



ICTE in Transportation and Logistics 2018 (ICTE 2018)

Development of transit potential in conditions of integration of the Republic of Kazakhstan into the world transport system

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Abstract

The article considers the current state of the transport infrastructure of the Republic of Kazakhstan, its integration into the international network, and also notes the further development of the transport and logistics infrastructure as a catalyst for the economy.

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Peer review under responsibility of the scientific committee of the ICTE in Transportation and Logistics 2018 (ICTE2018).

Keyword: Transport; International corridor; Transit; Logistics

1. Introduction

The geographical position of the Republic of Kazakhstan in the center of the Eurasian continent at the crossroads of Europe and Asia, between the largest economically developed countries China and Russia and the capacious consuming Central Asian region, causes a huge transit potential of the republic and creates real prerequisites for the participation of Kazakhstan's transport network in the formation of Eurasian corridors [1].

Taking into account the growth of cargo flows between producing countries: China and South-East Asia, with consuming countries: Europe and the Central Asian region, in the period of overcoming the consequences of the global crisis, the main goal of Kazakhstan's transport policy remains the further creation of the Eurasian transcontinental bridge.

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To date, through the territory of Kazakhstan, there are five established international transport corridors (see Fig. 1):



Fig. 1. Eurasian transport corridors.

- The Northern Corridor of the Trans-Asian Railway. It connects Western Europe with China, the Korean peninsula and Japan via Russia (on the Dostyk/Khorgos-Aktogay-Sayak-Mointy-Astana-Petropavlovsk (Presnogorkovskaya) section)
- The Southern Corridor of the Trans-Asian Railway. This corridor runs along the following routes: South-Eastern Europe - China and South-East Asia through Turkey, Iran, Central Asian countries (Dostyk / Khorgos-Aktogay-Almaty-Shu-Arys-Saryagash)
- North - South. Passes to Northern Europe from the Persian Gulf countries through Russia and Iran with the participation of Kazakhstan in the sectors: the seaport of Aktau - the regions of the Urals of Russia and Aktau-Atyrau, and also through the new railway line Uzen-Bereket (Turkmenistan) - Gorgan (Iran)
- The Central Corridor of the Trans-Asian Railway. It is of great importance for regional transit traffic in the direction of Central Asia-North-Western Europe (on the Saryagash-Arys-Kandagach-Ozinki section)
- TRACECA. It connects Eastern Europe with Central Asia through the Black Sea, the Caucasus and the Caspian Sea (on the Dostyk / Khorgos-Almaty-Aktau section, including through the perspective straightening railway route Zhezkazgan-Beineu, and Akhalkalaki (Georgia) -Kars (Turkey)

These corridors allow to significantly reduce the distance in the East-West communication and the terms of delivery of goods [2].

Over the years of independence, thousands of kilometers of railways have been built in Kazakhstan, including railway lines: Aksu-Degelen, Khromtau-Altynsarin, Shar-Ust-Kamenogorsk, Uzen-State Border with Turkmenistan, Zhetysay-Korgas, "Arkalyk - Shubarkol" and "Zhezkazgan - Beyneu" with a total length of 2432 km.

At present, the operational length of Kazakhstan's railways is 14.8 thousand km, including double-track lines - 4.9 thousand km (33%), electrified lines - 4.2 thousand km (28%).

The length of the motor roads of the Republic of Kazakhstan is 128.3 thousand km, of which more than 96.4 thousand km of the public road, including 23.7 thousand km of the republican value and 72.7 thousand km of

regional and regional significance [3].

Transit traffic occurs mainly between the republics of Central Asia, Russia and China. Currently, six international road routes pass through the territory of the Republic of Kazakhstan:

- "Tashkent - Shymkent - Taraz - Almaty - Khorgos"
- "Shymkent - Kyzylorda - Aktobe - Uralsk - Samara"
- "Almaty - Karaganda - Astana - Petropavlovsk"
- "Astrakhan - Atyrau - Aktau - gr. Turkmenistan "
- "Omsk-Pavlodar-Semey-Maikapshagai"
- "Astana - Kostanay - Chelyabinsk - Ekaterenburg"

The intensity of traffic along the corridors varies between 0.9 and 4.6 thousand cars per day. The largest volume of traffic is carried out along corridors 1, 3 and 6.

Currently, the Western Europe-Western China project is being implemented, the implementation of road projects "Center-South" (Astana-Almaty), "Center-East" (Astana-Ust-Kamenogorsk), "Center-West" (Astana-Aktobe-Atyrau-Aktau), Almaty-Ust-Kamenogorsk, Karaganda-Zhezkazgan-Kyzylorda and Atyrau-Astrakhan.

The implementation of the largest project - the reconstruction of the international transit corridor "Western Europe - Western China" is of great importance for the development of the transit potential of Kazakhstan. The total length of the corridor along the route "St. Petersburg - Moscow - Nizhny Novgorod - Kazan - Orenburg - Aktobe - Kyzylorda - Shymkent - Taraz - Corday - Almaty - Khorgos - Urumqi - Lanzhou - Zhengzhou - Lianyungang" is 8,445 km. Of these, 2,233 km across the territory of the Russian Federation, 2,787 km - the Republic of Kazakhstan (see Fig. 2), 3,346 km - the People's Republic of China [4].



Fig. 2. International road route "Western Europe - Western China".

The main advantage of this project is the shortening of the delivery time of goods from China to Europe. To date, the bulk of the transit flow (about 99%) is transported by sea (the South Sea Route), bypassing the territory of

Kazakhstan. At the same time, the transit route from the Asia-Pacific region to Europe across Kazakhstan is much shorter than the sea route. According to experts, the delivery of goods by sea through the Suez Canal takes 45 days, by road (via Kazakhstan) - 11 days.

Already in 2018, the reconstruction of the Atyrau-Astrakhan site is planned. In accordance with the Concept of the Road Sector Development of the Republic of Kazakhstan, the Atyrau Oblast is located on the most promising and fastest developing international transport corridor # 4 "Astrakhan border of Russia - Atyrau - Aktau - the border of Turkmenistan". The corridor joins the international transport corridor "Astrakhan - Moscow - Helsinki". In the south, it passes through the port of Aktau and further to the border with Turkmenistan. This transport corridor provides links to the developing Caspian region with the Aktau port, oil producing areas and exits to Russia and Central Asia.

The transport corridor "Center-West" is approximately 2511 km along the Akmola, Kostanay, Aktyubinsk, Atyrau and Mangistau oblasts "Astana-Zhantekke-Egindykol-Arkalyk-Amangeldy-Torgai-Yrgyz-Shalkar-Kandyagash-Dossor-Beineu-Aktau", which crosses international corridor "Western Europe - Western China". It allows both through the international transit corridor "Western Europe - Western China" and through the corridor "Center-West" to enter the Urals and Siberian federal districts of the Russian Federation and Turkmenistan.

The modernization of the transit corridors, together with the development of the Eurasian Economic Union (Russia, Belarus, Kazakhstan, Armenia and Kyrgyzstan) creates great opportunities for expanding and deepening interstate and trade relations. In addition, the implementation of the project for the reconstruction of the "Center-West" corridor will allow the Caspian region to enter the markets of China, Russia and the countries of South-East Asia, as it will be connected to the transport corridor "Western Europe - Western China".

2. The theoretical basis of Kazakhstan transport infrastructure research method

Importance of the role of transport logistics is recognized all over the world, and it is one of the profitable segments for national economies. The world market of transport logistics is estimated at 3.1 trillion. US dollars, that is about 7.1% of world GDP. In developed countries, the share of transport logistics is at the level of 13-14% of GDP. For example, in Ireland this indicator reaches 14.2%, in Singapore -13.9%, in Hong Kong-13.7%, in Germany -13.0%, etc. This indicates that these countries pay special attention to development of this sector as one of the sources of national income. In Kazakhstan, this indicator in 2017 was 8%. One of the logistics features of Kazakhstan is logistics costs, which are very large and far exceed the level of developed countries. So, today in Kazakhstan the share of logistics costs can reach up to 25% of the final product cost. This characterizes the deterioration of the transport infrastructure, not the effectiveness of many logistics operations due to the use of old technologies. At the same time, the world average is at 11%, in China 14%, in the EU at 11%, in the USA and Canada - 10%, etc. As a result, the economy of Kazakhstan is forced to bear a transport load twice as large as in developed countries [5].

Its main goal is to form the modern transport infrastructure of Kazakhstan, as well as ensure its integration into the international transport system and the realization of the transit potential of the country. For the first time since the independence of our country, specific targets were set by the State for the transport industry in figures by 2020.

The following target indicators of development are defined in it:

- Increase in the volume of transportation of goods to 5,800 million tons by the end of 2020
- An increase in the number of passenger transportations to 34,200 million by the end of 2020
- An increase in freight turnover to 800 billion tkm by the end of 2020
- Increase in passenger turnover to 530 billion pkm by the end of 2020

Today the world is divided by more than 600 interstate borders. Accordingly, the demand for transit services is growing and the market for these services is expanding.

The volumes of transit reflect the national level of transport development and its international competitiveness.

Transit potential of Kazakhstan has great prospects. And today the volumes of transit are very low in comparison with the potential. The Kazakhstan transit potential is estimated at about 2-2.5 billion US dollars per year. Now the republic really gets about 800 million US dollars. That is, it is clear that the potential is far from being exhausted [6].

Through Kazakhstan, the main traffic flows are regional transit: between Russia and Central Asia, China and

Central Asia. The transit between the countries of South-East Asia and Russia, the states of Europe is practically not mastered.

The main share in the structure of transit traffic by sending countries is occupied by Russia, whose share reaches 50%. China accounts for 30% of the total transit cargo volume and Uzbekistan accounts for about 10%.

The main countries of destination of transit cargo flows through Kazakhstan are the Central Asian countries - 87% (Uzbekistan - 36%, Kyrgyzstan - 19%, Afghanistan - 13%, Tajikistan - 11%, Turkmenistan - 8%), while Russia and China have on 5% (90% of sending and 84% of destination are neighboring countries).

The potential of non-regional transit is huge. An important factor in strengthening the transit potential of Kazakhstan is the rapidly growing volume of mutual trade between the EU and China. Experts predict that the volume of foreign trade between China and the European Union will increase to \$ 780 billion by 2020. At the same time, the share of cargo transportation between China and Europe will increase to 170 million tons. Between the countries of the European Union and the Asia-Pacific region, about 6 million containers run annually.

3. The results of the study of the transport infrastructure of Kazakhstan

When organizing the transit from Southeast Asia or China to Europe, there are additional difficulties, due to the participation in the transport of more than 3 countries. These are such barriers as the intersection of many borders, twice the change in track, the complexity of documenting, the complexity of calculating tariffs and increasing it, harmonizing the regulatory components of transport in many countries, and others. The sea routes are almost devoid of these shortcomings. All these difficulties often erase the advantages of a land route in reducing the range by half, increasing the speed of delivery three times [7].

One of the important elements of improving the logistics service of transit traffic was the opening of the movement of regular container trains of direct formation.

In 2005, the first container train "Almaty-Aktau-Baku-Poti" was launched. Further, the following trains were launched: Baltika-Transit (Baltia-Kazakhstan / Central Asia) and Kazakhstan Vector (Brest-Almaty-Tashkent), as well as trains plying as far as the formation of train units along the routes Almaty-Muuga Tallinn), Almaty-Novorossiysk, Aksu (Pavlodar) -Kherson, and Aksu (Pavlodar)-Klaipeda.

The total volume of transit cargo transportation is determined by summing up all the transported tons of cargo from all points:

$$P = P_1 + P_2 + \dots + P_n \tag{1}$$

where P_1, P_2, \dots, P_n is the amount of cargo (in tons) sent from the 1st, 2nd, ..., nth items, respectively, for a certain period of time.

Table 1 shows the figures for the transit of goods by type of transport.

Table 1. Indicators of transit cargo transportation by mode of transport.

Transit	Unit of measure	2013	2014	2016	2017	2020
General transit through the Republic of Kazakhstan	million tons	18,2	18,3	23,8	25,9	37,2
by rail	million tons	16,5	16,7	20,9	22,7	32,2
by car	million tons	1,57	1,5	2,3	2,9	3,5
by water transport	million tons	0,13	0,1	0,6	0,8	1,5

As we can see, the tasks set by the State before the transport industry are ambitious and ambitious. This increase in transit by 2020 is doubled, with the subsequent increase to 50 million tons per year. And by 2050 there is a task of an increase of 10 times.

Realization of the transit potential of Kazakhstan requires from the transport and logistics industry of the republic a high integration into key international transport corridors, including affecting the distribution of cargo flows.

The key factors and measures for the growth of transit are:

- Popularization of Kazakhstan transport corridors to attract the volume of transit cargo between China and the EU, bypassing Kazakhstan
- Systemic management of corridors and targeted development of their infrastructure. First of all, directing funds to the railway lines of international corridors, taking into account the wear of up to 60% of the trunk lines and the lack of funds
- Coordination and integration of efforts for the growth of transit of goods to Europe by the countries of the customs union. The first step is the creation of the United Transport and Logistics Company, a single logistics operator
- Development of common approaches to the organization of transit by countries of the participants of the overland route along selected corridors
- Improvement of the quality and culture of logistics service, systematic implementation of the "5C" principle - cost, service, speed, stability, safety - 5 essential components of a high level of customer service
- Creation of an internal and external network of modern transport and logistics centers equipped with new technologies
- Reducing costs and maintaining a flexible tariff policy
- Increasing the efficiency of administrative procedures for conducting transit operations

4. Conclusion

The current concept of developing the network of international highways, passing through Kazakhstan, is based on three priority areas: Russia, European and Baltic countries; China, Japan and the countries of South-East Asia; the countries of Central Asia and Transcaucasia, the Persian Gulf and Turkey. In each of these directions, there are established international transport corridors. In particular, 6 railways, 6 automobile and 4 air transport corridors have been identified and recognized by the international community on the territory of the republic. Estimating the transit potential of the Republic of Kazakhstan, we note that our country, in comparison with neighboring states, has the advantages associated with the fact that Kazakhstan is more open, politically and economically stable state, more advanced in the way of building market relations.

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