

«URBAN TRAIN»: IS IT TIME TO TALK?

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ABSTRACT

Specialists have not yet finally decided on reasonability to use railway spurs which pass through the major cities for local passenger transportation. The problem of this kind exists in Moscow and other Russian cities. In this article the author raises a problem of «urban train» in Minsk, capital of Belarus, where passenger lines and related infrastructure have been formed. And this is done in accordance with the strategy of urban transport network development in coordination of different types of transport routes and passenger flows, which meet the needs of the population. The author polemically sharpens the subject and raises questions, which are quite crucial for the present day.

ENGLISH SUMMARY

Background. From the beginning of «urban lines» construction in Minsk (2009), as well as proposals to build them (2008) the author in his conversations with colleagues and generally everywhere, where it was appropriate, tried to point out the numerous errors and inaccuracies associated with modernized mode of transport. Formerly the title «urban train» had been used and only after a year and a half the project was called «urban lines».

Objective. The objective of the author is to investigate some issues concerning «urban lines» project, which is being implemented in Belarus.

Methods. The author uses historical method, analysis and comparison.

Results.

«Border» conflict

The author considers as the first and foremost matter of controversy the time period when urban rail transportation appeared. The author believes that intercity passenger transportation by rail appeared when timetables provided stopping points / stations within Minsk limits for trains going through the city. It is desirable that their names could tell us something today, as we are descendants of those who in 1871 met the first trains on the line Smolensk-Orsha-Minsk-Brest. And if areas of city limits in which these stops and stations were located, also coincided with the modern concepts of the city limits, the subject of the dispute would have been exhausted. After the 140th anniversary of core rail diameter, which has been celebrated relatively recently, now there is a lot of useful information to clarify the details of the past, in particular to find out which of the «nearby» stations served as city stops for trains in czarist days.

But the author proposes not to refer the question of the beginning of intercity rail transportation to the period of emergence of the main railway because we can imagine city limits more clearly, and stopping points will bear their usual names. Thus, we are transported into the twentieth century. And despite the fact that the railway suburb map of 1920–1930-ies will be more understandable, the author proposes to supplement the search criteria, referring the issue to the postwar time. First, Belarus gained its current borders after the Great Patriotic War. Secondly, a weighty condition from which it is worth to count the beginning of urban rail transportation in Minsk is electrification.

As it is known, the first section of the main line, where electrification was carried out, became Minsk-

Olekhnovichi in December 1963. Hence, an opportunity to conduct a trip by train within capital city limits its residents and visitors got about half a century ago.

City (and vicinity) already had the usual shape, and the names of «suburban trains» stops were familiar to the ear. Ironically, Zhdanovich section (current «urban lines») – is Molodechno (i. e. Olekhnovichi) direction. By the way, Borisov, Stolbtsovo and Osipovich directions were electrified in 1973–1975 years. Today, the length of electrified railway lines within Minsk city limits is nearly 50 km.

The fourth or the sixth?

Perhaps somebody will be surprised that intercity rail transportation has been carried out for so many years, but it's true. Strictly speaking, «urban lines» are an improvement of already existed system on one of sections, though made at the highest level. What is the reason for this qualification? In one of the monthly schedules there are more than 70 electric trains in Borisov, Molodechno, Orsha and Stolbtsovo directions, and in addition to well-known «Minsk-North», «Masyukovshina», «Lebyazhiy» and «Zhdanovich» there are also eight similar stopping points.

A passenger in late 1963 – early 1964 had an opportunity to get to stations «Radiatorniy» and «Zhdanovich» by electric train.

According to statistics, Belarusian Railways in commuter communication (including intercity) carried 71, 9 million people in 2008 (the beginning of «urban lines» construction). Which part was within city limits? Minsk railway junction accounts for 50% of all commuter passenger traffic of the country, and the average transportation distance of one passenger (47,5 km) in relation to the length of each rail radius is very relative, and it is possible to talk about nine million users of urban sections of the railway network.

In light of the foregoing, «urban lines» are rightly considered as the fourth type of Minsk passenger transport – after bus (1924), tram (1929) and trolleybus (1952). After all, it appeared in 1963 before minibuses (1974) and metro (1984), which might get the fifth and sixth serial numbers in the record of the urban public transport.

But maybe, urban and suburban passenger transportation by «suburban trains» is quintessentially different? It is not true because intercity transportation remains part thereof. However, railroad specialists emphasize an unprecedented level of convenience for passengers of «urban lines». Train Flirt of Swiss production receives a special word of praise. But how can it be otherwise? This train is manufactured by industrialized country, besides having long rail traditions.

Distinctive features of «rail» Switzerland are meter gauge and total electrification of the network. In the 1960–1970-ies there (as in Germany) tram networks were not closed (which means independence of governmental decisions and strategy sustainability in car building). In the country of «banks, watches and cheese», despite the mountainous terrain, resettlement is exemplary. In Switzerland, which is similar in its population number similar with Belarus, the largest city, Zurich has 360 thousand inhabitants (and in the capital Bern live 180 thousand people). In the author's opinion, in that country suburban-urban rail transportation has the best chances to be implemented.

Blurry benefits

The author then focuses on the carrying capacity of the Swiss trains. It is a very important parameter for any kind of passenger transport. Moreover, it is decisive in choosing one or the other of them and a key condition for designing tram, metro, even more urban railway. So, in the accustomed Riga built train ER-9 – there is one thousand of seats. But in the Swiss train EP³ there are only 260 seats.

In the locomotive depot «Minsk-North» there are 52 trains ER-9 and they have mostly 10 cars (there are 8-car trains); nine of them were transferred to Baranovich department. How many Swiss trains are required to «cover» the former Minsk carrying capacity? It is not an idle question, given: a) the cost of purchasing a motor-car rolling stock of a particular construction; b) irregularity of modernization.

Arguing further upgrading of the fleet, we assume that the Belarusian Railway associates it with this Swiss train – Flirt was tested at Brest- Baranovich-Minsk section (inter-regional movement), and transportation on «urban lines» is performed to Zaslavl (i. e. it is classified as suburban), and not all of 10 ordered trains are designed for them. Plans have been announced for further assembly of Swiss rail buses Stadler (1–2-car diesel train) by «Belkommunmash». The author emphasizes: in Minsk intercity transportation of passengers by rail took place. Another thing is that a number of stopping points is located in industrial centers, making it difficult for passengers to get to them and increasing the length of pedestrian approaches from / to necessary objects. Transport and pedestrian links can be further developed only on a portion of them; for example, an increase in the use of electric trains of Moscow direction by residents of settlements Kolodishchi, Ozerische is restrained by their de facto transit movement to the railway station (due to passing through the industrial hub of a tractor plant). On the other hand, even traveling with transfers (bus / metro, and other types of urban transport) provides a significantly greater geography of trips for population. In addition, in order to reduce noise and vibration impacts on buildings adjacent to the railway, residential areas are located on a remote distance from the railway tracks that deprive potential users of gain in time and distance.

Encouraging signs

Opening of «urban lines», use of a Swiss electric train should not cause underestimation of existing urban transport, which is designed to transport residents and guests of Minsk. The existing public transport network of five transport modes is exclusively developed and should be protected and preserved. The author marks an unprecedented growth in the industry in recent years:

- tram cars were completely replaced;
- 80% of trolley buses and two-thirds of city buses became low-floor;
- more than 60% of the bus fleet was equipped with low toxicity engines Euro-3, and another 10% with Euro-4;
- 90% of buses use automatic transmissions, AC motors were mounted at almost 45% of trolley buses.

However, about 70% of passenger transportation is carried out by metro, trams and trolley buses running on electric traction. This kind of transport is not only growing, but is also bringing revenue for the industry. An encouraging sign of 2010, which should also be noted, is termination of decrease in passenger transportation volume.

But artificial redistribution of passenger traffic among various modes of transport should be avoided. And what about cost-effectiveness? Nobody has raised the question as follows: «Construction of «urban lines» costs so much bln. rub, and construction of urban transport section, parallel to it, with certain interchanges, pedestrian crossings etc. costs so much. And how these costs should be compared».

It is difficult to respond about the situation with suburban-urban passenger transportation by rail in Minsk junction under prevailing governmental approaches to development of urban means of communication. But some versions of its improvements relate primarily to the improvement of existing and construction of additional transport and pedestrian links near stopping points of trains located within Minsk city limits. This will ensure an increase in occupancy of «urban trains», the demand of this mode of transport. An example is interaction of urban passenger and rail transport during overhaul of Mayakovsky Street, with an increase in the number of trips from Loshitsa towards the central station of the capital and back. At that time, attention was paid to improvement of paths, lighting, fencing of tracks.

Not only crossings are waiting for interchanges

Alas, there are reasons for the assumption that in Minsk an excess supply of transport services is created, while passenger traffic in the rest of the country suffers a shortage of the necessary. Of course, the safety of passengers, as well as movement in general, has grown considerably with installation of fencing along the line to the station Zhdanovichi and especially the opening of pedestrian undercrossings (including at «Lebyazhiy» and «Masyukovshina»). But if this achievement is compared with sibling (including unregulated) crossings on railway sections in the rest of the country, including those in the precincts of many cities, where the provision of «multi-levelness» will be more important?

It is clear that a priority should be set for general construction, excavation and underground works. «Interchanging» of sibling crossings in regional and district centers – is the first task. In summer many residents turn into southbound passengers and see crossings with barrier not only in Bobruisk and Gomel. Construction of multi-level crossings should be the alpha and omega, sequentially performed in regional, then in district towns, at four main lines of the Belarusian Railway and the entire network.

There are about 50 pedestrian undercrossings in Minsk. Given that in regional cities live 300–500 thousand people, where there should be 8–15 of them, but what is in reality? In Gomel – 2, Vitebsk – 3 (and one as part of the railway stations), in Brest a pedestrian undercrossing (not connected with the railway station) appeared only with the opening of prospect Respubliki a few years ago, in Molodechno it has not been built until now, etc.

A road to financial independence of industries (referring to the division of the same railway into «responsible for movement» and «responsible for construction» components) is very long. The author sets a requirement directly for railway specialists of Minsk: complete removal of freight traffic.

Conclusions. Involuntarily in the shadow of these polemical notes remains skillful work of railway workers, designers of «urban lines» (it refers to «Belzheldorproject», founded in 1938), installation and construction services in railway subordination. The author believes that it is necessary in any case, to pay tribute to them and at the same time to try to look at the issues raised also in terms of their professional interest. Assessment of the situation from the inside may be quite different.



Keywords: urban transport, suburban-urban communication, urban sections of railways, combined routes, passenger traffic, coordination of transport modes.

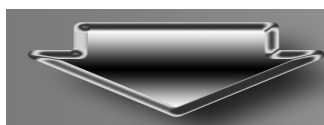
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EDITORIAL RESUME

Primarily, it is necessary to emphasize once again a polemical nature of the current publication; the author deliberately sharpens some problems, being aware of the fact that there may be other points of view. When publishing this paper, editorial staff did not rely on the importance of addressing certain issues or right approaches in dealing with development problems of passenger service systems using urban commuter train lines in Minsk, but on the possibility to start a discussion on generalization and systematization of experience in creation of multimodal passenger systems in metropolitan cities. Many questions (abstracted from certain natural specificity of each city) are universal.

They appear in the press when discussing specific decisions of municipal authorities, but their nature is non-systemic, local or general opportunistic. However, taking into account rapid evolution of complex urban transport systems there is a real need for their scientific multidimensional understanding. And there is a clear deficit. On the one hand, there are numerous scientific schools in the field of urban planning, and some of them focus on integration of transport systems in terms of optimization of passenger service (recall publication in our journal materials of Vukan Vučić). It can be explained by the fact that transport service is a cornerstone of any planning in urbanity.

But on the other hand, a number of methodological problems is at conditional «border» of urbanity, municipal management, management and specific transport studies. Many of them, in our opinion, are relevant specifically to transport science, but there is also plenty of them, that should be part of transport science in the most direct way.

There are many diverse tasks that need to be systematized. For example, is (or more precisely – at what point it becomes) commuter rail communication a direct part of urban transport systems or does it remain as some external component, which is taken into account because of the presence of passenger flows within city limits? Are purely intercity rail lines (planned «Moscow Ring»), a new kind of urban transport? What are the best forms of management integration (coordination, harmonization) of available transport modes involved in the urban transport system, to be developed at the city level? How can the actions of the management subjects of federal and municipal levels be harmonized? This issue refers not only to the integration of intercity or passing through the town railway lines, but also to existing examples of different subordination and ownership of land-based transport, to the lines of light metro, light rail, including those that begin in the city and then go in the suburbs. Is some kind of general systematization of transport modes development required (including from the perspective of investment, coordination of schedules, measures of city or national support, maintenance of infrastructure, tariff regulation, etc.) or should an issue in each case (the city) be solved individually? Should a particular attention be paid to study the influence of calculating the optimum passenger flows on the technical requirements for vehicles, what branch of transport science should integrate technical and technological approaches to the formation of intercity transport interchanges, transport and logistics hubs? The latter issues have got a rapid development at forming station complexes, but in the sphere of transport modes interaction, a kind of «urban multimodality» requires new fresh ideas and system approaches. ●