THE SHIPPING LAW REVIEW

NINTH EDITION

Editors
Andrew Chamberlain, Holly Colaço and Richard Neylon

THE LAWREVIEWS

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PREFACE

The aim of the ninth edition of this book is to provide those involved in handling shipping disputes with an overview of the key issues relevant to multiple jurisdictions. We have again invited contributions on the law of leading maritime nations, including both major flag states and the countries in which most shipping companies are located. We also include chapters on the law of the major shipbuilding centres and a range of other jurisdictions.

As with previous editions of *The Shipping Law Review*, we begin with cross-jurisdictional chapters looking at the latest developments in important areas for the shipping industry, including ocean logistics, piracy, shipbuilding, ports and terminals, marine insurance, environmental issues, decommissioning and ship finance.

Each jurisdictional chapter gives an overview of the procedures for handling shipping disputes, including arbitration, court litigation and any alternative dispute resolution mechanisms. Jurisdiction, enforcement and limitation periods are all covered. Contributors have summarised the key provisions of local law in relation to shipbuilding contracts, contracts of carriage and cargo claims. We have also asked the authors to address limitation of liability, including which parties can limit, which claims are subject to limitation and the circumstances in which the limits can be broken. Ship arrest procedure, which ships may be arrested, security and counter-security requirements, and the potential for wrongful arrest claims are also included.

The authors review the vessel safety regimes in force in their respective countries, along with port state control and the operation of both registration and classification locally. The applicable environmental legislation in each jurisdiction is explained, as are the local rules in respect of collisions, wreck removal, salvage and recycling. Passenger and seafarer rights are examined, and contributors set out the current position in their jurisdiction. The authors have then looked ahead and commented on what they believe are likely to be the most important developments in their jurisdiction during the coming year.

The shipping industry continues to be one of the most significant sectors worldwide, with the United Nations Conference on Trade and Development (UNCTAD) estimating that the operation of merchant ships contributes about US$380 billion in freight rates within the global economy, amounting to about 5 per cent of global trade overall. Between 80 per cent and 90 per cent of the world's trade is still transported by sea (the percentage is even higher for most developing countries) and, as of 2021, the total value of annual world shipping trade had reached more than US$14 trillion. Although the covid-19 pandemic has had a significant effect on the shipping industry and global maritime trade (which plunged by an estimated 4.1 per cent in 2020), the recovery was swift. The pandemic truly brought to

the fore the importance of the maritime industry and our dependence on ships to transport supplies. The law of shipping remains as interesting as the sector itself and the contributions to this book continue to reflect that.

We would like to thank all the contributors for their assistance in producing this edition of *The Shipping Law Review*. We hope this volume will continue to provide a useful source of information for those in the industry handling cross-jurisdictional shipping disputes.

Andrew Chamberlain, Holly Colaço and Richard Neylon
HFW
London
May 2022

Chapter 1

SHIPPING AND THE ENVIRONMENT

Thomas Dickson and Johanna Ohlman[1]

I ENVIRONMENTAL AWARENESS

The environmental impact of modern shipping has long been acknowledged to be a negative externality of the industry. However, it is only in relatively recent times that efforts – both state-driven and voluntary – have been focused on actively mitigating or reducing these negative effects. Regulations, primarily emanating from the United Nations' International Maritime Organization (IMO), have been introduced to address aspects such as oil pollution risk, waste disposal and emissions. The rise of environmental regulation has highlighted the need for operators to maximise efficiency to maintain competitiveness. Although compliance is an administrative and financial burden, it is clear that regulations are a necessary step towards the long-term sustainability of the industry and for the wellbeing of the planet.

Decarbonisation of the shipping industry is, and will remain, the most important and significant environmental challenge facing the industry in the coming years. Unprecedented investment and international cooperation will be required if the industry is to meet the IMO's targets on carbon emissions. It is essential that the global shipping industry is ready and willing to take quick and decisive action to ensure that this challenge is met head on.

II MARPOL

In 1973, the IMO adopted the International Convention for the Prevention of Pollution from Ships 1973 (MARPOL). Currently formed of six Annexes, MARPOL attempts to address major environmental issues that affect shipping, with a view to improving safety at sea and protection of the marine environment. The Annexes specify operational restrictions for which the responsibility of enforcement falls to individual Member States. Disciplinary measures for infringements vary widely between Member States. The IMO's Marine Environment Protection Committee (MEPC) meets (in usual times) twice a year to review and update MARPOL provisions, and to review and address the growing number of environmental issues that the industry faces. Most recently, the 76th MEPC session (MEPC 76) was held between 10 and 17 June 2021. MEPC 77, was held between 22 and 26 November 2021. Both sessions were held remotely as a result of the covid-19 pandemic.

1 Thomas Dickson and Johanna Ohlman are associates at HFW.

i Annex I – oil

Following the wreck of the *Torrey Canyon* off the coast of the United Kingdom in 1967, the international shipping community recognised the need to regulate shipping to reduce the incidence of oil pollution, in both frequency and scale. The primary legislative reaction was to allocate the responsibility to owners, using the rationale of the 'polluter pays' principle (see Section III). However, it was soon apparent that the liability regime did not promote preventive action sufficiently.

The IMO's response to tackling incidents of oil pollution (both accidental and operational) has been the formulation of MARPOL Annex I, which is intended to improve tanker safety. Annex I entered into force on 2 October 1983, encapsulating provisions relating to the monitoring and handling of oily water and the segregation of ballast tanks, as well as crude-oil washing systems.

After the *Exxon Valdez* casualty and the ensuing public scrutiny, the IMO amended Annex I to require double hulls on tankers over 5,000 deadweight tonnage ordered after 6 July 1993.[2] The implementation of the double-hull requirement was initially envisaged as a gradual phasing out of the single-hulled fleet, with the inspection of old tonnage and the progressive adoption of new measures. However, these plans were accelerated after the *Erika* casualty of 2001. A new schedule brought measures prohibiting the carriage of heavy-grade oil by single-hull tankers into effect as of 5 April 2005.

Recent changes have focused on increasing the regulation of operations in polar areas. With the opening of new polar shipping routes, and with considerable mineral deposits and oil and gas reserves being found within the polar territories, investment in these regions is likely to be extensive. The high level of care required in these waters will be reflected in a correspondingly in-depth regulatory regime. The IMO has adopted the International Code for Ships Operating in Polar Water (the Polar Code) to address this issue. The Polar Code covers a full range of requirements, including, but not limited to, design, construction, equipment, operations, training, and search and rescue, as well as environmental issues. MARPOL Annex I, Chapter 9, Regulation 43 prohibits the use of heavy fuel oil in the Antarctic. At MEPC 73, the IMO agreed that a ban on heavy fuel oils should be considered for Arctic waters too. Accordingly, the Pollution Prevention and Response Sub-Committee was tasked with carrying out the necessary methodology and impact assessments, with the result that MEPC 75 agreed to Arctic-specific draft amendments to Regulation 43 (Regulation 43A). If adopted at MEPC 76, Regulation 43A will prohibit the use and carriage (for use as fuel) of heavy fuel oil by ships in Arctic waters on and after 1 July 2024.[3]

ii Annex II – noxious liquids in bulk

The carriage of noxious liquids by sea poses a substantial environmental risk, addressed by MARPOL Annex II, which entered into force on 2 October 1983. This contains provisions attempting to reduce the likelihood of damage to the marine environment by accidents arising out of the transport of prescribed chemicals. It sets out restrictions and conditions relating to the design, construction, equipment and operation of chemical tankers.

Annex II compels operators of chemical tankers to enter in a cargo record book all operations in connection with noxious liquids being carried. There are also various mandatory

2 MARPOL Annex I, Regulation 19.

3 https://www.imo.org/en/MediaCentre/MeetingSummaries/Pages/MEPC-75th-session.aspx.

conditions that must be followed to ensure that the designated liquids are contained safely and received into certain reception facilities, that discharges are diluted and that these discharges are limited. There is a general prohibition of discharges within 12 nautical miles of the nearest land.[4] The Antarctic is designated a special area of protection under MARPOL Annex II.[5] At MEPC 74, the MEPC adopted amendments to Annex II to strengthen, in specified sea areas, discharge requirements for cargo residues and tank washings containing persistent floating products with a high viscosity or a high melting point that can solidify under certain conditions (e.g., certain vegetable oils and paraffin-like cargoes), following concerns about the environmental impact of permissible discharges.[6] These amendments entered into force on 1 January 2021.

iii Annex III – harmful substances in packaged form

Annex III requires the identification of harmful substances as marine pollutants, to ensure they are packed and in a manner appropriate to minimising accidental pollution. There is an obligation to use clear marks to distinguish these from less harmful substances. A harmful substance for the purposes of the provision is defined as being a substance that was identified as a marine pollutant in the International Maritime Dangerous Goods Code, or that meets the criteria in the Appendix of Annex III.[7] Annex III came into force on 1 July 1992 and the MEPC adopted a revised MARPOL Annex III on 13 October 2006.

Annex III prohibits jettisoning cargo that has been identified as harmful, other than in circumstances where it is necessary to do so for the purpose of securing the safety of the ship or life at sea. In addition, owners have to take appropriate measures based on the physical, chemical and biological properties of harmful substances to regulate the washing of leakages overboard, provided that compliance with those measures does not impair the safety of the ship or the persons on board.[8]

iv Annex IV – sewage

MARPOL Annex IV requires ships to have systems and controls in place to deal with human sewage, for governments to have port reception facilities[9] and a requirement for survey and certification.[10] Annex IV entered into force on 27 September 2003; a revision entered into force on 1 August 2004.

Every ship is required to have a sewage system up to an approved standard with a comminution and disinfection system, and both a temporary storage tank and a holding tank of an appropriate capacity.[11]

Annex IV prohibits the discharge of sewage into the sea except at a distance of not fewer than three nautical miles from the nearest land when the ship is discharging comminuted and disinfected sewage using an approved system and not fewer than 12 nautical miles from

4 MARPOL Annex II, Regulation 5(1).
5 id., Regulation 5(14).
6 www.imo.org/en/MediaCentre/MeetingSummaries/MEPC/Pages/MEPC-74th-session.aspx.
7 MARPOL Annex III, Regulation 1.
8 id., Regulation 7.
9 MARPOL Annex IV, Regulation 12.
10 id., Regulations 4 and 5.
11 id., Regulation 9.

the nearest land where the sewage has not been comminuted and disinfected.[12] Furthermore, untreated sewage must not be discharged instantaneously, but instead should be moderately released during the course of the vessel's voyage at a rate of not less than 4 knots,[13] while not producing any visible floating solids or discolouration in the surrounding water.[14]

As of January 2013, the MEPC has designated a zone of enhanced limitation in the Baltic Sea (the Special Area).[15] These amendments established additional requirements for passenger ships operating within the Special Area. The discharge of sewage from passenger ships within the Special Area is generally prohibited other than when it has been appropriately treated,[16] with the additional requirement that a vessel's sewage treatment equipment must meet certain nitrogen and phosphorus-removal standards[17] when tested for its certificate-of-type approval.

v Annex V – garbage disposal

The revised MARPOL Annex V, which entered into force on 1 January 2013, attempted to revolutionise the way in which the shipping industry regarded its waste disposal management. Annex V sets out obligations as to crew training and vessel garbage management plans on board, as well as vessel garbage record books. There is a general prohibition on the discharge of garbage into the sea except in some limited circumstances. Annex V imposes a complete ban on the disposal at sea of plastics, domestic waste and cooking oil, and other operational waste.

The scope of MARPOL's definition of garbage includes cargo residues.[18] Shipowners accordingly face responsibility for the treatment and disposal of residues while hold washing, which cannot be done at sea. The additional time and expense of doing so can be accounted for with appropriate charter party wording, such as the owner-friendly BIMCO (Baltic and International Maritime Council) Hold Cleaning/Residue Disposal Clause. Special areas of enforcement are designated in the Mediterranean Sea, the Baltic Sea, the Black Sea, the Red Sea, the Gulf region, the North Sea, the Antarctic, the Caribbean and the Gulf of Mexico.

Amendments to Annex V came into force on 1 March 2018. From this date, the responsibility for determining whether or not a cargo is hazardous to a marine environment will fall on the shipper with cargo to be classified in accordance with the criteria of the UN Globally Harmonized System of Classification and Labelling of Chemicals. Vessels will also be required to keep a garbage record book, documenting both the disposal of cargo residues and the disposal of garbage generated on board (including electronic waste items, known as e-waste).

12 id., Regulation 11.

13 Discharge rate is calculated according to the terms of Paragraph 3 of Resolution MEPC 157(55).

14 MARPOL Annex IV, Regulation 11 (see Resolution MEPC 157(55)).

15 In July 2011, MEPC 62 adopted new amendments by way of Resolution MEPC 200(62), which entered into force on 1 January 2013.

16 See Resolution MEPC 227(64).

17 See Resolution MEPC 227(64), Paragraph 4(2).

18 MARPOL Annex V, Regulation 1(1).

vi Annex VI – prevention of air pollution from ships

On 10 October 2008, the IMO adopted the revised Annex VI, which sets out the framework for limiting emissions of nitrogen oxide (NOx), sulphur oxide (SOx) and particulate matter from ship exhausts. The framework provides for zones of enhanced limits, 'emission control areas' (ECAs), which can be designated for SOx, NOx or both emissions.[19] The implementation of the limits has been on a graduated basis since 2012.

As of 1 January 2020, the limit for sulphur in fuel oil used on board ships operating outside designated ECAs was reduced to 0.5 per cent mass by mass (m/m) (the previous limit outside ECAs was 3.5 per cent m/m). Within the IMO-designated ECAs (the Baltic Sea area, the North Sea area, the North American area and the United States Caribbean Sea area) the limit is stricter, at 0.10 per cent m/m. The 2020 0.50 per cent m/m sulphur limit was confirmed by the MEPC 70 on 27 October 2016, ending years of uncertainty surrounding the effective date.

Enforcement, compliance with and monitoring of the 2020 sulphur limit are the remit and responsibility of states that are a party to MARPOL Annex VI. To meet the sulphur regulations, most ships are now using new blends of fuel oil with a very low sulphur content (VLSFO) or compliant marine gas or diesel oil.[20] In 2019, the IMO produced a set of guidelines regarding the technical and safety implications of the new requirement for maximum 0.50 per cent sulphur fuels. Included within the guidelines is a template for a Fuel Oil Non-Availability Report, to accommodate instances in which compliant fuel is unavailable. In addition, a number of shipping, refining, fuel supply and standards organisations have collaborated to produce joint industry guidance on the supply and use of 0.5 per cent sulphur marine fuel, released on 20 August 2019.

On 1 March 2020, the 'carriage ban' on non-compliant fuel oils entered into force. Pursuant to the ban, it is prohibited to carry fuel oil that is non-compliant with MARPOL Annex VI for combustion purposes for propulsion or operation on board a ship, unless the ship is fitted with an exhaust cleaning system, or scrubber.[21]

The options for emissions compliance fall under fuel-based and technology-based solutions. Low and ultra-low distillates are available on the market, although these are more expensive than conventional heavy fuel oil, and questions have been raised regarding reliability and how they affect fuel systems that are more suited to conventional fuels. Operators are still investing time and resources in investigating the viability of scrubbers, which allow vessels to burn (in most cases, cheaper) conventional fuel by cleaning exhaust gases. A certain category of scrubbers known as 'open loop scrubbers' has been criticised on environmental grounds owing to concerns about the effects of waste water being dumped into coastal waters. On the basis of information gathered by BIMCO, scrubber wash water discharges have been banned at a series of major ports in China, India, France, Germany, Norway, Singapore, the United States and Saudi Arabia as well as Fujairah in the United Arab Emirates. Furthermore, Egypt

19 Sulphur oxide [SOx] and nitrogen oxide emission control areas [ECAs] are currently in place on the North American coastline and US Caribbean, and SOx ECAs are in place in the North Sea and Baltic Sea.

20 www.imo.org/en/MediaCentre/HotTopics/Documents/Joint_Industry_Guidance.pdf.

21 Resolution MEPC.305(73) https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/MEPCDocuments/MEPC.305%2873%29.pdf.

has banned all such discharges in the Suez Canal. The IMO commissioned a review of its 2015 guidelines for scrubbers, to be carried out by the Pollution, Prevention and Response Sub-Committee. The revised guidelines were adopted at MEPC 77.[22]

BIMCO has released model industry clause wording to accommodate these regulations, including a 2020 Marine Fuel Sulphur Content Clause[23] (to replace the BIMCO Fuel Sulphur Content Clause 2005) and a 2020 Fuel Transition Clause for Time Charter Parties.[24]

MARPOL Annex VI also imposes NOx emission limits for diesel engines. The limits depend on the engine's maximum operating speed and are categorised into three levels of acceptable NOx emissions depending on the vessel's age or the engine installation date.[25] The emission levels are Tier I (applicable from 1 January 2000), Tier II (applicable from 1 January 2011) and Tier III (applicable from 1 January 2016, in NOx ECAs only). In November 2014, reversing its previous decision for a five-year postponement, MEPC 66 affirmed the 2016 implementation date for Tier III. The Tier III levels will be enforced in the North American ECA, the US Caribbean ECA and any subsequently designated NOx ECAs.

Ships completed on or after 1 January 2016 will have to comply with more stringent Tier III standards if operating within the North American and US Caribbean NOx ECAs.[26]

There is a general prohibition under MARPOL Annex VI on the emission of ozone-depleting substances from vessels, although installations that specifically contain hydro-chlorofluorocarbons were not subject to the prohibition until 1 January 2020.[27]

III OIL POLLUTION LIABILITY REGIMES

i The Civil Liability Convention

The primary international liability framework for oil pollution can be found in the International Convention on Civil Liability for Oil Pollution Damage 1969, replaced by the 1992 Protocol (the CLC Convention). The Convention was formulated following the *Torrey Canyon* incident in 1967 and imposes strict liability on seagoing vessels constructed or adapted for the carriage of oil as cargo,[28] if involved in an incident where there is a discharge of oil within the territorial sea, the exclusive economic zone (EEZ) or a similar area declared by a contracting state.[29] The CLC Convention is implemented in the majority of coastal states, although the United States remains a notable non-signatory.

Under the CLC Convention, a shipowner[30] is permitted to limit the level of its liability for oil pollution incidents based on a reference to the tonnage of the vessel. The Convention furthermore obliges owners of ships covered by the Convention to maintain insurance equivalent to their maximum liability for one incident.

22 Annex 1 to the report of MEPC 77 (MEPC 77-16-Add.1 - Report Of The Marine Environment Protection Committee On Its Seventy-Seventh Session (Secretariat) (1).pdf).

23 2020 Marine Fuel Sulphur Content Clause for Time Charter Parties (bimco.org) and HFW was the only external law firm on the sub-drafting committee responsible for producing this clause.

24 2020 Fuel Transition Clause for Time Charter Parties (bimco.org) and HFW was the only external law firm on the sub-drafting committee responsible for producing this clause.

25 MARPOL Annex VI, Regulation 13.

26 id.

27 id., Regulation 12.

28 CLC Convention, Article I.

29 id., Article II.

30 id., Article I(3); the Merchant Shipping Act 1995 defines 'owner' as 'registered owner' at Section 153A(7).

The 2000 amendments to the CLC Convention (which entered into force on 1 November 2003) provide for limits of liability as follows:

a for a ship not exceeding 5,000 gross tonnage (GT), liability is limited to 4.51 million special drawing rights (SDRs);

b for a ship of between 5,000 GT and 140,000 GT, liability is limited to 4.51 million SDRs plus 631 SDRs for every additional gross tonne over 5,000; and

c for a ship over 140,000 GT, liability is limited to 89.77 million SDRs.

ii The US Oil Pollution Act 1990

The oil pollution liability regime in the United States is set out in the Oil Pollution Act 1990 (the OPA 1990).[31] Liability will attach to a 'responsible party' of a vessel or facility when there is a substantial threat or actual discharges of oil into or on the navigable waters and shoreline of the United States.[32] For the purposes of the OPA 1990, the responsible party of a vessel can be the operator, owner or demise charterer of the vessel, excluding any federal or state government bodies. A manager of everyday activities will also most likely be considered to be an operator, and therefore a responsible party within the scope of the Act.[33]

The OPA 1990 extends to all oil pollution in the United States, including incidents occurring within its territorial sea[34] and the EEZ,[35] as per the US admiralty jurisdiction.

The Act imposes strict liability for the discharge of oil on the responsible parties, with no *de minimis* principle;[36] as such, any oil spill can result in liability. There is no provision for joint and several liability in the OPA 1990, but in light of judicial interpretation of the Clean Water Act 1972, this principle is likely to apply.[37]

The OPA 1990 allows damages to be recovered from the responsible parties in relation to:

a compensation and loss resulting from the loss of natural resources;

b damages for injury to and economic loss arising from destruction of real or personal property;

c damages for loss of subsistence use of natural resources (available to all who use the natural resources, regardless of ownership);

d loss in revenue resulting from loss of property;

e loss of profit or earning capacity resulting from the injury or destruction of real property, personal property or natural resources; and

f damages for the increased net costs of providing increased and additional public services during or after removal activities.

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31 Pub L No. 101-380 Section 1, 104 Stat 484 (18 August 1990) Title I, Oil Pollution Liability and Compensation, Sections 1001 to 1020, codified at 33 USC Sections 2701 to 2761.

32 Oil Pollution Act 1990 [OPA 1990], Section 1002.

33 De La Rue and Anderson, *Shipping and the Environment* (Second Edition, Informa, 2009), p. 656 (for the further categorisation of 'manager').

34 OPA 1990, Section 1002; 33 USC Section 2701(8).

35 *The International Marine Carriers v. The Oil Spill Liability Trust Fund 1995*, AMC 2072, United States District Court, Southern District of Texas (Houston Division).

36 *In re 'Jahre Spray II'*, 1996 WL 451315 (DNJ); 1997 NMC 845 (DNJ1996).

37 De La Rue and Anderson (op. cit., footnote 31), p. 197.

Punitive damages for maritime claims are also applicable under the OPA 1990, with a cap placed at a ratio of 1:1 punitive-to-compulsory.[38]

IV BALLAST WATER MANAGEMENT

The unregulated discharge of ballast water was previously recognised as enabling the transfer of potentially invasive foreign species between marine environments and consequently posing significant environmental harm. The effects of such a discharge can be harmful to localised food webs and result in the potential extinction of indigenous organisms. In an attempt to minimise these environmental effects, the IMO has formulated the Convention for the Control and Management of Ships' Ballast Water and Sediments 2004 (the Ballast Water Management Convention (BWMC)). To date, 79 countries representing more than 80.94 per cent of the world's tonnage have ratified the BWMC.

The BWMC came into force on 8 September 2017 but, because of a two-year extension granted by the IMO in July 2017, vessels that have already been built will be required to install a ballast water management system by their first International Oil Pollution Prevention renewal survey after 8 September 2019. Since this survey is required once every five years, some vessels will not be obliged to install ballast water management systems until September 2024. All newly built vessels will be required to be delivered with a ballast water management system.

In this regard, vessels are now required to:

a have a ballast water management plan;

b keep on board a ballast water record book and a ballast water management certificate;

c conduct any permissible ballast water exchange in line with the IMO'S D1 Standard; and

d have on board an approved ballast water treatment system in line with the IMO's D2 Standard.

Failure to comply with these requirements will result in port state detention, fines and the possibility of criminal prosecution.

In terms of the practicalities of implementation (and given that the BWMC remains in its early stages), the industry can look to the United States for an indication of how these provisions may work in practice. Ballast water management legislation is already in force there, and the United States Coast Guard Final Rule dated 23 March 2012 on Standards for Living Organisms in Ships' Ballast Water Discharged in US Waters (the US Rules) require vessels calling at US ports to treat ballast water when operating within US territorial waters, or to carry out an exchange of ballast waters before entering the US EEZ. In addition to the US Rules, which came into force in June 2012, individual states have also passed legislation, which has proven in places to be more onerous than the federal framework.

It was always envisaged that amendments would necessarily be made to the BWMC (the months following implementation have been referred to as the 'experience gathering phase') to improve the methodology of data gathering and analysis. Accordingly, MEPC 74 approved amendments to the BWMC concerning the commissioning testing of ballast water management systems and the form of the International Ballast Water Management Certificate. The amendments were adopted at MEPC 75 and are expected to enter into force in June

38 This is to be applied in circumstances when it is found that 'the tortious action . . . is worse than negligent but less than malicious'.

2022. The Committee endorsed the view that commissioning testing should begin as soon as possible, in accordance with the already approved '2020 Guidance for the commissioning testing of ballast water management systems' (BWM.2/Circ.70). Furthermore, the World Maritime University is expected to submit a full report following data analysis on invasive aquatic species in ballast water at MEPC 78.

V GREENHOUSE GAS EMISSIONS

In April 2018, the IMO MEPC (convening at MEPC 72) adopted the IMO Initial GHG Strategy,[39] which aims for a reduction in carbon intensity of international shipping (to reduce CO2 emissions per transport work, as an average across international shipping, by at least 40 per cent by 2030, pursuing efforts towards 70 per cent by 2050, compared to 2008 levels) and for total annual GHG emissions from international shipping to be reduced by at least 50 per cent by 2050 compared to 2008 levels.

The IMO Initial GHG Strategy divides the IMO's aims to reduce GHG emissions from ships into a set of candidate short-, medium- and long-term measures within a series of specified time frames. The IMO intends to incorporate as many candidate proposals as possible into a more concrete Revised Strategy to be implemented in 2023. The candidate measures have been divided as follows:

a short-term measures to be implemented between 2018 and 2023, which include proposed improvements to the existing energy efficiency framework;

b medium-term measures to be implemented between 2023 and 2030, which include implementation programmes for the effective uptake of alternative low-carbon and zero-carbon fuels; and

c long-term measures to be implemented beyond 2030, which include the development and provision of zero-carbon or fossil-free fuels to enable the shipping sector to assess and consider decarbonisation in the second half of the century.

If implemented appropriately, this strategy will lead to some of the most significant regulatory changes in the industry in recent years and much greater investment in the development of low carbon and zero-carbon dioxide fuels. The IMO's agreed target is intended to pave the way for phasing out carbon emissions from the sector entirely. The MEPC is supported by an Intersessional Working Group, whose role is to progress matters and maintain momentum in between each meeting of the MEPC.

The short-term measures will be captured in the Revised Strategy, scheduled to be adopted in 2023 at MEPC 80. These measures are based on data collected through the Fourth IMO Greenhouse Gas Study (the Fourth Study), which was commissioned to gather historical emissions estimates for international shipping for the period 2012 to 2018, and seeks to predict possible scenarios for future international shipping emissions (2018–2050). The Fourth Study was issued on 4 August 2020[40] and concluded that, based on historical

39 Note by the International Maritime Organization [IMO] to the United Nations Framework Convention for Climate Change Talanoa Dialogue, 'Adoption of the initial IMO strategy on reduction of GHG emissions from ships and existing IMO activity related to reducing GHG emissions in the shipping sector'.

40 See IMO, https://www.imo.org/en/OurWork/Environment/Pages/Fourth-IMO-Greenhouse-Gas-Study-2020.aspx.

emissions and projections, the target of a 50 per cent reduction in carbon emissions across global shipping by 2050 is feasible, although there remain calls from the private sector for the IMO to show more ambition, namely to target net zero emissions by 2050.

MARPOL Annex VI also introduced industry-wide energy efficiency standards in an effort to reduce greenhouse gas (GHG) emissions (including carbon dioxide (see also Section V: Carbon Emissions)). Since 2013, vessel operators have been obliged to comply with the Energy Efficiency Design Index (EEDI) and Ship Energy Efficient Management Plan (SEEMP) rules. The EEDI requires all newbuilds to achieve efficiency greater than an industry average reference line calculated on a five-year basis. The SEEMP requires all vessels to have an on-board energy efficiency plan. The rise of imposed efficiency standards has led to increased scrutiny of vessel design and technological innovation, not only to achieve compliance but also to save operational costs.

At MEPC 74, amendments to MARPOL Annex VI were adopted in relation to the EEDI regulations for ice-strengthened ships, replacing the words 'cargo ships having ice-breaking capability' with 'category A ships as defined in the Polar Code'. These amendments entered into force on 1 October 2020. MEPC 75[41] also adopted further amendments to Annex VI, bringing forward, from 2025 to 2022, the effective date of Phase 3 so that the EEDI demands for certain newbuilds (including gas carriers, general cargo ships and liquid natural gas carriers) are greater. The effect is that vessels constructed from 2022 onwards will have to be significantly more energy efficient than was previously prescribed under Annex VI.

Notwithstanding the regulations above, ports have been active in improving energy efficiency and making efforts to reduce pollution. These include various tax and fee incentives and the rise of shoreside electrical power sources (cold ironing).

In light of historically high fuel costs, operators have been able to reduce their fuel expenditure and consequent emissions by slow steaming. By proceeding at a slower or more economical rate, there are significant fuel savings to be made.[42] BIMCO have in this regard published slow steaming clauses for both time and voyage charter parties.

Building on the EEDI, short-term measures to be included in the 2023 Revised Strategy focus on energy efficiency requirements for existing ships, speed requirements and other technical and operational measures that will be effected through further amendments to MARPOL Annex VI. MEPC 76 adopted new carbon-emission specific draft measures[43] in two categories, namely:

a technical: in addition to the further strengthening of the Annex VI EEDI (see Section II.vi 'Vessel efficiency'), an Energy Efficiency Existing Ship Index (EEXI), requiring existing ships to meet a specific energy efficiency benchmark (depending on a ship's age, type and design), will come into force on 1 November 2022. The EEXI will be based on a required reduction factor (expressed as a percentage relative to the EEDI baseline). The EEXI will be verified by a new energy efficiency certificate to be issued on or after 1 January 2023; and

b operational: focusing on strengthening the ship energy efficiency management plan, in which will require the SEEMP (see Section II.vi 'Vessel efficiency') to be updated and monitored on a continuing basis. As part of these changes, a new carbon intensity indicator (CII) will be applicable to ships of 5,000 GT and above. The CII will

41 www.imo.org/en/MediaCentre/MeetingSummaries/MEPC/Pages/MEPC-74th-session.aspx.

42 Brodie, 'Congestion', Commercial Shipping Handbook (Third Edition, 13 August 2014).

43 https://www.imo.org/en/MediaCentre/MeetingSummaries/Pages/MEPC76meetingsummary.aspx.

determine the annual reduction factor needed to ensure continuous improvement of a ship's operational carbon intensity by applying a specific rating level. Ratings will be on a scale from A to E and will be based on previous operational carbon intensity and the improvements year by year.

The IMO is conscious that these measures risk having a disproportionate effect on smaller nations, particularly island nations that rely heavily on maritime trade. The effect of the short-term measures on these states (based on factors such as geographical remoteness and connectivity to main markets) is currently being assessed. Maritime transport cost models and trade flow models are being used to ascertain how certain measures would affect a country's gross domestic product. The agreed procedure contains four steps:

a initial impact assessment;
b submission of commenting documents (if any);
c comprehensive response to commenting documents (if required); and
d comprehensive impact assessment.

The amendments also include a review clause that requires the IMO to review the implementation of the EEXI and CII by 1 January 2026 and develop and adopt any necessary further amendments following this review.

BIMCO has again released model industry clause wording to address the EEXI (in the form of the EEXI Transition Clause for Time Charter Parties 2021).[44] A CII clause and emissions trading clause are also being produced, but at the time of writing, these have not yet been published.

MEPC 76 and MEPC77 discussed further mid- to long-term measures in more detail, including measures aimed at incentivising the uptake of low-carbon or zero-carbon fuels (e.g., biofuels or electrofuels (synthetic fuels) such as hydrogen or ammonia).

VI LOOKING TO THE FUTURE

Decarbonisation is the most significant challenge that the shipping industry currently faces, as highlighted by the recent COP26 summit in Glasgow with the Clydebank Declaration's commitment to at least six green shipping corridors (available to zero-emissions vessels) by 2025 with more to follow by 2030. COP26 also saw momentum built behind the call for a revised IMO target of zero GHG emissions from shipping by 2050, to better align with the Paris Agreement's goal of capping global heating to 1.5°C. There is now a clear expectation upon the IMO to echo this enthusiasm by developing and maintain a firmer stance on regulating the operation of vessels if its own carbon emission targets are to be met. Steps must be taken quickly and decisively if this vast environmental challenge is to be solved. In addition to IMO-led MARPOL amendments, the IMO is eager for states to collaborate and share as much information and technology as possible to enable the industry to rise to and meet this challenge through voluntary measures. Such measures that are currently being discussed at the time of writing this text are as follows.

44 EEXI Transition Clause for Time Charter Parties 2021 (bimco.org) and HFW was the only external law firm on the sub-drafting committee responsible for producing this clause.

Proposals for market-based measures (MBMs) to support research and development, including The International Maritime Research and Development Board (IMRB)[45] and IMO Maritime Research Fund (IMRF).[46] These initiatives are led by shipping's key global bodies to provide US$5 billion over the course of 10 years to fund key research and development into the decarbonisation of shipping. The IMRB is to be funded by the industry itself, through a levy of US$2 per tonne on bunker fuel, although certain nations consider this to be far too low and a US$100 per tonne levy to be more appropriate to match the level of funding that will be necessary. The IMRF would similarly be funded by mandatory contributions from ships, based on their carbon emissions.[47] The IMRB and IMRF were discussed at MEPC 75, MEPC76 and MEPC77 but have not been adopted. Member States and international organisations have also been invited to submit proposals for a revised IMO GHG Strategy to be considered at MEPC78.[48]

National action plans[49] are part of an IMO-led initiative to encourage states to pursue and develop (and share information in relation to pursuing and developing) voluntary plans with a view to improving implementation of IMO instruments and developing vessel efficiency on a national level. On 20 November 2020, the MEPC adopted Resolution MEPC.327(75) to encourage Member States to develop and submit voluntary national action plans to address GHG emissions from ships. So far, six countries – Finland, India, Japan, the Marshall Islands, Norway, and the United Kingdom – have submitted national action plans.

MEPC 74 adopted Resolution MEPC.323(74) to encourage voluntary cooperation between the port and shipping sectors to contribute to reducing GHG emissions from ships. Accordingly, the MEPC agreed to establish a voluntary multi-donor trust fund (the GHG TC-Trust Fund)[50] to provide a dedicated source of financial support for technical cooperation and capacity-building activities to support the implementation of the IMO Initial Strategy on reduction of GHG emissions from ships. For example, the trust fund funded an assessment of the impact of the EEXI and CII on states, with particular focus on the least developed countries and small island developing states.[51]

Regional initiatives have also developed, with the European Union playing a leading role. The EU Commission submitted its 'Fit for 55' package on 17 July 2021, which consists of several legislative proposals aimed at ensuring EU legislation is in line with the European Union's climate goals under the European Green Deal.[52] The European Green Deal is the European Union's strategy to reach its binding target to achieve climate neutrality by 2050 while the 'Fit for 55' package aims to achieve a cut of 55 per cent in emissions by 2030. Key

45 https://www.ics-shipping.org/press-release/shipping-industry-welcomes-imo-decision-to-give-further-consideration-to-usd-5-billion-fund-to-accelerate-decarbonisation/.

46 https://www.ics-shipping.org/press-release/international-chamber-of-shipping-sets-out-plans-for-global-carbon-levy/.

47 https://www.ics-shipping.org/imrf-prototype/.

48 https://www.imo.org/en/MediaCentre/MeetingSummaries/Pages/MEPC77.aspx.

49 https://www.imo.org/en/OurWork/Environment/Pages/RELEVANT-NATIONAL-ACTION-PLANS-AND-STRATEGIES.aspx#:~:text=The%20Initial%20IMO%20Strategy%20on,guidelines%20to%20be%20developed%20by.

50 https://www.imo.org/en/OurWork/Environment/Pages/Technical-Co-operation.aspx.

51 https://www.imo.org/en/OurWork/Environment/Pages/IMO%E2%80%99s-Multi-donor-GHG-Trust-Fund.aspx.

52 https://www.consilium.europa.eu/en/policies/green-deal/eu-plan-for-a-green-transition/.

proposals for the maritime industry are to include carbon emissions from maritime transport in the EU Emissions Trading System (EU ETS) from 2023 and a new Fuel EU Maritime regulation that aims to regulate the carbon intensity of maritime fuels from 2025.[53] EU ETS will apply to 100 per cent of GHG emissions from ship voyages between EU ports and 50 per cent of emissions from voyages between an EU port and a non-EU port. The EU ETS is a 'cap and trade' carbon market, whereby participants purchase or are allocated emission allowances that can be traded with other participants. An allowance entitles the holder to emit one tonne of CO^2 and each year participants must surrender the requisite amount of allowances corresponding to their verified annual emissions for the previous calendar year. Failing to surrender the requisite amount of allowances will require the difference to be made up and will attract a financial penalty. The proposal is, at the time of writing, being reviewed by and debated in the EU Parliament and Council and is subject to amendments. Several questions have arisen as to how the EU ETS will apply in the shipping industry, including which entity will ultimately be responsible for the cost of allowances and how the EU ETS, being a regional regulation, will be reconciled with the IMO's existing carbon emission regulations and proposals to regulate GHG emissions from shipping at the global level.

Recognising a global desire for a carbon-neutral supply chain, many shipowners and industry stakeholders are taking their own steps towards decarbonising shipping. For example, Maersk, the Danish shipowner, has committed to all newbuild vessels being installed with dual-fuel technology, enabling either carbon-neutral operations or operations on standard very low sulphur fuel oil.[54] Maersk also recently launched the Maersk Mc-Kinney Møller Center for Zero Carbon Shipping to lead research and development into technological solutions for decarbonisation.[55] In June 2019, the Poseidon Principles for Financial Institutions were launched by a group of global shipping banks with the aim of providing a framework for ensuring that banks' ship finance portfolios are aligned with the IMO's goal of reducing annual GHG emissions by at least 50 per cent by 2050 (compared to 2008 levels).[56] The initiative currently has 27 signatories. In December 2021, the Poseidon Principles for Marine Insurance were launched, which extends the principles to marine insurance portfolios.[57] Whether the necessary changes arise from the private sector, from international regulations, or (most likely) from a combination of both, will become clear in due course. Needless to say, extensive cooperation between, and a willingness by, all of international shipping's many stakeholders will be required to solve this very immediate global problem.

53 https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/revision-phase-4-2021-2030_en.

54 https://www.maersk.com/news/articles/2021/02/17/maersk-first-carbon-neutral-liner-vessel-by-2023.

55 https://www.zerocarbonshipping.com/about.

56 https://www.zerocarbonshipping.com/about.

57 https://www.poseidonprinciples.org/insurance/.

Appendix 1

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Thomas Dickson specialises in international commercial dispute resolution, with a focus on shipping disputes. He advises on both wet and dry shipping matters, including salvage cases, wreck removal, groundings, collisions and cargo damage, and on various charter party-based disputes arising from these incidents.

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