ORIGINAL ARTICLE
DOI: https://doi.org/10.30932/1992-3252-2021-19-3-13

World of Transport and Transportation,
2021, Vol. 19, Iss. 3 (94), pp. 266–274

Post-war Projects of Academician V. N. Obraztsov for Development of Transport in the European North of the USSR

Larisa P. ROSCHEVSKAYA

Mikhail P. ROSCHEVSKY

Larisa P. Roshchevskaya*[1]*,
***Mikhail P. Roschevsky*[2]**

[1] *Federal Research Centre «Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences», Syktyvkar, Russia.*
[2] *Institute of Language, Literature and History of Federal Research Centre «Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences», Syktyvkar, Russia.*
✉ [1] *lp38rosh@gmail.com.*

ABSTRACT

In 2024, the Russian Academy of Sciences will celebrate its three hundredth anniversary. In this regard, there is a relevant need to comprehend the contribution of Soviet scientists to reconstruction of the country's economy after the Great Patriotic War. In 2021, Russian University of Transport where Academician V. N. Obraztsov once worked, celebrates the 125th anniversary. The scientific conceptualisation of the ways to develop the North of the country is of great importance for the development of the transport system of Russia. Hence, those factors determine the topicality of the objective of the article to study the projects for development of transport in the European North of the USSR put forward by Academician V. N. Obraztsov in the post-war period.

To attain this objective, the system-structural and historical-comparative methods were used.

For the first time the activity of V. N. Obraztsov, as of an analyst and expert in the field of development of post-war railway transport, is analysed. It is concluded that having the talent of a major leader of transport projects, Obraztsov put forward research tasks adequate to the requirements of the time for reconstruction of the country's economy after the war. Among these tasks, he considered modernisation and development of transport. In the projects of 1945, Obraztsov laid the foundations for long-term planning of railway, road, river, and air transport in the European North of the USSR for several decades ahead. The volume of the proposed construction was enormous. Even though the planned large-scale design of the transport infrastructure was not entirely feasible for implementation in a short time due to limited forces and resources of the country, it catches imagination with far-reaching prospects for development of the European North and the Arctic. Academician Obraztsov's programs for development of the north, being of great scientific value, are especially relevant in 21st century.

Keywords: transport, history, Russian Academy of Sciences, Academy of Sciences of the USSR, Base of the Academy of Sciences of the USSR in the Komi ASSR, design of transport infrastructure, North-Pechora railway, Academician V. N. Obraztsov.

For citation: Roshchevskaya, L. P., Roschevsky, M. P. Post-war Projects of Academician V. N. Obraztsov for Development of Transport in the European North of the USSR. World of Transport and Transportation, 2021, Vol. 19, Iss. 3 (94), pp. 266–274. DOI: https://doi.org/10.30932/1992-3252-2021-19-3-13.

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.

INTRODUCTION

In 2024, the Russian Academy of Sciences will celebrate the three hundredth anniversary. Since this important date in the history of Russian and world science is approaching, there is also a growing need to reveal and conceptualise the contribution of Soviet scientists to reconstruction of the country's economy after the Great Patriotic War. Scientific discoveries are supported by many factors, including the location of scientific divisions of the USSR Academy of Sciences throughout the country. One of these entities is the Federal Research Centre «Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences» (FRC «Komi SC of the UrB of the RAS»), which celebrated its 75th anniversary in 2019. The history of the Centre is connected with beginning of the Great Patriotic War, when academic institutions were evacuated from Arkhangelsk and Kirovsk (Murmansk region). On their basis, on September 30, 1941, the Base of the Academy of Sciences of the USSR was created for the study of the North in the city of Syktyvkar, Komi ASSR, headed by Academician A. E. Fersman. In June 1944, following re-evacuation of some of the employees to their former job sites, the base was transformed into the Base of the Academy of Sciences of the USSR in the Komi ASSR, led in 1944–1948 by Academician Vladimir Nikolaevich Obraztsov who was its director.

NOVELTY

The upcoming anniversary prompts to analyse the project activities of Academician Obraztsov as of an analyst, expert and director of the Base of the USSR Academy of Sciences in the Komi ASSR in 1945 in the field of development of post-war railway transport. The proposed article introduces into scientific circulation two publications on reports at scientific conferences and the text of a scientific and educational lecture by V. N. Obraztsov.

METHODOLOGY

To reveal the topic, the system-structural and historical-comparative *methods* were used. The systemic-structural method requires isolation of the elements that are included in the system, as well as the analysis of the nature of the relationship between elements, and the study of interaction with the external environment. The historical-comparative method allows comparison in space and time. The genre of the article identified the biographical principle as the key one for this work. Internal periodisation is determined by a clearly defined date which is the end of the Great Patriotic War.

HISTORIOGRAPHY

The exploration and development of the North in 20th century was greatly influenced by the Northern Sea Route, development of river transport and construction of railways. But until the 1930s, the Soviet state was not ready for large-scale development of the North. The innovative concept of development of the Soviet North belongs to the economist S. V. Slavin, who focused on the need to create a favourable environment for the population in the North and Siberia, including during construction of railways (Slavin, 1961 [1]). Understanding of the contribution of V. N. Obraztsov to development of railway transport is facilitated by research on the history of industrialisation and on the history of major strategic operations during the Great Patriotic War (Kovalev, 1981 [2]).

The regional literature pays sufficient attention to railway projects (Kalemeneva, 2018 [3]; Kiselenko, 2014 [4]; Kuratova, 2010 [5]; Kuratova, Roshchevsky [*et al*], 2001 [6]), but reference publications with brief biographical information prevail (Vaneev, 1999 [7, p. 349]; Silin, 2000 [8]). Some authors considered V. N. Obraztsov a «secret» scientist (Sivkova, 2017 [9]), while others used the concept of «remote control» to characterise the features of V. N. Obraztsov's work in Syktyvkar (Samarin, 2006 [10]). Nevertheless, the literature does not contain yet characterisation of V. N. Obraztsov's post-war projects on development of transport in the European North.

Sources on the chosen topic are available in several archives. The personal archival fund of the scientist was deposited in the Archives of the Russian Academy of Sciences (scientific works, correspondence, documents related to trips to Syktyvkar, etc.) In the Komi Republic, V. N. Obraztsov's documents were deposited in two archives. In the National Archives of the Komi Republic, his documents are in the funds of the Council of Ministers of the Komi ASSR and the Komi Regional Committee of the All-Union Communist Party of Bolsheviks (memoranda, information, and reports on the work of the Base of the USSR Academy of Sciences in the Komi ASSR). The Scientific Archive of the Federal Research Centre «Komi

Science Centre of the Ural Branch of the Russian Academy of Sciences» contains the minutes of meetings with the participation of V. N. Obraztsov, a typewritten copy of his report «Immediate Prospects for Development of Transport in the USSR» at a meeting of the party activists in Syktyvkar (1945), the text of which was transferred to the Archives of the USSR Academy of Sciences in the 1970s; activity report for the year 1946.

Several hundred works of the Academician belong to the published sources, but their complete list has not been compiled. On the eve of his election as a member of the USSR Academy of Sciences in 1939, Vladimir Nikolaevich Obraztsov compiled such a list, but he was unable to restore the exact imprint regarding many publications. In 1944, the USSR Academy of Sciences prepared a bibliography of his works, but it did not include the publications of the last years of his life (Vladimir Nikolaevich Obraztsov, 1944 [11]). Obraztsov's articles were also published in the newspapers of the Komi ASSR, which is proved by the request of an employee of the Council of Branches and Bases of the USSR Academy of Sciences in September 1945 to send «issues of republican newspapers (in Russian and Komi languages) with his articles» (NA Komi SC of the UrB of the RAS, F. 1, L. 19, D. 40, S. 1[1]). It has not yet been possible to identify them. Another group of sources is made up of publications in the newspaper «Za noviy Sever» [For the new North]: a review of the Academician's activities as of the director of the Base of the Academy of Sciences of the USSR in the Komi ASSR (Shishkin, 1949 [12]) and an obituary (Obraztsov Vladimir Nikolaevich, 1949 [13]).

RESEARCH OBJECTIVES AND TASKS

The identified sources in aggregate make it possible to find out what projects for future development of transport in the European North of the USSR were put forward by Academician V. N. Obraztsov in the post-war period.

SHORT BIOGRAPHY OF VLADIMIR OBRAZTSOV

Without dwelling on the biography, let us highlight the most significant events in Obraztsov's life before Syktyvkar period. Vladimir Nikolaevich Obraztsov (June 6 (June 18, new style calendar), 1874, Nikolaev – November 28, 1949, Moscow) graduated from St. Petersburg Institute of Railway Engineers (1897), even before the revolution of 1917 acquired the authority of a major specialist in design and operation of railway stations, participated in construction of new lines and sections of Moscow–Kursk and Moscow–Yaroslavl railways. Later Obraztsov, after becoming D.Sc. (Eng) (1934, without defending the thesis) and Honoured Worker of Science and Technology of the RSFSR (1935), was elected Academician of the Academy of Sciences of the USSR (1939). He became a laureate of the Stalin Prizes in 1942 and 1943.

In 1935 Vladimir N. Obraztsov was entitled to take the lead of Scientific and Research centre of Railway Transport of People's Commissariat of Railways of the USSR, where he dealt with rearrangement of all railway nodes and junctions in Moscow. His idea of radial placement of railways throughout the territory of the capital with transitions to metro stations was included in the first general plan for reconstruction of the capital. Following his recommendations, Nizhny Novgorod, Saratov, Leningrad, Zaporozhye railway junctions were rebuilt, and transport junctions of Kuznetsk and Donetsk coal basins were reconstructed. He was a member of the technical council of Dneprostroy and designed Uralmashzavod. Obraztsov was a member of the State Planning Committee of the USSR, since 1939 he was head of the section for scientific development of transport problems of the AS of the USSR, and deputy chairman of the Council of branches and bases of the AS of the USSR (1942–1949). The scientist was awarded the Order of Lenin (1935, 1944, 1949), the Order of the Red Banner of Labour (1939), the Order of the Patriotic War of the 1st degree (1945), the medal «For the Defence of Moscow» (1945). He had the personal title of director general of traffic of the first rank.

ACTIVITIES DURING EVACUATION PERIOD IN THE URALS

In 1942, Vladimir Obraztsov, together with the Presidium of the Academy, was evacuated to Sverdlovsk and entered the academic commission for mobilising the resources of the Urals for the defence of the country. The commission within its activity developed measures related to development and reconstruction of railway transport in the Urals

[1] Please see the list of archival documents at the end of the article for details.

(Baikov, Gritske, 1942 [14]). V. N. Obraztsov promptly studied the specifics of the Ural railways and highlighted the need for their radical restructuring (Obraztsov, 1943 [15]) to achieve orderly evacuation of enterprises and human flows to the eastern regions and long-distance transportation of coal from Kuzbass to Ural enterprises.

Tagil industrial region was among most loaded transport hubs in the Urals. According to some reports, at the beginning of the war, over ten thousand wagons of evacuated equipment and population arrived in Nizhny Tagil, which proved impossible to be quickly unloaded. The history of our family, evacuated from Kursk to the village Laya near Nizhny Tagil, is also connected to this gigantic railway congestion. Our father Pavel Roschevsky at that time served in Kursk military hospital No. 1932, which, evacuated, was moving to the Urals. The train with wounded soldiers in Nizhny Tagil stood for so long that the father, having received a dismissal, got to the village Laya and spent several hours with his family. When he returned to Tagil, the train was still awaiting further dispatch. He recalled this in 1944: «From Kursk, destiny, or rather military service, carried me far, first to the Urals, where I was with Kursk hospital. There, in the Urals, quite unexpectedly, I met my family, the fate of which I did not know for several months. The occasion sent me exactly in the direction where the family was. The meeting was unexpected and joyful» (GASPITO, F. 4060, L. 1, D. 2, S. 25).

The study of transport provision of Tagil industrial region obviously showed the overload of the railway. Under the leadership of V. N. Obraztsov, intra-node and main cargo flows were calculated, the operation procedures for about 20 stations were determined. He proposed to urgently build a small rail insert to the line to Nizhny Tagil, so that trains from Nizhny Tagil could easily leave the congested section. In 1942, V. N. Obraztsov was awarded the Stalin Prize of the first degree for his work «On Development of the National Economy of the Urals under War Conditions».

V. N. Obraztsov's appointment to Syktyvkar was caused not only by the illness of Academician A. E. Fersman. The situation was determined by the interest of the leadership of the Komi ASSR in consultations related to commissioning of the strategic North-Pechora railway, which supplied coal and oil to the centre of the country and Leningrad. No wonder that the Council of Ministers of the Komi ASSR in 1943 corresponded with V. N. Obraztsov on scientific and organisational issues.

On December 21, 1944, the Presidium of the USSR Academy of Sciences appointed V. N. Obraztsov director of the Base of the USSR Academy of Sciences in the Komi ASSR. But wartime conditions developed in such a way that Obraztsov, due to the enormous volume of work performed within the USSR Academy of Sciences, could not permanently be in Syktyvkar.

The arrival of Vladimir Nikolaevich in the Komi ASSR in August 1945 was organised in connection with the government decision to solemnly celebrate the 220th anniversary of the USSR Academy of Sciences (NA Komi SC of the UrB of the RAS, F. 1, L. 1, D. 123, S. 8). In Syktyvkar, on August 24, an anniversary meeting of the Academic Council was held, as noted in the minutes, «in the presence of V. N. Obraztsov» (NA Komi SC of the UrB of the RAS, F. 1, L. 1, D. 110, S. 6, 15). Several employees of the Base of the Academy of Sciences in the Komi ASSR were awarded certificates of honour of the Presidium of the Academy of Sciences of the USSR «for good conscientious scientific work, accurate and honest fulfilment of various production tasks» (Roshchevskaya, Brovina, 2009 [16]). The agenda of the session of the Academic Council included a discussion on the results of the activities and the issues and topics of the activity plan of the Base for 1946. Based on the other documents of the Scientific archive of the Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences, it is clear that several employees, «taking advantage of the presence at the Base» of the director, asked to be relieved of their post, citing the domestic disorder and the absence of scientific literature in the city's libraries» (NA Komi SC of the UrB of the RAS, F. 1, L. 19, D. 40, S. 8).

TRIP TO THE NORTH OF THE KOMI ASSR

Regional authorities used the visit of V. N. Obraztsov to acquaint him with the conditions prevailing on the North-Pechora railway with regard to its upcoming reconstruction (completion). Detailed information about this trip to the north of the republic has not been preserved, but it is known that he visited Vorkuta, Abez, Ukhta and Knyazhpogost. The Academician advised builders on various issues: embankment

strengthening, reconstruction of railway bridges, arrangement of siding tracks, etc. «Now, by the way, the question is whether the second track should be laid on the Vorkuta line, wrote V. N. Obraztsov. But there are our heaviest rails IA, and the locomotives are the lightest ones. Why is that? Because we laid the heaviest rails and did not lay the real ballast. The ballast is bad there, and in many cases, there is no ballast at all. If we lay down the ballast, we will be able to dramatically increase the transit capacity of our Pechora railway. These questions now occupy our attention, and in the future the entire railway policy of the Soviet Union will go in this direction» (NA Komi SC of the UB of the RAS, F. 1, L. 1, D. 98, S. 14). As it can be seen, on a trip to the north of the republic, Academician Obraztsov performed expert functions.

The end of V. N. Obraztsov's trip to the industrial regions of the north of the Komi ASSR coincided with promulgation of the government's decision on August 19, 1945, to prepare the fourth five-year plan for reconstruction of the national economy.

It is worth mentioning that Obraztsov had been thinking about the problems of post-war reconstruction of the war-torn economy for a long time. At Moscow Institute of Railway Engineers in 1944, at the first meeting of a special seminar on the study of scientific and technical problems of the post-war development of transport in the USSR, the Academician made a report «The interaction of various modes of transport, the prospects for work and development of certain modes of transport in the USSR». The report spoke of a significant increase in the role of road transport, air transport, and pipelines.

In the Komi ASSR, Obraztsov continued to develop projects for the post-war development of all modes of transport, primarily railways. He foresaw difficulties in discussion on the planned five-year plan: «Now some guidelines are only outlined and proposed by the government for inclusion in the five-year plan» (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 20).

REPORT AT THE MEETING OF THE PARTY ACTIVISTS OF SYKTYVKAR

Vladimir N. Obraztsov announced some of his ideas in August 1945 at a meeting of the party activists of the city of Syktyvkar, focusing on transport support of the industrial regions of the Komi ASSR and the role of the North-Pechora railway (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 20). The attendees included the secretaries of the primary party organisations and the leaders of the groups of the system of party-political education.

The speaker started his speech with the thesis that, despite the total nature of the past war, the inextricable link between the battlefront and the home front, and the railways built during war years, ensured the victory. As an example, Obraztsov mentioned the railway «from Kotlas to Konosha and further along Arkhangelsk railway with further branch to Murmansk»: «If we had not built these two railways, then in fact we would have lost Murmansk. This is a strategic railroad and here it was impossible to count on whether it would be profitable or unprofitable to build» (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 13).

The Academician told in detail what changes will take place on railway, water, road, and air transport. He believed that in the Komi ASSR «aviation transportation will develop strongly», new modes of transport will appear, such as pipeline, that it is necessary to develop mechanisation of construction and loading and unloading operations in transport (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 16).

The main task of development of transport in the Komi ASSR, in his opinion, was due to proximity to the «magnificent iron ores on the Kola Peninsula» and the northern Urals. But these areas do not have the energy to process them. In order for the republic (as an intermediate link) to ensure the existence of two closest neighbours, «it is necessary to build a new line» (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 17) and «it is possible that in the next five years there will be a question about the line from Kozhva to Ivdel» (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 19).

Obraztsov connected development of transport with the problems of demography: «… creation of the Pechora railway almost doubled the population of your region and in the future we will certainly have to populate the region […], in particular, your region – the Komi Republic, northern Siberia, etc.» (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 14).

The report ended with an optimistic statement that many tasks will have to be solved in the next five years, since it is necessary «to develop the industry of the entire republic, to raise it to such a level that it turns from an almost agrarian and forestry region into an

industrial and agricultural country». «You cannot have a capital that is not connected by transport with the industrial enterprises that it owns. You need to have a connection with Kotlas, with Troitsko-Pechorsk, you will have to build Shies–Syktyvkar railway» (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 19). The mention of Shies railway station in Lensky district of Arkhangelsk region was explained by the territorial proximity to the border with the Komi ASSR, only 4 km or 7 km by rail. «We believe», the speaker summed up, «that Ivdel line and Shies–Syktyvkar line should be of the highest priority» (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 20).

In essence, the scientific and propaganda performance in front of the city's party elite went beyond the genre. Comparing the state of transport in the largest countries of the world, the speaker showed the prospects for economic development of the country and the region in connection with the growing role of almost all modes of transport as of an infrastructure for development of productive forces.

The study of the country's natural productive forces in the system of the Academy of Sciences was carried out by researchers united on the initiative of Academician V. I. Vernadsky in 1915 in the Commission for the Study of Productive Forces (KEPS), since 1930 called the Council for the Study of Productive Forces of the AS of the USSR (SOPS). V. N. Obraztsov participated in its work almost from the very start of its activity as can be seen from some of his publications in the works of the State Planning Commission. SOPS not only organised expeditions, including the North Ural expedition (1924–1928), North Ural quartz expedition (1932–1934), Ural complex expedition (1939–1945), but also held scientific conferences on the study of productive forces in different cities. As a rule, they only provided extensive material on a specific territory, but did not touch on inter-regional problems.

One of these All-Union scientific conferences on the study of productive forces took place in the city of Molotov (as Perm was called in 1940–1957) in November 1945. The conference was attended by the vice-president of the USSR Academy of Sciences, Acad. I. P. Bardin, Academicians B. E. Vedeneev, D. N. Pryanishnikov, S. G. Strumilin and V. N. Obraztsov. The subject of V. N. Obraztsov's speech was the growing role of development of transport on the territory of the Komi ASSR in the country's economy. Following the conference, the texts of reports (Conference, 1947 [17]), decisions and resolutions (Proceedings, 1947–1948 [18]) were published.

The fact that the report of V. N. Obraztsov was published as a separate book is evidenced by the summary made by the head of the economic group of the Base of the Academy of Sciences of the USSR in the Komi ASSR, a graduate of Leningrad Institute of National Economy S. F. Popov. Information about Popov himself is sketchy. Before the war, he worked in planning bodies in the Far East, in Saratov and Kirov, dealing with long-term planning and economic feasibility regarding construction of new enterprises. Contemporaries noted that Popov managed to significantly replenish the scientific library of the Base of the Academy of Sciences of the USSR in the Komi ASSR with books on the timber industry and transport, but on December 23, 1947, he diseased (NA Komi SC of the UrB of the RAS, F. 1, L. 1, D. 108, S. 1–3).

The abstract is based on a book printed by the publishing house of the Academy of Sciences (Obraztsov, 1945 [19]). Popov highlighted 20 headings, including those on long-term projects, prospects development of railway, water, road, and air transport (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 68, S. 1–19).

The search for this publication was not crowned with success, which increases the significance of the synopsis of one of the works of Academician V. N. Obraztsov kept in Syktyvkar. The report was so informative and wide-ranging that it was also published as an independent publication in the city of Molotov. Thanks to the head of the local history department of Perm Regional Universal Library named after M. A. Gorky Ya. E. Araptanova, it became possible to find this edition (Obraztsov, 1945 [20, p. 13]), which can be considered as a thesis version of the previous publication.

It should be recalled that the report took place at the end of the victorious 1945, when the country was still in ruins. Therefore, the prospects for development of transport after the war, presented by the Academician, certainly made a strong impression on the audience and readers. For the purposes of our historical and biographical research, we emphasise that the speech was aimed at development of the economy of the Komi ASSR.

Obraztsov argued that the national economy and transport of Molotov region cannot be considered in isolation from neighbouring regions. The national economy and transport of the Komi ASSR, Sverdlovsk, Arkhangelsk, Vologda, and Kirov regions are of decisive importance for its development. The Great Patriotic War dramatically changed and advanced the economy of this region. During the war years, extensive development of the coal, oil, and gas industries in the Komi ASSR was carried out and the North-Pechora railway was built, «which completed the design of a large energy centre in the North-East of the European part of the USSR».

«The presence of large reserves of high-value ore, heat- and energy-intensive raw materials on the Kola Peninsula, on the eastern slope of the Ural ridge, i.e., just on both sides of the energy centre, necessary for processing them (the Pechora basin and the Vorkuta coking coals) should be used. This raises the question of immediate development and partial construction of the Kola-Pechora group of enterprises as soon as during the upcoming five years (and in the future, implementation of the Ural-Pechora group of enterprises will be on the agenda), using the energy centre of the Komi ASSR, sea routes for export and intra-union relations for the Kola-Pechora-Ural complex as a whole». The construction of the largest hydroelectric stations in the areas of Molotov, Solikamsk, Pechora and Vychegda «will significantly change the energy of the region, the conditions of water transport, the position and area of flooding» (Obraztsov, 1945 [20, pp. 4–5]).

To expand economic ties with Leningrad, Murmansk, Arkhangelsk and develop international relations, the planned «construction of a port in Indiga and Kozhva–Tsilma–Indiga railway line connecting this port to the railway network» can be used. The village of Indiga of Nenets National District, has a convenient geographical position on the eastern coast of the Barents Sea at the mouth of the river of the same name, is located in the permafrost zone, but the bay nearly does not freeze. It can be used to create a well-protected year-round port, accessible to ocean-going ships, since the sea depth is quite significant here, and port facilities can be built over a large area of the bay. In addition, there were no significant fluctuations in the water level during river floods and sea tides, which does not complicate the work of the port. Since the end of 19th century, the region attracted the attention of economists for creation of a free port (*porto franco*), e.g., a harbour into which the import and export of foreign goods is allowed duty-free (Ioganson, Beloborodov, 1928 [21]).

V. N. Obraztsov had first expressed the idea of building a seaport and a railway to Indiga previously at the mentioned meeting of the party activists of Syktyvkar: «It will be not-freezing port, it will operate much longer than Arkhangelsk, maybe ten months, and under some conditions even all year round» (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 18).

To radically improve the waterways of the Kama, Pechora and Vychegda basins, the proposed project for construction of three dams on the Kama, Pechora, and Vychegda rivers, associated with creation of large reservoirs, does not complicate further construction of a railway line from Molotov region through Kozhva to Indiga.

The creation of a powerful energy centre in the area of the North-Pechora railway, in his opinion, was possible because the Vorkuta basin is located between «two areas of ore mining that are insufficient in coke (in the Urals and on the Kola Peninsula)». «To connect the Vorkuta coal basin with the areas of iron ore deposits, it is necessary to build new railways»: from Kozhva to Indiga towards the Kola Peninsula and from Kozhva to Ivdel and Solikamsk. The Barents Sea should play an important role in the transportation of coal after construction of ports in Khabarov and Indiga». On the other hand, the Academician made a proposal to build «a metallurgical plant in the Vorkuta region (for example, near Kozhva) to reduce the runs of coal and create a bidirectional transport system intended for coal transportation to the Urals and of ore to Kozhva, which could serve as the basis for the future Ural-Pechora group of enterprises (Obraztsov, V. N. Complex, 1945 [20, p. 5]).

According to V. N. Obraztsov, it was most expedient to design the connection of Molotov region with the North-Pechora line and subsequently with Indiga in the direction from Solikamsk to the area northeast of Kozhva, along the right bank of the Pechora, which would allow the use of nearby coal sites on the western slopes of the Urals and solid woodland,

not available yet for transportation. First, it is necessary to build a line from Kozhva to Ivdel, with the passage through the Urals north of Vishera, since this direction captures the largest riches of mineral raw materials (manganese, iron ores, bauxite, gold) and allows exploration of woodland in the north of Sverdlovsk region. Regardless of this, movement of Siberian timber for export is desirable to be provided with the line Samarovo–Kozhva–Ivdel.

V. N. Obraztsov emphasized the «exceptionally great» role of creation of the Ural-Pechora group pf enterprises in the northeast of the European part. According to him, the issue of the Ural-Pechora group of enterprises is at a stage when «it is imperative to carry out a number of detailed calculations, research and design work». It is necessary to «take an organised approach to practical development of the problem of the whole Ural-Pechora group of enterprises». To increase the load capacity and speed of trains, Obraztsov spoke in favour of making the rail track heavier, expanding the railway track, and laying second rail tracks. Drawing attention to construction of a highway for road transport, he reiterated how urgent it is to improve the technique of loading and unloading operations.

The main idea of the report focused on the need for energy supply of transport. At the same time, the Academician recognised that dams and reservoirs would greatly complicate construction of railways, increase their length and the cost of operation.

Thus, after a trip to the Komi ASSR, V. N. Obraztsov summarised necessary improvements to the North-Pechora railway, formulated its strategic importance and economic prospects for its use. The Academician developed and put forward a comprehensive plan for development of the largest railway centres in the European North and the Urals. The speech in the city of Molotov reflected these innovative positions of Obraztsov.

The Academician understood that not all his projects would be accepted and foresaw difficulties in discussing the planned five-year plan: «Can you imagine how many disputes and conversations there will be? « (NA Komi SC of the UrB of the RAS, F. 1, L. 9, D. 53, S. 20).

In the «Law on the five-year plan for reconstruction and development of the national economy of the USSR for 1946–1950», adopted on March 18, 1946, the main attention was paid to reconstruction of the destroyed western and southern regions of the country. However, the plan set another task. To bypass the overloaded railway junctions of Nizhniy Tagil and Sverdlovsk and connect the ore-rich industrial points of Sosva and Alapaevsk, Sosva–Alapaevsk line was put into operation in 1947. Thus, a new meridional line was completed, linking the South Urals (Chelyabinsk) with the industrial regions of the Northern Urals.

Obraztsov advocated development of industry and transport in the European North. Possessing a powerful analytical mind, Academician Obraztsov understood that his own projects were global in nature. Nevertheless, it was during the period of widespread discussion of the draft of the fourth five-year plan that he initiated projects that were more distant for implementation. These tasks are of great scientific value as programs for development of the territory of the North and the Arctic, but they have not yet been implemented.

CONCLUSIONS

The post-war projects of railway construction developed by Academician V. N. Obraztsov make it possible to re-evaluate his work in relation to the northern (polar) areas. V. N. Obraztsov considered the territory of the Komi ASSR to be the main area for development of the economy and transport of the European part of the USSR.

Obraztsov can be referenced as the expert who influenced the projects and practices of development of the North. V. N. Obraztsov developed the necessary logistics for implementation of the first programs for construction of railways, since he recognised the preferable convenience of the areas that are close to the main areas where construction materials, hydrocarbon raw materials are concentrated, and that possess sufficient labour force. To provide the economy with uninterrupted transportation, he considered it necessary to lay rational routes, develop railway transport, create transport corridors, and minimise transport costs. Obviously, Vladimir Nikolaevich Obraztsov is a major figure in development of logistics transport infrastructure.

Academician Obraztsov initiated distant projects which, due to objective circumstances, have not yet been implemented. But his programs for development of the territory of the

North and the Arctic are of great scientific value and are especially relevant in the 21st century.

REFERENCES

1. Slavin, S. V. Industrial and transport development of the North of the USSR [*Promyshlennoe i transportnoe osvoenie Severa SSSR*]. Moscow, Economizdat publ., 1961, 302 p.

2. Kovalev, I. V. Transport during the Great Patriotic War (1941–1945) [*Transport v Velikoi Otechestvennoi voine (1941–1945)*]. Moscow, Nauka publ., 1981, 480 p.

3. Kalemeneva, E. A. Changes in development models of the Siberian North in the 1950s [*Smeny modelei osvoeniya Sibirskogo Severa v 1950-e*]. *Siberian Historical Research*, 2018, Iss. 2, pp. 181−200.

4. Kiselenko, A. N. On development of the transport system of the European North of Russia [*O razvitii transportnoi sistemy Evropeiskogo severa Rosii*]. *Regional economy: theory and practice*, 2014, Iss. 11 (338), pp. 2−11.

5. Kuratova, E. S. Methodology of economic assessment of commodity exchange processes for the purpose of improving spatial organisation of transport. Abstract of D.Sc. (Economics) thesis [*Metodologiya ekonomicheskoiotsenki tovaroobmennykh protsessov dlya tselei sovershenstvovaniya prostranstvennoi organizatsii transporta. Avtoref. dis ... dok. ekonom. nauk*]. Moscow, MIIT publ., 2010, 48 p.

6. Kuratova, E. S., Roschevsky, M. P., Roshchevskaya, L. P., Elkin, A. Yu. Design and construction of railways in 19th–early 20th century. Design and construction of railways after 1917 [*Proektirovanie i stroitelstvo zheleznykh dorog v XIX-nachale XX v. Proektirovanie i stroitelstvo zheleznykh dorog posle 1917 g.*]. Atlas of the Komi Republic. Moscow, DIK publ., 2001, pp. 306−307, 428–429.

7. Vaneev, A. Vladimir Nikolaevich Obraztsov. Republic of Komi: Encyclopedia. Vol. 2. Syktyvkar, Komi book publishing house, 1999, 576 p.

8. Silin, V. Academician Vladimir Nikolaevich Obraztsov. *Svyaz' vremen*. Eds. Zherebtsov, I. L., Kurochkin, M. I. Syktyvkar, Fund «Pokayanie», 2000, 863 p.

9. Sivkova, A. N. Way to Ust-Ukhta [*Put'na Ust-Ukhtu*]. *Dym Otechestva. Book. 11, 2012*. Syktyvkar, Komi Republican Printing House LLC, 2017, 640 p.

10. Samarin, A. V. History of the Komi Scientific Centre of the Ural Branch of the USSR Academy of Sciences: Formation and Development (1944–1991). Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences. Syktyvkar, 2006, 236 p.

11. Vladimir Nikolaevich Obraztsov. Entry article by Zvonkov, V. V., Klyucharev, V. P. Moscow, Publishing house of All-Union book chambers, 1944, 32 p.

12. Shishkin, N. I. Scientist patriot. 75th anniversary of the birth of V. N. Obraztsov [*Ucheniy patriot. 75 let so dnya rozhdeniya V. N. Obraztsova*]. *Za noviy Sever*, 18.06.1949.

13. Obraztsov Vladimir Nikolaevich [*Obituary*]. *Za noviy Sever*, 30.11.1949.

14. Baikov, A., Gritske, E., Obraztsov, V. Resources of the Urals [*Resursy Urala*] [*On the work of the Commission of the Academy of Sciences of the USSR on the study and mobilisation of industry, energy, and transport resources*]. *Izvestia*, 14.03.1942.

15. Obraztsov, V. N. Transport of the Urals [*Transport Urala*]. *Bulletin of the Academy of Sciences of the USSR*, 1943, Iss. 4–5, pp. 52–57.

16. Roshchevskaya, L. P., Brovina, A. A., Samarin, A. V., Chuprova, E. G. Documentary history of the Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences: Komi Branch of the USSR Academy of Sciences in 1944–1964. Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences. Syktyvkar, 2009, 456 p.

17. Conference of the USSR Academy of Sciences on the study of the productive forces of Molotov region. November 26–December 4, 1945. Rulings and Resolutions. Molotov, 1947, 146 p.

18. Proceedings of the conference on the study of productive forces of Molotov region. November 26–December 1, 1945. National economic problems of Molotov region. In 2 volumes. Moscow-Leningrad, Publishing house of the Academy of Sciences of the USSR, 1947–1948.

19. Obraztsov, V. N. Complex development of transport in Molotov region [*Kompleksnoe razvitie transporta Molotovskoi oblasti*]. Report at the conference on the study of productive forces of Molotov region on November 27, 1945. OGIZ, Molotov region publishing house, 1945, pp. 4–5.

20. Obraztsov, V. N. Complex development of transport in Molotov region [*Kompleksnoe razvitie transporta Molotovskoi oblasti*]. Abstracts of the report at the conference on the study of productive forces of Molotov region November 26–December 1, 1945. Moscow-Leningrad, Publishing house of the USSR Academy of Sciences and Molotov Regional Executive Committee, 1945, 38 p.

21. Ioganson, E. G., Beloborodov, V. Ya. Port of Indiga. Considerations about railway construction to the port of Indiga and about cargo flows to it [*Port Indiga. Soobrazheniya o zheleznodorozhnom stroitelstve k portu Indiga i o gruzovykh potokakh k nemu*]. Preface by G. M. Muravyov. Ust-Sysolsk, Publishing house of Regional Executive Committee of aut. region Komi, 1928, 56 p.

LIST OF ARCHIVAL DOCUMENTS

State archives of the social and political history of Tyumen region (GASPITO), fonds (F). 4060, Listing (L) 1, Document (D) 2, Sheet (S) 25.

Scientific archives (SA) of the Federal Research Centre «Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences» (FRC «Komi SC of the UrB of the RAS»). F. 1, L. 1, D. 98, S. 14.

SA of the FRC «Komi SC of the UrB of the RAS». F. 1, L. 1, D. 110, S. 6–15.

SA of the FRC «Komi SC of the UrB of the RAS». F. 1, L. 1, D. 123, S. 8–19.

SA of the FRC «Komi SC of the UrB of the RAS». F. 1, L. 1, D. 196, S. 1.

SA of the FRC «Komi SC of the UrB of the RAS» F. 1, L. 9, D. 53, S. 1–20.

SA of the FRC «Komi SC of the UrB of the RAS» F. 1, L. 9, D. 68, S. 1–19.

SA of the FRC «Komi SC of the UrB of the RAS» F. 1, L. 19, D. 40, S. 8.

Information about the authors:

Roschevskaya, Larisa P., *D.Sc. (History), Chief Researcher at the Unit of the Interdisciplinary Humanitarian Research of the Federal Research Centre «Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences», Syktyvkar, Russia, lp38rosh@gmail.com.*

Roschevsky, Mikhail P.*, D.Sc. (Biology), Academician of the Russian Academy of Sciences, Professor, Chief Researcher at the Institute of Language, Literature and History of the Federal Research Centre «Komi Scientific Centre of the Ural Branch of the Russian Academy of Sciences», Syktyvkar, Russia, roshmp@mail.ru.*

Article received 14.03.2021, approved 18.05.2021, accepted 30.06.2021.