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Research on the South China Cross-border Railway Lines Connecting with Trans-Asia Railway

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ABSTRACT. *This paper discusses South China cross-border railway lines. Cross-border railways play a role in the development of regional economy in building an economic belt along the rail line because it shortens the transportation time and distance to reach Europe within 25 days from China. It also bypasses the Indian Ocean and Suez Canal in consideration of national strategic safety. Cross-border railway in the South China needs to be improved because it has the problem of low customs clearance efficiency and high transportation costs, cargo reloading at border rail ports, insufficient customs clearance capability and lack of information services.*

KEYWORDS: *Cross-border Railway Lines; South China*

1. Introduction

Cross-border railway, especially large intercontinental railway, is called Land Bridge. The Land Bridge refers to the transport channel where goods leave from a port on one end of the mainland without crossing the ocean, but through the connection of land, railway, road or air transportation, and are directly transported to the port on the other end of the mainland; and this form of international (especially intercontinental) trade, which is carried by land rather than sea, is called the Land Bridge [1].

The earliest Land Bridge in the world is the North American Land Bridge that traverses the North American continent. After that, the First Asia-Europe Land Bridge (also known as the Siberian Land Bridge) and the Second Asia-Europe Land Bridge (also known as the New Asia-Europe Land Bridge) that traverses from Asia to Europe [2]. As shown in Table 1, the major cross-border railway networks that have been built and operated include the North American Land Bridge, the Siberian

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Land Bridge and the New Asia-Europe Land Bridge, while the Trans-Asia Railway is in the construction stage.

Table 1. Major cross-border railways in the world[1]

Status	Land bridge	Period	Start from	Destination	Total length
In operation	North American Land Bridge	1950s	East Coast of USA	West Coast of USA	4500 km
	Siberian Land Bridge	1970s	Vladivostok, Russia	Rotterdam, Netherlands	13,000 km
	New Asia-Europe Land Bridge	1990s	Lianyungang, China	Rotterdam, Netherlands	10,900 km
In construction	Trans-Asia Railway	2006	Kunming, China	Singapore	81,000 km

(1) The North American Land Bridge connects the US inland with the east and west coasts

The North American Land Bridge starts from New York in the east and ends in San Francisco in the west, with a total length of 4,500 kilometers [2], connecting the east and west coasts of the United States, and providing a convenient transportation route for the central United States. In addition, goods from the east and west of the United States are transported by rail, strategically bypassing the Panama Canal, because it connects the Atlantic and Pacific. Most of the mileage of the North American Land Bridge belongs to United States territory, but it also includes some rail routes in Canada territory. After the American War of Independence, the United States accelerated the development of the economy in the western region, and the east coast railway line continued to extend westward, eventually connecting the west coast.

(2) The Siberian Land Bridge connects eastern and western Europe

In the 1970s, Japan, the former Soviet Union and European countries built the Siberian Land Bridge based on the existing rail network in Siberian [3]. As for construction of the Siberian Land Bridge in an early period, there are many problems in actual operations, including unstable transportation time due to weather and policy, poor information technology level of countries along the railway which makes it difficult to track cargo in transit, and unbalanced cargo volume between China to Europe.

(3) The New Asia-Europe Land Bridge connects Eastern Asia and Europe

The New Asia-Europe Land Bridge is based on the main railway lines of Longhai and Lanxin in China to connect the main rail stations in Russia, Mongolia and Central Asia, and finally connects with European countries [3]. The New Asia-Europe Land Bridge includes the North Line and the South Line. The North Line goes through Aktoya, Celinograd, Petropavlovskna, Moscow, Brest, Warsaw, Berlin and Rotterdam Port. The southern route goes through Arlesi, Iresky, Bryansk,

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Brest, Warsaw, Berlin and Rotterdam. It is possible to branch from Aresi, through Mashhad Iran to Tehran, and possible branch from Bryansk to Qiaopu and Budapest, Hungary [4].

(4) Trans-Asia Railway is under planning and construction

In 2006, 18 Asian countries formally signed the "Intergovernmental Agreement on the Asian Railway Network" in Busan, South Korea. And the Trans-Asia Railway was officially introduced as part of the agreement. According to the agreement, the Trans-Asia Railway includes three routes [5]. The east route plan is from Singapore via Kuala Lumpur, Bangkok, Phnom Penh, Ho Chi Minh City, Hanoi to Kunming China; the central route plan is from Singapore via Kuala Lumpur, Bangkok, Vientiane, Shang Yong, Xiangyun (Dali) to Kunming China; the west route plan is from Singapore via Kuala Lumpur, Bangkok, Yangon and Ruili to Kunming China. As China and Southeast Asia have different rail standards, the agreement stipulates that the Trans-Asia Railway will uniformly use standard rail tracks [5].

2. Cross-border railways play a role in the development of regional economy

Cross-border railway transportation plays an important role in creating a regional economic zone. Especially for inland areas, cross-border railways are an important channel for imports and exports.

(1) Building an economic belt along the rail line. Cross-border railway is not only an international transportation channel, but also an axis of regional economic development. The development of rail transportation will promote market prosperity and economic development along the rail areas [6].

(2) The cross-border railway geographically shortens transportation distance, with lower transportation time comparing to sea transportation, with lower cost comparing to air transportation. It provides an important trade channel for countries along the route. For rail freight from China to Europe, the transportation distance is shorter than shipping through the Indian Ocean and Suez Canal by sea that the cargo can reach Europe within 25 days. Since the operation of the "Rong'ou Express Railway" from Chengdu China to Europe in 2013, it has been shipped steadily at a frequency of one train per week. Its transportation time is about one-third of the traditional rail-sea multi-modal transport time, and the freight rate is one-quarter of the air freight [6].

3. Cross-border railway in the South China needs to be improved

Cross-border railways passing through China include the New Asia-Europe Land Bridge and the planned Trans-Asia Railway. The New Asia-Europe Land Bridge has been in operation for decades, but it still faces many challenges which have affected the transportation of the New Asia-Europe Land Bridge to a certain extent. Due to issues such as financing and coordination among countries, the construction of the

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Trans-Asia Railway is in a stagnation status in many countries along the rail line, and the overall progress lags behind the early plan.

(1) The New Asia-Europe Land Bridge has the problem of low customs clearance efficiency and high transportation costs

The average detention time of goods at the border customs accounts for 30% of the total transportation time. At the border customs, in account of documents, customs inspections and other reasons accounted for 60% of detention time, while capacity and other reasons accounted for 40% [7].

(2) The cargo reloading at border rail ports leads to an increase in time and transportation costs

There are both quasi-track and broad rail track rather than standard rail tracks in the countries along the New Asia-Europe Land Bridge. Therefore, the goods shipped from China to Europe need to be reloaded twice, resulting in longer transit time, increased reloading operation costs, and the high risk of delayed pressure at foreign ports.

(3) The customs clearance capability of ports along the railway is seriously insufficient

For the cargo exported from China to Europe, the New Asia-Europe Land Bridge requires these cargo to be reloaded at the Alashankou station at Chinese border and at the Dostyk station as imported cargo. Due to the serious shortage of Kazakhstan's reloading capacity, during the peak export season, the number of Kazakhstan's equipment and reloading capacity obviously cannot meet the demand for transportation, which usually results in a backlog of Chinese transit containers at Kazakhstan's rail ports.

(4) Land Bridge transport information is not smooth

In the Internet era, customers have higher requirements for tracking logistics information, especially electronic and food products with temperature requirements. The transportation of the New Asia-Europe Land Bridge is restricted by the information and network level of local countries, therefore the cargo is unable to be provided full tracking services. Compared with the mature information service by container shipping, the New Asia-Europe Land Bridge fails to achieve the sharing of cargo and regulatory information by the countries along the route and provide users Inquire. Secondly, the information of the customs supervision departments of the countries has not been interconnected. If the goods have customs clearance problems abroad, it will take a long time to notify the owners.

4. Conclusions

The major cross-border railways currently include the North American Land Bridge, the Siberian Land Bridge, the New Asia-Europe Land Bridge and the Trans-Asia Railway. Cross-border railways have promoted economic and trade activities along the railway and opened a land trade channel for non-coastal areas.

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Many achievements have been made in the construction of cross-border railway freight transportation, but there are also many problems. First of all, the difference in rail track standards of various countries limits the operation efficiency. The goods transported by cross-border railways need to be reloaded to another train at border stations, which increases the transportation time and cost. Secondly, the economic and trade relations of the countries along the cross-border railway are affected by the political reasons. If the continental railway is restricted by any country in the middle of transportation, its passing capacity will be greatly affected. Thirdly, there are still large fluctuations and instabilities of return cargo from Europe to China. Fourthly, the railway transportation management in the Far East and Central Asian countries is still chaotic and the freight rates are high to afford, which greatly reduces the competitiveness of railway transportation.

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References

[1] Zhang Kaicheng, 2014: "Guangdong's Response to the Construction of the Maritime Silk Road in the 21st Century", "Southern Journal" No. 87

[2] Chen Wanling and He Chuantian, 2014: "Games of All Sides of the Maritime Silk Road and Their Economic and Trade Positioning", "Regional Economy", Issue 3

[3] Huang Jiangang and Luo Xiaoping, 2014: "Guangdong Response to the Construction of the Maritime Silk Road in the 21st Century", Journal of Zhejiang Ocean University (Humanities Edition), Vol. 31, Issue 1

[4] Kou Hui, 2002: "Talking about the World Land Bridge", "Teaching Reference for Middle School Geography" No. 10

[5] China Industrial Development Research Network, 2015: The domestic section of the Trans-Asia Railway Eastern Line will be opened to traffic at a design speed of 200 kilometers per hour during this year, http://chinaidr.com/tradenews/2015-11/75530.html

[6] Zhong Qizhuang, 2008: "The Perspective of Japan's" Land Bridge "Complex Perspective", "Land Bridge Review" No. 11

[7] Han Song, 2011: Using National Strategy to Improve the Transport Competitiveness of the New Asia-Europe Land Bridge, "Land Bridge Vision" Issue 2