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# INTEGRATION OF KAZAKHSTAN'S RAIL ROAD IN THE WORLD TRANSPORT AND LOGISTICS SPACE

The article was considered issues of strategy of conducting a competitive transport business of Kazakhstan at the international level and the integration of the Railways of Kazakhstan in the global transportation and logistics space. The primary role in the transport and logistics concepts is given to rail transport.

## INTRODUCTION

The development of the transport system is one of the priorities of Kazakhstan's economic policy. The full functioning of the entire economic system of the country and the successful integration of Kazakhstan in the world economy are associated with the efficient development of transport. The current transport system of Kazakhstan is a complex, which includes 115000 km of surfaced roads, more than 15,372 km of railways, more than 20000 km of pipelines to pump oil, gas and petrochemicals, more than 4000 km of inland waterways, and 12 regional and 23 major airports, serving domestic and international air lines. The share of transport in GDP is 7÷8% [1]. In spite of the insufficient current development, the transport potential of Kazakhstan is very high. Advantageous geostrategic position, extensive airspace, huge territory with mostly flat surface enable laying the shortest air and land transport routes of global significance. Kazakhstan has no direct outlet to the world's oceans, so the country is intensively developing land transport infrastructure.

## 1. RAIL TRANSPORT

Rail transport is the main mode of transport in Kazakhstan it accounts for 46% of the freight turnover for all modes of public transport. According to the operational length of railways, Kazakhstan ranks 18th in the world and 3rd - among the countries of the former Soviet Union (Table 1).

Tab. 1. Rail transport is the main mode of transport in Kazakhstan

Country	Total length-km	Density, km per 1,000 sq km	Ratio of traction types (%)		Width of the gauge, mm	Place in the world
			Diesel locomotives	Electric locomotives		
China	121 270	12,6	54	46	1435	2
Russia	87 157	5,1	50	50	1520	3
Poland	19 627	62,7	40	60	1435(90%); 1520 (10%)	16
Kazakhstan	15 372	5,6	72	28	1520	18

The density of railways on the territory is fairly low (5.6 km per 1000 sq. km) and it does not meet today's needs of Kazakhstan. In 2015, the transport infrastructure of Kazakhstan achieved a certain growth in some indicators of competitiveness ranking in the World Economic Forum (Table 2). In terms of the quality of the rail infrastructure, Kazakhstan ranks 27th with 4.2 points, Russia ranks 24th and China ranks 16th with its 5 points in the rating. For the quality of roads, Kazakhstan (3.1 points) and Russia (2.7 points) lag far behind the leading countries of the world. According to the rating, the quality of seaport infrastructure of Kazakhstan is considerably inferior to the leading countries of the world.

JSC NC "Kazakhstan TemirZholı" (JSC NC "KTZ") is the largest transport and logistics center of national importance, providing rail transport. JSC NC "KTZ" is a part of the holding company "National Welfare Fund "Samruk – Kazyna", which is controlled by the government, and created to enhance the competitiveness and sustainability of the national economy.

Tab. 2. Indicators of competitiveness ranking in the World Economic Forum

Index of competitiveness	Kazakhstan		Russia		China		Poland	
	Rank	points	Rank	points	Rank	points	Rank	points
Infrastructure	58	4.2	35	4.8	39	4.7	56	4.3
Transport infrastructure	79	3.4	41	4.4	21	5.1	70	3.5
Quality of general infrastructure	62	4.2	64	4.1	51	4.5	68	4.1
Road quality	107	3,1	123	2,7	42	4,7	76	3,8
Quality of railway infrastructure	27	4,2	24	4,3	16	5,0	51	3,1
Quality of seaport infrastructure	114	2,9	75	3,9	50	4,5	67	4,0
Quality of air transport infrastructure	85	4,0	77	4,1	51	4,8	83	4,1

As the main coordinator for development of Kazakhstan's transport system, JSC NC "KTZ" carries out the strategy of competi-

tive transport business at international scale. The primary role in the transport and logistics concepts is given to the rail transport. Aktau International Sea Commerce Port (AISC), International Centre for Border Cooperation (ICBC) "Khorgos" and Special Economic Zone (SEZ) "Khorgos-Eastern Gate" and the network of airports were placed under management of JSC NC "KTZ" [2].

Features of international trade and economic relations of Kazakhstan are the following:

- firstly, a large proportion of export and import volume in value terms of GDP, which indicates high dependence of economic development on foreign trade and cooperation relations;
- Secondly, the products that are traded by Kazakhstan in the international market (except oil, transported by pipeline) are capacious cargo: coal, grain, fertilizer, black and non-ferrous metals, ore, etc.

The main mode of transport, delivering export goods to foreign markets and import goods to a large part of the domestic market is the rail transport, which is a leader in amount of performed work, measured by weight.

Member States of the Eurasian Economic Union (EEU) are historically interested in development of railway routes. Their territories are crossed by the overland routes connecting Western Europe with the countries of a northern part of the Pacific Rim, and Northern Europe with the countries of Central Asia and the Middle East, defined by the huge and constantly growing trade flows. In 2013, it was created the Consolidated Transport and Logistics Company (CTLC) of the railroads of Kazakhstan, Russia and Belarus [3]. The main objectives of CTLC are implementation of transit potential of members of the Eurasian Economic Union and the solution of infrastructural problems, harmonization of rates for through transportation, etc.

Within the framework of the CTLC project, the railroads of member states of EEU consolidate their efforts on development of routes and organization of transportation from various regions of China and the countries of Southeast Asia in the direction of large European logistic centers. Regular shipping is performed on routes Suzhou-Warsaw, Chongshen -Duisburg, Zhengzhou - Hamburg, Wuhan-Pardubice, Chengdu-Lodz, Yiwu-Madrid. More than 20 various routes have been already developed. The technology of transit transportation by using fast container trains through Eurasian Economic Union's customs territory contributes to the development of the way of cargo delivery, which will be alternative to the sea mode.

Today, new configurations of transit railway routes are being created. One of such routes is TRACECA created in 1993 according to the Brussels Declaration. The corridor of TRACECA goes through Ashgabat, the Caspian Sea (trail ferry Turkmenbashi- Baku), Tbilisi, the Black Sea (trail ferry Poti-Burgas, Varna, Constanta or Odesa/Ilyichevsk), further through the countries of Europe towards the Netherlands ports. However, this project is currently little effective. The project is complex in many respects: instability of political regimes in a number of the countries, use of ferry service through the Caspian Sea and the Black Sea, crossing borders of 10-12 countries with various width of a railway track and with specific transport and customs rules, occurrence of mountains with a train speed restriction.

The railroads of Kazakhstan provide transportation of export, import and transit cargoes with Russia, Uzbekistan, Kyrgyzstan and China on 14 stations operating on borders (figure 1).

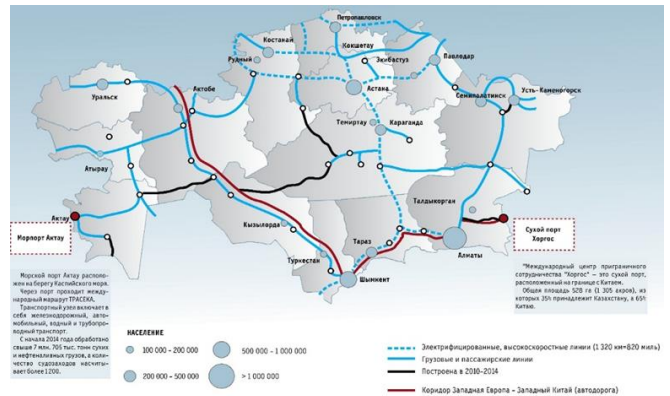


Fig.1. Map of railroads of Kazakhstan

With a view to transport and logistics, in development of Kazakhstan's railroad network three directions are of great importance. They are:

- Border (Russia) - Petropavlovsk - Astana -Karaganda - Moyunta - Aktogay-Dostyk; border (China) - the direction providing transport communication between Russia and China;
- Aksarayaskaya - Kandygash with the site to Tobol completed in 2004 - the direction connecting northern, central and western regions of Kazakhstan in the shortest way;
- Makat-Beyneu - Kungrad (Turkmenistan) – the second access to Central Asia and alongside with that it is the route serving the perspective, developing regions of the Western Kazakhstan.

Historically, Russia is above all interested in development of rail hauling on the Trans-Siberian Railway (Vladivostok - Moscow) with length of 9,300 km (Figure 2). On April 12, 2016 the railway corridor Harbin -Suifenhe -Vladivostok -Pusan was opened. It connected China, Russia and South Korea and created additional opportunities for through transportation increase. In the western direction, this corridor accesses the seaports of Russia, first of all St. Petersburg as well as the countries of Western Europe, and further goes up to the largest Netherlands ports (Rotterdam/Amsterdam). In the eastern direction, the corridor has access to the rail network of Kazakhstan, Mongolia and China. The Northern corridor of the Great Silk Way passing through Kazakhstan may become the main competitor of the Trans-Siberian Railway in through transportation. The beginning of the through-passage is the Chinese port of Lianyungang [4]. The through-passage crosses China (Xian, Lanzhou,Urumqi) and Kazakhstan (Dostyk, Aktogay, Astana, Petropavlovsk) or (Khorgoz, Almaty, Astana, Petropavlovsk), linking with the Trans-Siberian Railway, and further it reaches Eastern Europe. The distance along the Trans-Siberian Railway from Vladivostok to Rotterdam makes 11,800 km, and from Lianyungang, through the territory of Kazakhstan along the Great Silk Way to Rotterdam, it is 10,800 km i.e. the distance is reduced by 1,000 km.



Fig. 2. Map of the Trans-Siberian Railway and the Great Silk Way

## CONCLUSIONS

These corridors shall essentially contribute to economic consolidation and economic development of adjacent midland areas, as well as to economic and political integration of extensive Eurasian space. In many respects, the place of Russia, China, Kazakhstan and other countries of Eurasia in the world community will depend on timely implementation of these transport megaprojects. These transport megaprojects can bring especially noticeable effect to Kazakhstan.

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## Integracja transportu kolejowego Kazachstanu na świecie i w przestrzeni logistycznej

*W artykule omówiono strategię prowadzenia międzynarodowej działalności transportowej Kazachstanu w oparciu o kolejowy system przewozowy. Rozwój tego systemu transportowego wraz systemem logistycznym jest jednym z priorytetów polityki gospodarczej Kazachstanu. Omówiono infrastrukturę transportu kolejowego oraz kierunki rozwoju sieci kolejowej.*

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