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PROBLEMS OF ECONOMIC SECURITY IN RUSSIAN TRANSPORTATION AND INTERMEDIATE CARRIER INFRASTRUCTURE

This paper reviews the basic problems of economic security in infrastructural ensuring of the implementation of transportation and intermediate carrier potential of Russia: development and reconstruction of communication lines, usage of innovative transportation methods, building a network of transportation and logistics centers, development of regional airport hubs and others. Particular attention is paid to the problems of transportation and transit potential implementation of Siberia and the Far East. It is shown that the increase of transit facilities in the territory of Russia takes place in a competitive market of infrastructure projects. At the same time it is emphasized that along with exhausting the possibilities of commodity economy development, a natural competitive advantage of Russia as a transport bridge between Europe, Asia and America will be implemented in full force.

Keywords: economic security, transportation and transit potential, intermediate carrier potential, infrastructure projects funding, modernization of the economy, public-private partnership

Completion. Beginning in No.1.

6. Directions of implementation of transport and transit potential of Siberia and the Far East to ensure Russia's economic security

Russian economic space of Siberia and the Far East is fragmented due to poor development state of transport infrastructure. Contraction of economic space is happening at the moment, which concentration is most intense in the southern regions of Siberia, a narrow strip of the Trans-Siberian Railway, and in large cities. On the other hand, the main source of income for the country and the region are the large deposits of minerals — which are located in difficult reachable areas and not adequately secured by the lines of communication.

Regions of Siberia and the Far East have a weak degree of internal integration. Construction, real estate development and maintenance of roads are difficult because of climatic conditions of Siberia, the lack of necessary on-site construction materials and characteristics of the available vehicles. The export of extracted minerals using heavy-duty vehicles (with loading possibility of up to 15 tons per axle) leads to the destruction of the pavement. These factors, as well as the relatively low density of traffic on the Siberian regional roads make it difficult to use the mechanism of concessions and construction of toll highways.

The average daily traffic on the roads of Siberia is about four thousand vehicles, while Chita-Khabarovsk highway is able to handle up to five thousand cars a day. At the same time, traffic on the roads of the Moscow region amounts to 15-20 thousand, and in some areas — up to 100 thousand cars a day.

Ensuring economic security of the state involves creation in the regions of Siberia and the Far East of a transport grid, allowing carrying passengers and cargo all year round regardless of weather conditions. In addition, the problems and goals of national security require preservation of a common economic space and avoidance of excessive differences in levels of development and welfare of the regions.

However, in terms of financial and economic crisis and increasing power of the neighboring states, the main component of national security is the search for promising areas of socio-economic development and building of regional clusters of value added formation.

Currently, the development of Siberia and the Far East is of a focal character and is a combination of large-scale investment projects, as a rule, of the raw material orientation. Almost all projects have a component of infrastructure, while railway transport is of key importance.

The «Strategy of development of railway transport in the Russian Federation until 2030» suggests construction of freight traffic lines for transporting of minerals from large deposits in the region. Priority is given to major projects of public-private partnerships with significant amounts of traffic for export, ensuring the most efficient ones in the short to medium term. Timing of construction of these lines is aligned with the timing of development of the raw mineral deposit fields; the initiators and the main sources of investment funds are interested

companies. At the same time, the created transport infrastructure often bypasses many small or relatively small deposits, which can not be developed and extracted in this state of isolation.

Construction of railways only for the sake of development of mineral deposits has no long-term perspective; it increases raw material orientation of economic development, which cannot be sustained as a result of volatility in world commodity prices and because of the imminent exhaustion of the producing fields. Resource-targeted and cluster ways of development of the economy with a high degree of probability lead to the appearance of non-perspective mono towns, dying out villages, mass unemployment and a set of abandoned roads after major mining companies scale down their operations.

Ambiguous effect on the development of transport infrastructure in the region has the competition among different transport projects. For example, the construction of oil pipeline system «Eastern Siberia — Pacific Ocean» (ESPO) at the first stage provides development of the rail transport. Transport of oil flowing through the pipeline Taishet — Skovorodino (the first stage of ESPO) to the oil terminal in Kozmino is being carried by railway. Construction of the second stage of the oil pipeline system increases the amount of carriage of large diameter pipes and building materials. However, after the completion of ESPO-2 construction (according to the plans in 2012), the volume of rail traffic and loading infrastructure will be greatly reduced.

ESPO oil pipeline system is of geopolitical, federal and regional significance. Northern and Far East regions are interested in having the largest part of the system on their territory and having the maximum usage of the available oil and gas. The regions expect to increase tax and non-fiscal revenues and the creation of co-transport and energy infrastructure. At a time when payments for the transit of oil are being concentrated in JSC «Transneft», the largest regional effect on the operation of the pipeline system would be achieved in case of parallel construction of refineries in the Transbaikal and the Far East networks.

Capacity and carrying capacity of the eastern landfill of railway roads reduce as a result of congestion and traffic jams on the approaches to ports, fleet management problems, empty wagons, large counter-mileage cars and cars damaged while unloading.

A limiting factor for the development of transport infrastructure of Siberia and the Far East is

the lack of manpower for construction and operation of new routes. It comes to the fact that the «United Industrial Corporation» (UIC) has considered the opportunity to seek assistance from the Federal Penitentiary State Service of Krasnoyarsk territory to bring the prisoners to build road «Kizil — Kuragino».

Tasks of ensuring the economic security of the region require an external influx, because the rotational field development does not ensure sustainable development of the territory in the long term.

Development of transport infrastructure in the region is due to the growth of industrial production in the Southeast Asian countries. However, the development of transit potential of the territory is in terms of high competition with alternative means of communication (details on alternative means of communication between Europe and Asia are discussed in [4]). Imports of goods from China are carried out by sea through the ports of north-western Russia. Fledged European logistics network, competitive rates for transportation of containers in the opposite direction make sea transport attractive for the few Russian exporters of the products to Southeast Asia.

Formation of transit corridors will begin a more intensive phase of development (including additional commercial development and additional well testing of a raw deposit) of Siberia and the Far East. The reorientation of the export flows from the region to the closely-located countries of Southeast Asia (primarily China) will reduce transportation costs to goods carriage and natural resources. Expansion of trade and economic ties with China requires increasing the capacity of the Russian railways, construction of checkpoints on the borders, in addition to existing items at the stations of Zabaikalsk (Trans-Baikal Railway), Naushki (East-Siberian Railway) and Grodekovo (Far Eastern Railway). Expansion of existing and creation of new crossing points will be even more relevant after the formation of the railway corridor Indochina — China — Russia. It is vitally important to construct railway and automobile roads directly from Russia to western China.

The basis of the formation of transport infrastructure in Eastern Siberia and the Far East should be based on the major transportation hubs (Novosibirsk, Krasnoyarsk, Omsk, Irkutsk, Vladivostok and Khabarovsk), which are evolving into a multi-modal transport and logistics centers — clusters for regional development and international transport network elements.

The strategic objective is to combine the growth of production and export of natural resources to increase transit capacity in the territory of Siberia and the Far East. In the future, it will lead to replacement of the resource rent with the transport and transit rents as the main source of income of the population and budget.

Almost all major transport infrastructure projects in East Siberia and the Far East contain a unique opportunity to combine growth in production of raw materials to form a large transport-transit potential of the territory — the basis for its sustainable development. This requires an adjustment of the projects related to strengthening the role of the state, both in the direction of an increase in funding, because (and this is important) in the organizational, coordinating plan.

Let us review the ways of such an adjustment in the case of major infrastructure projects planned for implementation in the region [5]. The most detailed example of this is done on the railway of Kyzyl — Kuragino.

Construction of the railway line Kyzyl — Kuragino in conjunction with the development of mineral resources of the Republic of Tuva

As a part of the project implementation, it is expected to build a railroad Kyzyl — Kuragino of the length of 460 km in order to develop Eleget coking coal deposit. The project was initiated by United Industrial Corporation (UIC) and its associated company «Yenisei Industrial Company» (YIC). UIC had to finance the construction of an access road of the length of 38 km to the coal mine. Completion date is set to late 2013 — early 2014. Future traffic volumes were originally estimated at 15 million tons per year.

The cost of railway construction is estimated at 98.5 billion rubles. Funding should come from state funds and private investors (UIC), each participant must allocate 49.2 billion rubles. One area must be constructed from the Investment Fund of Russia, the other — at the expense of UIC; the administration of the Republic of Tuva is responsible for the reservation of land for the future road. Payback period of the railway is estimated at 13 years, internal rate of return for the state is estimated at 8.9%, for the private investors — at 15%.

Problems of implementation. In terms of financial and economic crisis, the project has been adjusted, the total length of railways was reduced to 403 km. In Tuva, there were cases of buying land on which the railroad was supposed to pass. It became clear that the line will not be built as scheduled. The

financial problems of United Industrial Corporation have lead to a change of ownership and changes in the parameters («optimization») of the project.

Prospects of implementation. The possibility of creating a consortium for the construction of the railway in the companies that received licenses for field development in Ulug-Khem coal basin is reviewed. In 2010, UIC has reached a preliminary agreement to sell Eleget field to the Japanese company Mitsui. The second license — the right to develop Mezhegey coal deposit (also included in the Ulug-Khem coal basin) was sold in 2010 to Evraz Group. Participation in that Evraz Group project involves construction of double-track railway and increasing its capacity to 50 million tons, as well as development of backbone infrastructure of Krasnoyarsk railways. The possibility of expanding road capacity to 27 million tonnes is also being discussed. The development of the southern course of Transsiberian railway, which has many one-sided track sections, primarily from Mezhdurechensk Taishet, is required.

In general, conflicting information about the possible volumes of traffic is coming from various sources. «Evraz» and «Severstal» have not yet defined the volume of production and timing of their projects in Tuva. The process is also being delayed by the changes of shareholders in the YIC and UIC.

The government of Tuva held unsuccessful negotiations on financing the construction of the road with MMC «Norilsk Nickel», which owns the license for the development of the Ak-Cugsk copper-molybdenum deposit. The country has other mineral deposits (Kara Sugsk iron ore, Kyzyk-Chardsk copper, Khovu-Aksinsk nickel-cobalt), but there is a need to conduct further exploration works. The initial project was an attempt to bring the railway Kyzyl — Kuragino as close as possible to the group of Kazyrsk iron ore deposits located in the south of Krasnoyarsk territory, for which regional authorities have proposed to increase the road for extra 20 kilometers. However, a straightened (and cheaper) version of the railroad leaves this deposit aside (100–120 km).

A Memorandum between the Ministry of Regional Development, Roszheldor (Russian Railways), the Republic of Tuva as well as companies with licenses to develop the Ulug-Khem coal basin — DIC, «Evraz» and «Severstal», was signed at the Ministry of Regional Development. The consortium will be established as an open joint stock company. Shares in the construction of the railway should be

distributed in accordance with the volumes that are declared by companies participating in the project of Ulug-Khem coal basin development. «Evraz» must produce at least 6.5 million tons of coal, no later than 2015 volumes of coal extraction by UIC should reach 12 million tons, and the company has already invested 600 million rubles. What considers the construction of the road, «Severstal» can provide only approximate predictions on the production: about 6.5 million tons by 2021. Metallurgical companies have different strategies of development.

Socio-economic importance of the project. Construction of a railway will solve the problem of the northern delivery and will create 10 thousand (by other estimates, 20 thousand) jobs in the region. Construction companies involved in laying the lines and development of the deposit in Tuva, will be registered in the Republic. It is expected that construction of the railway will involve up to 18-18,5 thousand people. Operation of the line will involve about 2 thousand jobs.

The fulfillment of the project will completely integrate the Republic of Tuva into the federal economic space. The development of mineral resources of the Republic will lead to an increase of budget revenues through additional tax revenues, as well as sales and an increase of the cost of licenses for the development of mineral deposits. The development of only one Eleget coking coal deposit will allow the country to withdraw completely from the endowment budget and minimize unemployment until 2020. In addition, the line (in case of renewal) can be used for the development of deposits in the western part of Mongolia. The railway will promote the tourist and recreational potential of the country; attract tourists to the natural park «Ergaki», in which it is planned to build a station and visitor center.

Areas of project adjustments to improve transport and transit potential of the territory. Problems of long-term development of the territory not only require formation of yet another commodity region and construction of infrastructure impasse, but also transformation of the railway into an international transport corridor, which allows to reduce the distance of transportation to Mongolia and China by 1.5–2 thousand kilometers.

The formation of this transport corridor is also important because of trade relations with China and Siberia, which are embarrassed by underdeveloped transport links with the rapidly developing China's western provinces. Organizational and economic design of the project requires creation of a joint-

stock company, which will deal with the construction and operation of the railway.

Integrated development of the Lower Angara

Summary of the infrastructure component of the project. Creation of an electro-metallurgical complex at Boguchanskaya hydro-electric power station involves construction of new railways: at the initial stage of the site Karabula — Yarki with the length of 44 km. The road is a continuation of the northern branch of Krasnoyarsk railway, Reshety — Karabula. The length of the first railway line is 21.3 km. Construction of the second extension with the length of 22.7 km will begin after the auction which will be determine the general contractor. Completion date, according to the tender documentation, is set to June 1, 2011.

The long-term traffic volume along the line is projected as follows: in 2015 — 1.7 million tons, in 2020 — 2.1 million tons. The initiators of the project were the United Generating Company, «Rusal» and the Administration of Krasnoyarsk territory. In the future, the road will be extended for 10 km to the bridge across the Angara River. The next stage envisages construction of main line, Karabula — Kodinsk. Transport infrastructure (rail and road), created during the completion of Boguchanskaya hydropower plant and development of aluminum manufacturing, will greatly speed up and reduce the cost of timber transportation and contribute to the development of forestry in the region.

Implementation problems. The implementation of the project «Integrated Development of the Lower Angara» involves construction of freight traffic lines, which can lead to inefficiency and lack of a significant multiplicative effect from the implementation of this project.

Areas of project adjustments to improve transport and transit potential of the territory. The railway being built under this project, should initiate a fundamental change in the transport system of Siberia, primarily through the construction of the North-Siberian Railway. Formation of a new transport corridor is inseparable from the implementation of infrastructural projects in Western Siberia and European Russia (railway road «the White Sea — Komi — Urals» (Belkomur)), as well as reconstruction of the Baikal-Amur Mainline (BAM).

North-Siberian Railway («Sevsib») — is a projected railway stretching over two thousand kilometers, which will connect the railway network of Khanty-Mansy Autonomous District with Baikal-Amur Railway. The road will con-

nect Nizhnevartovsk (Khanty-Mansy Autonomous District), Bely Yar (Tomsk region), Lesosibirsk (Krasnoyarsk region) and Ust-Ilimsk (Irkutsk region). Eastern part of the planned North-Eurasian Russian mainline would be Sakhalin railroad, which should connect to «Belkomur» on the west.

For the entire length of the line, a new Northern Industrial Belt of the country can be formed. During the construction of the railroad, branches in areas rich in natural resources, which will be involved in the marketplace due to «Sevsib», are planned. Predicted value of passenger traffic by rail in 2025 could reach 7 million people. The volume of domestic freights is expected to reach 60 million tons, transit cargo — 30 million tons. With the construction of «Sevsib», there is possibility of transforming Trans-Siberian Railway into a high-speed passenger service and container transit. In the «Strategy 2030», construction of «Sevsib» is expected to begin after 2016.

Organizational and economic design of the project requires creation of public-private group, the holding company for the construction of Sevsib (for example, capitalization of the existing «Sevsib Areas Development Corporation»).

Complex development of Transbaikal

Summary of the infrastructural component of the project. As a part of the project, almost 1 000 km of railways and 400 km of roads will be built. In particular, the railway Novoilinsky — Lake Mining — Taksimo will connect Baikal-Amur and Trans-Siberian Railways.

Implementation problems. Construction of the railway Naryn — Lugokan in Transbaikal territory is delayed due to the failure of MMC «Norilsk Nickel» to fulfill its investment obligations, in addition, the design length of the line is reduced from 300 to 100 km. Without the development of non-ferrous metal deposits (reserves are yet to be proven) by MMC «Norilsk Nickel» and construction of mining and processing plants, the new railway, which is located rather far from populated areas, will not be in demand.

In 2010, the passport of the project «Establishment of transportation infrastructure for the development of mineral resources of south-east of Transbaikal region» has been adjusted, and the railway line Borzys — Gazimurovsky plant will be reduced from 375 km to 223 km. After MMC «Norilsk Nickel» abandoned the development of three of the five fields, a branch of Naryn — Lugokan (leading to all deposits) was reduced to a

segment of Borzya — Alexandrovsky factory, and changing the point of junction of the new line to the network of JSC «RZD» from the station Naryn to the station Borzya. In February 2010, labor movement in the area Borzya — Alexandrovsky factory was launched. In 2011, a 94-kilometer section of the Alexandrovsky plant — Gazimurovsky plant should be built.

Company «Norilsk Nickel» reaffirmed their commitment to field development and construction of two mining and concentration complexes — Bystrinsky and Bugdainsky, as well as their financing: investments by «Norilsk Nickel» into this project will amount to more than 80 billion rubles, including 8 billion rubles for the construction of the railway. In this project, the state strictly followed the principle of public-private partnerships, when «Norilsk Nickel» has ceased to comply with its obligations under the project, the state suspended its line of financing, and funds were allocated only upon the allocation of funds by the company within strictly fixed proportions.

The possibility to transfer the facility to the state and JSC «RZD» is being discussed. Company «Norilsk Nickel» is not interested in this non-core asset. The solution may be to establish a fixed term of the freight rate at which the company will be able to regain some of the funds spent on road construction. The functioning of the railway may be unprofitable.

Areas of project adjustments to improve transport and transit potential of the territory. One of the key areas of Transbaikalia development should be the creation of international rail transport corridor from China through Mongolia and Buryatia to the European part of Russia. Buryat Republic has an advantageous geographical location and advanced means of communication: Trans-Siberian Railway, a branch in Mongolia, BAM, as well as major federal highways. With the development of a logistics center in Ulan-Ude, the emergence of another distribution hub for goods that come from the South-East Asia and the west coast of America and Canada will be possible.

On the territory of Buryatia, it is supposed to create some transport and logistics centers for maintenance of export-import and transit cargo, following the Trans-Siberian corridor, and the newly formed «Mongolian Vector»: Ulan-Ude — Naushki (Kyakhta) — Ulan Bator — Erlian — Beijing — Southeast Asian ports. It is planned to create transport and logistics centers in the area of Ulan-Ude, in

the cities of Ishim, Naushki and Kyakhta, as well as in transport hubs Taksimo and New Uoyan.

Freight traffic passing the next station after an overloaded Zabaikalsk, may be partially diverted to the border crossing Naushki in Buryatia. To increase the capacity of the corridor, it is necessary to carry out the electrification of the railway line Ulan-Ude — Naushki and upgrade of Ulan-Bator Railway under an agreement between «Railways» and JSC «Ulaanbaatar Railway» on the joint development of transit container traffic.

Complex development of South Yakutia

Summary of the infrastructural component of the project. It is assumed that the project will lead to the formation of core transport network of Yakutia. In 2014, the railroad Berkakit — Tommot — Yakutsk, stretching 494 km and a combined road and rail bridge across the river Lena are due to be completed. The project will construct access roads to five ore mining and processing, metallurgical, and chemical mills with a total length of 260 km. The volume of traffic on new roads should be up to 50 million tons of iron ore and coal per year, which will increase the transport of goods by rail Berkakit — Tommot — Yakutsk by 40 times.

Implementation problems. Construction of transport infrastructure in South Yakutia is being conducted in complicated geological and climatic conditions, while natural resources of the region are not adequately studied.

Socio-economic importance of the project. Construction of the railway Berkakit — Tommot — Yakutsk will contribute to solving the problem of northern delivery, which is currently being carried out on the river Lena (navigation only lasts for 3.5-4 months a the year), its tributaries and the Arctic seas. Currently, only 4% of the Republic territory have all-season ground post. Railway will provide year-round delivery of goods for 75% of the population of Yakutia and reduce transportation costs by 30-70%. Along with the construction of 250 km. automobile roads, Yakutsk in 2020 could turn into a major transport and logistics center. In this case, the main power of the river port of Yakutsk, which is able to handle vessels of «river — sea» class, will be used to move goods further to the North.

Areas of project adjustments to improve transport and transit potential of the territory. The implementation of transport and transit potential of the country requires the extension of the railway Berkakit — Tommot — Yakutsk in Chukotka and the Bering Strait to Alaska. The participation of

U.S. companies in the construction and operation of a transit line is due to available expertise, and it is facilitated because of their cooperation with JSC «Yakutia Railways». Thus, the railway company is modernizing its locomotives through the installation of the power plants by «General Electric» (GE), which gives substantial savings in fuel. GE power units will be shipped from the USA. Prior to 2014, when construction of the railway to Yakutsk will be completed, it is planned to upgrade 50 locomotives.

Thus, the railway will be part of an international network of transport corridors and infrastructure will not turn into a dead end, built only for exportation of natural resources of the Republic of Sakha-Yakutia.

Gennady Osipov, Member of the Russian Academy of Sciences, suggests using unique experience in the construction of BAM and modern technologies, to carry out a mega-project — the creation of an integrated Euro-Asian transcontinental transport system of the new generation, which will support a matrix of all economic activities of modern civilization. This so-called transcontinental transport corridor will include 47 thousand km of high speed ways, transportation systems that will link countries and continents. It will pass through the mineral deposits and science cities, concentrate around logistics and information centers to attract transit and labor resources.

Reconstruction of Oune — Vysokogornaya with the construction of a new Kuznetsovsky tunnel at the site of Komsomolsk-on-Amur — Sovetskaya Gavan

Kuznetsovsky tunnel is a barrier area, constraining the growth of freight traffic on the Baikal-Amur mainline to Vanino port and other ports of Khabarovsk territory. In 2009, the volume of traffic in the Far East ports increased by 23.8% compared to 2008. On the direction between Komsomolsk-on-Amur and Sovetskaya Gavan, over 12 million tons of cargo was shipped, which is an increase of about 60%. Reconstruction of Kuznetsovsky tunnel is worth 17.5 billion rubles. It will increase traffic volumes up to 22 million tons. This is one of the few infrastructural projects, which continues to be funded even under financial and economic crisis. It is fully consistent with objectives of improving transport and transit potential of the country as part of a future transit line «BAM — Sevsib — Belkomur».

In 2009, the loading of Baikal-Amur Mainline ranged from 7.5 to 22 million tons/km, depending on the site. The load amount of the eastern branch of

BAM is under the biggest influence of the transport of goods in connection to Vanino — Sovgavansky transportation hub — more than 14 million tons to a total was transported in 2009 in the eastern and western directions.

BAM bandwidth must be increased from 8 million tons to 20 million tons per year. It is necessary to conduct a comprehensive modernization of the infrastructure of BAM. First, to remove the bandwidth limitations of its parts, due to the presence of spans with a length of 25-35 km, which are formed by the closure of the separate items in the traffic during the recession in the 1990's, as well as sites with a violation of the maintenance periods, with defects in the sub grade, the upper way structure and artificial objects.

7. The problems of economic security of automobile, sea and air transportation

Automobile transport

The market volume of automobile transportation services in Russia is estimated at 8 billion euro a year. However, the Russian carriers are able to offer services only for 3 billion euro, yielding a large share of it to foreign carriers. The market is in a chaotic state, shady carriers and «gray» companies («piranha») work here, providing services at dumping tariffs and not paying taxes. However, the withdrawal of companies from the shadows will inevitably lead to a reduction of their operational business performance and competitive price advantages.

The majority (79%) of freight cars in Russia are operated for over 10 years, 90% of cars were manufactured in Russia. Productivity of Russian vehicles is lower than in Europe, where annual mileage of a commercial vehicle unit is close to 200 thousand kilometers. In Russia, it is about 130 thousand kilometers, and even then only in large companies.

Urgent is the problem of empty run due to errors of planning and lack of cargo in the opposite direction (especially traffic from east to west). Difficulties with the back loading of Russian carriers in Europe are due to the state protectionism, a large number of intermediaries and the need to have allowance to carry out the transport operation («permission»), significant amount of fines and punishments for their absence. We should note that the passage of vehicles from Russia on territory of the EU without the «permission» inevitably involves the imposition of penalties, the amount of which can range from 6 to 13 thousand euro. In Russia, the penalty for such a violation amounts to 1 500 rubles.

Foreign carriers take passing following freight at dumping prices in the implementation of return trips. In Russia, there are problems with organization of road and traffic control related to the lack of strict administrative responsibility and corruption of control bodies. Often, foreign carriers are not charged the official tolls and exactions, but fees are carried out in informal relationships. According to the International Union of road transport, 40% of the time drivers spend on the road in queues at the borders, and bribes to the officials and employees of regulatory bodies reach nearly one third of the total cost of freight.

Condition of roads in the regions does not allow passing large-capacity high-axle load cars which are on the international routes. Russian Transport Ministry plans to introduce a fee for trucks weighing over 12 tons for traveling on federal highways in 2012. Trucks will be equipped with the hardware (using GLONASS — global navigation system), which will determine the mileage and the amount of time spent by a driver at the wheel (tachographs), which meets the requirements of the EU. On the route of transport (especially at border terminals) the devices should be placed that can read information from the tachographs. An important requirement on the formation of transport infrastructure is to match the standards of engines, fuels and production of local oil refineries.

The service network of the European manufacturers does not match the scale fleet of foreign cars. Carriers must provide their own repair service. Trading of spare parts and the portions of services aimed at the maintenance of imported equipment is excluded from roadside business. The reason is high cost of parts and a quick update range of foreign vehicles and technology. Trucking companies are forced to engage in training of personnel by themselves.

In order to ensure economic security, the possibility to transport state goods should be provided to national carriers only.

The development of piggybacking transportation in Russia and the CIS promotes the elimination of unnecessary competition between rail and road transport, facilitation of crossing of state borders plus enhancement of environmental safety and road safety.

Water transport

This maritime transportation market is characterized by a net import of this type of transportation services estimated at 10 billion USD a year. Only

40% of Russian ports are capable of receiving deep water vessels.

The development of transit shipping in the first place related to the revival and extension of navigation along the Northern Sea Route (NSR). During Soviet times, NSR was used for delivery of cargo to remote northern areas; the ships went to the west and east of Dixon peninsula. In 1987, along the Northern Sea Route 7 million tons of cargo was transported. In 1991, navigation on the western part of the route was resumed, the NSR is used primarily for export delivery of MMC «Norilsk Nickel» products, and the volume of traffic is about 1.5 million tons per year. The transit function of the Northern Sea Route is not currently running. Freight rates for NSR transfer are 5-6 times higher than through the Suez Canal; even higher are the insurance premiums. A key issue is monopoly pricing for the services of the state icebreaker fleet, the sharpness of which will go down together with the emergence of Russian icebreakers of large private companies.

Constant monitoring of the ice and the usage of ice-class vessels are required, as well as creation of at least 10 rescue stations of the Russian Emergencies Ministry, provided with helicopters and other equipment, supporting port for minor repairs of vessels, organizations in the area of the Northern Sea Route of satellite communications, construction, energy and other infrastructural facilities.

The revival of the Northern Sea Route will contribute to the development of Arctic regions, simplification and cheapening of northern delivery, improvement of the reliability of transportation services for Yakutia, Chukotka, the Nenets and Yamalo-Nenets Autonomous Districts. Modernization of Murmansk transport hub and Arkhangelsk sea port will continue. Development of the Northern Sea Route will increase export opportunities for Russian companies, including logging enterprises of Arkhangelsk region. In the short term, the NSR can be used for delivery of special cargo in summer time. In Murmansk, the organization of assembly plants of separate units for the offshore Arctic shelf can be established.

The need for the development of port facilities and capacities is also associated with the development by the company «LUKOIL» of offshore oil fields. While the transportation of crude oil is carried in small vessels of ice class with the tonnage up to 70 tons, the cost of freight on this does not provide the necessary cost-effectiveness in the delivery of cargo over long distances, such as the United States. The

way out of this situation is an overload of oil in the port of Murmansk on ocean tankers with the tonnage up to 150 tons. This scheme can be applied in the development of the Stockman natural gas field.

The ability to provide loading of vessels with deadweight of 150 thousand tons is the competitive advantage of the port of Murmansk. At present, a substantial part of handling the relatively shallow Baltic ports make goods that are brought to Rotterdam and Antwerp for transshipment to ships with large displacement and transport across the ocean. In the future, Murmansk may become a specialized transport hub serving the development projects of the Arctic zone and providing transportation of goods by heavy load vessels.

The cities of Arkhangelsk and Murmansk are competing to be the capital of the Northern Sea Route, where its administration will be allocated that manages navigation, pilotage and hydrographic provision. In Arkhangelsk is the main part of the Arctic expedition of the fleet, the Northern Regional Management of Hydrometeorological Service, the Ministry of Transport of the Polar Hydrography and Navy as well as polar aviation.

One of the major development directions of water transport in Russia is to develop an integrated transport system «Yenisei — the Northern Sea Route». Yenisei River is a part of the meridional transport corridors on the territory of Siberia and the Far East, which (along with the existing and projected meridional railways) connects the Trans-Siberian Railway, Sevsib and the Northern Sea Route. The development of river navigation depends on seasonal factors (on the Siberian rivers, the duration of the navigation is 170-180 days) and the technical readiness of waterways, ports and ships. Implementation of water freight transportation requires large quantities of goods. Navigation on the Yenisei requires dredging and clearing the river bed. In order to prevent tariff dumping and infrastructure support to navigation on the Siberian rivers, a partnership of expedient shipping companies up until the creation of river cartels is reasonable.

Air transport

Degradation of the inter-region relationships can be traced on the fact that the share of Moscow's airports to serve air passenger traffic is 75–85%, whereas during the time of the former USSR, it was about only 25%. Moscow air hub handles 80% of the total cargo traffic. A large proportion of the transit air cargo is carried out not on the territory of Russia. As a result, according to Deputy Transport

Minister V. Okulov, Russia annually loses 10 billion USD of potential income.

Operation of hubs can become a driving force of the territorial development of individual regions and adjacent areas. The implementation of transport and transit potential requires organization of the distribution of passenger and freight traffic by at least 11 major airports with international status of the nodes in the list of which includes the sites of Moscow airports, St. Petersburg, Yekaterinburg, Novosibirsk, Samara and other cities.

Formation of international hub airports in Russia servicing the air transportation of cargo and passengers from Europe to Southeast Asia (in Yekaterinburg, Novosibirsk, Krasnoyarsk, Irkutsk, Ulan-Ude and Khabarovsk) faces competition both from Russian airports between themselves and with the airports in Central Asia (first of all, in Astana and Tashkent).

However, the development of airports in Alma-Ata and Tashkent has national importance with the release of adequate financial resources. The Kazakhstan government is developing two hubs — Alma-Ata and Astana, this focuses the airline AirAstana to establish direct flights to all major cities of the world within a seven hour flight, located at distances of six thousand kilometers and more. Uzbekistan has canceled the construction of cargo terminals at airports of Tashkent and Samarkand, but in 2010 it opened a new cargo terminal at the airport of Navoi.

One of the conditions for successful functioning of the hub is its own passenger flow, which can be generated by business and tourist centers of activity. Preferably is also the availability of visa centers (consular services) in the cities, where the hubs are located.

The presence of the airport's own airlines guarantees a minimum volume of passenger traffic and helps haul transit passengers from smaller airports. Basic airline should make transfer operations, docked flights to ensure passenger flow. Foreign carriers offer their customers great discounts if they take the transport services in the package: local flight — change at the hub airport for another flight. On the other hand, the presence of the airport and the airline's total ownership may lead to the manifestation of monopolistic behavior, limiting the arrival at the airport for other airlines.

Formation of hub airports is being constrained by the lack of development of the local aviation and lifting transport types. The work of a hub airport re-

quires development of inter- and intra-regional air transport, provision of passenger lifting by planes bringing up from the cities at a distance of 300 to 2000 km. Airlines do not seek to develop local lines because of their unprofitability, reduction of the number of existing airfields and aircraft fleet of local airlines. An important factor is the lack of modern and new short-haul aircrafts.

The development of regional transportation is in need of subsidies from the budgets of the Federation subjects. One reason for the decline in the share of domestic traffic is the unequal amount of tax: on international air flights, VAT is not charged. The development of the route network may require a subsidy of new directions of flights from the state budget on the principles of public-private partnership. Thus, the Government of Khanty-Mansi Autonomous District conducts tenders for the social movement and allocates more than 200 million rubles of direct subsidies to reduce the losses from the cost of tickets, which allows reducing tariffs by 40%.

Modern foreign aviation allows flying with a full payload without intermediate landings for refueling. Thus, the creation of hub airports and transit centers in Russia is more realistic, as well as transshipment points between South-East Asia and Western Europe.

The absence of the regime of «open skies» prevents the formation of hubs. The flights are regulated by intergovernmental agreements; there are visa regimes for national citizens moving. The institute of designated air carriers creates an exclusive environment in the market of passenger air travel.

The main direction of air companies' business strategies is the acquisition of foreign airline aircrafts with lower fuel consumption compared to domestic counterparts. For passenger traffic, the air companies mainly purchase medium-range aircrafts such as Boeing 737 and A320 with a flight range of 3-5 thousand kilometers. Exploitation of foreign-made aircrafts, especially leased ones, requires their intensive use: machines must be in the air for 15-18 hours a day with a filling of passenger seats by at least 70%, which is obtained only at the most popular destinations in the summer.

The establishment of regional jet production with access to foreign markets is required as well as re-entry and rehabilitation of closed local airports, and where this is impossible — turning them into helicopter landing sites and development of helicopter communications. Helicopters are gradually becoming the dominant type of small aircraft fleet.

For example, Ulyanovsk Aircraft Plant involves the establishment of cooperation with a Czech company «EVEKTOR» on production of new 14-seats turboprop aircraft EV-55. The planned annual program of production is 60-80 helicopters. For the implementation of regional transportation, the possible usage of aircraft type CRJ (Canadian Regional Jet) is currently being examined.

The payback period of GDP may reach 100 years. That is why a great level of public policy on the development of the airfield network is required. The increase in the number and size of runways leads to an increase in fixed costs of the airports. In the cost structure of an airport, a significant part (80%) is fixed costs. In addition, the demand for air travel is secondary to other needs, overall economic activity in the country and around the world.

To create air transit centers in Russian regions, the following is required:

1. Reconstruction of the airports, development of ground infrastructure, equipment of technical crossings with necessary machinery and equipment: tractors, trucks, warehouses, hangars for aircraft maintenance, etc.

2. Development of additional services, which can be more profitable in the hub than direct aviation business. Regional effect of the operation of the transit center is increased due to greater use of outsourcing, co-operation with logistics companies that deliver goods from door to door, as well as the presence of a carrier's own vehicles.

3. Accommodation of a transit center with a customs office, equipped with the necessary gadgets to carry out radiation control, radiological units for screening containers and other equipment.

4. Improvement of customs legislation. The current regulatory framework allows customs clearance under the simplified system at the first landing of the aircraft, but on subsequent stops the examination is in full and may take 4-5 days. If cargo is processed at an intermediate aircraft landing, one will need to complete customs clearance and passage of veterinary and sanitary control.

5. To ensure comparability of the size of airport and air carrier base, ground operation and air transport infrastructure of the airlines work closely inter-related, despite the formal separation. For example, the purchase of a new aircraft depends on the size of passenger traffic, including transit, and it, in turn, depends on the joint work of the airport and the airline's base.

6. Development of regional and local aviation for bringing up passengers and cargo, creation and widespread usage of aircrafts for regional flights, subsidies for local passenger services from regional budgets.

7. Russia's accession to the European policy of «open skies», provision of rights for foreign airlines to carry out domestic flights and the use of Russian airports as transit points.

8. Cancellation of the fees (royalties) for flying over Russian territory to be paid by foreign airlines in the framework of an agreement with Russian designated carrier «Aeroflot». In this case, flying over Russia and using Russian airports as transit centers will be more attractive than through the airspace of the Central Asian states.

Conclusion

A large impetus for the development of transport infrastructure is a competitive market for investment projects and territorial development plans. A striking example is the struggle of Novosibirsk and Krasnoyarsk for the right to be a major transit center of Siberia. The rivalry is going on and to attract funds from the federal budget, the inclusion of regional projects in the federal target programs and public-private partnership projects financed by the Russian Federation Investment Fund.

Market competition will allow overcoming obstacles to the implementation of transport and transit potential of Russia and its regions: lack of interest of private companies in the long-term investments, high administrative barriers, duration of customs clearance, backwardness of logistics and others. Public participation should play a major role only in the implementation of global projects: construction of the North-Siberian railway, the line in Alaska, development of the Northern Sea Route and others. Construction and maintenance of road freight traffic and the means of communication used in the economic activities of private companies should be a result of market self-organization.

To improve road safety, public investment must be used to implement image projects — APEC summit-2012, 2014 Olympics Games in Sochi, FIFA World Cup-2018, etc.

In general, the potential of market forces in the implementation of transport and transit potential of the country and the process of infrastructural support to regional development have not yet appeared in full. This will happen as exhausting the possibilities of the development of commodity economy. Then the natural competitive advantage of Russia as a transport bridge between Europe, Asia and America will be implemented in full.

References

1. Zoidov K. Kh., Medkov A. A., Tsvetkov V. A. (Ed.) (2011). *Transportno-tranzitnyy potentsial Rossii: problem i napravleniya razvitiya. Problemy razvitiya rynochnoy ekonomiki* [Transport and transit potential of Russia: problems and directions of development. Problems of market economy development]. Moscow: TsEMI RAN [Central Economics and Mathematics Institute, the Russian Academy of Sciences].
2. Pluzhnikov K. (2007). *Ne vernut'sya li k sovetskoj praktike organizatsii perevozok tranzitnykh грузов?* [Should we return to the Soviet practice of organizing transport of goods in transit?]. *Mezhdunarodny yekspeditor* [International Expeditor], 2. Available at: <http://old.morvesti.ru/slog/exp-arj/2007/2/8.asp> (Accessed 07 September 2010).
3. *Stimulirovanie eksporta rossiyskikh transportnykh uslug trebuetsya sozdaniya krupnogo igroka konteynernogo rynka* [Stimulation of the export of Russian transport services requires the creation of a major player in the container market]. *Transport Rossii* [Transport of Russia], 46 (11 November 2010). Available at: <http://www.transportrussia.ru/logistika/tehnologii-buduschego.html> (Accessed 23 May 2011).
4. Tsvetkov V. A., Zoidov K. Kh., Medkov A. A. (2010). *Problemy integratsii i innovatsionnogo razvitiya transportnykh sistem Rossii i stran Tsentral'noy Azii* [The problems of integration and innovative development of transportation systems in Russia and Central Asia]. Moscow: TsEMI RAN [Central Economics and Mathematics Institute, the Russian Academy of Sciences].
5. Tsvetkov V. A., Medkov A. A. (2008). *Perspektivy gosudarstvenno-chastnogo partnerstva pri stroitel'stve i rekonstruktsii zheleznodorozhnoy infrastruktury* [Prospects for public-private partnership in the construction and reconstruction of railway infrastructure]. *Zhurnal ekonomicheskoy teorii* [Journal of Economic Theory], 1, 170-182.

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