

Review article

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The epic of the Baikal-Amur Mainline is the fate of millions. On the 50th anniversary of the start of construction

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ABSTRACT The Baikal-Amur Mainline is one of the most ambitious and controversial Soviet projects on the socio-political and historical trail of perception. The proposal to build a new railway north of the Trans-Siberian Railway was put forward at the beginning of the 20th century. The idea was approached in the 1920s and 1930s. Surveys were conducted, and construction began on one of the sites, which was interrupted by the Great Patriotic War (World War II). Moreover, during the war years, the upper structure of the track and a number of engineering structures were dismantled on the constructed site, which were used for the construction of the extremely important rockade railway in the Stalingrad area, which played a significant role in supplying Soviet troops during the Battle of Stalingrad. The interest in the construction of the BAM of the Soviet leadership in the 1960s and 1970s arose again in the context of an aggravation of the political situation – the complication of relations between the USSR and the People's Republic of China. However, already during this period, the question was reasonably raised not only about the political, but also the economic strategic significance of the project from the perspective of the country's development prospects, the development of natural resources in this region, the development of transport links between the European, Siberian, and Far Eastern territories of the state. In the period after the collapse of the USSR, the BAM construction project, not without the influence of those who were under Western influence in the country's leadership circles, was classified as erroneous, extremely costly, economically and socially unjustified. Today, in society, the state, under the influence of many factors of recent years, there is an understanding of the importance of completing and developing the BAM construction project. This project has played a big role in the lives of millions of people, many organizations and institutions. Among them is the Leningrad Institute of Railway Engineers – today the St. Petersburg State University of Railways of Emperor Alexander I, whose students, graduates, scientists and specialists have been involved in various forms in the construction of the Baikal-Amur Mainline for half a century.

KEYWORDS: Baikal-Amur Mainline; BAM; Leningrad Institute of Railway Engineers; St. Petersburg State University of Railway Engineering; student construction teams; military builders of BAM

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Обзорная статья

Эпопея Байкало-Амурской магистрали — судьба миллионов. К 50-летию начала строительства

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АННОТАЦИЯ Байкало-Амурская магистраль — один из самых амбициозных и противоречивых советских проектов по общественно-политическому и историческому шлейфу восприятия. Проект новой железной дороги, севернее Транссиба, был предложен еще в начале XX в. К идее обратились в 1920–1930-е годы. Велась изыскания,

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на одном из участков началось строительство, прерванное Великой Отечественной войной (Второй мировой войной). Более того в военные годы на построенном участке было демонтировано верхнее строение пути и ряд инженерных сооружений, которые использовались для строительства чрезвычайно важной рокадной железной дороги в районе Сталинграда, сыгравшей заметную роль в снабжении советских войск в период Сталинградской битвы.

Интерес к строительству БАМа советского руководства в 1960–1970-е гг. вновь возник в условиях обострения политической обстановки – осложнения взаимоотношений СССР с КНР. Однако уже в этот период вполне обоснованно ставился вопрос не только о политической, но и экономической стратегической значимости проекта с позиций перспектив развития страны, освоения природных богатств этого региона, развития транспортных связей между европейскими, сибирскими, дальневосточными территориями государства.

В период после развала СССР проект строительства БАМа, не без влияния находившихся под западным влиянием лиц в руководящих кругах страны, был причислен к ошибочным, чрезвычайно затратным, экономически и социально неоправданным. Сегодня в обществе, государстве, под влиянием многих факторов последних лет приходит понимание важности завершения и развития проекта строительства БАМа. Этот проект сыграл большую роль в судьбах миллионов людей, многих организаций и учреждений. Среди них – Ленинградский институт инженеров железнодорожного транспорта, сегодня – Петербургский государственный университет путей сообщения Императора Александра I, чьи студенты, выпускники, ученые и специалисты на протяжении полувека в различных формах были вовлечены в проект сооружения Байкало-Амурской магистрали.

КЛЮЧЕВЫЕ СЛОВА: Байкало-Амурская магистраль; БАМ; Ленинградский институт инженеров железнодорожного транспорта; Петербургский государственный университет путей сообщения; студенческие строительные отряды; военный строители БАМ

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SALUTE, THE CONSTRUCTION SITE OF THE CENTURY!

2024 is the anniversary year in the epic of the Baikal-Amur Mainline (BAM). 50 years ago, a decision was made on the government level and construction of the BAM began. Since then, the attitude to the socialist “construction project of the century” — one of the most ambitious and largest transport infrastructure projects of all times and peoples — have changed both among the ruling government bodies, agencies and political figures, and the public in general. The changing opinions ranged from declaring it was strategically necessary, relevant and required to promptly implement the project to its complete negation as one of the government’s decisions considered wrong in the perestroika years...

Today, both the government’s decisions and public opinions reinstate the understanding of the importance of this mainline for the development of the so-called “Eastern operating domain”, which is a network of railways with a total length of more than 14 thousand kilometres, stretching from west to east and combining the transport potential of the Trans-Siberian Railway and the Baikal-Amur Mainline [1].

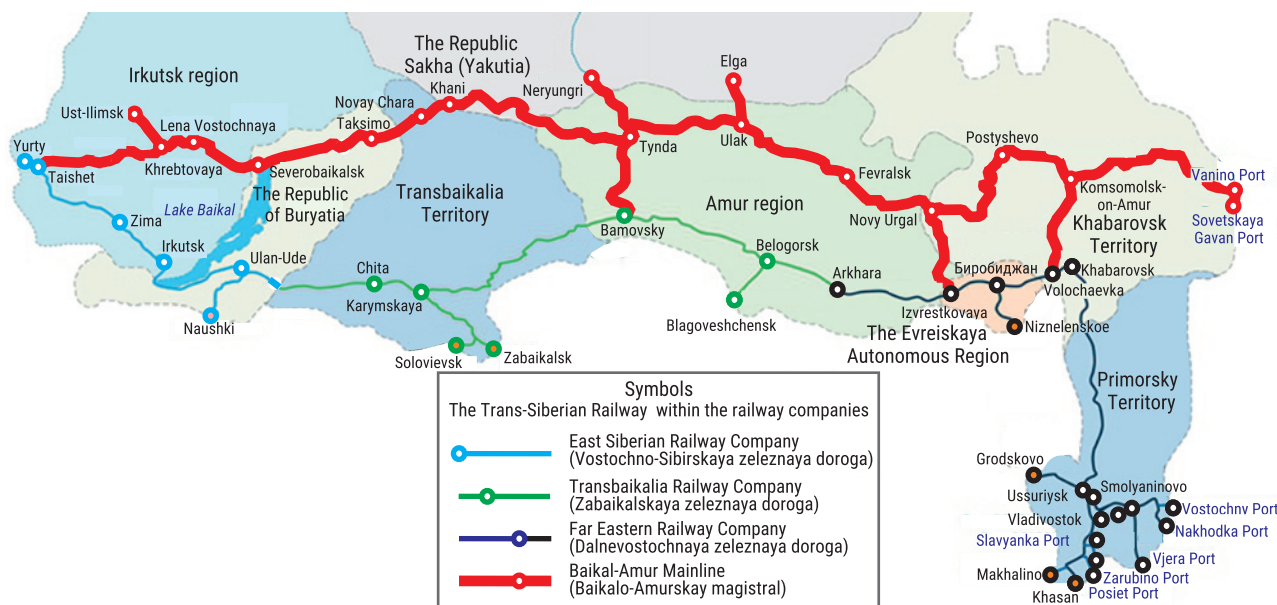
The new reality in the context of the sanctions pressure from Russia’s unfriendly countries, which the Russian economy has been experiencing since the beginning of the Special Military Operation in Ukraine in 2022, has led to a dramatic redistribution of the main export freight flows from the North West towards the Far East and South of Russia. Loads on the railways

leading to the sea ports of the Far East and Azov and Black Sea basins have increased significantly.

In this situation, the role of the Baikal-Amur Mainline becomes more conspicuous as it is one of the essential components of the Eastern operating domain (In Russian: «Восточный полигон» The Eastern polygon) with a great potential for the development of its traffic-carrying capacity. In the autumn of 2022, the first phase of construction of the BAM and Transsib railway facilities was completed, with a potential of adding 144 million tonnes of various freights to the carrying capacity of the Eastern operating domain. In 2023–2024, about 30 new facilities, such as tunnels, bridges and power substations, are planned to be built [2].

The construction of the Baikal-Amur Mainline remains one of the projects that affected the destinies of a great many people. During the peak period of construction in the late 1970s – early 1980s, the number of BAM builders engaged in track laying reached 130 thousand people [3]; the total number of participants in the construction project over all years was about 2 million people [4]; and the number of the new permanent population settled in the areas adjacent to the BAM was about 1 million people in 1984 [3].

For several decades, the design and construction of the BAM was an important and complex high-priority project that combined the research, engineering and academic efforts of several generations of scholars, professors, teachers, students and graduates of the oldest transport higher educational institution in Russia



Scheme of the Eastern operating domain (The Eastern polygon. In Russian: «Восточный полигон». Trans-Siberian Railway and Baikal-Amur Mainline

the Leningrad Institute of Railway Transport Engineers named after Academician Vladimir Obraztsov (LIIZhT). Today it is bringing together, in its new capacity as an important component of the Eastern operating domain, employees and students of this institute, which is currently known as Emperor Alexander I St. Petersburg State Transport University (PGUPS).

ACTIVITIES DEDICATED TO THE 50TH ANNIVERSARY OF THE START OF THE CONSTRUCTION OF THE BAIKAL-AMUR MAINLINE

The 50th anniversary of the start of the construction of the Baikal-Amur Mainline is widely celebrated in Russia at both the federal and regional levels, in many transport, construction, design, and research organisations, and educational institutions.

On April 22, 2024, President of the Russian Federation Vladimir Putin and President of the Republic of Azerbaijan Ilham Aliyev met in the Kremlin with veteran builders and workers of the Baikal-Amur Mainline on the occasion of the 50th anniversary of the start of its construction. At the beginning of the meeting, Vladimir Putin noted that the father of Ilham Aliyev, Heydar Aliyev, “played a special, enormous role in the history of the BAM. As the First Deputy Chairman of the Council of Ministers of the USSR, Heydar Aliyev supervised the construction of the Baikal-Amur Mainline and did everything possible to get this extremely complex project accomplished” [4].

In his speech during the meeting, Vladimir Putin noted that “The BAM is also the embodiment of the titanic work and courage of two million very young people from all over the Soviet Union. They carried out a project which is unique in all senses and has no equivalent in world’s history. Today, we can see that the BAM in many respects determines global logistics for the entire 21st century. Our country has gained great opportunities for the exploration and development of Siberia and Far East, for the expansion of freight transport towards the Pacific Ocean. Needless to say, it was due to the Baikal-Amur Mainline that the current turn towards East was possible” [4].

In addition to the ceremonial meeting in the Kremlin, Moscow, other events in honour of the 50th anniversary of the BAM took place in various agencies, ministries and departments. On April 23, 2024, Head of the Federal Agency for Rail Transport Alexey Druzhinin awarded anniversary medals “50 years of the Baikal-Amur Mainline” to a group of BAM builders, including teachers and employees of Emperor Alexander I St. Petersburg State Transport University [5].

On April 23, 2024, a ceremony dedicated to the celebration of the 50th anniversary of the start of the construction of the Baikal-Amur Mainline took place in the Kremlin Palace.

Those who went “to get some fog and smell of taiga” in 1974, as well as a new generation, students participating in the BAM 2.0 project of JSC Russian Railways, including members of the Baikal student construction brigade from PGUPS came together 50 years after the declaration of the All-Union Komsomol shock construction project. The first builders of the BAM from among



Group of BAM builders – teachers and employees of PGUPS awarded with the anniversary medal “50 years of the Baikal-Amur Mainline”, participants of the ceremony in the Kremlin Palace dedicated to the 50th anniversary of the start of the construction of the BAM on April 23, 2024 (from left to right): Evgeny I. Shekhtman, Pyotr K. Rybin, Vladimir F. Ravgeisha, Gennady E. Egorov, Alexey I. Dergachev, Nikolay S. Rogalev, Alexey G. Korablev. (Photo by PGUPS)



Certificate for the anniversary medal “50 years of the Baikal-Amur Mainline” in the name of Gennady E. Egorov, the contributor to the construction of the mainline, retired Colonel, Head of the Human Resources Management Department, PGUPS. 2024. The certificate says: “Certificate. Gennady E Egorov was awarded the jubilee medal “50 years of the Baikal-Amur Mainline”. It was established by decree of the President of the Russian Federation. The medal was awarded on behalf of the President of the Russian Federation. Minister of Transport of the Russian Federation V.G. Saveliev. [signed] February 28, 2024”. (Photo by PGUPS)

the teachers and staff of PGUPS also took part in the ceremony at the Kremlin Palace.

President of the Russian Federation Vladimir Putin attended at the anniversary meeting in the Kremlin Palace. The head of the state congratulated the BAM builders on the holiday, recalled the historical milestones of the project, and emphasized the much broader purpose that the project serves nowadays: to lay continuous second tracks along the entire length of the BAM. “The further development of the BAM will serve

to increase export and transit capabilities of Russia as an important link in the Russian transport system. I am certain, we will definitely fulfil all the plans we have and we will do this for the benefit of Russia and our people”, stressed the President [6].

On April 26, 2024, the science-to-practice conference “Recent History and Prospects for the Development of Russian Railways” dedicated to the 100th anniversary of the Department of Surveying and Design of Railways of the Emperor Alexander I St. Petersburg State Transport University (PGUPS) and the 50th anniversary of the start of the construction of the BAM took place in the assembly hall of PGUPS.

The conference was opened by Rector of PGUPS Oleg S. Valinsky. In his address, he noted that “in total, about two million people were involved in the Komsomol shock construction project, and for many of them, the construction of the BAM and their subsequent work



PGUPS students – members of the Baikal Student Construction Brigade participating in the ceremony dedicated to the 50th anniversary of the start of the construction of the BAM at the Kremlin Palace on April 23, 2024. In the centre of the photo is Gennady M. Fadeyev, the former Minister of Rail Transport of the Russian Federation in 1992–1996 and 2002–2003, Advisor to the Minister of Transport of Russia, Adviser to General Director – Chairman of the Management Board of JSC Russian Railways. (Photo by PGUPS)



Rector of PGUPS Oleg S. Valinsky is speaking.
(Photo by PGUPS)

on the mainline has been the lifetime project, a real feat without any exaggeration” [7].

Professors, teachers and employees of PGUPS and other organisations who took part in the implementation of the Baikal-Amur Mainline project in different years as part of scientific expeditions, surveying parties, student construction brigades, and units of military railway workers who participated in the construction delivered addresses and presentations at the conference.

Some of the speakers who were warmly received by the audience (mostly comprised of PGUPS students) were President of the PGUPS Alumni Corps Viktor N. Lobko; Head of the Department of Surveying and De-

sign of Railways at PGUPS Sergey V. Shkurnikov; Head of the Department of Wagons and Rolling Stock at PGUPS, Professor Yuri P. Boronenko; Deputy Chief Engineer of Lengiprotrans JSC Alexey P. Konyukhov; Major General in reserve, Director of the Leningrad Technical School of Railway Transport, Professor Evgeny I. Shekhtman, and others.

In their presentations, the construction participants shared their memories of the difficulties that were faced and persistently overcome by the first BAM builders, who were then students, young engineers, soldiers and officers of the Soviet Army, and also talked about the role that the legendary construction project played in the development, growing-up, experience acquisition, and character training of future specialists and, in many cases, operational managers. They noted that despite the severe living and working conditions and hard work which often lasted as long as daylight allowed, they had enough time for singing songs with a guitar, sports competitions, and amateur performances. Today, they remember all this as a wonderful time of their youth and feel themselves proud for having been part of the Great Construction Project and having made their personal contribution to it.

FROM THE HISTORY OF BAM

The Baikal-Amur Mainline, the legendary BAM, is one of the greatest transport projects in the history of Russia and globally, as well as one of the longest rail



In the conference hall of the science-to-practice conference “Recent History and Prospects for the Development of Russian Railways”. Head of the Surveying and Design of Railways Department at PGUPS, Associate Professor Sergey V. Shkurnikov is speaking.
(Photo by PGUPS)

mainlines. The project is not only ambitious, but also very difficult to implement.

The main period of construction of the BAM was from 1974 to 1986. However, the idea to build a railway north of Lake Baikal with the view to explore Siberia and the Far East was put forward as early as the beginning of the 19th century. Survey work to pursue the idea began in the first decades of the 20th century. The first projects for the construction of a railway line in parallel with, but to the north of, the Trans-Siberian Railway date back to the 1910s–1920s. For the first time, this direction of the Baikal-Amur Mainline was indicated on the contour map of prospective development of railways in the USSR approved by the Council of Labour and Defence in 1924 [8, 9].

The Soviet leadership turned to the project in 1930. A document on the design and construction of a railway with access to the Pacific Ocean was sent from the Far Eastern Regional Committee of the All-Union Communist Party of Bolsheviks to the Central Committee of the All-Union Communist Party of Bolsheviks and the Council of People's Commissars (SNK) of the USSR. Probably, it was this document that first named the future railway "Baikal-Amur Mainline" [10].

On April 13, 1932, Decree of the Council of People's Commissars of the USSR No. 542 "On the construction of the Baikal-Amur Railway" was issued to launch design and survey work¹. On October 23, Decree of the Council of Labour and Defence "On the construction of the Baikal-Amur Mainline" was approved. The construction of the Baikal-Amur Railway was entrusted to the United State Political Administration under the Council of People's Commissars of the USSR (OGPU under SNK of the USSR) using prisoners of forced labour camps as workforce. Sergey V. Mrachkovsky was appointed head of construction for the Baikal-Amur Railway². The construction began on several sections of the line, but was suspended because of the Great Patriotic War.

The project was reopened in the 1960s when in 1967, the Central Committee of the Communist Party of the Soviet Union (CC CPSU) and the Council of Ministers of the USSR made a decision to resume the design and survey works on the BAM. On March 24, 1967, the

Central Committee of the CPSU and the Council of Ministers of the USSR adopted Decree "On strengthening of survey work for the BAM" requiring organisations under the Ministry of Transport Construction (Mintransstroy) of the USSR to start design and survey works for the future mainline³.

On November 17, 1971, the Ministry of Transport of the USSR issued Order No. 204 "On the creation of a general contractor organisation "Bamstroyput" Construction Directorate at Skovorodino Station in the Amur Oblast under the Ministry of Transport". Valentin I. Mokrovitsky was appointed head of the Directorate⁴.

It is enough to look at a railway map to get an understanding of how necessary the line is. A developed network of railways existed only in the area to the west of the Urals, while to the east the country had limitless expanses and only one railway, the Trans-Siberian Railway, which was built between 1891 and 1916.

The length of the BAM between Tayshet and Sovetskaya Gavan stations is 4,341 km. For comparison, let's consider a section of the Trans-Siberian Railway between Tayshet and Vladivostok stations, which is 4,614 km long. So, the BAM section is shorter than that of the Trans-Siberian Railway by 273 km.

The construction of the BAM is fraught with great difficulties⁵. A considerable part of the mainline passes through areas with severe natural and climatic conditions, including high levels of seismic activity (from 6–7 points in the east of the route to 9 points in the west in the area of Tayshet and Lena), and perpetually frozen ground. The depth of soil freezing reaches 200 m from the surface. There are also places with buried ice, thermokarst sites (craters filled with ice), famous rocky clamps on rivers where mountain ranges drop almost vertically to the water, and equally famous swampy areas on permafrost known as mari. The mountain slopes feature naturally produced scree and stone runs (clusters of sharply angular stone blocks) that look like a closed, undivided cover on the surface of the earth. Another problem is aufeis (naleds) in places where groundwater erupts to the surface¹ [8, 9, 11].

Worth a special note here is the fact that the route of the BAM crosses more than 3,500 watercourses, including eleven full-flowing rivers, such as Lena, Amur,

¹ Decree of the Council of People's Commissars of the USSR No. 542 "On the construction of the Baikal-Amur Railway" / BAM Through Space and Time: Database on the History of the BAM. URL: <http://ihaefe.org/bam/>.

² Decree of the Council of Labour and Defence "On the construction of the Baikal-Amur Mainline" "On the construction of the Baikal-Amur Railway" / BAM Through Space and Time: Database on the History of the BAM. URL: <http://ihaefe.org/bam/>.

³ BAM: The Chronicle of Events: 1967. URL: <http://ihaefe.org/bam/>

⁴ BAM: The Chronicle of Events: 1971. URL: <http://ihaefe.org/bam/>

⁵ A section characterizing the BAM and the operational area of the railway prepared on the basis of the report. Konyukhov, A.P. "Contribution of Lengiprotrans JSC to the survey and design of the BAM" A.P. Konyukhov is a railway engineer, a participant of the survey, design and construction works at the Baikal-Amur Railway in 1976–1982 as a head of the surveying party and a deputy head of the expedition on the Central Section of the BAM — Tynda – Chara. Currently, he is Deputy Chief Engineer at Lengiprotrans JSC.



Buryat section of the BAM line. 1977. (Photo by S.F. Spiridonov. Science and Technology Library (NTB) of PGUPS)

Zeya, Vitim, Olekma, Nyukzha, Selemdzha, Bureya, and others. Besides, it runs through seven large mountain ranges, including the Baikal Mountains, the Northern Muya Range, the Udokan Range, the Kodar Mountains, the Olyokma-Stanovik, the Turan Range, and the Duse-Alin. The construction of the Baikal-Amur Mainline is an entire stage in the implementation of a grandiose programme for the development of Eastern Siberia and the Far East. The task was to “conquer” this vast region, and most importantly, to create a powerful industrial area here.

It should not go unmentioned that work was done in severe climatic and natural environments, with air temperature fluctuations from +40 °C in summer to –40 °C in winter, which is typical of a sharply continental climate; the abundance of gnats in the taiga wilds in the summer season, the remoteness of construction sites from supply bases, and the lack of roads in primeval forests and mountain ranges that can only be reached with the use of all-terrain vehicles or small aircraft.

The beginning of the construction of the new mainline was first formally mentioned in the speech of General Secretary of the Central Committee of the CPSU Leonid Brezhnev at a ceremonial meeting in honour of the 20th anniversary of the development of virgin and fallow lands that took place in Alma-Ata on March 15, 1974 [12].

In April 1974, the 17th Congress of the Komsomol was held in Moscow. It was there that the start of a large-scale project for the construction of the Baikal-Amur Mainline was announced a couple of months before the government’s official decision made in June.

On April 27, 1974, the first brigade of young builders left for the mainline construction site from the Yaroslavl Railway Station in Moscow [12, 13].

A strategic decision to build the Baikal-Amur Mainline was made by the Central Committee of the CPSU and the Council of Ministers of the USSR on July 8, 1974, when they issued Decree No. 561 “On the construction of the Baikal-Amur Mainline”. The Ministry of Railways and the Ministry of Transport Construction “were decreed to build the Baikal-Amur mainline with a length of 3,145 km from the town of Ust-Kut to the city of Komsomolsk-on-Amur via Nizhneangarsk, Chara, Tynda and Urgal in 1974–1983 with the view to further the development of productive forces in Eastern Siberia and the Far East and to support the increasing transportation of goods in the regions” [13].

The Central Committee of the CPSU approved the proposal of the Communist, Komsomol, and trade union organisations to declare the construction of the Baikal-Amur Mainline as a nationwide construction project. Thus, the BAM was given the status of the main All-Union Komsomol shock construction project, attracting even more people to take part in it.

The BAM construction included three stages:

Stage 1: 1931–1942. By 1941, the Izvestkovaya – Urgal – Duse-Alin (339 km) and BAM – Tynda (178 km) sections, a 68 km long line from Tayshet towards Bratsk, and a 180 km long line from Komsomolsk to Sovetskaya Gavan, including the Kuznetsovsky tunnel, were built and put into operation for train traffic.

On August 18, 1941, the construction work on the BAM was suspended. In 1942, the track superstructure, bridge and other structures of the BAM – Tynda sec-

tion were dismantled and used to build the Stalingrad – Saratov – Sviyazhsk belt road, which made a significant contribution to the victorious outcome of the Battle of Stalingrad.

Stage 2: 1943–1953. This included building the Komsomolsk – Sovetskaya Gavan line, which was of great significance in ensuring the defeat of the Japanese militarists (this required the dismantling of the track superstructure on the Izvestkovaya – Urgal section); building the Tayshet – Ust-Kut section, and restoring the Izvestkovaya – Urgal line. In total, more than 1,150 km of tracks were built. The BAM began to operate as a backbone line for the provision of transportation in the poorly developed region [13, 14].

Stage 3 of the BAM construction project began when the Central Committee of the CPSU and the Council of Ministers of the USSR adopted Decree “On strengthening of survey work for the BAM” on March 24, 1967. It took more than 12 years, from April 5, 1972 to October 27, 1984, to build the major part of the railway. On September 29, 1984, the teams of Alexander Bondar and Ivan Varshavsky met at the Balbukhta junction. On October 1, 1984, the rail length with the golden spike was ceremoniously laid at Kuanda station connecting the both parts of the line into a single whole [13, 14].

On September 1, 1989, the State Commission led by Head of the Baikal-Amur Railway named after Lenin Komsomol, Deputy Minister of Transport of the USSR Valery Gorbunov signed a certificate of acceptance for continuous operation of the eastern section of the BAM from Tynda to Komsomolsk-on-Amur. On November 1, 1989, a completion certificate for the western section was signed. The entire new 3,000-kilometer-long section of the mainline was put into continuous operation. The Severomuysky Tunnel, which is the longest tunnel in Russia, spanning 15.343 kilometres, was put into continuous operation in December 2003 [14]. Before it was complete, a temporary operating bypass with large slopes was used.

PARTICIPATION OF LIIZhT – PGUPS IN THE BAM EPIC

The contribution of the staff of Russia’s oldest transport educational institution to the construction of the Baikal-Amur Mainline encompassed two important ar-

eas of activity: first, scholars of many departments provided scientific and engineering support for the design and construction of important facilities on the mainline, and second, student construction brigades comprising students and teachers took part in construction works during the summer season.

In the summer of 1973, a year prior to the official launch of the BAM construction, a brigade of 65 people from the Bridges and Tunnels Faculty went to the BAM in Komsomolsk-on-Amur at the initiative of the Komsomol Committee of LIIZhT which was supported by the party committee, rector’s office, and leadership of the Ministry of Railways of the USSR. The students took part in the construction of a bridge crossing over the Amur River [16].

In 1975, the Baikal zonal student brigade comprised of 440 people from four faculties of LIIZhT — Construction; Bridge and Tunnels; Mechanical; and Electrical Engineering — was set up. The brigade was headed by commander V. Babich and commissioner A. Zorin who were graduates from the Institute. Subsequently, it became a tradition to deploy line zonal construction brigades of LIIZhT on the Buryat section of the BAM, between the Baikalsky and Severomuysky Tunnels [17].

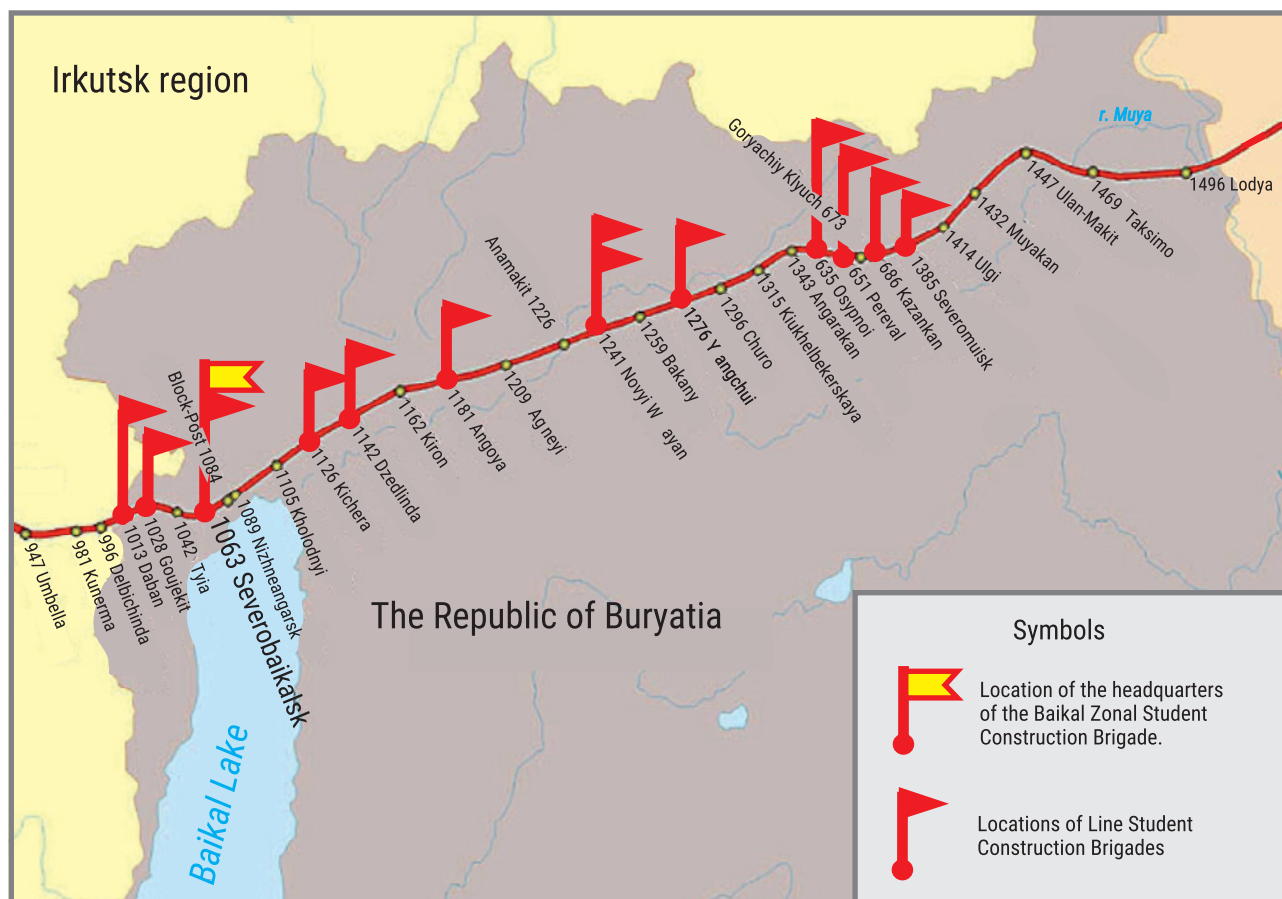
After the adoption of Decree of the Central Committee of the CPSU and the Council of Ministers of the USSR “On the construction of the Baikal-Amur Mainline” in 1974, the LIIZhT team became involved in solving the problems of design, construction and subsequent operation of the huge construction site [17, 18].

The range of scientific and technological problems was so broad that it was necessary to organise research at Institute’s departments and the Scientific Research Institute of Bridges in a streamlined manner⁶. LIIZhT Rector Evgeny Kraskovsky⁷ initiated the establishment of the Council for Coordination of Research for the BAM which was chaired by Professor Yuri Limanov. The Council included professors Mikhail I. Voronin, Georgy N. Zhinkin, Yuri M. Silnitsky, and Mikhail M. Filippov. At the beginning of 1975, LIIZhT entered into agreements on creative collaboration with the Lengiprotrans, Lengiprotransmost and Giprotranssignalsvyaz design institutes, the Directorate of the BAM, and other organisations [19].

The issues covered by scientific research included studying the conditions of construction and prepara-

⁶ The Scientific Research Institute of Bridges was a division of LIIZhT until the early 1990s.

⁷ Evgeny Y. Kraskovsky (1918–1993) was the twenty-fifth rector of LIIZhT, an outstanding figure in higher education, one of the most successful rectors of the Institute. Under his leadership, the Institute accomplished great plans for its social and economic development, achieved significant results in academic, scientific, cultural, educational and character-building activities, significantly expanded its physical, technical and scientific assets, including the construction of new educational buildings, student dormitories and a Sports Palace with a swimming pool. LIIZhT became one of the country’s leading engineering and technology higher education institutions. In 1984, LIIZhT was awarded the Order of the October Revolution.



Deployment of Line Student Construction Brigades of LIIZhT on the Buryat section of the BAM. A yellow flag on the map shows the location of the headquarters of the Baikal Zonal Student Construction Brigade. Triangular red flags on the map show the locations of Line Student Construction Brigades [17]

tion of efficient technical solutions for managing the construction in areas of concentrated work on the Chara – Tynda section; purification of oily wastewater at BAM sites; construction and operation of railway water



Evgeny Kraskovsky, LIIZhT Rector in 1968–1989.
(Photo by PGUPS)

pipelines in permafrost areas; designing efficient crossing loops and stations for the Chara – Tynda section. The results of the research on complex issues of design and construction of the BAM were widely discussed by the country's scientific and engineering community. Science-to-practice conferences were held at the initiative of the Ministry of Railways of the USSR, the Railway Research Institute (VNIIZhT) and railway higher education institutions to facilitate the integration of research and development outcomes into engineering practices for the construction of the mainline [20].

The Institute provided scientific and technical assistance to design and construction organisations involved in the construction of bridges and pipes on the Baikal-Amur Mainline. During the construction of bridges with columns, corrugated metal culverts, the northern version of pre-stressed reinforced concrete spans and other artificial structures of a new type for the BAM, the Institute carried out systematic field observations of their condition, deformations, features of the stressed state and made changes to designs and construction technology, as and when necessary.

Scholars in LIIZhT involved more and more of its students in research work on BAM-related topics and

the latter used real life subjects concerning facilities on the BAM route for their final qualification works (graduation projects). In 1975, the Training and Production Association of the Department of Surveying and Design of Railways and the Technical Department of Lengiprotrans was established. According to an expert review opinion from the Ministry of Railways on the technical design of Lengiprotrans, specialists of the design institute proposed 17 topics for graduation projects on the development and comparison of options for the route of the Chara–Tynda section of the BAM [20]...

Students involved in these projects did their pre-graduation internship at Lengiprotrans with its leading specialists acting as second thesis supervisors.

By 1976, LIIZhT developed 60 research topics for the BAM, involving 24 departments and the Research Institute of Bridges of LIIZhT. 73 graduation projects on topics relating to the construction of the BAM were completed in the Institute in 1975 [19]...

Assistance to the Institute's Komsomol organisation in setting up and managing student construction brigades was under increased scrutiny from the rector's office and the party organisation of LIIZHhT. For several years, LIIZHhT Rector Evgeny Kraskovsky travelled to the BAM construction site to visit student construction brigades of the Institute, meet with students and managers of construction organisations, and take part in gatherings and festivals of construction brigades which were traditionally timed to coincide with the Railway Worker's Day (the 1st Sunday in August) or the Builder's Day (the 2nd Sunday in August).

In 1984, ten student construction brigades of the Institute with a total of 450 people worked on the construction of the Baikal-Amur Mainline [21] Besides, the Institute sent its students to do internships at Bamstroy Mekhanizatsiya and Tyndatransstroy trusts, in surveying parties, and on the operating Tynda section of the Baikal-Amur Mainline.

PHOTO REPORTS: LIIZHT STUDENTS ON THE BAM



LIIZhT students. Late 1970s. (Photo by PGUPS)



a



b

Members of LIIZhT student construction brigades building bridge crossings on the BAM. Late 1970s. (Photo by PGUPS)



Members of a LIIZhT student construction brigade at the construction site of the Severomuysky Tunnel on the BAM. Late 1970s. (Photo by PGUPS)



Rector of LIIZhT Evgeny Kraskovsky (in the centre) and the manager of Nizhneangarsktransstroy trust, Hero of Socialist Labour F.V. Khodakovsky (to the left of Kraskovsky) arrived by a helicopter at the place of stationing of one of the brigades. On the far left is the commander of Baikal zonal student brigade Yuri Boronenko. 1977. (Photo by S.F. Spiridonov. Science and Technology Library (NTB) of PGUPS)



Meeting of the command unit of Baikal zonal student brigade.

On the photo, from left to right, are chief engineer O. Klishev, chief of the command unit V. Korovkevich, secretary of the command unit, Baikal commander Yu. Boronenko, commissioner V. Volkov, and chief physician V. Luchkevich. (Photo by S.F. Spiridonov, Science and Technology Library (NTB) of PGUPS)



LIIZhT students building a drainage collector for the east portal of the Severomuysky Tunnel. The Buryat section of the BAM. 1977. (Photo by S.F. Spiridonov, collection of A.V. Kabanov. Science and Technology Library. PGUPS)



The west portal of the Severomuysky Tunnel. 1977. (Photo by S.F. Spiridonov, collection of A.V. Kabanov. Science and Technology Library (NTB) of PGUPS)



Long-awaited lunch time and a short break. Baikal-1 student construction brigade. 1977.
(Photo by S.F. Spiridonov, collection of A.V. Kabanov. Science and Technology Library (NTB) of PGUPS)



Thermal radon baths on the job. 1977. (Photo by S.F. Spiridonov, collection of A.V. Kabanov. Science and Technology Library (NTB) of PGUPS)



Preparing an issue of the Taiga Pravda wall newspaper of Baikal-1 student construction brigade. 1977.
(Photo by S.F. Spiridonov, collection of A.V. Kabanov. Science and Technology Library (NTB) of PGUPS)



Camping site of Baikal-1 student construction brigade. 1977. (Photo by S.F. Spiridonov, collection of A.V. Kabanov. Science and Technology Library (NTB) of PGUPS)



Celebration of the initiation into the "glorious tribe of construction brigade members". 1977.
(Photo by S.F. Spiridonov, collection of A.V. Kabanov. Science and Technology Library (NTB) of PGUPS)



Celebration of the initiation into the "glorious tribe of construction brigade members". 1980.
(Photo by E. Komarov. Science and Technology Library (NTB) of PGUPS)



Brigade! Front and centre!... Brigade commander A.V. Kabanov in the first row on the left (sitting). Baikal-1 student construction brigade. 1977. (Photo by S.F. Spiridonov, collection of A.V. Kabanov. Science and Technology Library (NTB) of PGUPS)



Gathering of Baikal zonal student brigades. Ceremonial assembly of brigades. Commander of Baikal zonal student brigade Yuri Boronenko (on the left) and commissioner I.P. Kiselev are accepting reports from brigade commanders. Severobaikalsk. 1980. (Photo by E. Komarov. Science and Technology Library (NTB) of PGUPS)



Rector of LIIZhT Evgeny Kraskovsky and the manager of Nizhneangarsktransstroy trust F.V. Khodakovsky are viewing the exhibition of wall newspapers of student construction brigades during a gathering. Severobaikalsk. Late 1970s. On the far left of the photo is commander of one of the brigades A.P. Ledyayev. (Photo by S.F. Spiridonov. Science and Technology Library (NTB) of PGUPS)

SEVEROBAIKALSK 1980

Severobaikalsk. 1980 (Photo by E. Komarov.
Science and Technology Library (NTB) of PGUPS)



Roadbed of the future line. 1980. (Photo by E. Komarov.
Science and Technology Library (NTB) of PGUPS)



Severobaikalsk. 1980. A future supermarket.
(Photo by E. Komarov. Science and Technology Library (NTB)
of PGUPS)



Severobaikalsk. 1980. Central square.
(Photo by E. Komarov. Science and Technology Library (NTB)
of PGUPS)



Severobaikalsk. 1980. The so-called "new houses".
(Photo by E. Komarov. Science and Technology Library (NTB)
of PGUPS)



Future Severobaikalsk. A gift from builders from Leningrad –
the first block of modern, comfortable, earthquake-resistant
residential buildings. 1980. (Photo by E. Komarov. Science and
Technology Library (NTB) of PGUPS)



The future is here. Severobaikalsk nowadays, 2020.
(Photo by Yu.P. Boronenko. Science and Technology Library (NTB) of PGUPS)



The Severobaikalsk station referred to as "the Baikal Wave" by residents.
Architect: Vladimir Avksentyuk. 1990. (Photo by Roman Denisov.
URL: <https://periskop.su/2071040.html?from=sds>)



Severobaikalsk. Station Square.
Monument to city builders from Leningrad.
(Photo by Roman Denisov.
URL: <https://periskop.su/2071040.html?from=sds>)



Certificate for the medal “For the construction of the Baikal-Amur Mainline” which was given to Yuri Boronenko for many years of participation in the movement of Student Construction Brigades and a great contribution to the construction of the BAM. Yuri Boronenko is Chair of the Wagons and Wagon Facilities Department at PGUPS, Doctor of Engineering Sciences, Honorary Professor of PGUPS. (Photo by PGUPS).

In the mid-1980s, the movement of student construction brigades reached its acme. After the beginning of the period subsequently known as “perestroika” and the start of political and economic turbulence in the country, the number of student construction brigades began to decrease. However, in 1985, the Institute’s combined student brigade still had 57 line brigades with a total of 1,595 people, including about 500 people working at BAM sites. Many activists of student construction brigades subsequently grew into professors, teachers, heads of divisions and the Institute as a whole. These include: V.V. Babich, A.A. Blatt, Yu.P. Boronenko, N.S. Bushuyev, V.P. Bykov, N.A. Eliseyev, N.N. Kachan, I.P. Kiselev, V.B. Korovkevich, S.M. Kurmashev, A.P. Ledyayev, E.N. Malyshev, V.M. Petrov, V.L. Uralov, S.V. Shkurnikov, V.V. Shmytinsky, P.P. Yakubchik, and many others [19].

The certificate says: “Certificate. Yuri P. Boronenko, on behalf of the Presidium of the Supreme Soviet of the USSR, was awarded the medal “For the Construction of the Baikal-Amur Mainline” by the Decree of the Presidium of the Supreme Soviet of the Russian Soviet

Federative Socialist Republic [RSFSR] dated November 29, 1984. Secretary of the Presidium of the Supreme Soviet of the RSFSR [signed]”.

The participation of PGUPS in the development of the Eastern operating domain, including the BAM, is currently becoming more and more significant. In 2014–2023, specialists of the University provided methodological support (technology audits) for facilities of the Baikal-Amur Mainline of particular national importance.

The project provides for specific activities to reconstruct and reinforce infrastructure facilities, build second tracks and double-track inserted sections, new large investments are planned to this end. In the attraction zone of the BAM, the commercial development of mineral deposits is underway.

The movement of student construction brigades is being reactivated too. PGUPS again sends its students to the current “construction project of the century” in the area of the BAM for the third working semester in the summer season.

22 student brigades of the university will take part in the 2024 summer work semester. They will be stationed in St. Petersburg, Nizhny Novgorod, Michurinsk, Nizhny Novgorod, and on the BAM. These brigades will employ more than 600 students from the parent university and 460 students from its branches [23].

MILITARY CONSTRUCTION WORKERS AND THE CONSTRUCTION OF THE BAIKAL-AMUR MAINLINE

Groups of military railway workers⁸ began to take part in survey and construction works on the BAM in 1926 when the military of the Separate Corps of Railway Troops of the Workers’ and Peasants’ Red Army engaged in topographical surveying for the future route of the Baikal-Amur Mainline.

After the government made a decision to build the BAM in 1974, railway troops were entrusted to build the eastern part of the mainline, from Tynda to Komsomolsk-on-Amur, with the main line of 475 km and 535 km of station tracks. The construction period was nine years⁹ [24].

⁸ Railway troops are a kind of special troops that provide logistics support in the Armed Forces of the Russian Federation as part of the system for ensuring the defence capability and national security of the state. The first units of railway troops in the world were created in Russia as part of the engineering troops of the Russian Imperial Army in 1851. Railway troops developed as part of the armed forces of the USSR and then of the Russian Federation.

⁹ A section about the contribution of military railway workers to the construction of the BAM prepared on the basis of the report: Shekhtman E.I. “Accomplishing a mission for the construction of the Eastern section of the Baikal-Amur Mainline using the railways troops (1974–1989)”. E.I. Shekhtman took part in the construction of the BAM in 1984–1990 (from lieutenant to captain) and 1997–1997 (colonel). He is currently a Major General in reserve, Doctor of Military Sciences, Director of the Leningrad College of Railway Transport, professor at the Railway Track Department of Emperor Alexander I St. Petersburg State Transport University (PGUPS), Professor.

Deployment of military railway workers at the BAM construction sites

In accordance with the order of the Minister of Defence of the USSR, two railway corps, a total of 40,180 people, were sent to the construction site in 1974. The headquarters of the 35th Railway Corps (ZhDK), which arrived at the village of Tynda, was set up in Sverdlovsk. The headquarters of the 1st Railway Corps was relocated from Kharkov to Chegdomyn station. The central headquarters of railway troops was converted into the main headquarters of the railway troops.

Railway troops acted as the general contractor for the BAM, with all that this implies. It was the first time that railway troops faced a challenge of such a magnitude, which they had to solve under quite peculiar climatic, organisational and engineering conditions. Addressing the challenge required change in approaches to managing construction and installation works. It was necessary to reorganise BAM units and formations, strengthen them with trained personnel, and provide machinery capable of operating under severe conditions. They had to introduce major changes to the logistics and administrative support procedures, set up new patterns for interactions with the country's policymakers, government agencies, executive and local government bodies, with the customer — the Ministry of Railways and the BAM Construction Directorate, as well as with design institutes, specialized divisions of the Ministry of Railways, and other subcontractors.

In the end of November 1974, the first troop trains left for the BAM. Their movement was constantly monitored by traffic controllers of the administration of brigades and line bodies of military communications (VOSO). The commandship was daily updated to have a clear understanding about where they were and whether their provision was full.

The first units began to move into taiga to their stations along winter roads through frozen mari and numerous watercourses. In November 1974, the first sledge-and-tractor train of the 4th Separate Railway Brigade (OdZhDB) began to lay a 168-km-long winter road from the village of Tynda eastward to what would be Dipkun station in the future. It took one month to go that distance.

The work was planned to be carried out on a broad front using an integrated flow method based on a five-beam scheme: from Tynda eastward to Tungala; from Urgal westward to Tungala and eastward to Urkaltu; from Berezovka westward to Urkaltu and eastward to Komsomolsk-on-Amur.

It was necessary to create base stations for the construction project at Tynda, Urgal, Berezovka and Komsomolsk-on-Amur. Moreover, intermediate base stations were designed to be established at Dipkun, Zeisk,

Fevralsk, and Alonka. Thus, 14 work clusters were formed that were assigned to particular formations.

By the beginning of construction of the Tynda – Urgal – Komsomolsk-on-Amur section, the transport network was poorly developed. Therefore, in the beginning of the construction it was necessary to solve the problem of building roads for delivering personnel, machinery, materials and structures to the project sites.

The role of road transport increased with the construction and reconstruction of roads. In the winter, winter roads along the rivers Amgun, Duki, Gorin, Gilyuy, Bureya and Niman were widely used. In the summer, earthworks to create sites for military camps were performed and roads were built on both sides of the camps.

Upon the arrival of railway troops at their designated stations, a preparation period began with works to provide normal everyday stationing of units and the beginning of construction works. These included felling and uprooting of trees and bushes; construction and reconstruction of haul roads; construction of basic military construction camps; construction of temporary operations support facilities and maintenance yards; construction of rail length assembly shops and logistics facilities; earth excavation; demolition of structures and removal of utilities; setting up communications and temporary power supply, water supply, and warehouse facilities; arranging for meals, household and medical services for military personnel and their families.

Earth excavation and a range of earthworks

To build the roadbeds for the motorway and railway, borrow pits were explored and excavated. About 6,700 thousand m³ of soil were removed and laid on the Tynda – Urgal section.

In 1984–1989, when the railway sections were prepared for commercial commissioning, it became necessary to reinforce the roadbed and drainage systems with stone. Rock was used to reinforce side slopes and excavations, while cone-shaped elements of engineering structures were reinforced with graded rock fill.

As trees and shrubs were removed in clearings within the right-of-way, the construction of a temporary side road began. In 1975, military railway workers began the construction and reconstruction of the road simultaneously in the following directions: from Urgal eastward; from Komsomolsk westward; from Berezovka, Dzhanku and Dusse-Alin in both directions. On the Tynda – Urgal section, works began immediately after the relocation of units to their base stations: toward Marevaya and Dipkun on the Tynda side; and toward Chabygda, Alonka, Vosporukhan and Fevralsk on the Urgal side.

To build the roadbed for the motorway, the material was taken from local borrow pits; gravel and cobble sediments in the floodplains of the rivers crossed were widely used, too. In parallel with the construction of the roadbed, temporary works and, where necessary, anti-ice structures were erected. Before the construction of bridges across rivers, temporary ice crossings were widely used in the winter season.

The roadbed for the motorway and railway were built in compliance with specifications for the preservation of vegetation.

Thanks to the dedicated work of railway soldiers, the 596-km-long motorway on the Fevralsk – Urgal – Berezovka section was completed in 1977, and the section from Fevralsk to Tynda was put into operation in 1981.

A bridge across the Bureya River and approaches to it were a barrier site. To avoid hindering track laying operations, a bridge on the bypass for the railway and motorway and a roadbed leading to it were built in 1975.

On October 2, 1980, one year ahead of schedule, mechanization battalions were the first to cross the border of the Khabarovsk Krai and the Amur Oblast on the eastern section of the BAM. Here, at the top of the pass, they met with the advanced battalions of the 39th Separate Railway Brigade commanded by Colonel G.I. Kogadko. A rally was held to celebrate this, which was attended by the winners of the socialist competition from units of the brigades. On the border of the two regions, the unit of Captain B. Shinybayev installed a stele formed by two 12-metre rails topped with the emblem of the railway troops.

Due to the elimination of the barrier site on the excavation where the route goes through the Turan Pass on the Ulma – Isa section and here, in the area of five large bridges, the roadbed was ready and the track laying operations could start in 1981 instead of 1980 expected in the plan. These pits had soils of categories 9–11 rather than categories 6–7 used in the design.

Laying the superstructure

The first so-called silver spike was driven into the rail length of the main track on the eastern wing of the Baikal-Amur Mainline near Urgal station on February 5, 1975. In 1976, builders installed a large granite cube on this site, assigning it an honourable role to testify to history the site of the BAM's first spike and to serve as a monument for the descendants.

In 1975, rail length assembly workshops equipped with PPZL-650 semi-automatic rail length assembly lines, sets of gantry cranes, and electric tool kits were established at Dzhalingra, Urgal and Postyshevo stations. Later, rail length assembly workshops were created at Verkhnezeisk and Fevralsk stations, and in



Track laying on the central section of the BAM. 1970s.
(Science and Technology Library (NTB) of PGUPS)

1976 they were opened in the area of Komsomolsk station. 25-metre-long rail lengths were assembled at the workshops and then sent to laying sites using roller platforms.

On the Tynda – Postyshevo section, track was laid by railway battalions using PB-3M track-laying vehicles, while on the Postyshevo – Komsomolsk-on-Amur section, the old rail-sleeper grid was dismantled and a new one was laid with the help of a UK-25/9 track-laying vehicle.

April 17, 1984 marked a historical event when units of the corps moving towards each other met at the junction named after Hero of the USSR V. Miroschnichenko.

As at the end of 1989, military railway workers have in total installed superstructure for 1,465.7 km of the main track and 341.2 km of station tracks on hauls and operation points, excluding Tynda and Urgal junctions.

Engineering structures

One-third of the BAM length is accounted for by bridges, tunnels, viaducts, avalanche protection walls and other engineering structures.

The construction of 15 of the 50 large bridges was entrusted to units of Mostostroy-8 and Mostostroy-10



Military railway workers are replacing temporary spans with permanent ones on the river between 70 km and 90 km from Tynda. Early 1980s. (Photo from the collection of N.S. Rogalev. Science and Technology Library (NTB) of PGUPS)

trusts, and 1,345 engineering structures were built by bridge units and units of the railway troops.

Operation points

Operation points were designed and built based on the capacity of the line to allow for the required amount of traffic and on the availability of convenient sites for building stations and settlements depending on the terrain surface relief and geological structure.

The layout type for passing loops and through stations was mainly longitudinal, with the useful length of 1,080 metres and the number of receiving and departure tracks of two at passing loops and three at through stations taken to allow for the operation of double-length trains.

The completed eastern section of BAM is designed to accommodate freight trains of 6,000 tonnes with 4,000-tonne 4TE10S diesel locomotives and passenger trains with 2TE10M diesel locomotives.

Two tracks with a length of 300 metres were built at each of Verkhnezeisk and Fevral'sk stations for parking a fire-fighting train and a wreck train. Besides, these stations each had high side and end platforms, two loading platforms, and a control and technical inspection station. Eight stations tracks were built at Verkhnezeisk station. Fevral'sk, Marevaya, Dipkun, Dugda, and Alonka stations got railway warehouses, open platforms, and bulk load platforms. All passing loops were built to a longitudinal design.

Communications and signalling systems

To communicate with external addressees, railway troops used the available communications channels of the Ministry of Communications of the USSR, the Ministry of Defence of the USSR, and the Ministry of Railways of the USSR.

Certain railway communications battalions built communications lines ahead of the completion of the roadbed and engineering structures. The communications line was built using four pairs of wires with a traverse profile. Two pairs were intended to support the operation of construction trains (for communications between the stations and with dispatchers) and the other two were to provide operational communications with units.

With the deployment of heavy r-404 multi-channel radio relay stations, Urgal, Alonka, Verkhnezeisk and Dipkun military camps were able to make long-distance calls directly from the mainline site.

All types of communications used in combination by railway troops when building the BAM provided reliable and continuous management of formations and units.

Power supply of the mainline

The most labour-intensive work during the construction of the 35/10 kV longitudinal transmission line was excavation for the foundations and supports of the transmission lines. In fact, 93–95 % of all the pits on the eastern section of the BAM were dug manually using shovels, jackhammers, concrete breakers, and by no-blowout loosening of rock soils with blasthole charges.

Railway soldiers had major problems when excavating pits in water-bearing ground.

The electrical installation work was performed by wiring trains (EMP-760 in Khabarovsk and EMP-764 in Tynda) of Transenergomontazh trust of Glavtranslektromontazh under the Ministry of Transport Construction.

Construction project outcomes

The Tynda – Komsomolsk-on-Amur railway line was commissioned into commercial operation strictly in accordance with the completion dates and the scope of works for start-up complexes stated in decrees of the Central Committee of the CPSU and the Council of Ministers of the USSR. The acceptance procedures were performed by state acceptance commissions appointed by orders of the Ministry of Railways of the USSR.

The last section of the eastern BAM between Zeisk and Tungala (156 km) was put into commercial operation on September 29, 1989. The entire 1,466-kilometre-long eastern section of the BAM was added to the existing lines of the Ministry of Railways within the scope of the start-up complex. This date began to be celebrated as the Day of Labour Glory of Railway Troops.

The commissioning of the Baikal-Amur Mainline has created favourable grounds for expanding steel mainlines to undeveloped areas in the Asian part of Russia. The construction of the BAM has been essential



Opening a 1,050-metre bridge across the Zeiskoye Reservoir.

In 1976–1982, the construction work was carried out by Mostotryad-70 of Mostostroy-10 with the participation of 42 railway brigades and 351 bridge battalions. May 12, 1982.

(Photo from the collection of N.S. Rogalev. Science and Technology Library (NTB) of PGUPS)

for the strengthening of the national economy and defence capability of the country.

The work of military railway workers was highly appreciated by the leadership of the country and the Ministry of Defence.

More than 56 thousand railway troops were awarded the medal “For the construction of the Baikal-Amur Mainline”; 25 officers who were Komsomol members were awarded the Lenin Komsomol prizes in the field of production; generals and officers G.I. Kogatko, V.V. Kupriyanov, M.K. Makartsev, S.N. Palchuk, and A.A. Shantsev were awarded the title of Hero of Socialist Labour along with the Order of Lenin and the “Hammer and Sickle” Golden Star.

Orders and medals of the USSR for the construction of the eastern section of the BAM were given to 1,000 people. Medals of the Minister of Defence of the USSR were awarded to 180 recipients. General V.A. Vasiliev and Captain A.B. Chudakov received the USSR State Prize.

By building the eastern section of the BAM the troops were able to gain experience in managing units and military bases in the context of construction management with work being performed on a wide front under severe climatic conditions typical of the Transbaikalian region and the Far East, including managing the relocation and movement of units to uninhabited areas.

The silver rails of the BAM running through glens among taiga, crossing rivers and mountain ranges, with trains running around the clock in any weather, carrying passengers and commercial cargo, have become a monument to all of the BAM builders.



Miroshnichenko junction, 497 km. Military railway workers are laying the final rail length with the golden spike on the Tynda–Urgal section during a ceremony dedicated to the occasion. April 17, 1984. To provide the possibility of through traffic, the sections of the 35th Railway Corps (also known as the Tynda Corps) and the 1st Railway Corps (Urgal Corps) were connected to produce a total length of about 1,000 km and open through traffic. (Photo from the collection of N.S. Rogalev. Science and Technology Library (NTB) of PGUPS). The “Golden Word” about military labour valour, responsible attitudes, and the sense of duty during the construction of the Baikal-Amur Mainline (URL: https://dzen.ru/a/Y3byG_R-fXGUjEyg)

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