

# North Eurasian rail systems and their impact on Siberian economic growth

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*The following guest commentary was submitted by Mr. Cooper, a consulting engineer from Kirkland, Washington, and Professor Bykadorov, of the Siberian State Academy of Transport in Novosibirsk, Russian Federation. The authors are experts in the relevant fields, and the editors believe that the article will be of interest to EIR's readers, in the context of Lyndon LaRouche's proposals for the infrastructure development of Eurasia.*

A series of worldwide infrastructure development projects was proposed in the Jan. 1, 1995 issue of *EIR*.<sup>1</sup> The particular focus of these proposals was to develop three parallel railroad transportation corridors across the southern part of the Eurasian land mass between China and Europe. These three corridors were as follows: 1) the route of the present Trans-Siberian Magistral (mainline), across the southern part of Siberia, as the northernmost line; 2) the central Silk Road route, across northern China to Kazakhstan and Afghanistan to Iran and Turkey to southern Europe; 3) the southern route in Southeast Asia from southern China to Vietnam and Thailand to Myanmar (formerly Burma) and Bangladesh, across India to Pakistan, to join the Silk Road central route at Herat, Afghanistan.

The original proposal for a trans-Eurasian continental railroad infrastructure network to promote economic development was made in 1896, based on the "Great Projects" concept of Prime Minister Gabriel Hanotaux of France and Finance Minister Sergei Witte of Russia.<sup>2</sup> Their proposal called for the construction of two separate rail networks from France to Africa, and from France to Russia, so as to connect to China and Japan. These proposals were originally advanced in order to foster worldwide economic development through peaceful relations between nations with increased trade.

There was also a separate proposal advanced in 1906 to extend the Eurasian rail network from Russia to North America by way of Siberia and Alaska. The keystone of this proposal was to construct a railroad tunnel under the Bering Strait from the Chukchi Peninsula in Siberia to the Seward Peninsula in Alaska. This project was originally proposed by a joint American-French-Russian company which had been

chartered in the State of New Jersey.<sup>3</sup> The ultimate objective of constructing this railroad network in Siberia and the rail tunnel through the Bering Strait was to be able to connect Paris with Moscow and New York by direct rail service, for the transport of both freight and passengers. However, this project was shelved with the onset of World War I, and was to remain dormant for many years.

## The Stalin era

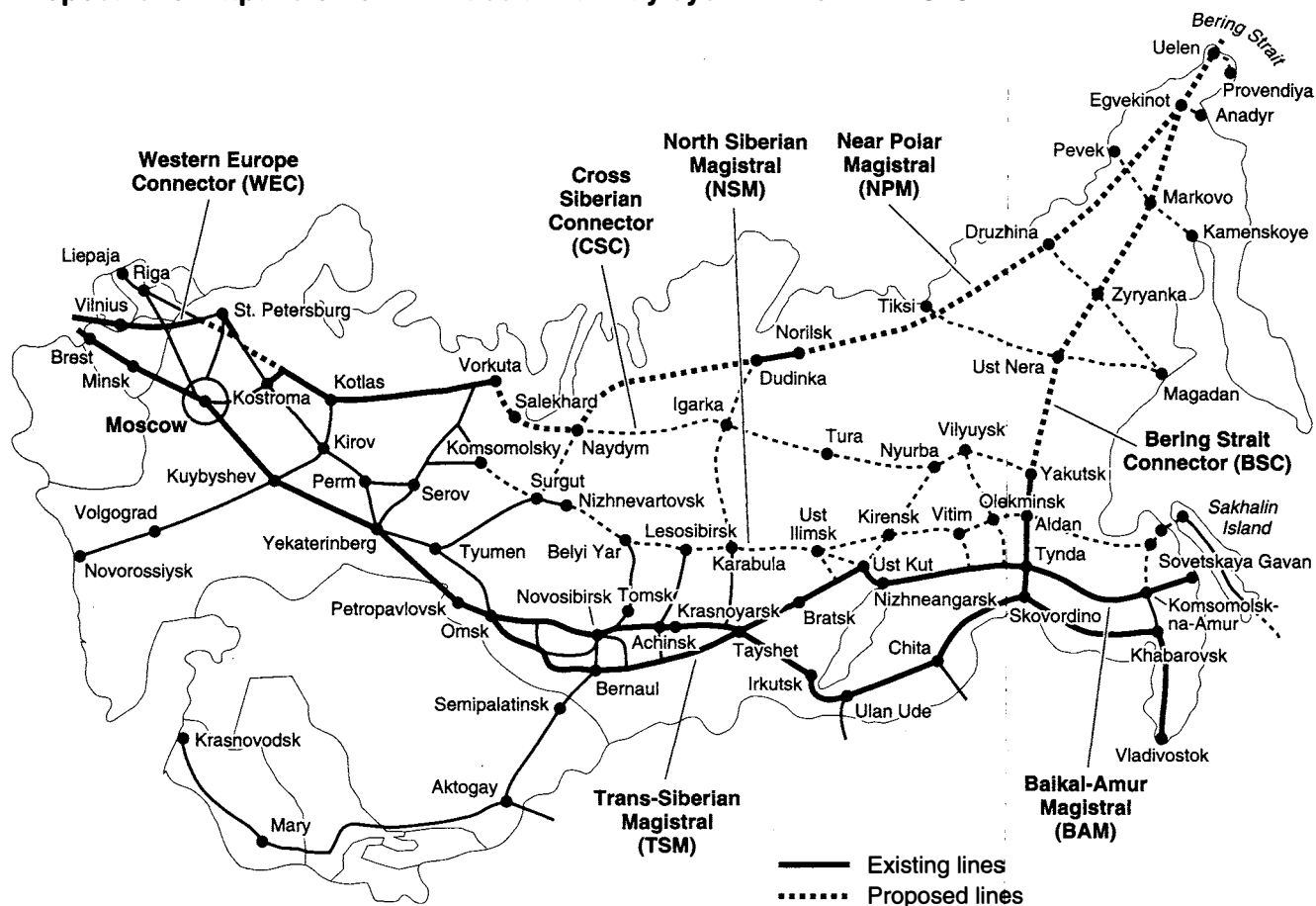
The idea of developing a northern Eurasian railroad network did not occur until after the end of World War II, during the time of Stalin. Planning studies of new rail system development in the northern Russia region were begun in the late 1940s, which involved both railroad lines and railroad tunnels. Two of the specific rail line projects which were considered were:

- 1) a new rail line in the Arctic Slope region of far northern Russia in the coastal zone;
- 2) a second railroad line parallel to but to the north of the present Trans-Siberian Magistral. Other connecting railroad lines were also studied which allowed access to the extensive mineral resources of Siberia at specific locations, as well as for military purposes.

Feasibility studies were also carried out for two major railroad tunnels under water, in the eastern part of Siberia. There was a study done for a proposed rail tunnel under the Tatar Strait, from the Russian mainland to the northwest end of Sakhalin Island. The tunnel to Sakhalin Island was for a crossing of the Tatar Strait of approximately 5 miles (8 km), and was ultimately to be complemented by a second tunnel at the southern end of the island to connect with the northernmost Hokkaido Island in Japan. A much longer railroad tunnel under the Bering Strait of 53 miles (85 km) was also studied between Siberia and Alaska, plus the connecting railroad line in Russia, so as to be able to connect the United States with the former Soviet Union.

Route surveys of these proposed railroad lines were completed during the Stalin era, along with the necessary engineering and economic feasibility studies. The trans-Arctic or **Near Polar Magistral (NPM)** railroad route in the northern Arctic coastal zone was actually laid out, with

## Proposals for expansion of the Russian railway system into the Arctic\*



\* Selected adjacent countries are also shown.

detailed field surveys conducted at a number of locations, and with some land clearing and grading actually taking place. Initial sections of this NPM rail corridor were actually constructed and placed into operation from Norilsk to Dudinka in the Taimyr region of north central Russia, to serve a large metal smelter from the river connection at an isolated point. The railroad line from Kotlas on the main system was extended to Vorkuta in the northeast of the Komi region in northwestern Russia, so as to service oil and gas as well as other resource development.

Engineering design studies were also completed of the proposed Sakhalin Island railroad tunnel between Lazarev and Pogibi, and construction was actually begun of the tunnel approaches. Initial surveys were also conducted of the rail line connections to the Bering Strait tunnel from Skovorodino on the Trans-Siberian Magistral to Tynda and to Yakutsk. These rail line surveys were extended from Yakutsk to Markovo and Yegvekinot to Uelen in the Chukotka region of far northeastern Siberia adjacent to the Seward Peninsula in the State of Alaska. Work on all of these

projects was halted in 1953 with the death of Stalin. Some work was continued on short extensions of rail lines from the existing Trans-Siberian route, so as to be able to gain access to specific mineral resources for exploitation, during the 1950s and 1960s.

### After Stalin: development of the BAM and TSM

Plans were made to extend a number of these rail lines further to the north and east during this period, for purposes of military defense as well as mineral resource exploitation. However, the only major northern Eurasian railroad development project which was actually constructed was the **Baikhal-Amur Magistral (BAM)** route. This project involved the construction of a 2,500-mile (4,000-km) railroad line from Tayshet on the **Trans-Siberian Magistral (TSM)** to the east of Krasnoyarsk to Bratsk and to Nizhneangarsk at the north end of Lake Baikhal. This line was then extended to Ust Kut on the Lena River and then to Tynda and to Komsomolsk-na-Amur. The BAM was then extended to Sovetskaya Gavan

on the Tatar Strait, with a railroad ferry boat crossing to Kholmsk on Sakhalin Island.

The BAM railroad line was built for the purpose of fostering economic development in northern Siberia, providing improved access to the very large mineral and energy resources of the region. The BAM was also intended to provide a more militarily secure route, farther from the Chinese border, after the split of the two communist countries in 1962. The BAM was also constructed with the ultimate objective of being able to facilitate the earning of foreign exchange revenues from transit shipments across Russia from Japan to Europe. The BAM was located so as to be between 400 and 800 miles (640 to 1,340 km) to the north of the existing TSM. Construction of the BAM was begun in the mid-1950s and completed in the 1980s.

Freight traffic on the TSM in the past has been very heavy on this largely double-track and electrified route, because it connects the major population centers of southern Siberia. Rail freight traffic has traditionally been much lighter on the largely single-track and dieselized BAM, for several reasons. The population density along most of the route is low, with relatively few towns and cities and only a limited number of industrial plants and mining sites. There is now a reduced need for a more militarily secure railroad route farther from the Chinese border, as the result of the improved relations between China and Russia in recent years. There has been a parallel lack of other infrastructure development in the region, including the failure to complete the railroad tunnels at the north and south ends of Sakhalin Island, which would otherwise serve as a natural freight traffic base for intermodal cargo shipments between Japan and Europe. In addition, there has been a drop in economic output in Russia, since the collapse of the former Soviet Union.

### **Proposed new Siberian lines**

It is proposed to construct a network of new railroad lines across Siberia, in order to foster future economic development of the region as well as trade and commerce among Europe, Asia, and North America. The Siberian railroad lines in northern Eurasia would parallel those railroad lines already proposed between the southern part of Eurasia and to Europe. These railroad lines in northern Eurasia would be built for the following purposes: 1) to promote exploitation of energy, mineral, and forest resources as a means of economic development of Siberia; 2) to promote trade and commerce among northern Russia, Japan, Korea, and Europe; 3) to promote trade and commerce among Europe, Asia, and North America.

A railroad line is now being constructed from Tynda to Yakutsk in the Sakha Republic of the Russian Federation, which is now more than 50% complete over its approximately 400-mile (640-km) route distance. The completion of this railroad line in about two years will provide access to the very large oil, gas, coal, and other mineral resources of the

Yakutsk region, as well as to promote its economic integration into the rest of the Russian Federation. A further extension of this railroad line over the approximately 900 miles (1,400 km) from Yakutsk to Magadan would allow the presently isolated Magadan region to also become more economically integrated into the rest of the Russian Far East, Siberia, and the Russian Federation as a whole.

The connecting railroad line from Yakutsk to the Bering Strait could be extended from Ust Nera at the half-way point of the route to Magadan to the northeast to Zyryanka to Markovo to Yegvekinot in the Chukotka region. This railroad line could then be extended to Uelen from Yegvekinot for subsequent entry into the Bering Strait tunnel to Alaska by way of Big and Little Diomed Islands.<sup>4</sup> Branch lines from the main railroad corridor could then be built to Anadyr, to Pevek, to Kamenskoye at the north end of the Kamchatka Peninsula, and to Provideniya and Lavrentiya on the Chukchi Peninsula. This railroad line from Tynda to Uelen is known as the **Bering Strait Connector (BSC)** route, as shown on the map.

Several railroad lines need to be constructed across Siberia in an east-west direction, as a part of the north Eurasia rail network. The most northerly route is that of the Near Polar Magistral in the coastal zone of the Arctic Ocean in far northern Russia. This NPM would be approximately 4,500 miles (7,200 km) in length from Vorkuta on the west to Uelen on the east by way of Dudinka, Norilsk, Druzhina, Pevek, and Yegvekinot, where it would join with the northeast-southwest Bering Strait Connector line. The completion of the NPM would facilitate the development of the extensive metal and other mineral resources of far northern Siberia; it would also facilitate access to the oil and gas resources of the Arctic zone of Russia in the Sakha, Taimyr, Yamal, and Komi regions. The construction of the NPM would make it much easier for both workers and equipment to be brought into these areas, as well as for the crude oil and natural gas products to be brought out for processing and utilization.

The completion of the NPM would make it possible to ship both goods and people across this far northern region of Russia over all 12 months of the year, with no concern for Arctic Ocean ice. Large-scale movements of intermodal containers could then take place by the shortest overall route distance between interior locations in Europe and Asia, and similar locations in North America, in less transit time than would be possible by ship. Crude oil or refined products of petroleum as well as natural gas could also be shipped directly by rail from Russia to the United States from future producing fields in the Taimyr, Yamal, and Komi regions of the Arctic, as well as from the existing producing fields of Surgut and Tyumen in western Siberia. The shipment of crude oil by rail from Russia to the United States could take place without the need for terminal transfers or concerns for marine oil spills or winter icing problems. Other cargoes could also be shipped from North America to Europe, Russia, and Asia by

this route, without the need for marine terminal loading and unloading for grain, equipment, and machinery.<sup>5</sup>

There are two intermediate railroad routes proposed to be constructed in an east-west direction between the southern Trans-Siberian Magistral and the northern Near Polar Magistral. One line is a westward extension of the present Baikal Amur Magistral. The other line would go to the west from Yakutsk to join the Near Polar Magistral route at Nadym. There would be additional north-south connecting lines from Surgut to Nadym and from Karabula to Igarka to Dudinka to cross both new intermediate east-west railroad lines. These new railroad lines, superimposed on the existing Russian railway system, are illustrated on the map.

The northern intermediate railroad line would be built from Yakutsk on the Lena River to the west to Nyurba to Tura and to Nadym, and would then connect to Salekhard and Vorkuta. The new railroad line to be constructed through this region would make it possible to extract a large number of minerals, including precious and other metals, from this previously inaccessible area. This rail line would be known as the **Cross-Siberian Connector (CSC)** route.

The second new railroad line would be the **North Siberian Magistral (NSM)**, as a westward extension of the present BAM. The railroad line would go to the west from Ust Kut on the Lena River to Ust Ilimsk, Karabula, Lesosibirsk, Belyi Yar, Nizhnevartovsk to Surgut, and Khanty-Mansijsk to Komsomolsky. There is then an extension on the existing lines from Komsomolsky to Serov, Perm, Kirov, and Kostroma, so as to completely bypass the Trans-Siberian Magistral and its traffic congestion. This railroad line would facilitate the transport of crude oil from the Surgut and Tyumen regions to either the Pacific Coast via Sovetskaya Gavan, or to the Bering Strait via Yakutsk, on at least an interim basis. The construction of this rail line would make it possible to develop the extensive energy and mineral resources of this region, as well as of the extensive timber resource harvesting.

## The economic impact

Siberia is one of the regions of Russia where the collapse of the former Soviet Union has had a very destructive influence. The recent changes in the geopolitical situation of Russia call for additional efforts to redeploy the productive workforces of Siberia. The economic growth of Siberia is complicated by its relations with the rest of Russia, as well as with Europe, Asia, and the Middle East.

The economic integration of Siberia with central Russia and the Russian Far East can be provided by the reconstruction of the Trans-Siberian Magistral railroad line, as a starting point. The reconstruction of the TSM would allow it to be upgraded to a high-speed interregional passenger line, as was earlier proposed.

The TSM could then be used as a high-speed freight line to ship containers between the Russian Far East and Europe.

The reconstruction of this rail line would then serve the five purposes of the central government—social, economic, defense, political, and geopolitical—in terms of the goals of the Russian Federation.

The second step would be to build the North Siberian Magistral as an extension of the BAM from Ust Kut to Surgut to Komsomolsky and to Perm and Kirov. The completion of the NSM would make it possible to greatly reduce, if not eliminate, future traffic congestion on the western part of the TSM, because trains from the two lines would never be combined. It would then be possible for there to be two totally separate rail freight shipment routes between the eastern and the western parts of Russia across Siberia. This advantage would then become especially important for future containerized freight traffic between Japan and Europe, with the possible construction of the rail tunnels to Sakhalin Island. These intermodal freight trains would then be able to operate across the entire length of Russia, so as to have a minimum of delays and congestion.

The proposed construction of the NSM as an extension to the BAM would have several major economic benefits: 1) to increase the traffic level of the existing BAM; 2) to open up many of the regions of Siberia to economic development; 3) to provide for foreign currency revenues earned from transit fees for intermodal freight shipments between Japan and Europe; 4) to facilitate shipments of crude oil from Russia to the United States; 5) to encourage Japan to ship cargoes destined for Europe over the Russian railway system instead of by ship; 6) to accelerate required research and development in transport, construction, engineering, and management of the project.<sup>6</sup>

It is then possible for the northern rail lines to be constructed after the rebuilding of the TSM and the building of the NSM. The construction of the Bering Strait Connector line could take place in parallel with the construction of the NSM. The next line to be constructed would be the Cross-Siberian Connector, to the north of the NSM. The final rail line to be constructed would be the Near Polar Magistral, to connect with the Bering Strait line and the Cross-Siberian Connector lines, as well as the north-south connector lines. This construction would be designed to take place over a prolonged period of time, in a series of steps.

It is also necessary to construct the north-south connector lines as a part of the North Eurasian rail network development. The three main north-south connector routes are the Bering Strait Connector in the east, the Karabula to Igarka to Dudinka connector in the center, and the Surgut to Nadym connector in the west. There are also a series of existing railroad lines which connect to several of the proposed intermediate points from the Trans-Siberian line to the proposed North Siberian line as follows: 1) Reshoty to Karabula; 2) Achinsk to Lesosibirsk; 3) Taiga to Tomsk to Asino to Belyi Yar; 4) Tyumen to Surgut to Nizhnevartovsk. These routes are intended primarily for the exploitation of specific mineral

deposits at the present time, but can also serve as future through-lines.

It is not possible for Russia to carry out the development of all of the above projects under the present economic conditions. It is possible that Russia will be able to pay for financial assistance from foreign countries by means of loan collateralization from its own mineral resources. Such a financing method has recently been proposed by a consortium of 13 Korean companies led by the Daewoo, Samsung, and LG Groups.<sup>7</sup> This consortium has proposed to construct a 3,000-mile-long corridor containing a railroad, a highway and a pipeline from Yakutsk in Sakha to Vladivostok and then to South Korea. The total cost of this project is estimated at \$22 billion, or about \$7.3 million per mile. The reason for building this project would be to develop the extensive coal, oil, gas, and nonferrous metal resources of the region, and to provide electric power for the overall area.

The construction of the proposed North Eurasian regional railroad network in Siberia would promote the development of its enormous energy and mineral resources, plus its abundant forests. The Eurasian railroad network would serve as a useful complement to the parallel South Eurasian railroad network development, as previously proposed. Through-traffic flow would become possible, to promote trade and commerce in the region and to enhance economic development along with the peaceful integration of the many

disparate regions of the Russian Federation into a unified whole. The level of prosperity of the people in the region would be greatly improved, along with a large increase in local employment. The construction of the proposed North Eurasian railroad network would encourage greater trade and commerce among the nations of Europe, Asia, and North America, as a means of enhancing world peace.

## Notes

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