Research on Problems and Countermeasures of China’s Multimodal Transport

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Abstract: China’s economy has maintained rapid and steady development in recent years. However, the transport resources are getting increasingly tense and have become one of the "bottlenecks" which have restricted social economic development of our country. How to improve transport efficiency to build a multi-modal transport in close collaboration with international standards for multimodal transport system has become the urgent need to resolve issue. In views of actual conditions of our country, this paper analyzes the current situation of China’s multimodal transport and proposes countermeasures by drawing on the experience of foreign developed countries.

Keywords: Multimodal transport, Synthesis transportation system, International

1 Introduction

Transport course tie to become economic globalization, integrating transport chain in order to serve our country and international coordinate production right away seems particularly important. The whole transport process should be as an integrated transport services to meet the transport needs, which contributed to the emergence of multimodal transport. According to the statistics of national development and reform commission, state statistical bureau, China federation of logistics and purchasing, the total of China’s social logistics has reached 158.7 trillion Yuan during the "tenth five-year plan", 2.4 times that of "ninth five-year plan", and showing an average annual increase of 23 percent. After adjusting for inflation, an average annual increase is about 15 percent exceeding the 9.5 percent increase of China’s GDP. The statistics indicates that logistics total of the whole society rose by 75.8 trillion on the basis of 3 trillion from 1993 to 2007. The following graphic is the curve diagram:

Figure 1.1 The growth curves figure of the value of Chinese logistics

International multimodal transport is a new type of transport mode. It is able to combine, connect various traditional, single different transportation ways as an organic whole organically, in order to implement "door-to-door" transport, and to provide services which are economic, reasonable, prompt, safe, and convenient. The multimodal transport has become an advanced form of organization in the
development of container and cargo transport, in the world over 100 countries and regions have enjoyed rapid promotion.

2 The Existing Problems of the Multimodal Transport

According to data, the railway open mileage of our country increases to more than 70,000 kilometers from over 20,000 kilometers before reform and open policy, having increased by 3 times. Opening in the location of mileage occupies the third place in the world, the rotation volume of goods transport occupies the second in the world; The transporting amount of aviation ranks third in the world. But compared with international developed countries, there is a big disparity between our country's multimodal transport and theirs. For this reason, it can be tense and leading to the fact of transport that the phenomena of overstocking of products and raw materials take place at times, the transportation “bottleneck” of economic development is conspicuous, its main existing problems show as follows:

2.1 The restriction from the state policies
An important factor in restricting the development of China's multimodal transport is the integrated management inefficiency between government departments, which has caused regional market barriers. This is because China's highways, railways, waterways and airways are managed by different departments. Cross-departmental responsibilities cause no consideration about the entire transport system integration in the course of investment in transport infrastructure construction. This resulted in various forms of transportation capacity lack of coordination, lack of close convergence, and other issues. In addition, the government has not taken effective measures to use price leverage to support the multimodal transport.

2.2 Backwardness of facilities and equipments
For a long time, China's transport hub, public storage and transportation facilities, all the modern logistics distribution center and logistics infrastructure construction have lagged far behind. China's economic system can effectively connect different modes of transport large-scale multi-cargo hub, serving the regional economic or various intra-city logistics base, lacking of logistics centers. Secondly, China sea rail multimodal transport still is in the early stages, and dose not materialize in the harbor and rail links. It is still used short haul road service to achieve the harbor and rail connections. Finally, the lack of maritime forces, irregular routes and less ports impact on the import and export of goods flowing into the outflow timely, in particular exports of goods in transit.

2.3 The excessively high expense of the short distance transport
A multimodal transport enterprise's competitive power is decided by the transport expense, and the transportation cost including various sectors cartage expense, stopover expense and warehouse expenses on required time. According to statistics, China's expense of the short distance transport accounted for the total freight 25% - 40%. The short distance transport expense is so excessively high that it impacts multimodal transport profitability, which results in multimodal transport and other forms of competitive ability decreasing.

2.4 The cargo transportation stopover station and transfer post quantity are few
The freight transportation stopover station has the collection and distribution cargo function, and its mainly responsibility is handling the cargo’s transmission, arriving, relaying and warehousing operations. Transfer station is a node in the multimodal transport system network, and its main role is to avoid or reduce the port container handling business development deformities caused by road congestion, and other goods stranded drawbacks. At present, there are about 600 stations in China's railway container handling, of which 20 ft container handling stations are 130, 40-foot containers for about 130 stations. However, these containers handled at the uneven geographical distribution, most come from the transformation of the freight yard, equipment and management required by the multimodal transport and cargo transit stations have certain disparity. Overall, the quantity of cargo transit stations and transfer
post is few, the collection function of cargo transit stations is not strong and cargo is scattered, all these fail to reach the scale requirements of multimodal transport.

2.5 The weakness of information foundation
Compared with developed countries, China Logistics Information building still is in the initial stage of a late start. Such as electronic data interchange (EDI), the global satellite positioning system (GPS), geographic information system (GIS), due to economic and technical reasons, except for GPS shipping in a certain use, other information technologies use less, therefore, it can not achieve the synchronization among the various modes of transport, and the reliability of transport as well as timeliness turns to a low and poor level. All these above can not meet the developing requirement of current socio-economy.

3 The Experience of International Development of Multimodal Transport
American-European countries have run multimodal transport as an experiment since the end of the sixties of the 20th century, through the course of more than 30 years, have accumulated abundant experience, still in constant development and completion so far. These experiences, as well as the trend of development of its multimodal transport, can serve as reference for accelerating the development of multimodal transport in China.

3.1 European multimodal transport mode
European railway network is developed, and the railway transportation is monopolized by the National Railroad Company, with advanced technology and equipment, in recent years "the net transports separation" the reform of the railway industry has been carried out, the overall level of service is high. Because the strong support of the major ports and government departments, freight volume continued to grow by the sea and railway combined transport and the sea and river combined transport, from Europe's largest container port-Dutch Rotterdam port, we can know that in 2006, the transportation amount by rivers and sea achieves 1.36 million boxes, about 225 million TEU, accounting for 23.2% of the container throughput; the transportation amount by sea and railway achieves 49 million boxes, about 810,000 TEU, accounting for 8.4% of the container throughput. At the same time the railway was due to the recent policy support and significant investment in infrastructure, and other measures, it is estimated that the transportation volume through sea and railway will still continue keeping the good growth in Europe.

3.2 American multimodal transport mode
The main form of American multimodal transport is sea rail combined transport and humpbacked transportation, and the Sea rail combined transport's main transportation direction is from west to east (from the Asian imports of goods), and the humpback transport mainly services in the domestic trade cargo long distance transportation. The transport enterprises take the initiative to connect with others, optimum composition, complementary advantages, display overall superiority, and make multimodal transport unify in transportation's continuity more closely. Such as that transportation amount sharp increased 20 times only in two years by the American Hunt Automobile transport company's Cooperation with Santa Fe railway transport companies.

Secondly, the enterprises operating the multimodal transport in the long-term management process gradually form a multi-dimensional service unified body of agents, transport, trade through the joint, purchase and other methods, and to internationalization development, and extend own business scope of their own to the logistics collection and distribution center in the world so as to set up branches organization, or develop transport mesh point by join management way with foreign companies.

3.3 Canadian multimodal transport mode
Canadian multimodal transport has been highly developed and integrated into its economic development. Transport and logistics services have become the powerful backing which promote its economic and trade into globalization. The economic operation is highly dependent on its high efficiency and
comprehensive logistics services. By multifactorial analysis, Canadian multimodal transport has the following characteristics:

3.3.1 The Government not only provides of a good legal environment for transport management, but also sets up unified management and reasonable arbitration institutions for transport. This has positive function for the safeguarding market order, breaking the monopoly of trade, protecting transport security and promoting the development of the transport sector.

3.3.2 National and global transportation network has been built, we can provide any type of multi-aspects, high-quality and high-efficiency integrated services, such as transportation, warehousing, packing, customs, insurance, distribution and so on. The whole process logistics services have become popular, such as the "door-to-door" and "shelf-to-shelf. Transport services have been infiltrated into the survival and development of enterprises in various sectors.

3.3.3 Universal container transport, advanced handling technology, well-equipped scientific management, And because of the extensive application of information technology in the transportation, distribution, warehousing, customs and other aspects, it reduced a large number of mass and cost, increased the speed and accuracy of the transport.

4 The Development Countermeasures of China’s Multimodal Transport

4.1 Exert governmental function adequately and orchestrate the communications development

China should refer to the occident experience to establish comprehensive coordinated department similar to Traffic Committee, which will make our related policy and transportation infrastructural investment harmonious. Meanwhile we should change the modus operandi, only considering their own planning regardless of the overall situation, by standing beyond various transportation profession altitude to verify the development planning of railroad, road, marine transportation, aerial transport and draw up the national transportation development projects, carry out our own laws and regulations contracting with the international, and also give the biggest supports in manpower, material and financial support to solve the key issues in the development process and promote the development of multimodal transportation. On the other hand, we should establish the transportation association, listen to populace's suggestions fully. The government should also take into account the guiding role of transport associations when making decision or policy adjustment.

4.2 Strengthen the construction and engagement of transportation infrastructure

Recently, transportation infrastructure has quickened construction step, but it still doesn’t form a unified network in multimodal transportation. Therefore our country should increase investment in the transport network and form the join of all transport means to improve the operating efficiency and regulate transport rules. Besides, we should design and construct reasonable transportation nodes, because the efficient and seamless connection between different transportation nodes is the key to the development of multimodal transportation. So in the planning and construction of transport infrastructure, we should fully consider the connection among them to meet the development demands of international standard container multimodal transportation. Moreover in the progress of developing multimodal transportation, we must emphasize the developing railway container transport, especially the connection between railway and container freight station on land and the effective combination between marine transportation and railway transportation.

4.3 Adjust the price of different transportation modes

At present, short-haul transport costs too high to influence its competition ability of our country’s multimodal transportation compared to other transportations. So we should make full use of collection function of transport station to integrate small quantities cargo flows and then reduce short-haul freight by size effect. Besides the benefit allocation among different transports is not so reasonable, like railway’s low tariffs, which can not reflect the real value of transport and restrict the development of the railway itself. So Most Western countries now have relaxed the control of the railway, China should also learn from the experiences of western countries to let market, the invisible hand, to play more important
role in the comprehensive coordination among different transport modes. In addition, in view of the social and economic benefits bringing by high efficiency of multimodal transportation, we can consider using price lever to support multimodal transport.

4.4 Realizing the standardization, generalization as well as customization of the transport industry

In the standardization of container and loading and unloading machinery, China's Standardization Committee has made specific provisions, and there has been some successful practice, such as the introduction of generic standard containers, standardization provisions of loading and unloading machinery. In addition, in recent years the emergence of new dual-use rail cars and containers for multimode transport has played an active role in promoting the development of multimode transport. In views of China's actual situation its introduction may be taken into consideration.

4.5 The use of information technology development results to accelerate the process of normalization of multimode transport

Compared with advanced foreign standards, China's multimodal transport equipment and technology have lagged behind, which have affected the development of multimodal transport industry and transport convergence with the world. It is imperative to speed up the upgrading of equipment and technological transformation. Therefore, the logistics enterprises will be encouraged to invest in modern logistics technology. Efficient service can be provided through information networks and logistics network to enhance our competitiveness. For example, based on bar codes, geographic information systems, global positioning system on the logistics a logistics management system is established to have an effective control of the entire process and achieve EDI multi-functions of the transport document, mainly including freight bill of lading, freight and cargo inventory list. Transport route optimization, tracking cargo monitoring of the whole process and co-coordinating arrangements for the return freight are implemented. The introduction of the latest technological achievements in foreign multimode transport can be combined with independent development to keep up with and converge with the development of international multimodal transport direction and trends as soon as possible. In combination with China's national conditions, the transport of tools, equipment and facilities that can be applied to China's R & D should be developed so that it is not only suitable for domestic transport of goods and but also adapt to the international multimodal transport.

5. Conclusion

Multimodal transport is an international issue, China's rapid socio-economic development and its huge logistics, calls for a new and advanced way - multimodal transport, and its development have provided a broad market space. Relying on advanced science and technology and on carrying out reforms and innovations to better the comprehensive transport system under the multimodal transport, China's multimode transport undertakings will surely flourish by earnestly drawing from the experience of foreign multimodal transport, strengthening government policies and regulations in the area of macroeconomic management, improving transportation infrastructure construction, overcoming the drawbacks in the management system, modifying enterprise development strategies and the implementing of the policy of "communication - cooperation - a win-win situation - development".

References


