

Research on the current situation and trend of China-Europe freight train operation

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Abstract: The China-Europe freight train is an important part of the Belt and Road Initiative, which aims to strengthen trade and economic cooperation between China and European countries. Since its first operation in 2011, the China-Europe freight train has achieved remarkable development results, becoming an important route for overland trade between China and Europe. Firstly, this paper analyzes the current situation of China-Europe freight train operation, and finds that the China-Europe freight train has obvious advantages in improving trade facilitation, shortening transportation time and reducing transportation cost through the research of operation routes, cargo types and transportation efficiency. At the same time, there are also some problems in China-Europe freight train, such as imperfect infrastructure and high return empty container rate. Then, the paper looks forward to the future trend of China-Europe freight train operation. With the deepening of the "Belt and Road" Initiative and the strengthening of cooperation between relevant countries, the coverage of China-Europe freight train will continue to expand, the categories of transport products will continue to increase, transport costs will continue to decrease, cross-border e-commerce lines will increase, and it will occupy a place in the multi-modal transport market. Finally, this paper puts forward counter measures such as improving infrastructure construction as soon as possible and establishing an international information platform related to China-Europe freight train.

Keywords: The Belt and Road Initiative; China-Europe freight train; Railway transportation

1 Introduction

Since the operation of the China-Europe freight train, the trade volume between China and Europe has increased year by year, and the China-Europe freight train has gradually become an important international logistics transport mode between China and Europe, and has gradually developed into an internationally renowned logistics brand under the "Belt and Road" initiative. The China-Europe freight train provides a guarantee for the industrial chain and supply chain of the countries along the route, while the China-Europe freight train platform in China provides customized train services and provides whole-process logistics and transportation solutions for many enterprises, thus ensuring the stability of the supply chain of enterprises along the route and promoting the economic development of the countries along the route. Since 2022, a total of 1,150 China-Europe "customized trains" have been launched. By the end of July 2022, the China-Europe freight train have carried 109,000 tons of anti-epidemic supplies to Europe, providing a "life channel" for global epidemic prevention and control. Although the China-Europe freight train has made some achievements, there are still some problems, and it is necessary to study its development trend.

2 The current situation and problem analysis of China-Europe freight train

2.1 Wide distribution of China-Europe railway lines

The China-Europe freight train connects Europe and the countries along the route, as well as East and Southeast Asian

countries and regions, thus forming a comprehensive multimodal transport channel. Based on the "New Eurasian Continent" and the "Siberian continent", three major railway transport corridors, namely the "Eastern route", "Western route" and "Central route", have been basically completed. The eastern route mainly starts from the Suifenhe Railway port in Heilongjiang and the Manzhouli Railway port in Inner Mongolia, and connects with other European countries through the two railways of Belarus and Poland. The western route is at the Alashankou (Khorghos) railway port in Xinjiang, connecting the railway lines of Kazakhstan and Russia, passing through Belarus, Poland, Germany and other countries; The Middle route is the second Hot railway port in Inner Mongolia, connected by railway lines in Poland, Belarus, Mongolia, Russia and other places.

2.2 The ranks are constantly increasing

In 2022, about 16,000 China-Europe freight trains carried 1.6 million standard containers, an increase of 9 percent and 10 percent over the same period last year. The freight capacity of the "West Land New Channel" increased by 18.5% over the same period of last year, and 756,000 TEUs were shipped; The transport network has been further expanded. The China-Europe railway services have connected 108 cities in China and 208 cities in 25 European countries, with a total of 65,000 trains carrying 6.04 million TEUs. The number and frequency of China-Europe freight trains have been increasing, and the transportation time has been decreasing, which has brought convenience and efficient logistics services to the trade cooperation between China and Europe.

2.3 There are many kinds of goods

At the beginning of the operation, most of the products

exported from China to Europe were electronic products such as laptops, mobile phones and auto parts, but also some textiles, garments, metal products and some small commodities. The main items returning to China from Europe are machinery, metal, cars, and other transportation equipment. With the continuous expansion of the scale of operation, as well as the continuous development and application of technology such as refrigerated containers, the types of commodities that can be transported are also increasing, and now it has expanded to 53 major categories such as food, chemical raw materials, mineral products, medical equipment and more than 50,000 varieties, covering all aspects of production and life needed by people in countries and regions along the line. China's small goods and electronic products have become important transport goods on China-Europe freight trains. At the same time, under the background of China's active advocacy of the "Belt and Road", more and more countries and regions have joined the transport network of China-Europe freight trains, further enriching the transport product categories of China-Europe freight trains.

2.4 Some countries along the route have imperfect infrastructure

The transit areas of China-Europe freight trains are mainly Russia, Central Asia, Mongolia, East and Central Europe and other countries, the level of infrastructure supporting varies among countries, and some countries are still relatively backward in infrastructure construction and information technology, which brings great difficulties to the multimodal transport and distribution of freight trains, warehousing and transit of goods, and increases their logistics costs.

2.5 Many empty containers on the return trip

According to the data, most of the vehicle users of the China-Europe freight train are Chinese enterprises. Some European companies have also adopted China-Europe freight trains, but their contribution is only a small part of the total. On the whole, the overall scale of China-Europe freight is also small, and the contribution of China-Europe freight trains to China-Europe trade by value is only 2%. Most of the growth has been between China and Russia, with more than 2,000 trains now in service, accounting for about 40 per cent of all freight. However, during the epidemic, the European blockade did have a serious impact on the traffic volume between China and Europe, especially the return east-bound transport. In the first half of 2022, about 2,000 westbound trains left for Europe, but only 900 returned. To a certain extent, this has caused a waste of resources for the return journey of China-Europe freight trains.

3 The operation trend of China-Europe freight train

3.1 The coverage continues to expand

On the one hand, China's provinces and cities have opened up new train routes; On the other hand, while maintaining the operation of the main line, the early train lines formed a "1+N" line layout through the opening of branch lines, expanding the coverage of China-Europe trains at home and abroad. At present, the China-Europe railway has connected 108 cities in China and 208 cities in 25 European countries, and established a relatively stable operation mode on this basis, providing strong support for the construction of the Belt and Road Initiative in China and other countries along the route. At the same time, the China-Europe railway services

are also growing, and more countries and regions are participating in this process. In 2018, Turkey joined the China-Europe railway cooperation mechanism, becoming the first non-EU member state to connect the Eurasian continent with the European railway network. The continuous expansion of the coverage of China-Europe freight train has not only facilitated the entry of European goods into the Chinese market, but also provided a more convenient means of transport for Chinese exports.

3.2 Transportation costs continue to fall

As the number of China-Europe trains increases, the average cost will continue to fall, and the fixed cost can be spread over more trains and goods, thereby reducing the unit cost. The increase in the supply of backhaul cargo can improve the operational efficiency and utilization rate of China-Europe freight trains, thereby reducing transportation costs. Market-oriented operation can improve the competitiveness and flexibility of China-Europe freight trains, promote price rationalization and transparency, and thus reduce transportation costs. Characteristic industry development refers to the introduction of customized services in combination with local characteristic industries to expand the incremental market and improve the value and quality of goods. The expansion of characteristic industries can improve the added value and differentiation advantages of China-Europe freight trains, thus reducing transportation costs. For example, in Guangzhou, Henan, Chongqing, Chengdu and other places, the China-Europe Express runs new energy vehicles, cross-border e-commerce, wood, green tea and other special services. The gradual expansion of the scale of China-Europe freight trains enables relevant enterprises and management agencies to make more full use of transport resources and logistics networks, and reduce transport costs.

3.3 More cross-border e-commerce lines

The buyers and sellers of cross-border e-commerce are distributed in different countries, and its cross-border transportation has the characteristics of long distance and high risk, so the logistics requirements for timeliness and safety are higher. The opening of the China-Europe Express has further expanded the logistics network connecting the Belt and Road, and has gradually become the primary choice of many cross-border e-commerce companies with its stable, green and efficient characteristics. The journey of the Central European train is only 1/3 of the sea liner, under normal circumstances, from the sea liner to Europe takes about 45 days, but the Central European train only takes 12 days. In this way, the transportation time is greatly reduced, the business volume of cross-border e-commerce is greatly improved, and the efficiency of trade is also improved.

The relevant departments of the state have successively introduced policies related to the China-Europe railway line of cross-border e-commerce. The General Administration of Customs further rolled out 10 measures in February 2020 to support the development of China-Europe express trains. These measures include "allowing China-Europe freight to go through customs formalities through multiple customs transits", "supporting the use of China-Europe freight to carry out cross-border e-commerce, express mail transportation business", etc., organically combining cross-border e-commerce and China-Europe freight, expanding foreign trade channels, and enhancing the radiation capacity and influence of China-Europe freight.

3.4 Occupy a place in the multimodal transport market

The opening of the China-Europe Express will bring new changes to China's multimodal transport pattern. The rapid growth of the China-Europe railway has made it become the main mode of railway multimodal transport in China, which has played an important role in promoting China's foreign trade relations. After the opening of the China-Europe Express, a new international transport market has been opened up for the international transport field of China's railway, and a number of international multimodal transport operators have been born. Local governments have strengthened investment in China-Europe Express services and are constantly improving policies and regulations related to multimodal transport to promote better management and development of multimodal transport. In the future, China's multimodal transport market will no longer be occupied by a single mode, but will be occupied by a variety of transport modes.

4 Measures to promote the high-quality operation of China-Europe freight trains

4.1 Constantly improve infrastructure construction

In order to reduce the transportation cost and improve the loading efficiency, it is necessary to speed up the construction of infrastructure and distribution points in countries along the line, and constantly improve the relevant supporting facilities of the China-Europe train. Therefore, it is necessary to increase efforts to expand development cooperation with countries along the line in infrastructure construction and other fields, so as to improve the infrastructure level of railways along the line and better promote bilateral trade in goods. On the one hand, we should strengthen official cooperation with countries along the Belt and Road, and rely on international financial institutions such as the Asian Infrastructure Investment Bank and the Export-Import Bank of China to provide financial services for their infrastructure. On the other hand, strengthen the business cooperation between private infrastructure enterprises and countries along the Belt and road, and provide material, technical and human support for construction projects.

4.2 Establish an international information platform related to China-Europe Express services

Establish a logistics public information platform led by the China-Europe Express, drive the geo-economic development along the route through the China-Europe Express, and enable countries

along the route to realize real-time sharing of relevant logistics information. First, build a unified information system across the country. Under the overall planning of China Railway Group, with the focus on ports and railways, the construction of cross-provincial China-Europe railway logistics information exchange platform, to realize the sharing of China-Europe railway logistics information throughout the country. Secondly, a railway logistics information sharing platform should be built for the countries along the route. The platform can promote the exchange of paperless information and electronic data in inspection and quarantine, documents and other aspects between the countries along the China-Europe Railway line, accelerate the real-time and dynamic transmission of the operational data of the China-Europe Railway line at home and abroad, lay a solid foundation for the regional economic development of the countries along the China-Europe Railway line, and bring more convenience and economic benefits to all parties.

4.3 Strengthen international coordination to increase the volume of return shipments

Reducing the operating costs of China-Europe freight trains depends on increasing the supply of return freight, improving the return rate, and promoting a more balanced return journey. Driven by the Belt and Road Initiative, China will continue to coordinate, communicate and cooperate with Poland, Russia, the EU and other countries, and strive to lift relevant restrictions as soon as possible, so that more European products can be shipped to China via China-Europe freight trains. Secondly, we will strengthen cooperation with Europe by taking advantage of the return resources and reasonable prices of partners such as Deutsche Bahn, Russian Railway and Polish Railway. At the same time, we will strengthen cooperation with Chinese companies that have established overseas cooperation parks, industrial zones, overseas warehouses and processing centers in countries along the China-Europe Railway Line, so as to obtain more stable supplies of goods. Finally, it is necessary to further promote the docking of the China-Europe freight train trade channel with the new international land and sea trade channel, further expand and extend the international railway channel in western and southern China, in particular, to seize the opportunity of industrial transfer to Southeast Asian countries, extend the operation of the China-Europe freight train, and make the China-Europe freight train become a link between Southeast Asia - China - Eurasia - Europe, so as to promote the cooperation between China and Europe. Achieve the integration of the Belt and Road Initiative.

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