

Literature Review of China Compulsory Pilotage System

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ABSTRACT

With the deepening of the global economic integration process, the strategic position of the compulsory pilotage system is becoming more and more important. The composition of China compulsory pilotage system includes six aspects: basic principles, participants, applicable conditions, management system, rules of behavior and legal responsibility. From the perspective of composition, this paper summarizes and summarizes the current situation, deficiencies and countermeasures of China compulsory pilotage system. On this basis, learn from the experience of foreign compulsory pilotage system to promote the development of China compulsory pilotage system.

Keywords: Pilotage, Compulsory pilotage, System.

1. INTRODUCTION

Pilotage is one of the key links of port external service, especially the compulsory pilotage, which not only has the public welfare of safeguarding national sovereignty, but also provides the paid service of pilotage technical services. It plays an irreplaceable role in the development of China shipping and port industry. Since the reform and opening up, the development of China pilot industry promoted the reform of the compulsory pilotage system to a higher level, but there are some problems and disadvantages in the compulsory pilotage system in China, it is necessary think deeply and explore, seek reasonable scientific reform countermeasures, to promote the better development of the pilot industry in China, to provide more quality and efficient pilot service for port production.

2. STATUS QUO OF CHINA MANDATORY PILOTAGE SYSTEM

As for the basic principles, Jinglei Yang and Mengya Hou [1] pointed out that with the gradual economic prosperity, the pilot industry is developing more and more rapidly, and the principle of compulsory pilotage returns to safe pilotage again, but then the meaning of safety is

richer, which not only refers to the safety of transport goods, but also refers to the safety of port production. Ping Lu [2] proposed that compulsory piloting is a public welfare resource, providing public services on the one hand and reflecting national sovereignty on the other hand. Safeguarding national sovereignty has always been the principle of compulsory pilotage. Gongzhong Li [3], through his research on the history of pilotage, emphasized that since ancient times, the waterway of a port is a natural barrier for a country and is related to a country's national defense. Compulsory pilotage is the embodiment of the country's pilotage rights, and its fundamental principle is to safeguard national sovereignty.

As for the participants, Fengyu Sun [4] pointed out that in compulsory pilotage, the pilot is the person authorized by the port authority to perform the piloting task; and is the employee of the ship who assists the captain in steering the ship. The duty of a pilot in pilotage is to safeguard national interests and lead the ship safely and quickly. Wei Zhang [5] pointed out that in the process of ship piloting, the pilot, as a professional commander, and the captain are in a working relationship of mutual cooperation and mutual supervision. According to the provisions of the "Port Law" and the spirit of the "Notice of the General Office of the State Council Forwarding the Opinions of the Ministry of Communications and Other

Departments on Deepening the Reform of the Port Management System Directly Under the Central Government and Dual Leadership", Xiujiang Feng [6] concluded that my country's pilotage agencies refer to legal persons that professionally provide pilotage services, subordinate to the port administrative department, and exercises the right of pilotage on foreign ships on behalf of the state.

As for the applicable conditions, Honglin Zhong [7] concluded that the main regulations in my country that stipulate the conditions for compulsory pilotage of ships are: "Maritime Traffic Safety Law", "Port Law", "Ship Pilotage Management Regulations". In my country's pilotage area, all foreign ships are subject to compulsory pilotage; Chinese ships are subject to compulsory pilotage with restrictions, including Chinese ships approved by the Ministry of Communications and Chinese ships stipulated by laws and administrative regulations.

As for the management system, Xiaohai Wang [8] believes that my country's pilotage management model is the operation mode of an institution. The government authorizes a certain institution to perform government management functions on pilotage, and the government strictly controls the institution. Yidong Xue [9] emphasized that in accordance with the requirements of the State Council and the specific deployment of the Ministry of Transport, the reform of the pilotage management system is advancing in an orderly manner. At present, a pilotage management system with Chinese characteristics and self-discipline by industry associations has been established. In addition, the Ministry of Transport emphasized that the management of pilotage agencies should follow the overall positioning of "public interest, franchise, safety, and service". Zhizheng Chen [10] reviewed the development process of China pilotage management system since the reform and opening up, and pointed out that in the early stage of the national reform and opening up, the former Ministry of Communications decided to separate the national pilotage work from the port supervision department and put it under the leadership of the port bureau, which integrates government and enterprise. Ports set up professional pilot agencies in a timely manner, established pilot stations, enriched personnel teams, and improved internal organizations and rules and regulations. In 2015, the Ministry of Transport decided to separate the pilot agencies of various ports from port enterprises and return them to the leadership of the Port Authority, and finally formed a new management

model of "one port (water), one pilot" and "corporate governance".

As for the rules of conduct, the relevant laws and regulations especially emphasize that during the piloting period, the captain, the pilot agency and the pilot should maintain contact and communicate in a timely manner. As the first-level pilot of the Guangzhou Port Pilot Station, Xin Xu [11] also agreed with this view, saying that the pilot and the captain must communicate closely, trust each other and cooperate tacitly, so as to ensure the safety of the ship to a great extent and complete the entry and departure of the ship with high quality. Most pilots and captains can currently do all three. Chunhua Xie [12] emphasized that during the piloting process, the pilot's code of conduct also includes careful operation and timely handling. Climbing the pilot ladder is the biggest risk for pilots. Every year, pilots are injured or lose their lives in this link. Therefore, careful operation is a compulsory course for pilots. Pilotage will be affected by natural factors such as wind, waves, currents and other ships around, and the situation will be more complicated when the ship enters and leaves the port. Pilots must make professional judgments on the specific situation in a timely manner and take correct contingency measures immediately, in order to avoid danger and ensure the safety of ships and port channels.

As for the legal liability, Weiqi Kang and Gang Zhou [13] pointed out that international conventions and the Ministry of Communications of my country stipulate that "when a ship is piloted by a pilot, it does not relieve the captain of the responsibility for managing and driving the ship", which defines the responsibilities of the pilot and the captain during the navigation of the ship. The absolute responsibility of the captain for the safety of the ship's navigation is clarified. Gaoyang Liu [14] concluded that the safety of the ship is ultimately the responsibility of the captain, and the loss caused by the negligence of forced pilotage needs to be borne by the shipowner or the carrier, according to the contents of the "Regulations on the Pilotage of Seaports", the "Maritime Law" and the "Regulations on Pilotage". Pilotage agencies and pilots are not liable for pilotage negligence.

3. INADEQUACIES OF CHINA COMPULSORY PILOTAGE SYSTEM

In terms of the participants, Xuesi Chen [15] analyzed the main reasons for the accident of the

pilot, and believed that the legal status of the captain and the pilot was not clear, and the distribution of their rights and obligations was not clear, leading to the contradiction between the cooperation between the two sides. In addition, the foreign language ability of captains and pilots is not good, the operation skills are not skilled, and the safety awareness, professional ethics and psychological quality are poor. Therefore, the access mechanism and training mechanism for captains and pilots need to be further strengthened. Qugen Fang, Sheping Hu and Yongtao Xi [16] pointed out that the construction of my country's pilot team is not perfect. The increase in the number of pilots in my country is obviously behind the increase in the workload, resulting in a serious shortage of human resources in the pilot team. In addition, due to the increasing size of today's ships, the technical level structure of pilots in many domestic port pilotage agencies is difficult to meet the needs of pilotage development. In addition, the reform of my country's pilot agencies is not sufficient. According to the provisions of the pilotage system reform, all pilotage agencies should have the status of public institutions as legal persons. At present, although most pilotage agencies have been restructured into public institutions, pilotage agencies in a small number of regions have not implemented the restructuring requirements and are still corporate institutions. This has led to inconsistencies in management, appointment, promotion, and responsibility determination.

In terms of applicable conditions, Ke Zhu [17] said that China compulsory pilotage is mainly based on the nationality of ships, and does not consider the actual situation of each region basically. Most ports do not have their own pilotage rules, which are not enough to ensure the safety of ships. Jidong Zhao [18] emphasized that from the provisions on mandatory pilotage of the "Regulations on the Administration of Ship Pilotage", it can be seen that the state's focus on pilotage is to maintain national sovereignty, so foreign ships are forced to pilot, and the compulsory issue of Chinese ships to the local maritime safety bureau and government port authorities to formulate. Only Shenzhen ports and Xiamen ports have made specific regulations on the mandatory issue of Chinese ships. Other ports have implemented the regulations of the Ministry of Communications and have not conducted mandatory pilotage of Chinese ships.

In terms of the management system, Xiaoying Wu [19] analyzed the pilotage management system of Zhoushan, and said that although the pilotage organization has basically separated from the enterprise, it has become a specific institution with independent legal personality and is managed by the port management department. However, due to the lack of higher-level laws and the inadequate supervision of the reform by the management body, there are still some pilot stations that use the brand name of public institutions to adopt the enterprise operation mode, the pilot management system reform is not thorough enough, does not really reflect the separation of enterprise. Haidong Zhan and Yongfeng Zhang [20] pointed out that, from the perspective of my country's current pilotage management system, although the management mode of public institutions is conducive to ensuring the fairness and public welfare nature of the pilotage industry, there are also low service efficiency, limited personnel establishment and promotion channels, The approval process is cumbersome and other issues. Shiguan Han and Zhenrong Sha [21] believe that there are deficiencies in the safety inspection of arriving ships by maritime agencies, and the port department also needs to improve the safety dispatch ability of berthing ships. At the same time, the lack of management of port tug, and some tug ships have great safety risks.

In terms of behavior rules, Taixiang Liu and Xiangyu Kong [22] said that the timely exchange of information such as the pilot plan and ship control is an important link in the piloting process of the ship, in the pilotage process often appears between the pilot and the captain information exchange is not smooth. The impact of the San Francisco COSCO BUSAN ship on the Oakland Bay Bridge occurred precisely because the ship's captain did not fully communicate with the pilot and did not fully understand the operation intention of the pilot. Guoping Zhang [23] analyzed the risks in the process of boarding and leaving the pilot ship, and pointed out the problems existing in the practice of the two behavior rules of hidden trouble investigation and careful operation. The factors such as pilot ladder fracture, gangway wire rust, unqualified pedal pin, and non-compliant placement of the boarding device are all the risk of casualties in the process of boarding and leaving the ship, and these problems are caused by the lack of hidden dangers in advance. At the same time, the improper timing of climbing the soft ladder in the

pilot process will also lead to danger, which is one of the manifestations of careless operation.

In terms of legal liability, Xin Zhang [24] pointed out the irrationality of the law through a careful study of Article 39 of the Maritime Law. The attribution of the liability of the pilot should correctly determine the subject of the collision liability according to the attribution principle of the tort liability, rather than blindly attribute all the liability to the ship owner. As the representative of the owner of the ship, the captain has the management responsibility for the ship. However, in the process of ship pilotage, the pilot actually operates the ship instead of the captain, and there must be a conflict of responsibility and authority. Ping Guo and Ke Zhu [25] believe that, compared with the pilotage legislation of developed countries, there are fewer regulations on pilotage legal liability in my country, and there is no distinction between mandatory pilotage and non-mandatory pilotage.

4. THE IMPROVEMENT OF CHINA COMPULSORY PILOTAGE SYSTEM

For the participants, in the face of the uneven quality of pilots, Baowu Han [26] emphasized that the pilot entry and qualification requirements system should be improved, and at the same time, the pilot training, examination, evaluation and certification system should be strengthened to ensure the quality of pilots. Kaifeng Fan and Hao Yu [27] said that to enhance the capacity building of pilotage agencies, the following aspects should be paid attention to: (1) Accelerate the restructuring of pilotage agencies, and maintain the same administrative and social attributes of the agency across the country; (2) Improve pilotage management skills and effectiveness, and optimize the personnel structure of pilot agencies; (3) Improve pilot training and verification training methods, and speed up the construction of pilot teams.

For the applicable conditions, Qiang Wang [28] advocated that, in addition to ships of foreign nationality, the types of ships of Chinese nationality that require compulsory pilotage should be clearly specified. It is particularly emphasized that Chinese ships with foreign crew members must be compulsorily piloted when entering and leaving the prescribed pilotage areas. Jidong Zhao [29] pointed out that in Tianjin Port, at least the following types of Chinese ships should be subject to mandatory

pilotage: (1) ships over 10,000 gross tonnage entering and leaving Xingang; (2) ships over 1,600 gross tonnage entering and leaving the Xingang lock; (3) ships over 1,000 gross tonnage Passing through Haimen Bridge; (4) Oil tankers over 5,000 gross tonnage and ships carrying Class 1 flammable, flammable liquids and gases; (5) Container ships; (6) Arriving at and leaving the trestle-type oil terminal.

For the management system, Qianxiang Liu [30], combined with in-depth research on the pilotage risks of the Jiangsu section of the Yangtze River, emphasized that in terms of pilotage management, maritime management agencies should improve their emergency response capabilities and form a mechanism of "overall coordination and rational dispatch". Kaifeng Feng [31] advocated that the national competent authorities and local port management departments should support the pilotage work in terms of policies and materials, and optimize the distribution of their functions. The maritime administrative department should effectively perform the pilotage management responsibilities; be responsible for the safety supervision and management of pilotage; organize and implement pilot training, examinations and certification. At the same time, according to the pilotage management status, the management department should formulate targeted management regulations in a timely manner, and flexibly use the management plan in different periods. Ning Gao [32] said that in the face of highly intelligent and autonomous new supervision objects, maritime management agencies need to change their concepts, build systems, and establish a ship safety supervision mechanism that is compatible with them.

For behavior rules, Regarding the behavioral rules, Fan Li [33] and An Li [34] gave the following views on the four behavioral rules of maintaining communication, identifying hidden dangers, operating prudently, and dealing with them in a timely manner: First of all, as the actual operator of pilotage operations in the port, the pilot should communicate effectively with the captain, understand the actual maneuverability of the ship in detail, clarify the difficulties in the pilotage operation, and formulate specific pilotage implementation plans according to the actual situation. Secondly, the pilot agency needs to sample and investigate the problems related to personal safety and ship piloting safety during the pilot operation, so as to urge relevant parties such as terminal companies, ship owners and ship agents

to strengthen the management of wharfs and ships. In addition, because the uncertainty of the pilot's personal quality will inevitably have an impact on the safety of pilotage operations, it is necessary to strictly check and regularly assess the pilot's psychological quality and professional skills to ensure that the pilot can operate cautiously in the face of in different situations. Finally, if the pilot finds a danger during the piloting operation, he should promptly report it to the relevant parties of the piloting agency to deal with it in a timely manner.

Regarding legal liability, Faqiang Yuan [35] pointed out that, on the one hand, if the occurrence of the average damage was caused by the captain's act of driving the ship, rather than the error of the pilot's command, then the piloted ship should be liable for compensation. In this case, when the pilot is at fault, the piloted ship and the piloting agency shall bear the responsibility proportionally according to the size of the respective faults of both parties. On the other hand, if the average loss is caused by the pilot's fault leading the ship, the pilot agency to which the pilot belongs shall be liable for compensation. The problem of insufficient capacity of pilotage agencies to bear responsibility can be solved through compulsory insurance. From the perspective of state compensation, Li Zhang and Xiufen Wang [36] stated that according to the current laws and regulations, even if the pilot's fault causes damage to the ship or a third party, the loss shall be borne by the shipowner. However, because the pilot's exercise of the state's right to pilot is an administrative action, based on the provisions of "the State Compensation Law", after the shipowner files administrative compensation, the shipowner should be given a certain amount of administrative compensation.

5. THE EXPERIENCE AND REFERENCE OF FOREIGN COMPULSORY PILOTAGE SYSTEM

Regarding the U.S. pilotage system, Zhizheng Chen [37] put forward the following points through the investigation of the management system, laws and regulations, pilot training and technical equipment of U.S. pilotage. First of all, in terms of management system, the United States adopts the secondary management model of the federal government and local government for ship piloting; secondly, in terms of laws and regulations, the federal government and state governments of the

United States regulate and adjust pilotage activities, and the regulations are very detailed and specific; Finally, in terms of pilot qualifications, the United States attaches great importance to the life-long training of pilots, which has been institutionalized.

Regarding the German pilotage system, Jianhua Chen [38] pointed out that the German pilotage agency, called the "Port Pilot Brothers", is a public utility and is based on the port location and the river. The Brotherhood of Pilots in the ports of Hamburg and Bremerhaven is governed by the two municipalities, and the Brotherhood of Pilots in other ports is governed by the federal government. The pilotage of ships in the Federal Republic of Germany is based on federal and municipal laws. By studying the mandatory pilotage system in Germany, Jidong Zhao [39] pointed out that the mandatory pilotage systems in the German port of Hamburg and Bremerhaven are roughly the same. The ships that require mandatory pilotage are general ships with a length of more than 50 meters, and oil tankers and liquefied gas ships with a length of more than 60 meters. In addition, the captain must be able to speak German proficiently in order to be exempted from compulsory pilotage. The port authority and the pilot agency will issue a self-pilot certificate after the captain has passed the assessment. If the ship violates the rules and regulations in the port, the captain's self-citation certificate will be revoked.

Regarding the Japanese pilotage system, after in-depth research on the Japanese pilotage industry, Yueming Lu [40] believes that the Japan United Pilots Association can revise the mandatory pilotage system after conducting a safety feasibility assessment of the areas where mandatory pilotage is implemented. For example, the state no longer implements compulsory pilotage for all foreign ships, and has also relaxed the compulsory pilotage of ships of its own nationality in certain waters to a certain extent. When the gross tonnage of the ship is less than a specific tonnage, the captain can apply for exemption from compulsory pilotage, if he has the experience of driving a ship of corresponding tonnage more than 4 times in the pilotage area.

After analyzing the experience of foreign pilotage systems, Qiang Wang [28], by comparing the pilotage systems of several representative countries and regions, believes that he has the following enlightenments:(1) Foreign ships and Chinese ships can use different pilotage service supply methods to optimize the allocation of pilotage service resources; (2) In terms of pilot

selection qualification standards, the pilot access standards should be improved, and Pilots need lifelong learning;(3) In terms of pilotage laws, pilotage areas should be demarcated at the legal level, pilotage agencies should be regulated, pilot qualification requirements should be raised, the responsibilities of government regulators should be clarified, and the boundaries of government regulation and market regulation should be determined; (4) In terms of pilotage management, The management system of pilotage service supply should be reformed, the pilotage service supply organization should be simplified, and management efficiency should be improved.

6. CONCLUSION

This paper summarizes the basic principles of the China compulsory pilotage system from six aspects: participants, applicable conditions, management system, rules of behavior, and legal responsibility, so as to clarify the current situation of the compulsory pilotage system in China. Combined with the understanding of various scholars and the analysis of references, this paper puts forward the shortcomings of China compulsory pilotage system, and organizes scholars' suggestions for improving China compulsory pilotage system to address these problems. At the same time, China should learn from the mandatory pilotage systems of the United States, Germany and Japan, so as to build a perfect China compulsory pilotage system.

AUTHORS' CONTRIBUTIONS

This paper is independently completed by Zhuoer Zhang.

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