DOI: https://doi.org/10.30932/1992-3252-2019-17-5-316-325

Role of Tram Transit in Formation of Magnitogorsk Transportation System (1930–1955)




Marina N. POTYOMKINA **Mikhail V. GRYAZNOV** **Tatyana G. PASHKOVSKAYA** **Egor A. TIMOFEEV**

Potemkina, Marina N., *Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia.*
Gryaznov, Mikhail V., *Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia.*
Pashkovskaya, Tatyana G., *Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia.*
Timofeev, Egor A., *LLC Sitno-Product, Magnitogorsk, Russia*.*

ABSTRACT

The article provides information about the state of Magnitogorsk electric transport during its formation. This is one of the steps to preserving the history of emergence and development of tram traffic, an attempt to outline its fundamental role in formation of the transport system, as well as in socio-economic and political life of Magnitogorsk, one of the first so called social cities of the Soviet Union. The article is structured into sections relating to expansion of the tram route network, state and development of tram fleet. The considered time period captures the years of the Great Patriotic War and is limited to the beginning of the «thaw» in the domestic political life of the Soviet state. Through systematization of documentary evidence, the fundamental role of tram traffic in formation of the transport system of Magnitogorsk for the studied time period is determined. This should contribute to development of information support for research on the historical patterns of formation of urban transport systems in the period of industrialization.

This issue offers the first part of the article.

Keywords: tram traffic, route network, urban transport system, industrial archeology, industrial heritage monuments.

---

*Information about the authors:
Potyomkina, Marina N. – Professor, D.Sc. (History), Head of the Department of World History of Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia, mpotemkina@mail.ru.
Gryaznov, Mikhail V. – Associate professor, D.Sc. (Eng), Head of the Department of Logistics and Transport Systems Management of Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia, gm-autolab@mail.ru.
Pashkovskaya, Tatyana G. – Associate professor, Ph.D. (Philosophy), Associate professor of the Department of World History of Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia, craczulia@inbox.ru.
Timofeev, Egor A. – Logistics Director of LLC Sitno-Product, Director of ME Maggortrans (2015–2017), Magnitogorsk, Russia, wolf_tea@mail.ru.

Article received 18.06.2019, accepted 16.08.2019.

For the original Russian text of the article please see p. 316.

Background. The study and preservation of industrial heritage allows modern society to understand industrialization as one of the most significant periods in the history of civilization. One of the oldest types of urban passenger public transport, existing from the beginning of the 21st century, is a tram. It arose in the first half of the 19th century, and initially was horse-drawn. An electric tram appeared at the end of the 19th century, in 1881, in Germany. After the heyday, the era of which fell on the period between the world wars, the decline of tram traffic began. But, if already from the late 1930s in Europe views about the tram as of an obsolete mode of transport begin to dominate and tram systems are actively shutting down, then the USSR tram era is in its prime. In the social city of Magnitogorsk, founded in the steppe in 1929, tram traffic was opened in 1935 and for many decades tram was the main mode of public transport.

This explains the choice of the object of study which is urban transport system as material evidence created by the industrial process in the conditions of a socialist economic model. The subject of this study is associated with the patterns of development of the urban transport system as a phenomenon that is an integral part of urban economic and socio-cultural life of Magnitogorsk, as one of the first social cities of the Soviet Union.

Objective. The objective of this study is to study formation and functioning of the urban transport system of Magnitogorsk, as a product of the socialist industrial heritage of 1935–1955.

Methods. The authors use general scientific and historical-retrospective methods.

Results. There are few studies devoted to the analysis of transport systems integrated into the environment of the city of the Stalinist socio-economic model. But among researchers there is consensus that the tram in the first half of 20th century was one of the leading types of public transport in industrial cities. Some researchers studied evolution of public policy aimed at development of the urban transport system, while others focused on public transport as the communicative space of a modern city.

Documentary evidence and photographs given in this article are stored: in Magnitogorsk Museum of History and Local Lore; in the archive of Magnitogorsk municipal enterprise «Maggortrans»; in the personal archives of the employees of this enterprise[1]. The periodicals are also the source of public information, which has retained till our time the interesting information about Magnitogorsk tram.

Extension of the route network

During the first years of maturing, the Soviet government set as its goal the most rapid industrialization of the country with the priority development of military-industrial production. Among other things, this goal was achieved by reducing all «non-core» expenses, including construction of housing, the technical support of urban areas, development of public transport systems, and public services.

The increase in the general standard of living of the working population during the years of the first five-year plans was planned through construction of social cities. This is the name of housing estates in various cities of the former USSR, which were built during the years of industrialization according to a comprehensive unified plan and were located, as a rule, not far from large factories under construction for workers to live and leisure.

Initially, in Magnitogorsk, at a metallurgical plant, a working village was supposed to be, with a population of around 20 thousand people, that figure was determined by the «labor balance» method. It adjoined the industrial site of the metallurgical plant at the central entrance with radial streets converging to the center.

Construction of a social city was initially carried out not according to the general plan, but based on the constantly changing needs of the city-forming enterprise. Since 1930, Magnitogorsk began to be built according to the projects of the architect Ernst May, according to which residential buildings turned out to be sandwiched between a low mountain range and a chain of hills, while an industrial enterprise was located between the Ural River and the social city (Pic. 1).

The transport infrastructure of the city was not adapted for daily and punctual movement of a large number of workers to the metallurgical plant. It is necessary to take into account the continuous nature of

[1] The article is written using the materials of the monograph: Timofeev E. A. Magnitogorsk tram: historical experience and development prospects: Monograph [in 3 parts]. Formation, war, after-war years (1930–1955). E. A. Timofeev, M. N. Potyomkina, M. V. Gryaznov. Ed. by M. N. Potyomkina. Magnitogorsk, Magnitogorskiy Dom pechati, 2018, 204 p.

Pic. 1. General plan of Magnitogorsk[2].

metallurgical production and remoteness of the industrial site from residential areas. Public transport of Magnitogorsk from the first days of its foundation consisted of horse-drawn carts and cars (Pic. 2).

The situation with horse-drawn vehicles was tense, despite the fact that in 1931, in addition to the existing stable, another horse yard was built, designed for 2000 horses. At the end of 1931 there was an epidemic of glanders. Hundreds of horses were quarantined. With difficulty, but this problem was solved. Lack of feed, poorly qualified care and other factors led to the fact that by the mid-thirties, according to the results of the survey, depletion of 65 % of horses was revealed. The prosecution of those responsible, the increase in wages in horse-drawn households did not bring any effective results. This type of transport could not solve the problem of public and cargo transportation.

Road transport in the city was poorly developed. These were mainly trucks (about

Pic. 2.Working days of urban transport of Magnitogorsk in 1940s.

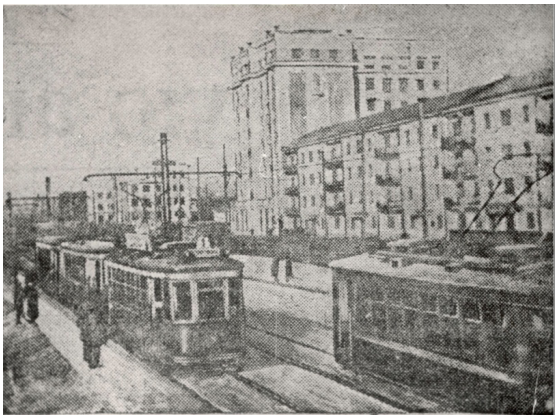
100 units). They were used to transport people to and from work. This continued until August 1930, when transportation of people by truck was prohibited. In early 1931, Magnitogorsk received the first buses for passenger transportation. By 1933, the city's motor transport of 100 trucks had increased more than seven times and roughly consisted of: 80 cars; 530 trucks; 14 buses; 57 fire engines; 4 ambulances; 16 tanks; 8 tractors; 8 motorcycles. In total, more than 700 vehicles were operated.

Despite the small number of vehicles, accidents occurred very often in the city. The main reason was low qualification of drivers. In the same years, the first simple road signs appeared on the city roads. Traffic control was carried out by the police and the only traffic inspector by the name of Gorbenko.

In the autumn of 1932, work began in three directions at once: re-qualification of drivers, mandatory inspection of vehicles and active construction of roads. In 1933, work was carried out to organize lighting of the main road from the social city to the village of Berezki. The main road at that time was the so-called highway from the railway station (now in the vicinity of Tovarnaya station), through the village Berezki to the village Magnitniy. By 1936, the first sidewalks appeared in the city, cleared of snow.

However, it is impossible to talk about improvement in operation of urban transport. There was only one garage in the city, the rest of the cars were parked in vacant stables. Maintenance and repair were poorly organized. In addition to this, it is worth noting that a significant part of cars were imported. The supply of automotive spare parts began to improve only by 1936.

[2] The photos used in the article were retrieved from: personal archives of employees of Maggortrans (Pics. 2, 4); archives of the newspaper *Magnitogorskiy rabochiy* for the year 1937 (Pic. 3); Konyshev, E. V., Meerovich, M. G. Ernst May and design of social cities during the first years of first five-years plans (at the example of Magnitogorsk), Moscow, 2011, 221 p. (Pic. 1).



Pic. 3. Tram traffic along Kirov street on the route «Shchitovie–Zavodoupravlenie» (1937).

Magnitogorsk became a full-fledged industrial city with huge production, requiring clear and punctual work of employees. Poor provision of residents with transport jeopardized the dynamics of growth in housing development, increased the likelihood of failures in the work of industrial enterprises. And if during the construction period, when the villages were located close to the construction sites, the transport issue could be solved by horse-drawn carts and cars, then with settlement of the city, huge pendulum flows set the task for the city leadership to organize a fundamentally new type of transport.

This transport was supposed to be able to fulfill its task in a harsh climate, hilly terrain and with a poorly developed road network. Climatic conditions of Magnitogorsk are characterized by a moderately cold climate with an average annual temperature of -1,6°C and significant rainfall: the average rainfall per year is 381 mm.

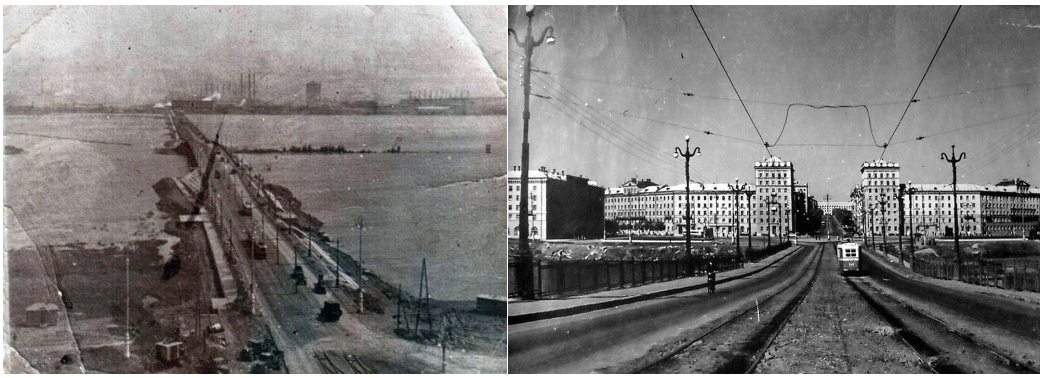
By mid-1931, city officials realized that building a tram park and launching a tram was vital for Magnitogorsk. In 1933, Tramwaystroy [directorate which name literally means tram track construction] was established as part of Magnitogorsk Iron and Steel Works, an organization that began construction of the city's tram economy. From the time of its founding and almost until the collapse of the Soviet Union, the urban tram system was subordinate to the metallurgical plant, after which it was transferred to the municipality.

Tram construction at the initial stages was followed by constant breakdowns in the deadlines for completion of facilities, which were caused by a number of objective reasons related to delays in supply of equipment and materials, lack of staffing, untimely supply of tram cars, an undeveloped production and technical base of tram facilities, and lack of design documentation at the beginning of construction of a number of facilities. The situation was exacerbated by a shortage of rails nationwide. For that period of time, the old standard applied to rails of types 1-a, 2-a, 3-a and 4-a with a mass of one running meter, respectively, 43, 57, 38, 42, 33, 48, 30, 89 kilograms.

By the time the tram was launched, construction of the depot was not completed, there was no repair base, which jeopardized traffic in case of malfunctions of motor cars. Despite objective difficulties, the launch of the first tram in Magnitogorsk took place on January 18, 1935.

Over the first three years, the tram network covered the bulk of the multi-story and a significant part of the individual residential development of Magnitogorsk. The process of mass transit of employees of the city-forming enterprise has been debugged. This is evidenced by a photograph that depicts the everyday life of city, the tram movement being its integral part (Pic. 3).

Intensification of construction of tram lines in the pre-war years, the desire to ensure transport accessibility in remote areas of the city did not affect development of the associated street-road network. Despite the fact that the railway track was laid and trams were moving along it, there was no talk of paving or somehow equipping stopping areas, sidewalks, roads in the passing direction and quarterly driveways. The city did not have enough resources for this. This situation was observed for several more years, even in the postwar years.



Pic. 4. Dam (Central passage) across the factory pond (left – photo of 1948, right (reverse direction) – photo of 1953).

The peculiar location of the city dictated the trajectory of construction of tram lines. Until 1939, the residential area was located exclusively on the left bank of the Ural River. However, the lack of the possibility of further development of the city in the left-bank part led to actualization of construction surveys on the right bank. This was facilitated by the unstable steppe wind regime, exacerbated by harmfulness of production on the left bank. The right-bank version of the location of the city had several advantages:

• directivity of 25 % of winds from the plant to the left bank and 9 % to the right bank;

• terrain on the right bank is more suitable for construction and management of the city;

• presence of a transit transport line that provides good railway approaches both in latitudinal (Kuzbass–Kartaly–Magnitnaya–Ufa) and in the meridional direction (Tashkent–Orenburg–Magnitogorsk–Verkhneuralsk–Miass–Sverdlovsk);

• construction of city districts on the left bank was unwanted as mineral deposits might occur under future residential areas;

• complexity of operation of transport due to the hilly left bank;

• danger of restricting the number of population to 80 000, since it is impossible to rationally place a larger number in the left-bank part;

• possibility of building a factory pond on the shore;

• location on the right bank allows development of a large administrative-political and socio-cultural center;

• with the right-bank location of the city, arrangement of buildings from north to south is along the horizontal lines, which helps to avoid ledges in the building lines, thereby facilitating the solution of issues of standardization and mechanization of construction (with the left-bank version, the meridional arrangement of buildings runs across the horizontal lines, which will cause level differences along the length of the buildings up to 5–7 meters);

• presence of a factory pond simplifies landscaping.

In 1939, on the right bank of the river, the first capital house was laid on the first street, later called Uralskaya. By 1945, the population of the right-bank part of the city had achieved 25 thousand people, while the total population of the city at that time exceeded 200 thousand inhabitants. In the future, the population of the right-bank part of the city was to be 200 thousand people, and the left-bank population was expected to reach 40 thousand people.

As of mid-1945, no transport infrastructure in the right-bank part existed, it was necessary to get to the plant on foot. During construction of houses on the right bank, the problem previously indicated by the architect E. May became urgent due to low transport accessibility, aggravated by the almost complete lack of investments in communal and transport infrastructure. The situation changed only in the mid-1940s, when large-scale design and development of the right-bank part of the city began. This reversed the psychological reluctance of people to settle on the right bank. Currently, in fact, the whole city is located on the right bank of the Ural River, while on the left bank there are an industrial zone, and partially old residential buildings. This pattern of resettlement of citizens is also dictated by the environmental situation.

To be continued ●