, passing approximately through Petrozavodsk, Shenkursk, Yarensk, areas with an area of up to 1 120 000 sq. versts, are located at a distance of 50 versts and more from the railways. Assuming that with development of the railway network, these areas will, to a greater or lesser extent, be included in the sphere of direct influence of the railway track, that, finally, in this case, an increase in the value of land will occur, on average, by twenty roubles per tithe, and the total increase in land value would be expressed as the sum in 2 240 million roubles,

i.e. would be equivalent to the cost of building more than 40 000 versts of railways.

It would seem that the task of the railway financial policy should, among other things, be that this increment in land value caused by railway construction is taken into account in one way or another in the railway balance.

In any case, there is no doubt that the rouble spent on construction of railways is, as it were, a rouble, although buried in the ground, but increasing its value by more than its own price.

We celebrate today the seventy-fifth anniversary of the first Imperial Decree, which bestowed upon Russia the first railway and set it on the path it has followed steadily since then. May it be allowed to express on behalf of the Railway Department of the Imperial Russian Technical Society firm confidence that in the next twenty-five years our railway network will powerfully develop and expand so that on the day of the solemn celebration of the centenary railway anniversary, those who are destined to meet, God willing, in the vast hall of the renovated building of the Imperial Russian Technical Society, could proudly note the further mighty growth of our network and its enormous importance for the cultural upsurge and well-being of our dear Motherland (*prolonged applause*).

O. A. Struve
Zheleznodorozhnoe delo [Rail Business],
1911, Iss. 17–19, pp. 124–128) ●