

The Dilemma of the Compensation System for Environmental Rescue in Maritime Disaster and the Path of Improvement

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ABSTRACT

In the context of modern shipping, maritime pollution is an important factor of modern marine pollution, and traditional maritime disaster relief does not include environmental relief, thus leading to the increasingly serious problem of maritime environmental pollution. Only through the continuous improvement of the environmental rescue compensation system, the environmental rescue problem can be well solved. From the "no effect, no pay" rule, to the "special compensation" rule, and then to the "safety net" clause, this paper systematically elaborates the development of the maritime disaster compensation system, and points out The system has been developed and the difficulties of the existing maritime rescue compensation system have been pointed out. In order to make China's maritime rescue law effectively guide the practice of environmental rescue, it is necessary to complete the independence of the environmental rescue compensation system, update the environmental damage liability as the subject of rescue, and improve the accounting rules for environmental rescue compensation.

Key words: Maritime Rescue; Environmental relief; Compensation System; "No effect, no pay"

Introduction

Maritime distress rescue is an old system in maritime law, mainly from the common law case law, "with typical equitable characteristics"¹, "for the purpose of equity and efficiency"², the payment and acquisition of rescue compensation is an important institutional arrangement to achieve this purpose. In the context of modern shipping, marine pollution is an important factor of modern marine pollution, and the traditional maritime disaster relief does not include environmental relief, thus leading to the increasingly serious problem of environmental pollution at sea. Only through the continuous improvement of the environmental rescue compensation system can the environmental rescue problem be well solved. From the rule of "no impact, no payment", to the rule of "special compensation", to the provision of "safety net", this paper systematically elaborates the development of the compensation system for maritime disasters, and points out the system that has been formed and the difficulties that exist in the current compensation system for maritime disaster relief. In order to make China's maritime salvage law effectively guide the practice of environmental salvage, it is necessary to complete the independence of the environmental salvage compensation system, update the liability for environmental damage as a salvage subject, and improve the accounting rules for environmental salvage compensation.

In the context of modern shipping, ship-source pollution accidents occur frequently, which mostly cause serious marine environmental pollution and even ecological disasters. In the ship-source pollution accident, the timely and effective

¹ See Per Sir J. Hannen. *Five Steel Barges* (1890) 15 P. D. 142. 146 Christopher Hill. *Maritime Law*. 3rd ed. Lloyd's of London Press Ltd, 1989. 188.

² 刘刚仿: 《海难救助客体法律制度比较研究》, 北京: 对外经济贸易大学出版社 2006 年版, 第 29 页。

rescue operation of the rescuer is crucial to prevent or mitigate the damage to the marine environment. From the perspective of environmental protection, the rescuer's timely prevention and mitigation of environmental pollution damage can be legally defined as marine environmental rescue. However, contemporary maritime disaster relief is not dominated by parties that value the marine environment. It is because the current laws in most countries do not recognize environmental rescue as part of property rescue, and thus cannot be paid for under the "no effect, no pay" rule, that neither shipowners' mutual insurance associations nor hull insurers are willing to pay for environmental rescue, which is the reason why it is difficult to see any marine rescue operators taking environmental rescue into account in the process of implementing rescue actions.³ However, marine environmental rescue is urgently needed for an ecologically civilized society, and rescuers should be incentivized to pay appropriate environmental rescue payments to rescuers as a feasible institutional arrangement in the private law context. ⁴With the integration of the emerging environmental rescue factors, the traditional framework of the maritime distress compensation system has been gradually revised partially, but it still cannot effectively guide the practice of environmental rescue, and also affects the regulation of property rescue. In addition, the development of the maritime disaster relief system has taken on new characteristics and trends as people's awareness of environmental protection has increased. In order to better respond to the dilemma with the practice,

³ See John Reeder, *Brice on Maritime Law of Salvage*, 4th ed. , London: Sweet & Maxwell , 2003, paras. 1-126.

⁴ 参见高俊涛, 李志文: 《我国海难事故环境救助报酬制度审视与重构》, 《华中科技大学学报(社会科学版) 》2012 年第 3 期; 李志文, 高俊涛: 《海难救助“无效果无报酬”原则的生态化嬗变》, 《法学》2010 年第 7 期。

this paper tries to explore the legislative path to improve the environmental rescue compensation system under the existing maritime rescue law of China's Maritime Law.

I. The justification of constructing an environmental relief payment system

1.1 Meet the real needs of modern shipping industry

Marine accidents are accompanied by the threat of pollution damage to the marine environment, and the intervention of environmental rescue operations can prevent more serious pollution from occurring. In modern shipping, ships are increasingly scaled up and specialized, and the ability to concentrate on transporting large amounts of specific types of cargo has increased. At the same time, in order to meet the power needs of the ship scale, the amount of fuel carried by the ship also increased significantly. And the goods carried are of various categories, among which the bulk chemical products are mostly toxic and harmful substances. Once the ship encounters a maritime accident, a large amount of fuel and toxic and harmful substances will seriously damage the marine environment, and even affect the natural environment of coastal areas, so that humans and other living creatures suffer from ecological imbalance disaster. In terms of energy consumption and emissions per unit, shipping is the most energy-efficient and environmentally friendly mode of transportation. However, the total volume of shipping is huge, and ships emit a lot of pollutants such as sulfur oxides, nitrogen oxides, carbon dioxide and particulate

matter. From 2007 to 2012, the average annual NOx emissions from shipping in China accounted for 15% of total human activities and 13% of sulfur oxide emissions.

China is not only a big trading country, but also a big shipping country, with many large tonnage tankers and chemical products professional transport ships; and driven by the prosperity of trade, China has developed into a big port country, and various types of merchant ships from different countries shuttle in our navigable waters and enter and exit our port waters. Under these conditions, ship pollution accidents occur frequently in China, causing serious impacts on port cities. In order to be able to accommodate mega ships at berth, port areas are constantly being expanded, seriously damaging the shoreline ecosystem. Also the dismantling of scrap ships has polluted local waters and soil, endangering the health of workers. According to public statistics, from 1998-2008 alone, 733 ship pollution accidents occurred in China's jurisdictional waters, deteriorating the country's marine environment. Marine environmental interests concern the public interests of a country or even the whole human society, and timely and effective marine rescue operations can also prevent or mitigate marine environmental pollution damage when maritime accidents occur. Stimulating environmental rescue behavior through legal means is essential to protect the marine environment, and also meets the urgent practical needs of shipping industry practice.

1.2 Comply with the mission of ecological civilization construction

The 21st century is the era of ecological civilization, and the 17th Party Congress report formally put forward the ambition of "building ecological civilization" in line

with the development of the times. The concept of ecological civilization is based on the core value of maintaining the balance of the ecosystem, and the essential requirement of maintaining the ecological balance is to restrict human beings from giving and taking to the nature and to strengthen environmental protection.⁵ At the same time, ecological law also encourages environmental rescue. In terms of the legislative concept of the environmental rescue system, the principle was established to realize the ecological civilization concept of giving priority to the environment. Along with the large-scale development of industry, the environmental pollution today has been very serious. In order to promote human beings to an ecological civilization society, we must face the ecological crisis caused by the current environmental pollution. As the most powerful self-cleaning system on earth, the ocean must be protected. In order to ensure the protection of the marine environment, it is necessary to promote the change of the traditional legal system. From the 1989 Rescue Convention to the Maritime Law of China, which gradually praises the rescue behavior, it symbolizes that the traditional maritime disaster rescue system has been revised from the traditional single property rescue compensation system, which has certain positive effects. However, the compensatory compensation built on top of the property rescue system is destined to be unable to fulfill the mission of achieving environmental priority. Not only there is no right to claim compensation for simple environmental rescue, but even when there are two or more rescue acts at the same time, environmental rescue is also dependent on property rescue, which obviously

⁵ 参见曹明德：《法律生态化趋势初探》，《现代法学》2002年第2期；余耀军：《侵权行为法应有‘生态化’的价值取向》，《法学》2003年第9期

cannot fully play the role of preventing and controlling environmental pollution.

Just as ecological problems are complex, and their harmful effects are long-term and hidden, it is difficult for humans to fully understand the full picture of their harmful consequences. Moreover, the cost of treating and restoring the environment is expensive and will far exceed the cost of preventing ecological damage, and it is not economical to treat it afterwards. Therefore, when dealing with ecological damage, the legal person should take preventive measures to prevent the harm from occurring in the first place. ⁶China's "Prevention and Control of Ship Pollution of the Marine Environment Regulations," Article 3 clearly states that "prevention and control of pollution of the marine environment by ships and their related operational activities, the implementation of the principle of prevention first, prevention and combination."⁷When a maritime accident occurs, timely and effective maritime salvage behavior can strongly prevent or mitigate pollution of the marine environment, is necessary to implement the regulations. In a considerable number of salvage operations, one of the important tasks is to prevent or reduce pollution damage to the environment, and take the necessary measures or means to prevent oil spills and remove oil pollution.

Nonetheless, there has been more human concern about the benefits of shipping. The frequent maritime accidents in maritime transportation are mostly accompanied by environmental pollution damage, which seriously disrupts the ecosystem order. The importance of marine environmental protection has been increasing since the 1960s, especially after several mega ship oil spill pollution incidents in the

⁶ 参见蔡守秋：《以生态文明观为指导，实现环境法律的生态化》，《中州学刊》2008年第2期

⁷ 我国《防治船舶污染海洋环境管理条例》根据《中华人民共和国海洋环境保护法》制定，自2010年3月1日起施行。

international arena. In addition to cargo oil and fuel oil pollution, the damage caused by various toxic and harmful substances to the marine environment cannot be ignored. In order to meet the needs of marine environmental protection, international organizations and national governments have introduced relevant maritime international conventions and domestic laws to make provisions for marine environmental protection. Due to the diversified forms of marine environmental damage and the increased requirements of coastal states for marine environmental protection, it can be said that almost every modern maritime accident is accompanied by the threat of marine environmental damage, which puts forward higher requirements for the rescuers who directly carry out maritime rescue acts.

Marine environmental pollution has become increasingly important to governments, and practice has shown that the damage caused to humans by environmental pollution due to a tanker wreck often exceeds the direct loss of the ship's cargo. As the marine environment is a matter of interest to coastal countries, the maritime rescue industry is also subject to more and more interference from public authorities. For the ship in distress posing an environmental threat, coastal states generally refuse to provide refuge for their own interests, and even if they accept the ship in distress, they often have harsh requirements, which leads to rescue people even if the rescue is successful, but also can not achieve results. For example, in the case of the oil spill of the tanker Prestige, it was the Spanish government's failure to approve the ship's request for refuge that led to the huge oil pollution damage. The failure to achieve results in rescue operations due to government intervention will

greatly discourage rescuers from rescuing ships with environmental pollution damage.

Many countries and regions have introduced relevant laws and regulations to increase the penalties for those responsible for environmental pollution damage. In addition to civil liability and administrative liability, rescuers may also bear criminal liability. For example, the EU Ship Pollution Source Act will be accidental oil pollution accident as a crime, due to "gross negligence" caused by pollution damage, the relevant responsible person will be held criminally liable. 1991 "British Water Resources Act" Article 85 provides that the act or negligence caused by the marine environment pollution damage, even if the act or negligence is not the main cause of the damage, the responsible person shall also be held criminally liable. The risk of liability of the rescuer for environmental relief is significantly higher, and the rescuer is entitled to be paid for environmental relief commensurate with it.

From this, it can be seen that building ecological civilization is a systematic project, and it is necessary to penetrate the concept of ecological civilization into the existing system that carries human civilization, so as to improve the specific system at the micro level to make it complete the ecological transformation.⁸As a part of the human civilization system, China's maritime rescue law has deviated and conflicted with the concept of ecological civilization, and also needs to be ecologically transformed. The traditional maritime rescue law originates from the practice of property rescue such as ships and goods, and forms an institutional framework centered on property rescue. However, under the concept of ecological civilization,

⁸ 张瑞萍：《论环境法的生态化转型》，《法学杂志》，2009年第6期

the value of ecological balance should take precedence over the value of short-term economic interests of human beings,⁹ so environmental relief should take precedence over property relief, and the construction of environmental relief system to stimulate the environmental relief behavior of preventing or reducing the threat of marine environmental pollution damage has become an inevitable choice for the ecological transformation of maritime disaster relief law.

II. Status and dilemma of the legislation of maritime rescue compensation system

2.1 "No effect, no pay" principle

The 1910 Salvage Convention, which established the basic principles and system of maritime salvage, has a history of more than 100 years, and the principle of "no effect, no reward" established by the Convention has laid the foundation of maritime salvage law, but it has revealed a lot of shortcomings when it comes to salvaging ships with potential threat of environmental pollution under present-day conditions. The "no effect, no pay" principle has laid the foundation of maritime rescue law, but it has revealed many shortcomings when rescuing ships with potential threats of environmental damage under present-day conditions. The principle of "no effect, no pay" is the basic principle for establishing compensation for marine casualties, and the central idea is that the pay is contingent on the effect of the rescue. There is the ultimate effect before giving money, no effect does not give money. Only when the

⁹ 陈德敏、梁洋熙：《论生态文明视阈下中国自然资源法的完善》，《重庆大学学报》（社会科学版），2009年第1期

rescuer both paid the effort and achieved the results to get the pay he won, otherwise pay more efforts, no results will not help. China's "Maritime Law" Article 179 provides that: "the ship and other property in distress by the rescue party to rescue, and achieve results, the right to obtain compensation for the rescue of the rescue did not achieve results, except for the maritime law and other laws or contracts provide otherwise, no right to obtain rescue costs", so that China's maritime law is also recognized this principle in the traditional maritime disaster Under the traditional maritime disaster rescue mechanism, the subject of rescue is only limited to other maritime property such as freight of the ship's cargo at risk, and thus formed the principle of no effect and no compensation for property rescue compensation, which is related to the effect of property rescue in the same direction, and the two show a positive relationship between the weak and the weak and the long, and the upper limit of the compensation for property rescue is determined by the value of the rescued property.¹⁰ "Rescue effectiveness to determine the cost of rescue" can not only effectively solve the cost of the rescue party and the rescued party, and can make the rescuer's motivation to a certain extent to improve the full mobilization of the rescue party's rescue capacity, which is also the most effective principle of rescue costs.

The traditional "no effect, no reward" principle, whether in pure rescue or contractual rescue, takes property as the main object of rescue, which is obviously contrary to the trend of ecological development of the subject matter of maritime disaster rescue, forming the impact of the existing principle on the developing

¹⁰ 参见李志文、高俊涛：《海难救助无效果无报酬原则的生态化嬗变》，载《法学》年第期，第 86 页。

institutional framework. As mentioned above, the internal operation rules of the "no effect, no reward" principle include the homogeneous association of property effect and rescue reward and the voluntary principle, while the intervention of environmental factors tries to break through the limited nature of property effect and aspires to incorporate environmental effect on the one hand, and the forced environmental rescue under the intervention of public power on the other hand is also incompatible with the traditional voluntary rescue. On the other hand, the public authority's intervention of forced environmental relief is also incompatible with the traditional principle of voluntary relief. In practice, when a tanker is in distress, rescuers often ignore the environmental rescue when it is difficult to have rescued property or when the value of rescued property is low. In contrast to the general rescue of ships and property, the rescue of tankers is often accompanied by the responsibility to mitigate the environmental impact of oil pollution damage. On the one hand, the equipment and technical requirements of the rescuers are greatly increased, and the risks are correspondingly increased; on the other hand, according to the provisions of the 1910 Rescue Convention, such rescuers do not have the right to enjoy the limitation of liability, which means that, under the principle of "no effect, no reward", the rescuers of tanker distress may have to spend. This is not conducive to encouraging the development of environmental rescue.

2.2 Special Compensation Rules

Compared with the 1910 Salvage Convention, the 1989 Salvage Convention has made significant changes to the traditional legal regime of maritime salvage,

expanding the scope of the subject matter of maritime salvage and the scope of application of the Convention, and adding special compensation provisions. The special compensation mechanism is a limited breakthrough of the "no effect, no reward" principle. The fundamental principle of the special compensation mechanism is that the rescuer is entitled to receive compensation for the rescue of the ship or the cargo on board that poses a threat to the marine environment, even if the property is not rescued, as long as the rescuer has paid the corresponding efforts and costs.

The risk of "environmental pollution" in a maritime accident, the efforts made by the rescuer to prevent or mitigate environmental pollution in the process of rescuing the ship or cargo, and the fact that the rescuer is entitled to receive less than the cost of his rescue in this activity are the three elements that must be present at the same time when the special compensation system is implemented. The harm in "environmental pollution" is a necessary condition for the creation of environmental remedies. The "environmental pollution" to which the special compensation applies must occur within the selected area, i.e., within the "coastal, inland water or its adjacent area", so the special compensation cannot be used in the high seas or exclusive economic zone outside the specified area, and Environmental pollution must be "highly probable". Whatever the proportion of environmental factors in the process of rescue activities, the basic goal of maritime rescue is still the rescue of ships and goods, if not to the basic rescue of ships or goods, but only to prevent or control environmental pollution, for example, there is no legal connection of maritime rescue before, but only after the tanker accident sunk into the sea, the rescuer in order

to prevent pollution damage to the oil slick floating on the sea level, or the use of boats to collect the oil slick, or the boom to prevent the spread of the oil slick, cannot be compensated for the special costs incurred by the ship owner.

The special compensation system, which was first established in the form of a convention in Article 14 of the 1989 International Convention on Salvage, may now be in danger of being reworked. The core of the proposal is the urgency of reforming the special compensation mechanism and the addition of the concept of "environmental relief compensation", i.e., to separate environmental compensation from the original property relief compensation system to create a separate compensation program to replace the original special compensation system for relief costs. The amount of environmental remedy compensation in the proposed rescue is determined by the severity of the shipowner's liability to third parties for environmental damage avoided by the rescuer's rescue action, so that the amount of environmental remedy compensation is no longer limited by the original value of the rescued property, and it is all decided by the judge or arbitrator freely according to experience and evidence. In other words, the reform proposal of the International Rescue Union is a reversal of the previous special compensation mechanism. In other words, the reform proposal of the International Rescue Union is a reversal of the previous special compensation mechanism. Therefore, in practice, the special compensation is a relatively perfect relief solution in the form of incomplete relief compensation, and there is no special compensation at all when the relief

compensation is complete. According to the relevant legal provisions, "incomplete relief compensation" means that the relief fund paid by the relief party is greater than the relief compensation to which it is entitled, which is the basis for the occurrence of special compensation. The special compensation mechanism is the dividing line between traditional maritime disaster relief law and modern maritime disaster relief law, and is a sign of the development of modern maritime disaster relief law. Under the mechanism of "special compensation", the payment of special compensation is not necessary for the rescue of property, and it completely breaks the most fundamental principle of "no effect, no reward" in the maritime disaster relief law.¹¹

The special compensation rule is the first loosening of the principle of "no effect, no pay", and its wide scope of application and high cost ratio are conducive to encouraging environmental rescue and protection, but its passivity cannot be ignored. First, from the construction of the maritime disaster relief system, the special compensation rules do not achieve the theoretical purpose of the environment as an independent subject of maritime disaster relief, in a maritime accident, the ship and cargo and other maritime property if all have been completely lost, the rescue party will be out of concern for compensation, will not carry out pure environmental relief. Second, the special compensation rules do not change the "no effect, no reward" principle to property as a single subject of rescue tone, according to the 1989 Rescue Convention, Article 14, paragraph 1, environmental relief must be attached to the "environment poses a threat of damage" In accordance with Article 14(1) of the 1989

¹¹ 参见司玉疏、李志文：《中国海商法基本理论专题研究》，北京大学出版社 2009 年版，第 417 页。

Salvage Convention, environmental salvage must be attached to the salvage of "a ship or its cargo" that poses a threat of damage to the environment, and the amount of compensation is the difference between the special compensation and the property salvage compensation. Third, from the viewpoint of the subject of payment, the rule does not take into account the limitation of the ship owner's ability to pay as the subject of payment, which also affects the recovery of the environmental salvage costs.

2.3 "Safety net" clause

The "safety net" clause originated in the 1980 Lloyd's contract. This version of the Lloyd's salvage contract recognized the environmental obligations of saviors and was used as a basis for improving the legal regime for salvage pay. Specifically, the "safety net" clause can be summarized as "In the case of salvage of a tanker with a full or partial load of oil cargo, the tanker owners' P&I Club shall pay to the savior alone the reasonable costs incurred for such salvage and a surcharge not exceeding 15% of such costs, provided that the savior is not at fault. If the salvage operation is successful and the oil accident is prevented, the salvage compensation shall be more favorable than the property salvage alone. However, if the failure or partial failure of the salvage is attributable to the fault of the savior, its employees or agents, the savior shall not be entitled to claim reasonable expenses and surcharges." Of course, in order to be paid for such salvage, the savior must "use its best endeavors to prevent the spillage of oil from the salvaged vessel," a requirement also considered by the 1980

Lloyd's salvage contract as part of the savior's obligation to comply with the CLC.¹²

The 1980 Lloyd's salvage contract introduced new provisions in the area of environmental protection from two perspectives, namely the duty of the salvor to use his best endeavors to prevent oil from escaping from the ship while providing salvage services to the ship, its cargo and fuel materials, and the exception to the aforementioned "no effect, no reward" principle. The "safety net" clause was introduced to allow salvors to use their best efforts to prevent oil spills when rescuing tankers, thereby protecting the marine environment. The Amoco Cadiz and the Atlantic Empress, both of which occurred in 1978 and 1979, prompted the government and the insurance industry to reflect on the current law. The government and the insurance industry were prompted to reflect on the current law and concluded that the actions of salvors, if successful, would make a significant contribution to avoiding or mitigating environmental pollution damage and that the provision of salvage to tankers carrying cargo should be encouraged. In light of this, Lloyd's reacted quickly to this situation and developed a set of effective provisions that we see today as the "safety net provisions". The "safety net" provision is most meritorious in that it created a new, optional system of compensation for assistance that departs from the old "no effect, no pay" rule. This "safety net" clause creates an "optional" rather than "alternative" system of remuneration in Lloyd's contracts, because when the remuneration calculated under the traditional system is higher than This is because the traditional system of "no effect, no reward" is still used as the standard when the

¹² See International convention on civil liability for oil pollution damage 1969 as amended by the 1992 Protocol. London: International Maritime Organization, 1992.

reward calculated under the traditional system is higher than the result calculated under the new system.

It is worth noting, however, that when the rescuer cannot be reasonably paid under the traditional system or cannot be paid at all, the "safety net" system works to ensure that the rescuer is paid at least as much as the cost of the rescue and a surcharge of no more than 15% of the cost. The point of this surcharge is to encourage the rescue of tankers, which has a high probability of costing the rescuer a lot of money without achieving any results. In other words, this system also encourages the participation of salvors in environmental salvage in a sense, and the 15% surcharge in the contract reflects the drafters' desire to protect the rights of the salvage industry and avoid the loss of professional salvors.

Although the "safety net" system is a solid step forward in establishing a more reasonable salvage compensation system than the "no effect, no pay" rule, there are many problems with this new system. For example, its scope of application is limited to marine casualties involving oil tankers and oil pollution, which is already destined to be limited to the scope of the CLC since the "safety net" clause was born as a supplement to the CLC. This issue was not important at first, because in the early days of environmental rescue, the main cause of environmental pollution in maritime disasters was oil pollution caused by tanker accidents and unreasonable rescue. However, with the development of the shipping industry, more dangerous chemicals were included in the scope of marine cargo, and even the emergence of special hazardous chemical ships, contemporary environmental pollution in maritime

disasters is no longer limited to oil pollution, which led to the lack of a comprehensive legal system of compensation for environmental relief in a broad sense. The "safety net" clause in the consideration of the premise of the oil pollution of the cargo oil of the tanker, but forgot whether the tanker or other ships in the shipwreck rescue may exist in the fuel pollution, and fuel pollution in the tanker safety measures continue to upgrade, management continues to standardize the general environment has become relatively more common. Therefore, even if there is a debate in the academic circle on whether the rescue involving other pollution sources should be included in the scope of the new compensation system, there is no doubt that the new compensation system should take the rescue involving fuel oil pollution into consideration. This trend is also evidenced by the emergence of the Bunker Oil Convention¹³ and the Fund Convention¹⁴, which followed the CLC and were generally accepted by the international community.

III. The improvement path of environmental relief compensation system

China's Maritime Law has been keeping pace with the times on the issue of compensation for maritime distress, and has made reference to the latest international developments in the field of maritime distress rescue, with corresponding provisions designed for the "no effect no pay" principle and the "special compensation" rule.

¹³ See International convention on civil liability for bunker oil pollution damage 2001 . London: International Maritime Organization,2001.

¹⁴ See International convention on the establishment of an international fund for compensation for oil pollution damage 1971,as amended by the 1992 Protocol. London: International Maritime Organization,1992.

Although the development of the times, China's maritime rescue system is constantly updated, the concept of rescue is also evolving with the times, but the existing problems can not be ignored. Although the traditional maritime rescue system is becoming more ecological, it has a positive impact on the protection of the environment compared to the previous single property rescue payment system. However, the dependency of the environmental rescue system still exists and does not fully realize the ecological concept of environmental priority. Therefore, the environmental relief compensation in the maritime disaster relief is still in the cracks. Improving the path of the environmental rescue compensation rules system on the basis of the existing maritime rescue compensation system is conducive to fully motivating the environmental rescue behavior of the rescuers to prevent or mitigate the threat of environmental pollution damage, so as to better promote and implement the environmental rescue in maritime disasters.

It is a trend to seek a breakthrough from the design of the rescue system and the system of environmental rescue in maritime disasters. Some scholars suggest that "the current system of environmental rescue compensation in maritime disasters in China's Maritime Law is dependent on property rescue, which fails to realize the concept of "environment first" in the era of ecological civilization and is difficult to effectively guide the practice of environmental rescue in maritime disasters. At the same time, the current system of environmental rescue compensation for maritime disasters also disrupts the complete rule structure of the traditional property rescue compensation system. In order to make China's maritime rescue law can effectively guide the rescue

practice, especially the maritime environmental rescue, it is necessary to create an independent maritime environmental rescue compensation system, to include environmental damage liability in the scope of the rescue subject matter, and to improve the accounting rules for maritime environmental rescue compensation."¹⁵ This discussion flagrantly puts forward that the environmental rescue of maritime accidents is independent of the property rescue of maritime accidents, which is in line with the development trend of the compensation system of maritime accidents, and lays a theoretical foundation for the establishment of an independent compensation system of environmental rescue of maritime accidents.

3.1 Independence of environmental aid compensation models

The so-called independent environmental salvage compensation for maritime disasters is another kind of salvage compensation proposed by ISU, which is completely independent from the property salvage compensation in terms of calculation method, actual payment, and limit, etc. because the salvage party avoids or reduces the environmental liability of the rescued party by rescuing the ship's cargo with the threat of environmental damage. Let the independent environmental rescue form the right to obtain compensation request, is the maritime disaster rescue compensation system continue to develop and improve the requirements of the times. If this idea can be achieved, the property salvage can independently account for its salvage acts and no longer include environmental salvage factors, and the property salvage system can return to its original complete and perfect institutional framework.

¹⁵ 参见高俊涛, 李志文: 《我国海难事故环境救助报酬制度的审视与重构》. 载华中科技大学学报(社会科学版), 2012年第3期, 第48-53页。

In this way, the environmental relief and property relief would not interfere with each other, so that both relief providers would not have to worry about the benefits of their relief actions, and their respective rewards would be borne by their respective beneficiaries, and the interests of each party would be balanced. The two rescue acts parallel to each other, can fully mobilize the enthusiasm of each rescue, and the system of compensation for maritime rescue can also form a stable and complete institutional model.

In the era of ecological civilization, the shift of the maritime rescue system to ecological is irreversible, and I believe that the core of the ecological transmutation of the traditional system is the creation of an independent environmental rescue compensation system. Under the ecological civilization, the environment is in a priority position, and the environment needs to become the first target of maritime disaster relief beyond ships, goods and other maritime property. The traditional maritime disaster relief system was formed during the period when property relief was the core, and the maritime disaster relief law would give generous compensation to the rescuer for rescuing the goods from the danger at sea; while under the ecological civilization of the 21st century, environmental relief has become the core, and the maritime disaster relief law "shall also give generous compensation to the rescuer for rescuing the marine environment from the pollution damage of the goods".

¹⁶Environmental salvage compensation should no longer be dependent on property salvage compensation. As a result, the salvor can receive a parallel environmental

¹⁶ See Thomas L. Nummey. "Environmental Salvage Law in the Age of the Tanker", Fordham Environmental Law Review, vol. 20, 2009.

salvage payment to the property salvage payment for the salvage of the vessel or cargo that poses a threat of environmental damage, which can fully motivate the salvor to save the environment. At the same time, the respective beneficiaries are responsible for their own separate property and environmental salvage payments, which balances the interests of both salvors. The environmental relief and property relief are complementary to each other, building a complete and stable overall structure of the maritime disaster relief system.

3.2 Environment Environmental relief as the subject of relief

Since it is established that environmental relief has an independent right to claim compensation, and an independent environmental relief compensation system is constructed, it is necessary to further clarify what is the object of environmental relief. The object of the rescue is the object of the rescue relationship, which is the connection point between the two parties. The subject of the rescue as the determination of the rescuer and the rescued party to pay and obtain the legal relationship between the rescue compensation intermediary, the need to make clear provisions in the legislation of the subject of the disaster rescue, which is the basis for accounting for the effect of rescue, but also the rescue party to obtain the premise of the rescue compensation. Environmental relief should be paid by who, only under the premise of clear relief of the subject matter, to clarify who is the beneficiary of the rescue, to determine who will be paid for the rescue.

Only when the subject matter of the relief is clearly defined in the legislation can the direct beneficiary of the relief be identified and the appropriate subject matter for

the payment of the relief be determined. To create the environmental relief compensation system, if the marine environment itself is the subject of relief, the subject of environmental relief compensation should be the direct beneficiaries of the relief actions to prevent or mitigate environmental damage, i.e., the subject who enjoys the property rights such as ownership and use of sea area, covering the state, collective, natural or legal persons and other types of interest subjects. Such provisions, involving a large number of subjects, and intervene in the scope of national sovereignty and other public law, beyond the boundaries of the legislative competence of maritime law with private law norms as the main body, lack of operability. It can be seen that it is difficult to incorporate the environment directly into the scope of the subject matter of environmental relief by amending the provisions of China's Maritime Law, and the subject matter of environmental relief must be clarified in another way.

In order to fill the gap in the law of environmental relief, the 1989 Salvage Convention has created a special compensation system, which takes environmental damage as the subject of environmental relief, which is a feasible idea. As mentioned above, the traditional principle of "no effect, no reward" cannot motivate the rescuers to save the environment and encounter difficulties in its application. The view is that when a maritime accident occurs, in addition to the risk of loss and damage to maritime property such as ships, goods and risky freight, the environmental damage liability of the rescued party to the third party is also affected by the maritime danger and is in an uncertain state, and the rescuer can effectively prevent or reduce the

liability by timely rescue. The salvage party is an environmental tortfeasor, and its potential liability for environmental damage is a separate subject of salvage from traditional maritime property such as ships, cargo, and freight at risk.

The 1989 Salvage Convention began to introduce the concept of liability for environmental damage and attempted to define it as an object of environmental salvage. The salvors' interests proposed to introduce the theory of environmental damage liability salvage, but the liability insurers were strongly opposed to it. This was because of the fear that the introduction of the concept of environmental damage liability relief would indefinitely expand the liability to pay benefits. After many negotiations, the parties agreed to create a new system in the Convention, which recognizes that the actions of the salvors' liability for environmental damage prevention and control should be or are remunerated, which is the present-day special compensation system. From the definition of the special compensation system in the Convention, it is clear that the liability for environmental damage is already considered as the subject of relief, but there is no separate compensation system for this purpose. Therefore, on the basis of the special compensation system, it is a feasible legislative approach to establish environmental damage as the subject of environmental relief and to replace the current compensation rules with an independent system of compensation for relief.

3.3 Improve accounting rules for environmental relief compensation

After the subject matter is resolved, the accounting rules are also a major challenge. Environmental relief has always been an obstacle to the successful return

of relief providers due to its complex accounting rules. It has been argued that many of these criteria are difficult to account for due to the diversity of responsibilities, and have been criticized in practice, but in fact these problems can be improved through the accounting rules to make them more operable.

First of all, let the economic value of the salvage subject be more clearly quantified. In the face of maritime accidents, the actual damage caused by the rescued person may be diverse, even involving a variety of sectoral laws, often appearing civil liability, criminal liability, administrative liability in parallel. In terms of the civil liability of the rescued party is also complicated, may include the responsibility of wreckage cleanup, oil cleanup, toxic and hazardous cargo cleanup responsibility, personal injury liability, etc.. It has been pointed out that if the liability is listed as an independent subject of rescue, many distant relations will be drawn into the rescue legal relationship, which will lead to an incomparably complicated and unreasonable situation. Obviously, we do not want to see such a situation, which will not only make the accounting process more complicated or even difficult, but also may cause the system to be abused, so the traditional law has been to limit the scope of the subject matter of relief by statutory nature. Therefore, in the face of the accounting problem of environmental damage, the types of environmental damage liability that can be the subject of relief should be clarified by legislation, and the scope of liability boundaries that can be included in the scope of relief should be limited by statute to avoid the above-mentioned situation.

Secondly, the principle of "no effect, no reward" guides the whole system of

compensation for maritime disasters, and the existence of this principle requires us to make environmental damage liability a quantifiable value effect. Based on this criterion, we can only assess the direct economic loss caused by the direct environmental damage that the rescued party may have caused. The 1989 Salvage Convention defines environmental damage as "significant physical damage to personal health, to marine life and marine resources in inland coastal waters or their adjacent areas caused by pollution, contamination, fire, explosion or similar major incident." Here environmental damage is limited to a statutory scope, within whose boundaries liability for environmental damage can be prevented from causing confusion with other similar liabilities. This concept was not defined in the Maritime Law of China with reference to the 1989 Salvage Convention, resulting in uncertainty about the scope of environmental salvage within the scope of China, and China should clarify this concept to guide the determination of environmental salvage liability.

Finally, the rules for accounting for environmental remediation should be properly evaluated. Another important issue of environmental relief liability is how to assess the size of such liability and to exclude such quantitative accounting obstacles in order to allow to be compensated. It has been argued that, although the concept of environmental liability is convenient, it is difficult to determine the extent of the liability of the rescued person to third parties for damages that the rescuer has prevented or mitigated, and to calculate it accurately.¹⁷ It is also a technically difficult task to calculate the amount of liability relief pay accurately. Although it is difficult to

¹⁷ See Martin Davies. "Whatever Happened to the Salvage Convention 1989" , *Journal of Maritime Law & Commerce*, October 2008, vol. 39.

reflect the environmental damage liability of the rescued person, it is still possible to quantify it with the right method. Under the legislative model that specifies the liability for environmental damage as the subject of relief, the rules for assessing the environmental relief compensation can be formulated by drawing on the traditional method of approving the compensation for property relief. For example, by making environmental damage liability as the subject of salvage statutory through legislation, the rules and methods that can be used can be applied to the determination of environmental damage liability by comparing the old relevant property accounting, and our Maritime Law can introduce factors that are closely related to environmental salvage as a reference for the accounting of environmental salvage compensation. These factors include the value of the property rescued and the nature and extent of the risk of environmental damage and the benefits derived from it, the skill and effort of the rescuer to prevent or reduce the environmental damage, its effectiveness, the time spent and the damage suffered, the timeliness of the rescue services, etc. Taking these factors into account, together with the improved methods of accounting for property salvage compensation, which have been revised in practice for centuries worldwide, and with highly qualified arbitrators, the problem of assessing environmental salvage liability can be solved in the near future.

Conclusions

Nowadays, ship-source pollution accidents are frequent, and the environmental and ecological damage caused by them should not be underestimated. The traditional system of marine distress rescue can not fully and effectively motivate rescuers to

prevent or mitigate ship-source pollution, which is not only detrimental to the development of marine economy, but also contradicts the environmental protection requirements in the era of ecological civilization. In the era of ecological civilization, it is urgent to improve the path of environmental rescue compensation rules system on the basis of the existing maritime rescue compensation system, to solve the dilemma of property rescuers who are reluctant to carry out environmental rescue in maritime disasters, and to realize the ecological concept of environmental priority.

This paper discusses the issues related to the environmental rescue compensation system in marine distress rescue. Under ecological civilization, marine environmental protection is an important part of ecological civilization and should be given sufficient attention. On the one hand, it should establish an effective and feasible mechanism to motivate the rescuers to carry out rescue, and on the other hand, it should help to dispel some doubts of rescuers in the process of environmental rescue, so as to improve the effectiveness of rescue behavior; it should appropriately increase the amount of compensation received by rescuers for environmental rescue, and it should be paid independently. The amount of compensation for environmental relief should be increased and paid independently, and a reasonable and perfect system should be used to guarantee this, so that the enthusiasm of environmental relief can be stimulated. If it is said that the environmental damage liability relief is the way to promote the marine environment legislation, then the formulation of environmental relief compensation is the legal needs in the practice of environmental relief, so that the occurrence of major accidents and other vicious accidents to promote the revision

of the law to avoid the mistake.

The study of the environmental relief pay system in maritime disaster relief is a complex systemic project, and this paper is only a preliminary elaboration of a general idea, which needs to be supplemented by more specific and operable theories. The real application of the environmental relief compensation system in maritime disaster relief to practice requires not only the coordination of the ecological process of each sector of law, but also the support of the system and the recognition of rights and interests.

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