Analysis on the Development Orientation of the Golden Channel of Passenger Roll Transportation in Qiongzhou Strait under the New Era

Gao Song
China Waterborne Transport Research Institute Beijing, China
clavin111@163.com

Abstract: Combined with the favorable situation of passenger roll transportation in Qiongzhou Strait in the new era, following the guidance of liner policy and the macro market demand closely, the passenger roll transportation in Qiongzhou Strait is defined as the "golden channel" serving the national economy and people's livelihood, which is judged as the economic development channel, tourism support channel, agricultural and trade transport channel, residents' communication channel, green travel channel and combat readiness support channel, and is also committed to promoting the construction of modern, scientific and reasonable comprehensive passenger and cargo transportation channels, to provide high-quality development services for the Qiongzhou Strait water passenger and passenger transportation.

1. Introduction
In July 2019, the implementation plan for passenger and roller transport liner operation in Qiongzhou Strait(trial) is issued and implemented [1], which is required to establish the operation mode of "fixed wharf, fixed schedule and fixed ship". The pioneering measures comply with the strong requirements of the society and passengers "fixed point punctuality" "reduction of waiting time", and change the problem that the ship operation efficiency and service level are difficult to improve after the original mode falls. Meanwhile, the comprehensive evaluation and management measures for passenger and roller transport vessels in Qiongzhou Strait (trial) was implemented in September 2019, the 2019 schedule of passenger and roller transport liner operation in Qiongzhou Strait was issued to further standardize the operation mode and order in August 2019.

In view of this, when the passenger roll liner transportation mode is opened in the new era, it is necessary to accurately grasp the policy guidance, look forward to participating in new business forms, grasp the opportunity of industry reform, redefine the development orientation and connotation of "golden channel" and optimize the "new service, new management and new form" by clarifying the macro situation and development trend [2]. And it is of great significance to improve the station height, fulfill the the construction of a powerful transportation country, promote the high-quality development of waterway passenger transport, meet people's increasing needs for the better travel and leisure tourism, also serve the quality, diversification and sufficient supply of the economy and society [3].

Based on the investigation and analysis, combined with national and local policies and market development needs, the passenger roll transportation of Qiongzhou Strait is considered with six aspects (Fig. 1), including economic development, tourism support, agricultural and trade transport, residents' communicate, green travel and combat readiness support [4-5].
2. Economic development channel
   
   To promote sound and rapid development of regional economy.

   The Qiongzhou Strait passage is the economic lifeline of Hainan Province, which is related to all aspects of Hainan's economy and people's livelihood. The passenger roll transportation mainly serves the development and construction of Hainan Province. In recent years, the total amount of economic operation in Hainan Province has increased and the growth rate has slowed down, the comprehensive deepening of reform and opening up has shown a good situation (Fig. 2). According to the assessment and confirmation of the national bureau of statistics, the provincial GDP reached ¥483.205 billion, an increase of 5.8% over the previous year. According to the three industries, the added value of the primary industry is ¥100.011 billion, an increase of 3.9%; the added value of the secondary industry is ¥109.579 billion, an increase of 4.8%; the added value of the tertiary industry is ¥273.615 billion, an increase of 6.8%. Among them, the transportation, storage and postal services developed rapidly, up 17.1% over the previous year.

Hainan's economic and social development dominates this market. The passenger roll transportation has also become an important economic channel for Hainan's development. The cargo throughput completed over the years has accounted for about 40% of the total port volume of the province for a long time. Hainan's large-area agricultural planting has exported million tons of agricultural products to the mainland of China, accounting more than 50% of the port throughput, and vehicles entering and leaving the island from Qiongzhou Strait channel maintain a growth trend of more than 15% every year.

3. Tourism support channel
   
   To meet the good expectations of people's leisure tourism.
The construction of Hainan international tourism island has become a national strategy, which provides a huge space for the development of Hainan tourism. At present, tourism is one of the pillar industries in Hainan Province (Fig. 3). In 2018, the number of overnight tourists received was ¥76.2739 million, an increase of 11.8% year on year; the total tourism revenue was ¥95.016 billion, an increase of 14.5% year on year (Fig. 4). Especially, due to the unique charm of Hainan tourism with good ecological environment and climate conditions, a large number of domestic and foreign tourists come to Hainan to celebrate the Spring Festival, and the holiday tourism market has a blowout growth. During the golden week of the Spring Festival in 2019, 5.8239 million tourists were received in Hainan Province, a year-on-year increase of 2.62%, realizing a total tourism revenue of ¥14.375 billion, a year-on-year increase of 4.75%. The growth of self driving tour has led to the rapid growth of the proportion of small and large channel traffic, which has exceeded 50% in 2019.

Passenger roll transportation is an important means for mainland tourists to visit Hainan Island. Also is more economical and convenient than air transportation. With the increase of domestic and foreign high-end tourism groups and individual tourists year by year. In 2018, passenger roll transportation in Qiongzhou Strait was generally stable, showing a steady and positive trend, with the annual traffic volume of 3.29 million vehicles entering and leaving the island. On the other hand, with the implementation of the state council's decision to exempt small bus tolls on major holidays, the number of self-driving vehicles has increased significantly. In 2018, the passenger traffic volume reached 15.1 million person times with a new record.

4. Agricultural and trade transport channel

To ensure the convenient and efficient transportation of fruits and vegetables between the two places.

The construction of the national tropical modern agricultural base is one of the strategic positioning given to Hainan's economy by our country. Since October 2011, the memorandum of cooperation on jointly promoting the construction of Hainan national tropical modern agricultural base was signed, which decided to deepen the cooperation in 11 aspects, including the construction of the national
winter melon and vegetable production base, the national tropical fruit base and the south propagation base, also bringing greater development to Hainan's tropical agriculture. In recent years, the construction of tropical high-efficiency agricultural base in Hainan province has begun to take shape, and the expressway network on both sides of the Taiwan straits has been basically formed. Tropical crops, fruits and vegetables in the opposite season can be transported to 22 large and medium-sized cities across the country through the Qiongzhou Strait.

Passenger roll transportation is the only way for Hainan vegetables and fruits, especially every year from autumn to the end of spring, automobile rolling transport as the most important way of circulation of fruits and vegetables, it accounts for nearly 85% of the agricultural products in Hainan Island. In the seasonal peak season, the advantage of automobile transportation is even more obvious, sometimes it can reach 95%. Due to the unique properties of melon and vegetable, its color, flavor, taste and moisture are not suitable for long-term storage and transportation, nor high temperature resistance, and high damage rate. So the vegetables and fruits are usually transported by trucks through ro-ro ship ferry. Although railway, air transport and sea shipping can also relieve the pressure of green agricultural products during the peak period, due to the defects of these modes of transportation, they are not suitable for the actual situation.

5. Residents' communication channel

- To meet the needs of residents on both sides of the Strait to cross the sea efficiently.

The north-south Qiongzhou Strait waterway is the only sea passage connecting the southernmost part of China's mainland and Hainan Island. Most of the people, goods and all vehicles cross the sea through this passage, which has the irreplaceable needs of People's Daily travel. The people of hainan island and Leizhou Peninsula have maintained close exchanges, and there is a great demand for daily travel such as business, work and study. With the rapid development of Hainan Island under the support of relevant policies, it has brought the demand of large migrant workers. More mainland residents enter Hainan Island to seek development, further promoting the flow of people between the mainland and Hainan Island. With its advantages of economy and convenience, passenger roll transportation has become an indispensable mode of transportation for cross-strait residents.

The location and administrative gap of Qiongzhou Strait is worthy of attention. Compared with Zhanjiang's position in Guangdong and Beihai's position in Guangxi. Haikou as the provincial capital, is the most important port in Hainan province, and the importance of Haikou Port far exceeds the importance of other regions. Also taking Haikou Port as the node between land and island, the practical value of residents' communication channels in different regions is more obvious.

6. Green travel channel

- To give full play to the comparative advantages of water transport in energy conservation and emission reduction.

Relevant research shows that fuel consumption per unit volume of water transportation is far lower than that of road and railway transportation. According to relevant reports of the United States, the energy consumption ratio of domestic water transportation, first-class railway and highway transportation is 1:1.65:13.2. According to statistics of relevant data in Germany, the unit energy consumption ratio of inland river, railway and road transportation is 1:1.3:3.2. In the relevant data, the results calculated by different methods are consistent, that aviation energy consumption is the highest, highway energy consumption is the second, railway energy consumption is the third, and water transportation energy consumption is the lowest. Energy saving also means emission reduction. The pollutants such as waste oil, sewage and waste gas discharged by the ship per unit volume are far less than those discharged by road and railway transportation, and are easy to prevent and control. The research shows that the ratio of water transport to railway and road is 1:3.3:14.6, which highlights the comparative advantage of energy conservation and emission reduction of water transport industry.

In the new era, with the further development of ecological civilization construction in China, the passenger roll transportation has the advantages of low energy consumption, less emissions, and less
land occupation. It also has the advantages of high loading efficiency, low terminal requirements, less port investment, and low loading costs. It embodies the close relationship between the green development and water transportation. It will provide a green channel for the development of comprehensive three-dimensional traffic corridor in Hainan.

7. Combat readiness support channel

- To enhance the service capacity of strategic resource transfer.

Hainan is not only China's largest southern island, but also a maritime strategic channel connecting the Pacific Ocean in the east and the Indian Ocean in the west. In the new era, our National "One Belt And One Road" initiative is advancing orderly, and the strategy of maritime power is being implemented in depth. However, the external pattern is more severe. The complex situation in the South China Sea, the Taiwan Strait issue, and trade frictions between China and the United States, which means the Qiongzhou Strait is no longer limited to the transport hub, but also the bridgehead for safeguarding national sovereignty and territorial completion, safeguarding the national marine rights and interests. The route has become an important channel to support the military and material transportation.

Hainan is also the province with the largest marine area in China. It governs Xisha, Zhongsha and Nansha Islands in the South China Sea. The sea area is about 2 million square kilometers, accounting for two-thirds of the country's marine land. The huge ocean water body is rich in resources and energy, including biological resources, fishery resources, oil and gas resources and space resources. With rapid development of China these are important strategic resources. Qiongzhou Strait has the responsibility and obligation to serve the national emerging energy base and naval base, and help China develop from a land power to a maritime power.

8. Conclusion

In the new era, the "golden channel" of passenger roll transport in Qiongzhou Strait will be placed in a more important and prominent position. It will be systematically sorted out and located in six aspects of economic development, tourism support, agricultural transportation, residents' exchanges, green travel, and combat readiness support. It is committed to building a modern, scientific and reasonable comprehensive passenger roll transport channel, reflecting industrial policies, industrial reality and market demand. It can meet the needs of passengers crossing the sea and emergency transportation during the peak period, and also conforms to the development trend of hainan international tourism island and free trade port construction. Meanwhile, it has certain practical value and guiding significance for port terminal planning, shipping capacity renewal, enterprise quality improvement and efficiency enhancement, government supervision and management, business environment improvement, resource factor aggregation, etc.

References

[1] The implementation plan for passenger and roller transport liner operation in qiongzhou strait (trial) [S]. Pearl river navigation administration, ministry of transport, etc, 2019.

[2] Analysis report on the bottleneck of Qiongzhou channel [R]. Hainan port and shipping Holding Co., Ltd. 2018.

[3] Hu Ping. A Study on Promoting Service Quality of Qiongzhou Strait Ro-ro Passenger Transportation [D]. South China University of Technology, 2017.

[4] The development plan of passenger ro ship transportation in Qiongzhou Strait [R]. China Waterborne Transport Research Institute, 2014.

[5] Feasibility study on the renewal of two ro passenger ships in Qiongzhou Strait [R]. China Waterborne Transport Research Institute, 2019.