

Assessing the Potential Impact on Previous Maritime Accidents Had the HNS Convention Been Applied

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Abstract: The HNS Convention (International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 2010) covers any damage caused by the carriage by sea of hazardous and noxious substances in the territory or territorial sea of a State Party to the Convention. The costs of preventive actions, i.e. measures to avoid or minimize damage, are also covered wherever taken. The HNS Convention includes preventive measures as any reasonable measures taken by any person after an incident has occurred to prevent or minimize damage, i.e. actions such as clean-up or removal of HNS from a wreck if the HNS presents a hazard or pollution risk. It seems that after the CLC (Civil Liability Convention), much environmental legislation has lost the concept of pro-activeness/prevention of an environmental hazard and is more focused on compensation and reactivity. This approach is not consistent with the purpose of environmental legislation and the examination of the basic principles of the HNS Convention in parallel with distinctive environmental hazards proves this theory of reactive strategy. The methodology is based on the exploratory research principles and the legal doctrine, utilizing legislation and case law as the primary source of data, aiming to examine the effects of the HNS's entry into force by studying cases that are inside its authority and scope.

Keywords: HNS Convention, CLC, Chemical Tankers, International Maritime Organisation.

1. Introduction

The 2010 HNS Convention (International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 2010) established a regime that is primarily modelled on the preexisting legislation for oil pollution from tankers based on the International Convention on Civil Liability for Oil Pollution Damage, 1992 CLC (Civil Liability Convention) which includes pollution damage caused by spills of persistent oil from tankers [1].

The HNS regime is governed by the 2010 HNS Convention, the purpose of which is to provide sufficient, prompt and adequate compensation for loss or damage to personnel, property and the environment arising from the carriage of HNS by sea [2]. The

Convention includes both pollution damage and damage caused by other risks, e.g. fire and explosion [3]. Under the 2010 HNS Convention, the shipowner is liable for the loss or damage up to a certain amount, which is covered by insurance (1st tier). A compensation fund (the HNS Fund) will provide additional compensation when the victims do not obtain full compensation from the shipowner or its insurer (2nd tier). The HNS Fund will be funded by those companies and other entities which receive HNS after sea transport in a member state over the thresholds laid down in the Convention [4].

2. Materials and Methods

The purpose of this paper is to (i) demonstrate the economic, social and environmental effects by HNS Convention's entry into force, (ii) examine the legal gaps of the current legislation based on the legal doctrine, supported by case studies, (iii) and present the Convention's efficiency upon implementing

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proactive measures to avoid shipping accidents with hazardous materials [5].

This paper is an exploratory research study on the effects of the HNS Convention's entry into force [6]. Initially, the present status is assessed, and the economic, social and environmental parameters are evaluated [7]. Then the analysis is focused on the scope, the effects and the impact of HNS and the reasoning behind the hesitation from the traditional shipping Countries to ratify the Convention [1].

The analysis of the relevant legislation and case law is based on the doctrinal method, the dominant form in legal research [8], aiming to provide a systematic exposition of the legal and regulatory principles upon a legal issue and to analyze the relationship between those principles to provide clarifications and detect the gaps in the existing legal framework [9].

This research method is qualitative and is very similar to critical analysis, the application of which is performed through (a) description of the existing and previous statutory and case law; (b) prescription, the essence of which is to search for practical solutions that may fit in the existing legal system it overcomes problems arising from the existing law, and (c) justification which is the case where after the analysis of legal principles a specific law can be categorised as "good law". The relevant legislation is the primary source of data, and case study analyses are often being conducted to support the author's suggestions and demonstrate the extent of the issue in discussion [8]. The case studies that follow will be an election of "notorious" maritime accidents of the past, involving the sinking or explosion of ships while carrying hazardous cargo [10].

3. Main Provisions of the HNS Convention

The HNS Convention was adopted by an International Conference organised by the International Maritime Organization in London in May 1996 and is based on the highly successful model of the Civil Liability and Fund Conventions which

cover pollution damage caused by spills of persistent oil from tankers. As with the original oil pollution compensation regime, the HNS Convention will establish a two-tier system for compensation to be paid in the event of accidents at sea, in this case, involving hazardous and noxious substances, such as chemicals [1].

Tier one will be covered by compulsory insurance taken out by shipowners, who would be able to limit their liability. In those cases where the insurance does not cover an incident or is insufficient to satisfy the claim, the second tier of compensation will be paid from a Fund, made up of contributions from the receivers of HNS. Contributions will be calculated according to the amount of HNS received in each Member State in the preceding calendar year [2].

By 2009, the HNS Convention had still not entered into force, due to an insufficient number of ratifications. A second International Conference, held in April 2010, adopted a Protocol to the HNS Convention (2010 HNS Protocol), that was designed to address practical problems that had prevented many States from ratifying the original Convention [11].

Once the 2010 HNS Protocol enters into force, the 1996 Convention, as amended by the 2010 Protocol, will be called: "the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 2010" [1].

3.1 Liability of the Shipowner: Tier 1

Tier 1 of the Convention imposes: (a) Strict liability for the shipowner. The registered owner of the ship in question is strictly liable to pay compensation following an incident involving HNS. This means that he is liable, even in the absence of fault on his part. (b) Limitation of liability. The shipowner usually is entitled to limit his liability under the 2010 HNS Convention in respect of any one incident to an aggregate amount calculated on the basis of the units of G.T. (Gross Tonnage) of the ship as follows: The

shipowner will be denied the right to limitation of liability if it is proved that the damage resulted from his act or omission committed either, with intent to cause damage, or recklessly and with the knowledge that damage would probably result. (c) Channelling of liability. As set out above, the registered shipowner is liable for pollution damage under the 2010 HNS Convention, unless the damage resulting from his act or omission was committed with intent to cause such damage, or recklessly and with sufficient knowledge that such damage would probably result. (d) Compulsory insurance. The owner of a ship that carries HNS is required to provide an insurance policy to his vessel or maintain other sufficient financial security to cover his liability under the 2010 HNS Convention [1, 2].

3.2 HNS Fund: Tier 2

The HNS Fund will pay compensation when the total admissible claims exceed the shipowner's liability, i.e. the Fund pays "top-up" compensation when the shipowner, or his insurer, cannot meet in full the loss or damage arising from an incident. The HNS Fund also pays compensation in the following cases: (a) the shipowner is exonerated from liability or (b) the shipowner is liable for the damage caused, but he is financially incapable of meeting his obligations [11].

The maximum amount payable by the HNS Fund in respect of any single incident is 250 million Special Drawing Rights (SDR), including the sum paid by the shipowner or his insurer. The 2010 HNS Convention also provides financing for the HNS Fund. Below we present a graph depicting the ship-owner's liability and fund limit according to the HNS Convention [12].

4. The Need for a Proactive System

Below a short analysis of related maritime accidents that involved serious pollution due to chemical spills is presented to explore the impact had the HNS Convention been applied. This research method is a part of the exploratory research, aiming to assess the

potential alternative effects should specific legislation be in force during a specific past event/accident and it has been conducted in other research in the past [13]. The aim of assessing those cases is to compare and analyse the facts that led to each accident, explore the root cause of the accidents and present the impact of the HNS Convention, to avoid similar cases in the future [14, 15].

(i) The casualty of M/T "*Bahamas*" at Rio Grande (1998), a chemical tanker carrying sulfuric acid, suffered a leakage in the cargo pump room and subsequently loss of pressure in the hydraulic oil system. The accident report suggested the need for a contingency plan, as recommended by IMO, in order to improve the efficiency of the response operations and also to minimize the environmental consequences of such accidents. In the aftermath, there were many holes in the hull and the cargo tanks. As a result, a considerable thickness reduction of the ship's structure was indicated, whereas the port was contaminated for months [11].

(ii) The casualty of M/T "*Panam Serena*" in Porto Torres, Sardinia, Italy (2004), a chemical tanker carrying benzene and cut C6. While the benzene discharge was completed and the vessel was close to completion of discharge of the C6, the ship exploded and caught fire. As an aftermath, the ship suffered catastrophic damage, and it was declared a CTL (Constructive Total Loss). The accident report suggested that the most probable cause of the initial explosion was due to a static or electrical discharge of sufficient strength to create an ignition source within a volatile environment that had developed onboard the vessel [2].

(iii) On 15 March 2012, the chemical tanker "*Stolt Valor*" (15,732 G.T., built-in 2004) carried 13,000 tons of MTBE (Methyl Tertiary-Butyl Ether), suffered an explosion in international waters off Ras Tanura. The crew were evacuated by the US Navy and salvors were appointed by the ship-owner to respond to the incident. In the following days, attempts to tow the vessel further

away from the coast were made, until the towline broke in bad weather and the vessel drifted off Bahrain towards Qatar with the fire still raging. A towline was successfully re-established on 19 March a few nautical miles from the coast of Qatar and the casualty was eventually towed offshore. No place of refuge was granted by the 4 neighbouring states in order to carry out safe removal and lightering of the fuel oil and remaining cargo [14].

5. Present Status of the HNS Convention

The 2010 HNS Protocol will enter into force 18 months after the date on which it is ratified by at least twelve States, including four States each with not less than 2 million units of G.T., and having received during the preceding calendar year a total quantity of at least 40 million tonnes of cargo that would be contributing to the general account [1].

South Africa became the fifth State to ratify or accede to the 2010 HNS Protocol in July 2019. It joins Canada, Denmark, Norway and Turkey, who have already deposited instruments of ratification to the Protocol and who are leading the way towards entry into force of the 2010 HNS Convention [11].

Amongst the criteria for the Convention's entry into force, at least 12 States are required to ratify or accede to the Protocol, four of which must each have a merchant shipping fleet of no less than 2 million units of G.T. The instruments deposited by the five States so far have led to the Protocol having already over one-third of the number of States required for its entry into force as well as the required units of G.T., so this particular criterion has been met [4].

Although eight states (Canada, Denmark, France, Germany, Greece, the Netherlands, Norway and Turkey) signed the 2010 HNS Protocol, subject to ratification, Canada, Denmark, Norway, South Africa and Turkey are the first States to have consented to be bound by the Convention. There has, however, been significant progress reported by a number of other States in recent months and it is anticipated that a

number of those States will ratify in the near future [1].

A key conclusion from the workshop organised by IMO in April 2018 in cooperation with the International Oil Pollution Compensation Funds (IOPC Funds), was that, while the current momentum towards entry into force of the Convention was encouraging, the onus was on States to act and make concrete progress towards ratification of the Protocol. That conclusion was reaffirmed on the occasion of the 1992 Fund Assembly session in October 2018, and it is very encouraging to see that South Africa has taken steps to respond to that call [1].

At the time of Norway's ratification on 21 April 2017, the Secretary-General of IMO, Mr Kitack Lim had encouraged other States to follow suit "The HNS Convention is the last piece in the puzzle needed to ensure that those who have suffered damage caused by HNS cargoes carried on board ships have access to a comprehensive and international liability and compensation regime," said IMO Secretary-General Kitack Lim. "The number of ships carrying HNS cargoes is growing steadily with more than 200 million tonnes of chemicals traded annually by tankers, and we have to recognize that accidents can and do happen. I urge all States to follow the example set by Norway and consider acceding to the HNS 2010 treaty as soon as possible, in order to bring it into force." [16].

This message has been reiterated by IMO, the IOPC Funds and others at a number of occasions since. The Director of the IOPC Funds has been given the role of carrying out the tasks necessary to set up the International Hazardous and Noxious Substances Fund (HNS Fund) and making preparations for the first session of the HNS Fund Assembly. The 1992 Fund Secretariat undertakes a number of administrative tasks in cooperation with IMO in relation to the preparations for the entry into force of the Convention. It also remains available to support States in their efforts to prepare for ratification or

accession to the HNS Convention and industry stakeholders on technical issues [17].

6. Conclusion

The three aforementioned accidents of chemical tankers have initially shown the dangerous nature of such cargoes and then how they should be transported to their final destination. It seems that, from the loading and storage operations, the preventive measures during the transportation of cargo while at sea, until the discharge and delivery of it, a lot of risks are involved and it is of primary concern that the crew has acquired the knowledge required to manage these types of cargo.

Nevertheless, despite its importance by installing preventive measures, the HNS Convention still includes many vague and repeating clauses that are identical to the platform set by the CLC, as most conventions prepared by IMO, refer to limitation of liability. Chemical spills are quite different from oil spills not only by assessing the damage to the environment but how they should be either prevented and/or dealt with, i.e. chemical dispersants used to break the oil slick is more toxic than the oil itself.

The main focus of the HNS Convention should be primarily on installing efficient and effective measures to avoid accidents coupled with reactive measures to minimize the effects of such accidents. It is evident from the accidents presented that even if the HNS Convention was in force in its present state, the potential impact will be minimal and most likely the events and the outcome would be the same.

References

- [1] HNS Convention. 2010. Assessed February 24, 2022: <https://www.hnsconvention.org/wp-content/uploads/2019/05/2010-HNS-Convention-English.pdf>.
- [2] Boviatsis, M., Alexopoulos, A. B., Vlachos, G. P., and Samiotis, G. 2019. "Chemical Tanker Accidents and the 2010 HNS Convention." In *Proceedings of the 16th International Conference on Environmental Science and Technology*, 4 to 7 September 2019, Rhodes, Greece.
- [3] Radović, R. J., Rial, D., Lyons, B. P., Harman, C., Viñas, L., Beiras, R., Readman, J. W., Thomas, K. V., and Bayona, J. M. 2012. "Post-Incident Monitoring to Evaluate Environmental Damage from Shipping Incidents: Chemical and Biological Assessments." *Journal of Environmental Management* 109: 136-53.
- [4] Isabel, C. 2015. "Review on Hazardous and Noxious Substances (HNS) Involved in Marine Spill Incidents—An Online Database." *Journal of Hazardous Materials* 285: 509-16.
- [5] Boviatsis, M., Alexopoulos, A. B., and Theodosiou, M. 2019. "A Proactive International Regulation System Based on Technological Innovations against Emerging Environmental Threats." In *16th International Conference on Environmental Science and Technology*, 4 to 7 September 2019, Rhodes, Greece.
- [6] Smits, J. M. 2017. "What Is Legal Doctrine? On the Aims and Methods of Legal-Dogmatic Research." In *Rethinking Legal Scholarship: A Transatlantic Dialogue*, edited by van Gestel, R., Micklitz, H. W., and Rubin, E. L. New York: Cambridge University Press, pp. 207-28.
- [7] Daniil, G., and Boviatsis, M. 2022. "Evaluation of Environmental Impact Assessment Factors in Maritime Industry." *Journal of Environmental Science and Engineering B* 11: 18-23.
- [8] Budianto, A. 2020. "Legal Research Methodology Reposition in Research on Social Science." *International Journal of Criminology and Sociology* 9: 1339-46.
- [9] VanHoecke, M., and Warrington, M. 1998. "Legal Cultures, Legal Paradigms and Legal Doctrine: Towards A New Model for Comparative Law." *International & Comparative Law Quarterly* 47 (3): 495-536.
- [10] Stake, R. E. 2013. *Multiple Case Study Analysis*. New York, NY: Guilford Press.
- [11] Zhuo, R., 2020. "The HNS Convention." *Natural Resources Journal* 60 (2): 207-38.
- [12] Harold, D. P., de Souza, A. S., Louchart, P., Russell, D., and Brunt, H. 2014. "Development of a Risk-Based Prioritization Methodology to Inform Public Health Emergency Planning and Preparedness in Case of Accidental Spill at Sea of Hazardous and Noxious Substances (HNS)." *Environment International* 72: 157-63.
- [13] Boviatsis, M., Alexopoulos, A. B., and Polemis, D. 2019. "Problems Related to Ship Recycling IMO Regulations." In *Proceedings of the 16th International Conference on Environmental Science and Technology*, 4 to 7 September 2019, Rhodes, Greece.
- [14] Hakkinen, J. M., and Posti, A. I. 2014. "Review of Maritime Accidents Involving Chemicals—Special Focus on the Baltic Sea." *TransNav, the International Journal on Marine Navigation and Safety of Sea Transportation* 8 (2): 295-305.

- [15] Boviatsis, M., and Tselentis, V. 2019. "A Comparative Analysis between EU MRV and IMO DCS—The Need to Adopt a Harmonised Regulatory System." In *Proceedings of the 16th International Conference on Environmental Science and Technology*, 4 to 7 September 2019, Rhodes, Greece.
- [16] IMO. 2017. "Norway Is First to Ratify 2010 Compensation Regime for Hazardous and Noxious Cargoes." Assessed February 24, 2022: <https://www.imo.org/en/MediaCentre/PressBriefings/Pages/12-HNS-ratification-Norway.aspx>.
- [17] Dong, B., & Zhu, L. 2019. Civil Liability and Compensation for Damage in Connection With the Carriage of Hazardous and Noxious Substances: Chinese Perspective. *Ocean Development & International Law*, 50 (2-3), 209-224.