

# **THE ANALYSIS OF THE URBAN ELECTRIC PASSENGER TRANSPORT CONDITION IN REPUBLIC OF BELARUS**

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The urban electric transport in the general structure of urban transport of Belarus has been considered. There has been shown problems on urban electric transport. Comparison to a control system of passenger transport abroad is resulted.

## **Introduction**

Reliable and effective work of urban electric passenger transport for Belarus is the major parameter of sociopolitical and economic stability. Appointment of this kind of transport consists in realization of the stable, reliable and safety public conveyances promoting effective maintenance of multilateral ability to live of the population of republic, and also the organizations. It provides the basic part of labor trips of the population, directly influencing efficiency of a national economy.

### **Urban electric transport and its problems in the general structure of urban transport**

Urban electric transport (tram, a trolley bus) is served 8 cities. In 2009 urban electric transport was carry out about 30 % from total amount of the passenger conveyances executed by all aspects of public passenger transport of Belarus, autobus - 40 %; subway - 10 %. More and more considerable agency on a condition of transport sector of the majority of cities, on street-highway network loading renders process of an active motorization of the population. On privately owned vehicles about 15-20 % of trips of townspeople are made.

The estimation of a state of affairs shows that on urban electric transport in republic the problems leading to decrease of quality of transport service of the population and efficiency of activity of the transport organizations have collected. Quality of transport service of the population has essentially decreased. As a result of abbreviation convey possibilities of urban transport systems essentially increase in an interval of traffic of transport facilities, thus on the majority of urban itineraries at o'clock "peak" exceeds an average interval of traffic of 15 minutes. And as a whole the time spent by the population at stops in expectation of autobuses, street cars, and trolleybuses has considerably increased by journey to a place of work and back. Abbreviation of park of a rolling stock has forced local governments to divide out rates of increase of a routing network, despite growth of cities. So extent of tram ways has over the last 10 years increased all by 2 kilometers, trolleybus lines on 18 kilometers. For comparison the general extent метрополитенных ways has over the last 10 years increased by 33 kilometers.

The increase in transport mobility of the population, caused by the beginning of economic growth in the country, in the conditions of abbreviation провозных possibilities leads to growth наполняемости salons. At o'clock "peak" in the majority of cities it almost in two exceeds the values recommended by the International union of public transport. It is not provided not only a minimum level of comfort of trips of passengers, but also necessary conditions of observance of safety at conveyances. For this reason numerous complaints arrive, express discontent, social stress level among the population of the majority of cities grows.

In Minsk where there is a subway, circumstances with public conveyances is slightly better. In particular in Minsk the subway carries out more than 50 % of all public conveyances.

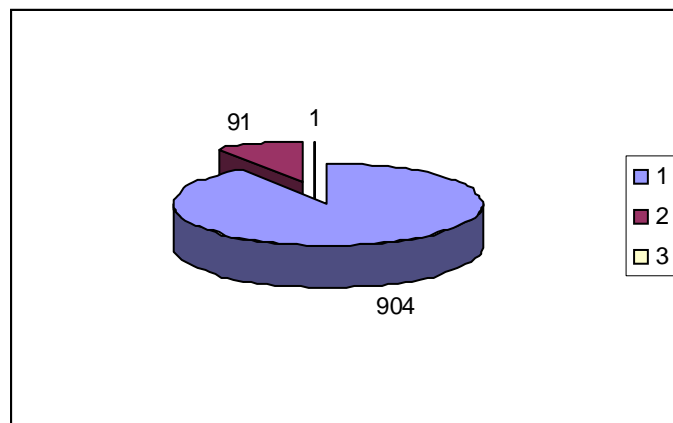
Active development of a private sector on urban passenger transport, characteristic for the majority of large Belarus cities, has a little softened sharpness of problems of transport service of the population. However and it any more does not compensate decrease провозных public transport possibilities as in

the majority of cities will reach economically well-founded saturation point by the small autobus working in a taxi regime.

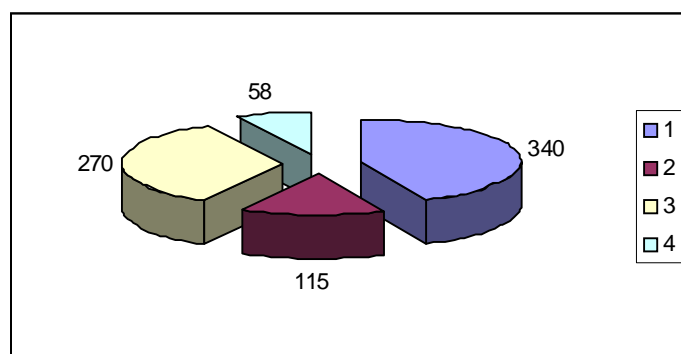
### Technical condition of means of urban electric transport

The strain ageing and abbreviation of park of a rolling stock of factories GET proceeds, 40 which % are maintained over target dates. Now in factories GET it is maintained on urban itineraries of 1990 trolley buses, 334 tram carriages. In comparison with 2000 the operational park of trolley buses was divided out by 2010 to 34 units (2 %), street cars - on 16 units (6 %). According to the experts as a whole level of security of cities rolling stock ГЭТ makes 40 % from requirement.

The extent of physical deterioration of passenger transport facilities is high. Thus the rule worsens every year. Now 25 % of tram carriages and 20 % of trolley buses are maintained over standard service life and are subject to write-off. The total of such rolling stock exceeds 300 units. In drawings 1-2 age structures of trolleybus park of Minsk and other regional centers as of 1.06.2010. Apparently from the presented drawings are presented intensive updating of trolleybus park of Minsk that you will not tell about parks of regional cities is observed. From drawing 2 it is visible that the quantity of transport in other regional centers which age is in limits from 10-15 years makes 35 % from rolling stock total, over 15 years - 8 %.



**Figure 1: Age structure of trolleybus park of Minsk:**  
 1 - till 5 years; 2 - from 5 till 10 years; 3 - from 10 till 15 years



**Figure 2: Age structure of trolleybus park of other regional centers:**  
 1 - till 5 years, 2 - from 5 till 10 years, 3 - from 10 till 15 years, 4 - over 15 years

Along with an intensive strain ageing of transport facilities, deterioration of the basic production assets occurs also considerable, over 30 %. First of all it refers to garage and станочному to the equipment of trolleybus park, tram depots, to traction substations and transfer devices (to tram ways, contact and cable networks).

Maintenance in an efficient condition and exhaustion on a line of the outwear transport facilities demands the raised operational expenses and reduces safety public conveyances. The quantity of the broken flights and retraces of a rolling stock from a line on technical derangement constantly grows. A principal cause of abbreviation and a strain ageing of park of transport facilities is sharp decrease in rates of its updating, boundedness of the financial resources which are gated out on these purposes. Conservation of current level of purchases of a rolling stock at the expense of putting off without day replacements of the worn out park will lead in the near future to its mass exit out of operation and to other formidable aftereffects. Thus on republic cities differences on level of updating of park of transport facilities that testifies both to difference of conditions and possibilities, and about subjectivity in approaches to the solution of a problem of matching authorities are observed.

### **Conclusion**

The analysis of development of systems of urban electric transport abroad and conducting of analogies to the Belarus experience have shown that one of the main points defining transportation value and extent of development of public passenger transport in cities, the rational combination of interlocking and decentralization of management of it is. It is expressed available strong governmental (regional or municipal) the structures defining "skeleton" of system of urban electric transport in the form of the routing circuit design and schedules of socially-significant itineraries and providing resistant to level of financing of the factories of system. Besides the different systems of decentralization promoting use of advantages of market self-regulation, supplement and develop system, provide turning on of "internal" mechanisms of growth of efficiency mass public conveyances and growth of competitiveness of public urban electric transport in comparison with individual. Such direction of development will provide timely and qualitative satisfaction of demand of the population on conveyances by urban electric transport.