

Bottleneck Analysis and Countermeasures of Shanghai Port Sea-Rail Combined Transport Development

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Abstract

With the development of "the Belt and Road", the trade of various countries has become more and more frequent, and the container transportation volume of various ports has continued to grow and develop. With the continuous development, Shanghai Port has been promoted to the world's largest container throughput port, and had a pivotal position in China's import and export ports of goods. However, in the rapid development, the market competition is becoming more and more fierce. There are also many problems to be solved in Shanghai Port. This paper explores the development of Shanghai Port Sea-Rail Combined Transport. Sea-rail combined transport is currently the more advanced mode of transportation in the world, but it needs a lot of support and involves a wide range of aspects, so it also faces great challenges. However, the advantages of sea-rail combined transport are not only to reduce transport costs, shorten transport time, simplify the transport process, but more importantly, it is greener and more environmentally friendly than general transportation, which will become the future development trend of multimodal transport in China. This paper analyzes the development status of sea-rail combined transport in Shanghai Port, analyzes and discusses the necessity and development trend of the development of sea-rail combined transport, explores the bottlenecks of its existence, and proposes corresponding improvement suggestions, hoping to bring Shanghai Port Sea-rail combined transport some inspiration.

Keywords

Transportation, Shanghai Port, Sea-Rail Combined Transport.

1. Introduction

With the development of international economy, the development of sea-rail combined transport in developed countries is very high, but in the environment of low development of sea-rail combined transport in China, it is imperative to speed up the development of sea-rail combined transport in China. Shanghai, as China's international shipping center, is also one of the largest ports with global throughput and hub port. Located along the coast of China, as well as in the Yangtze River Delta and Yangtze River Basin, Shanghai is the junction of the two major economic zones. It is an indispensable important port for both domestic and international. The development of sea-rail combined transport in Shanghai Port is a potential big market, but at the same time it faces many problems. The construction of sea-rail combined transport system in Shanghai Port is a very wide-ranging system, which requires cooperation and efforts from various parties to achieve in the future. In this paper, from the current situation, future trends, development necessity and problems of Shanghai Port, the corresponding solutions will be put forward to adapt to the trend of the times as much as possible. On the existing basis and technology, some ideas and suggestions will be provided for Shanghai Port to

build sea-rail combined transport, break through the bottleneck period of sea-rail combined transport, and further become an international shipping center.

2. Development status of Shanghai Port sea-rail combined transport

2.1 Development history of Shanghai Port sea-rail combined transport

Shanghai Port's sea-rail combined transport started as early as the 1990s, but the process of development is not fast. It has gone through the stages of development, recession and stagnation.

In 1996, Shanghai Railway cooperated with Maersk to open a container train from Yangpu to the west of Nanjing, which greatly promoted the development of Shanghai Port sea-rail combined transport in this period under the characteristics of train timing, fixed-point, pricing, fixed-line and fixed-train number. With such a development prospect, in the following year, Shanghai opened a new class from Shanghai to Chengdu, and had previous experience. This route covers many important port cities in China.

At the end of the 20th century, with the sustainable development of Shanghai's sea-rail combined transport, the urban nodes of Shanghai-inland intermodal transport involve Chongqing, Hefei, Wenzhou, Nanchang, etc.

In 1999, Shanghai implemented the "one-stop" service policy, that means, to set up railway transport service stations directly in the port area, which saved a lot of manpower, material resources and time costs.

In 2005, Luchao Gang Center Station, the first railway container center station to be built and put into operation, is an important supporting project of Yangshan Deepwater Port. It is connected with Yangshan Deepwater Port through the Donghai Bridge and runs through the railway system throughout the country, forming a certain scale.

2.2 Development status of Shanghai port

At present, the Railway Bureau has opened more than 20 "five fixed" domestic container sea rail combined lines. As far as Yangshan Port is concerned, the Luchao Gang Central Station, which was built in 2005, has not played the role of real sea-rail combined transport because of the separation of the port and the need for trailers to transport in the middle. However, some of the port area's railways were basically demolished or discontinued. Another important port in Shanghai -- Waigaoqiao port area and Shanghai Tong Railway two phase will enter Shanghai Waigaoqiao port area, which is also in the initial stage.

However, the sea-rail combined transport of Shanghai port has made great progress along the way, but compared with the developed ports of other developed countries, the Shanghai Port sea-rail combined transport is still in its infancy. In 2013, China's container sea-rail combined transport volume reached 1 million 565 thousand TEU, accounting for 35.5% of the whole country. However, the traffic volume of the sea-rail combined transport is 85 thousand and 300 TEU, which accounts for 0.26% of the throughput of the container port. Such a low proportion of the sea-rail combined transport has caused people to worry about the development of the sea-rail combined transport.

3. Necessity of Shanghai Port to Develop the sea-rail combined transport

3.1 Rapid development of sea-rail combined transport in domestic and foreign ports

Large container ports in Europe and the United States regard container sea-rail combined transport as a key development business, such as Ports of Los Angeles, New Jersey, Hamburg and so on, and their container sea-rail combined transport proportion is as high as 20%-30%. The Ningbo-Zhoushan port throughput reached 24 million 610 thousand TEU in 2017, an increase of 14.1% over the same period last year. Since the global financial crisis in 2008, the shipping industry has been experiencing a great impact, and has been growing at an annual double-digit rate of growth to become a dark horse. In less than 5 years, it has continuously surpassed fourth of the world's largest container ports. Its achievements will benefit from its continuous expansion of the sea-rail combined transport business

to Central Asia, Eastern Europe and other countries, actively docking the "Silk Road Economic Belt", and expanding the economic hinterland, expanding the waterless port and increasing the supply of goods.

3.2 The Leading Sheep of Domestic Ports

In 2010, Shanghai port container throughput reached 29 million 70 thousand TEU, becoming the world's largest container port. In recent years, the container throughput of Shanghai port has been increasing year by year, leading to other ports in China. In 2017, Shanghai port occupied the world's first list with more than 40 million TEU, and it is also the first port in the world to break through the 40 million mark. Although the throughput of Shanghai port is very large, the proportion of sea-rail combined transport is very low. On the contrary, in 2018, the sea-rail combined transport of Ningbo-Zhoushan port exceeded 400 thousand TEU for the first time, far ahead of the Shanghai port. Shanghai port is located at the confluence of China's coastal areas and the two major economic belts of the Yangtze River. It is an important hub for domestic and foreign logistics, it is also an important template for the development of other ports in China. Under the background of such a low proportion of China's sea-rail combined transport, the development of Shanghai is particularly important. The sea-rail combined transport developed in Shanghai first, in order to provide some experience for more domestic ports, thus driving the development of China's sea-rail combined transport and becoming the true center of international shipping.

3.3 The only way to develop green shipping

"Green shipping" is very popular in the modern shipping industry. In the past few decades, in order to develop, we have emitted many sources of pollution, resulting in a global greenhouse effect. As people's ideas progress, we pay more and more attention to ecological civilization and promote "green."

Research has shown that under the same amount of transportation, the average energy consumption ratio of rail transport, air transport and road transport unit traffic is 1:18.6:9.3, it can be seen that the advantages of railway transportation are greater under the same energy consumption. Sea-rail combined transport has been proven to be a green, environmentally-friendly and energy-efficient mode of transportation in Europe and the United States, and has been promoted. Compared with road transport, railway transport has the advantage of energy saving and emission reduction. The European Union conducted statistical studies on road and rail, and the pollutants emitted by these two types of cargo transportation. As shown in Table 1, in addition to sulfur dioxide, the unit pollutant discharge of railway transportation is much lower than that of road transportation.

Table 1. Unit Pollutant Emissions from Road and Railway Transportation $g / (t \cdot km)$

Contaminant	Road transport	Rail transport
Carbon monoxide	0.5	0.2
Carbon dioxide	98	28
Hydrocarbon	0.2	0.1
Nitrogen oxide	1	0.5
Sulfur dioxide	0.03	0.04
Particulate	0.08	0.03

It can be seen that sea-rail combined transport is conducive to reducing air pollution, alleviating the greenhouse effect, conducive to the sustainable development of Shanghai, and is in line with the development of green shipping.

4. The bottleneck problem of Shanghai Port Sea-Rail Combined Transport Development

Although Shanghai Port can be said to be one of the best in the world, the development of sea-rail combined transport is still far from the developed countries. Although the country is now vigorously developing domestic sea-rail combined transport, especially the more developed ports. There are various factors that restrict the sea-rail combined transport of Shanghai Port. Internal and external factors are important reasons for the delay in sea-rail transport.

4.1 Internal factors that inhibit the development of sea-rail combined transport in Shanghai

4.1.1 Inconsistent connection of port facilities

Waigaoqiao Port and Yangshan Port are two major port areas in Shanghai. At present, the water depth conditions and geographical location of Yangshan Port are better than those in Waigaoqiao Port Area. Therefore, most large ships such as Triple E will be selected in Yangshan Port, and with the trend of large-scale ships, most of the ocean-going ships will call Yangshan Port in the future. At present, many goods brought out from inland barges will be unloaded in Waigaoqiao Port Area and then brought to Yangshan Port through short barge mode of truck. Therefore, there is no direct railway between the two major port areas. The transportation between the two port areas is mainly transported by road trucks and requires two loading and unloading operations. This type of transportation not only increases the cost of capital, but also increases the cost of manpower and material resources. To a certain extent, the efficiency of operation has been greatly reduced. The incomplete connection between Shanghai Port and railway lies not only in the absence of a direct railway between the two ports, but also in the absence of a railway loading and unloading line between the two ports, and in the absence of a direct railway to enter the port. In particular, Yangshan Port still has the problem of "separation of port and land". Although the Luchao Gang Railway Container Center Station is a supporting facility for the development of Yangshan Port, it still has a distance of 40km from the port area, and the 40 km distance can only pass through the truck barge. According to the survey, the short-distance fee for the Luchao Gang Central Station to the port area is around 500-800 yuan., Moreover, the problem of "separation of port and land" also requires two loading and unloading operations plus one road transportation, which undoubtedly increases the transit cost of Yangshan Port and the detention time of goods in the port area. For the guests, the cost of the demurrage fee will be increased. For the work of sea-rail combined transport, the risk of the carrier will be increased, and the work of "one customs, three inspections" and the organization of sea-rail combined transport will be affected. In another port area, the railway container center station in Waigaoqiao Port Area is still in its infancy and has yet to be researched and developed.

Although at present Shanghai Port has taken corresponding measures to establish Yangpu and Jungong Road Container Port Station jointly with Shanghai Railway, it has started the integrated operation mode of sea-rail combined transport. With "one window, one-vote settlement", there is still no direct communication. The railway to the port area is still the way to separate the port and not cure the problem.

4.1.2 The cooperation between sea and rail transport participants is not close

There are many participants involved in the sea-rail combined transport system, including ports, terminals, shipping companies, customs, inspection and quarantine, etc. All departments need to cooperate and share information to create an efficient and high-energy sea-rail transportation system. Any problem in any of the links may lead to imperfections in the sea-rail transportation system. A large part of the lag in the development of Shanghai Port sea-rail combined transport is due to the lack of cooperation among participants, the lack of cooperation between various departments, and poor information exchange. At present, there is no complete information sharing, and there may be a lack of advanced communication mechanisms, resulting in information asymmetry in various departments. The management structure of Shanghai Port is not perfect enough, so that the links and information between departments, management and grassroots, ports and customers are not

symmetrical, there are information islands, and also between departments and enterprises. Cooperation is difficult to carry out, and the project of sea-rail combined transport is very slow.

Compared to Shanghai Port, Ningbo Port has done a lot better in this regard. In the service system of Ningbo sea-rail combined transportation, for example, the lead unit: Ningbo Port International Container Co., Ltd. will coordinate various resources under Ningbo Port, terminal operation, port operation, railway agency, dry port platform, cargo collection system, truck fleet, through various resources, close cooperation of participants, The close connection of each link can ensure the orderly development and development of sea-rail combined transport work.

4.1.3 The freight of sea-rail combined transport has yet to be resolved

The level of freight directly determines the shipper's choice to a certain extent. After all, the shipper will definitely measure the economy of the transport. How much is the cost directly affects their income. According to statistics in 2012, 78% of shippers are most concerned about the level of freight. In 1999, the Ministry of Railways implemented a "one-price" transportation mode at the National Container Center Station, which means that the shipper paid the expenses in one lump sum. Although it brought convenience to the shipper to a certain extent, it saved a lot of trouble, but the freight rate of railway containers is much higher than the freight rate of whole-vehicle transportation, which hinders the shipper from being more inclined to others when choosing the transportation mode. Although the unit mileage of rail transport will be more than that of the highway, but the short-distance fee for road transport between the port stations, and the full-range freight for the medium-distance and short-distance container sea-rail combined transport, the total price will still be higher than that of the sea-highway transport. The freight rate, therefore, the advantage of sea-rail combined transport in the freight rate is relatively weak. In addition, for some midwestern cities, ports in North China such as Tianjin Port and Qingdao Port will have advantages over Shanghai Port in East China, and the transportation distance is short. In recent years, the railways of Tianjin Port and Qingdao Port are directly connected to the port area, no additional road transport is required, so it is more cost-effective than Shanghai Port. There is also a very important point. At present, because most of the containers used are COC, sea-rail combined transport will need to use its own container to load the goods at the sea-rail combined transport station in the Mainland. Not only the high usage fee of the container, but also the long cycle of operation, it is likely to cause the ship company to be out of the box, resulting in the loss of the list. Therefore, the shipping company will consider it again when choosing the sea-rail combined transport.

4.1.4 The railway transportation capacity is tight and the service system is not perfect

At present, the transportation route of sea-rail combined transport in Shanghai is still relatively scarce. There are not enough rail routes to meet the transportation needs of Shanghai Port, mainly relying on Shanghai-Nanjing and Shanghai-Hangzhou double-track railways, however, the utilization rate on these two lines is almost 100% or even full, and the capacity is saturated, which affects the turnover of the container. Although the passenger high-speed railway lines of Beijing-Shanghai, Shanghai-Hangzhou and Shanghai-Nanjing have been completed, the freight pressure on these lines has been alleviated to some extent, but due to insufficient supply, tight transportation capacity and high cost, it is difficult to carry out the five scheduled trains, provide stable services and ensure the regular departure. So in recent years, the traffic loss is serious. There is only one Suzhou line left in the original five fixed trains, while the surrounding ports have developed rapidly in recent years. For example, Ningbo port, the train line is more stable and better than Shanghai port, so part of the supply of goods in Shanghai Port is losing.

In addition, the service system at Shanghai Port is not perfect, and the system for managing transportation has not yet realized the market economy model. It is still a centralized system, unified command, and extremely inflexible. Information sharing is not good enough to meet the requirements of customers in a timely manner to achieve fast and accurate delivery of goods. The service awareness is not strong, the departments are independent, the cooperation is difficult, and the system is imperfect. The service level of railway transportation is very low and the quality is very poor.

4.2 External factors that inhibit the development of sea-rail combined transport in Shanghai

4.2.1 Insufficient supply in the central and western regions

Due to the relative imbalance of China's economic development, the economy of the central and western regions is lagging behind the development of the eastern region. The volume of import and export of foreign trade is relatively small, while the supply of goods in the eastern region is relatively large, especially in the Yiwu and Suzhou areas like Jiangsu and Zhejiang. Textiles in other cities have a large export volume and a relatively stable supply. The per capita import and export volume in the Yangtze River Delta region is 6-10 times higher than the per capita import and export volume in the central and western regions. However, it will take a long period of time to improve this situation. Economic development is needed to promote trade in the central and western regions and increase import and export. The volume will promote the development of sea-rail combined transport in Shanghai. One of the main reasons for the relatively developed sea-rail combined transport in European and American ports is that its regional economic development is more balanced and stable, and the hinterland is broader, laying a good foundation for the development of sea-rail combined transport. Shanghai Port is an international transit port. However, the shortage of supply boxes in the central and western regions is unstable, and the long-term imbalance between supply and demand in the market will make the development of sea-rail combined transport in Shanghai a lack of motivation, thus affecting the future development of Shanghai Port. In addition, in the case of small cargo volume, the operation of the market is not standardized, and the quality of the relevant employees is not high, which is also an important factor that restricts the development of sea-rail combined transport of Shanghai Port.

4.2.2 Excessive pressure on market competition

The economic hinterland of Shanghai Port is mainly divided into the Yangtze River Delta region, the middle and upper reaches of the Yangtze River, and other central and western regions. Most of the goods in the Yangtze River Delta region are transited through Shanghai Port, so the cost of railway transportation in short-distance transportation is higher than that in road transportation. It is difficult for railways to take advantage of short-distance transportation. In addition, the time of railway transportation is unstable. The cumbersomeness has also inhibited the development of the railway.

At present, the development of other ports in China is relatively rapid, such as Ningbo Port, Qingdao Port, Tianjin Port, Shenzhen Port. Shanghai needs to cope with the competition of these ports. The supply of goods in the central and western regions will be diverted to ports in North China. The rise of Ningbo Port in the Yangtze River Delta region has brought great pressure on Shanghai Port, and the advantages of road transportation are even greater. In this area along the Yangtze River, a port group that is engaged in container transshipment and loading and unloading operations has been formed. Therefore, the Yangtze River transit is also very marketable. With the development of multimodal transport in China, more modes of transportation will be used. For example, the transportation mode of "Rail-Sea Transfer + Yangtze River Transfer" and the stable and sustainable development of China-European trains will separate the source of sea-rail combined transport. The competition and external factors of all parties will hinder the development prospects of Shanghai Port sea-rail combined transport.

5. Development strategy of Shanghai Port sea-rail combined transport

In the 13th five year plan, the container throughput of Shanghai port will increase by 15% to 42 million TEU. According to the current development trend, road transport is the main transportation route, and the utilization rate is very high, which inevitably increases the pressure of road transport, and the carrying capacity of the road transport network is also very limited. Therefore, it is extremely urgent to develop the sea-rail combined transport of Shanghai Port. Although the development of sea-rail combined transport in Shanghai Port has encountered a lot of bottlenecks, how to turn these bottlenecks into driving forces for development is what we need to solve now.

5.1 Actively promote infrastructure development

At present, the separation of port and station is a big problem in Shanghai port, and the separation between port facilities and railway facilities is the key short board. The inability of the railway to directly reach the port area has greatly hindered the development of sea-rail combined transport. If Shanghai Port wants to develop sea-rail combined transport, it must solve the key problems of railway entry. Yangshan port can be used for both highway and railway by building the second East China Sea Bridge, which is led out by the fourth group station, and directly connected to Dayangshan island through the second East China Sea Bridge, so as to realize the real significance of sea rail intermodal transport. However, the disadvantage of this scheme is that the central station of Luchao Gang built before has little effect. Another method is to reconstruct the existing Donghai Bridge, change the two lanes in the center of the bridge into two-way railway, keep the separation setting of the up and down highway lanes, extend the railway at the land end to connect with the central station of Luchao Gang railway, the advantage of this scheme is that the original central station of Luchao Gang can play its role and maximize the benefits with a small cost. In addition, the construction of infrastructure not only requires the close connection of the port, but also the important point is that the inland railway is connected to form a complete and integrated logistics hub. Therefore, it is especially important to reduce the conversion cost of inland connections. The development of sea-rail combined transport is not unilateral, it requires the support of all parties, the improvement of port facilities and the overall strategic objectives of the country and the integrated layout of all aspects of the inland areas are essential conditions. The free trade zone of Shanghai port also has inherent advantages for the development of sea rail intermodal transport. The railway container station can be included in the bonded zone, and the inland dry port can be strengthened to form an integrated management system, which will greatly help the development of sea rail intermodal transport of Shanghai port.

5.2 Actively promote the supply of inland areas

In the current economic hinterland, Shanghai port should classify and analyze the cities in these areas, instead of blindly pursuing the traffic volume of sea rail intermodal transportation. No matter what city or region, it will develop railway transportation. Such blind behavior will not only not develop, but also may backfire. The key point is to transfer the unreasonable road transportation to the railway transportation and attract the economic hinterland with comparative advantages for Shanghai. Based on the Beijing Shanghai line, Shanghai port can develop the market of Jiangsu Province and strive to expand the market of Anhui Province. In the long run, we can combine Shanghai to Shanghai railway, tap the markets of central and Northern Jiangsu, and strengthen cooperation with Anhui railway. Shanghai port should actively strive for the supply of goods in the economic hinterland with its diversified and full coverage sea transportation network, give full play to the advantages of Shanghai port as far as possible, base on the core hinterland, strive for the general competitive hinterland, and explore and tap the potential hinterland. The mutual cooperation and information sharing between enterprises can provide better service quality for customers; and the Shanghai government can also communicate with the inland city government to build a perfect sea rail intermodal transport market. The cooperation and coordinated operation of all parties can accelerate the development of Shanghai port sea rail intermodal transport and realize a good market system of win-win situation.

5.3 Establishment of third party operators

Sea-rail combined transport is a comprehensive project involving railways, ports, customs, shipping companies, quarantine agencies, etc. However, the current linkages between these departments are not perfect enough, which has greatly hindered the development of sea-rail combined transport. At the same time, it is urgent to establish a multi-party intermodal transport company involving railway, port, etc. as a third-party operator, which plays a coordinating role, as a link between all sectors in all links, and cultivate and tap new market subjects. The third party operator can break the past single block system, perfect the transportation organization system, share the information of various departments, make up for the various departments and regions, and use technology to establish the

electronic data exchange system for users. The parties have different powers to complete consultation, booking, inquiries, electronic payment and personalized services, and create Internet + e-letters. The information platform forms a comprehensive system of sea rail intermodal container transportation, realizes seamless connection of vehicles and ships, and improves transportation efficiency. Ningbo Port's service system in sea-rail combined transport is relatively better than Shanghai Port. Their goals are the same, not their own, and they have the lead units to make overall arrangements. The units are closely coordinated and the resources of all parties are better integrated. For the establishment of the third party operator, the author thinks that we can start from Shanggang Company, integrate the advantages of all parties, share resources, integrate the railway, port, shipping company, freight forwarder, etc., and build a service alliance of sea-rail combined transport in Shanghai port, so as to maximize the interests of all parties. At the same time, improve the legal system of multimodal transport carriers, have a reasonable interest sharing and risk sharing mechanism, understand their responsibilities and obligations, and effectively promote the development of Shanghai-sea container sea-rail combined transport.

5.4 Support of national policies

According to statistics, the freight rate of railway container is 20% higher than that of vehicle transportation. Although it has certain advantages over 500km, because the Ministry of Railways has implemented the freight rate fluctuation, there is no great advantage in the freight rate of Shanghai port sea rail intermodal transportation. More than 40% of the freight volume comes from Jiangsu and Zhejiang regions, so there is no transportation distance of more than 500km. However, the average external cost of railway transportation is only 6.6% of that of road transportation, which has made great contribution to green shipping, but has not been supported by the policy of Shanghai government.

The Shanghai Municipal Government should speed up the construction of the development blueprint of Shanghai port rail sea intermodal transport, issue some policy support, and compare with some other ports at home and abroad, as shown in Table 2. China's policy support, the implementation of the years are very short, are focused on the short-term effect, are direct use of monetary support policies, there is no corresponding legislation, investment in infrastructure is also very small, long-term such support will form regional vicious competition.

Table 2. Comparison of domestic and international sea-rail combined transport support policies

	Policy form	Subject of policy implementation	Monetary Subsidy Project	Implementation mode	Infrastructure construction	Years of implementation
New York - New Jersey Port	PIDN Plan	New York-New Jersey Port Authority	newly opened lines, heavy boxes, empty containers, empty containers shipped back	Joint venture fund	Port handling equipment	20 years
Rotterdam Port	Railway incubator project	Rotterdam Port Authority	newly opened lines, heavy boxes, empty containers, empty containers shipped back	Joint venture	railway	More than 20 years
Antwerp Port	C-2009/14189 Bill	Belgian government	heavy boxes	Government currency support and tax exemption	N/A	Unlimited
Ningbo Port	notice	Ningbo Municipal Government	routes, heavy boxes, container shipping companies and service	Government currency support	N/A	3 years

			companies, operating platforms			
Dalian Port	Implementation details	Dalian Municipal Government	heavy boxes, transportation companies, terminals	Government currency support	Port handling equipment	2 years

The Shanghai Municipal Government can reduce the company's business tax through the tax policy for the actual operators in the Shanghai area, such as the trains, companies that provide short-distance service between the railway container stations and the terminals. It is also possible to pass the fiscal policy, some train operators who have reached a certain amount of container and operate for a certain period of time, give them certain rewards, financial subsidies, etc., and reduce the disadvantages of sea-rail combined transport in freight rates. Shanghai Port can also consider implementing the unified lump sum fee mode of the port station, which is to merge the card short bar, terminal charges and container center station charges. Of course, when financial support is needed to avoid regional competition and other issues, the Shanghai government can consider adopting regional subsidies, increasing the competitive subsidies for road transportation within 1000 km, and subsidies for inland areas not along the Yangtze River. Increments can also be encouraged and subsidies can be made. There is also the possibility of increasing subsidies for multimodal transport of full bills of lading. In short, in the case of financial subsidies, it is necessary to dynamically evaluate and set the implementation deadline. The author is more suggesting to form a systemic support system based on national legislation and long-term planning, and to conduct more in-depth research on supporting methods and deadlines. And the investigation, so that the policy benefits are maximized, systematic guidelines, differentiated policy support, and the advantages and disadvantages of the city's sea-rail combined transport, rather than blindly emulating the policies of other cities at home and abroad, thus real Promote the development of sea-rail combined transport in Shanghai.

6. Conclusion

In recent years, with the rapid development of China's economy, the changes in the country's strategic structure, and the continuous implementation of relevant policies, the development of the shipping industry has also rapidly emerged. With the introduction of the 21 actual Maritime Silk Road, the implementation of the "Belt and Road" has brought great opportunities and challenges to Shanghai's construction into an international shipping center. In the construction of Shanghai Port as an international shipping road, improve the transportation mode of Shanghai Port, and establish a new comprehensive and efficient collection and distribution system, in order to ensure the sound and rapid development of Shanghai Port, which will improve the Shanghai Railway The transport mode of intermodal transport plays a key role in this "battle."

At present, the term sea-rail transportation is in full swing in shipping. The sea-rail combined transport system in developed countries has been perfected, and other ports in China are also eager to try. Ningbo Port and Qingdao Port have also achieved good results. Shanghai Port, as the port with the container throughput ranked first in the world, has not stopped growing. The development of sea-rail combined transport from Shanghai Port in the past, the necessity of developing sea-rail combined transport in Shanghai Port, from internal factors: imperfect connection of port facilities, uncoordinated cooperation between sea-rail combined transport participants, unresolved freight rates for sea-rail combined transport, service The system construction is imperfect, and external factors: the shortage of goods in the central and western regions and the excessive market competition have analyzed the bottleneck problem of the current development of sea-rail combined transport in Shanghai Port. On the basis of the previous article, it is proposed to promote the development of Shanghai sea-rail combined transport. It should focus on the development of its own short-board, actively promote the construction of infrastructure, and strive to promote the supply of inland

areas. From the national level, relevant policies should be given support, the establishment of third-party operators should be improved, corresponding laws and regulations should be promulgated, and their respective responsibilities and obligations should be clarified. Comprehensive consideration of various aspects, the use of comprehensive means, from different angles, multi-pronged approach to truly break through the bottleneck of the development of Shanghai-sea rail transport.

The development of sea-rail combined transport in Shanghai Port is imminent. The development of sea-rail combined transport in Shanghai Port is not only the need of its own development, but also an important measure of the "One Belt, One Road" policy of the corresponding country. It is in line with the needs of the trend of the times. To ensure the stable, efficient and sustainable sea-rail transportation of Shanghai Port, we must recognize the long-board and short-board development of our own development according to our actual situation. Combined with the actual situation, we cannot follow the development model of other ports blindly. Identify the problem, multi-pronged sweeping obstacles, and truly solve the problem. Therefore, the author hopes that through the research of this article, it will bring some enlightenment to the development of Shanghai-Tianhai sea-rail combined transport, making the development of Shanghai Port conform to the general direction of green shipping and accelerate the construction into an international shipping center.

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