
REGULATION OF RISK

Transport, Trade and Environment in Perspective

Abhinayan Basu Bal, Trisha Rajput,
Gabriela Argüello, David Langlet

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Edited by

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This Liber Amicorum is dedicated to Professor Lars-Göran Malmberg on the occasion of his retirement from the University of Gothenburg. The book highlights contemporary issues in the regulation of risk and their place in the theory and practice of transport, trade, and the environment. The three areas, as identified in the book, are the leitmotifs of Professor Malmberg's pursuits at the University of Gothenburg, where he has been instrumental in building a cross-disciplinary environment that comprises both senior and junior academics who collaborate amongst themselves and with external academic, industry and institutional partners to pursue their respective research and teaching with particular emphasis on society.



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Introduction to Regulation of Risk

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1 Understanding Risk

Risk is a complex topic intersected by law, policy, and politics, making it an interesting and important subject of study. We currently live in a time that is fraught with risks such as climate change, political upheavals, security, and armed conflict. Risk is also the subject of considerable discussion and action, which further adds to its relevance as a topic of research. Humankind has experienced discrete risks, including earthquakes, epidemics, famines and floods, since time immemorial. Discrete risks¹ are usually understood in objective terms as features of reality that are not dependent on “subjective and social factors”² and are externally imposed on humans.³ Within this approach, risk is not only related to harm but is also conceived as a calculation mechanism, i.e., to understand the extent of undesirable events.⁴ Risk is then defined in probabilistic terms, as the “probability of a particular event (or hazard) occurring and the consequent severity of the impact of that event.”⁵ Traces of the probabilistic definition of risk is found in legal scholarship as well, where risk may be conceptualised as “the possibility of harm or loss associated with an activity, or the likelihood of an incident happening that may result in danger to life, property or the environment, or may lead to commercial disputes and litigation.”⁶ The translation of risk into probabilities makes it possible to assess

1 “Much research tends to focus on discrete, highly identifiable threats (*eg*, earthquakes) isolated technical hazards (*eg*, hazardous spills) and accidents of practice.” Robert Baldwin, ‘Risk: The Legal Contribution’ in Robert Baldwin (ed), *Law and Uncertainty: Risk and Legal Processes* (Kluwer Law International 1997) 3.

2 Jens Zinn, ‘Introduction: The Contribution of Sociology to the Discourse on Risk and Uncertainty’ in Jens Zinn (ed), *Social Theories of Risk and Uncertainty: An introduction* (Blackwell Publishing Ltd 2008) 5. John Oberdiek, ‘Risk’ in Dennis Petterson (ed), *A Companion to Philosophy of Law and Legal Theory* (2 edn, John Wiley & Sons 2010) 579.

3 Anthony Giddens, ‘Risk and Responsibility’ (1999) 62 *The Modern Law Review* 4.

4 Zinn (n 2) 4.

5 Robert Baldwin, Martin Cave and Martin Lodge, *Understanding Regulation: Theory, Strategy, and Practice* (2 edn, OUP 2012) 83.

6 Aleka Mandaraka-Sheppard, *Modern Maritime Law – Volume 2: Managing Risks and Liabilities* (3 edn, Informa Law 2013) 5. In fact, according to Oberdiek, in “legal contexts risk is typically understood probabilistically” Oberdiek, ‘Risk’ (n 2) 579.

its potential harm and manage it, for example, through insurance and quality standards.

While risk has traditionally been externally imposed and, in broad terms, quite predictable, modernity radically changed “the way of dealing with hazards and insecurities.”⁷ Sociologists characterise the change introduced by scientific and technological progress as the dawn of the “risk society.”⁸ Unknown to pre-industrial societies, modernity introduced a risk that looms over humans as an omnipresent threat and permeates social life. To name a few, humans are exposed to a myriad of risks due to our dependence on fossil fuels, production of dangerous chemicals, pesticide use, intensified resource exploitation, carriage of dangerous goods; trade of weapons; testing of mass destruction weapons, development of autonomous and intelligent systems, biotechnology, high-speed transport systems, and the advancement of technologies for making large-scale interventions in the climate system. In modern societies, risk is no longer externally imposed but is “morally cognisable.”⁹ As Oberdiek points out, humans, rather than the external world, are imposing risk because we are, usually, the creators of risk, and we own the responsibility to take active action to prevent to the extent possible the negative consequences of such scientific and technological development.¹⁰ Giddens also makes a similar point by referring to the risk society in terms of “manufactured risks”¹¹ resulting from human, technological and scientific endeavours. In the words of Beck, the semantics of risk have changed in modern societies due to the “present thematisation of future threats that are often a product of the successes of civilisation.”¹² The risk society is not fundamentally more dangerous per se, but societies are more aware of possible future scenarios and, therefore, more prone to action.¹³ In these scenarios, notions of prevention and safety are prevalent.

7 Ulrich Beck, *Risk Society: Towards a New Modernity* (Sage Publications 1992). Barbara Adam, Ulrich Beck and Loon Joostvan (eds), *The Risk Society and Beyond: Critical Issues for Social Theory* (Sage Publications 2000), Eugene Rosa, Ortwin Renn and Aron McCright, *The Risk Society Revisited: Social Theory and Governance* (Temple University Press 2014).

8 Beck, *Risk Society: Towards a New Modernity* (n 7).

9 John Oberdiek, *Imposing Risk: A Normative Framework* (Oxford Legal Philosophy, OUP 2017) 1.

10 Ibid 1. See also Beck, that refers to ‘manufactured uncertainties’ Ulrich Beck, ‘World Risk Society and Manufactured Uncertainties’ (2009) 1 *Iris* 291.

11 Giddens (n 3) 4.

12 Ulrich Beck, *World at Risk* (Polity Press 2009) 4.

13 Ulrich Beck, ‘Foreword: Risk Society as Political Category’ in Eugene Rosa, Ortwin Renn and Aron McCright (eds), *The Risk Society Revisited: Social Theory and Governance* (Temple University Press 2014) XVIII.

When risk cannot be anticipated, the legal system may not be able to prevent and compensate for harm. Eventually, the legal system may fail to deliver legal certainty. For this reason, novel regulatory alternatives have been proposed, including, for example, adaptive management and inclusive governance. In the fields of environmental law, financial markets, administrative law, social welfare, and medical law, adaptive management has been suggested as an alternative to deal with modern risks.¹⁴ Such management refers to “learning by doing”¹⁵ and acknowledges that social and natural systems constantly change. Taking into consideration this state of constant change, the legal system is called to provide the tools to periodically evaluate legislative objectives and establish flexible mechanisms for adjustment in light of changing circumstances, including, for example, new scientific knowledge. Inclusive governance requires a broader set of required actions both from governmental and non-governmental actors. Arguably, the assessment and management of risk require the participation of multiple stakeholders, including scientists, policymakers, legislators, industry representatives, and civil society organisations.¹⁶ The involvement of non-governmental stakeholders has been linked to behavioural change and added legitimacy to regulatory processes because:

including ... many actors in defining the problem space and exploring the solution space has been proven to be a reliable and valid method to cope with complex and contested policy options ... Inclusive governance is based on the assumption that affected and interested parties have something to contribute to the governance process and that mutual communication and exchange of ideas, assessments and evaluations improve the final decisions.¹⁷

14 Robin Kundis Craig and JB Ruhl, ‘Designing Administrative Law for Adaptive Management’ (January 2014) 67 *Vanderbilt Law Review* 1. Barbara Cosens and others, ‘The Role of Law in Adaptive Governance’ (2017) 22 *Ecology and Society* 1.

15 Jan McDonald, ‘Risk, Resilience and Environmental Regulation: Using Law to Build Resilience to Climate Change Impacts’ in Bridget Hutter (ed), *Risk, Resilience, Inequality and Environmental Law* (Edward Elgar 2017) 43. However, as Renn argues, when one reaches a tipping point, “it is too late to learn” Ortwin Renn, ‘The Systemic Risk Perspective: Social Perception of Uncertainty and Tipping Points’ in Peter Wilderer and others (eds), *Strategies for Sustainability of the Earth System* (Springer 2022) 20.

16 Ortwin Renn and others, ‘Systemic Risks from Different Perspectives’ (2020) *Risk Analysis* 1. Renn, ‘The Systemic Risk Perspective: Social Perception of Uncertainty and Tipping Points’ (n 15). Organisation For Economic Co-operation and Development (OECD), ‘What does “inclusive governance” mean?: Clarifying Theory and Practice’ (2020) 27 *OECD Development Policy Papers*.

17 Renn and others (n 16) 14.

The risk society also has implications for the justification of regulatory intervention. Decision-makers are more prone to use the language of risk to frame State interventions as legitimate. This implies that areas regulated in the “name of risk have been expanding significantly, most particularly through the 1990s.”¹⁸ Additionally, since modern risks are usually transboundary, Beck points out the steady transition to a “cosmopolitan imperative” where international and regional cooperation is paramount for the regulation risk.¹⁹ The increased awareness of transboundary risk may explain international law’s “expansion and differentiation.”²⁰ Expansion relates to the regulation of areas previously unnoticed by the States, while differentiation refers to the continuous sophistication and enactment of detailed rules.²¹ The subjects of this book, i.e., trade, transport, and the environment, are good examples of this cosmopolitan imperative.

In risk societies, risk acceptability and risk tolerance are highly controversial issues.²² As previously explained, the risk society calls for the involvement of multiple stakeholders. However, reaching a consensus is not an easy task in a regulatory framework where multiple actors influence decision-making processes. Even if not directly involved in decision making, societal actors are increasingly interested in receiving information on risks they are exposed to. In legal terms, this interest has been translated, for example, into disclosure obligations in product safety law and procedures of informed consent within the medical field.²³ Science has also been an important source to justify the existence of risk and regulatory action. Still, expert knowledge is met with increased scepticism.²⁴ Anti-vaxxers and climate change deniers are good examples of the contested perceived value of scientific knowledge. It brings to

18 Julia Black, ‘The Role of Risk in Regulatory Processes’ in Robert Baldwin, Martin Cave and Martin Lodge (eds), *The Oxford Handbook of Regulation* (OUP 2010) 304.

19 Beck, *World at Risk* (n 12) ch. 3.

20 Lars Blichner and Anders Molander, ‘Mapping Juridification’ (2008) 14 *European Law Journal* 36.

21 *Ibid* 42–43.

22 Nicholas Rescher, *Risk Theory: Rational Decision in the Face of Chance, Uncertainty, and Risk* (Springer 2022) 61. Note also that “[r]isk acceptability is more dependent upon the perception of distributive justice than upon the perception of risk magnitude.” Ortwin Renn, *Risk Governance: Coping with Uncertainty in a Complex World* (Earthscan 2008). Frédéric Boudier, David Slavin and Ragnar E Löfstedt, *The Tolerability of Risk: A New Framework for Risk Management* (Earthscan 2007). DND Hartford, ‘Legal Framework Considerations in the Development of Risk Acceptance Criteria’ (2009) 31 *Structural Safety* 118.

23 Rescher (n 22) 61.

24 Beck, *World at Risk* (n 12) 3.

the fore questions about the privileged position of science to address complex matters and prevent risks.²⁵ These examples also show that informing the public about broad scientific consensus is not enough to shape the risk perception in societal actors.²⁶

Modern risk intensifies the debates about the role and function of the welfare State. Due to the complexity and ubiquitous nature of contemporary risk, it appears that States are failing to prevent, assess and manage the risks of, for example, climate change, biodiversity loss, or data security. It is also debatable whether security and prevention justify giving more extensive powers to the regulatory State. The COVID-19 pandemic evinced profound disagreements about the legitimacy of State interventions across the globe.²⁷ Overall, if regulatory intervention is deemed insufficient or overly intrusive, distrust in governments and political institutions may ensue.²⁸ Used as a justification for regulation, risk may be categorised as paternalistic and perceived as a tool to curtail individual freedoms.²⁹

The transition into a risk society has also implications for risk as an object of regulation and risk as a justification for regulatory intervention. As an object of regulation, modern risks (e.g., climate change, pollution, biodiversity loss, cyberattacks) are not easily framed as probability questions. They are usually delocalised and are non-compensable through monetary valuations and insurance schemes.³⁰ In fact, these risks generally have transboundary effects, are

25 Joseph E Uscinski, Karen Douglas and Stephan Lewandowsky, 'Climate Change Conspiracy Theories' in Hans von Storch (ed), *Oxford Research Encyclopedia of Climate Science* (OUP 2017). Geoffrey P Dobson, 'Wired to Doubt: Why People Fear Vaccines and Climate Change and Mistrust Science' (2022) 8 *Frontiers in Medicine* 1.

26 Dan M Kahan and others, 'The Polarizing Impact of Science Literacy and Numeracy on Perceived Climate Change Risks' (2012) 2 *Nature Climate Change* 732 at 734.

27 Mike Hulme and others, 'Social Scientific Knowledge in Times of Crisis: What Climate Change Can Learn from Coronavirus (and Vice Versa)' (2020) 11 *Wiley Interdisciplinary Reviews* e656.

28 In relation to COVID-19, "[e]vidence so far suggests that even countries that have responded well to the crisis have seen trust levels changing over time during the crisis, including seeing an initial trust "honeymoon" that waned as the pandemic set in" Siân Herbert and Heather Marquette, *COVID-19, Governance, and Conflict: Emerging Impacts and Future Evidence Needs* (K4D Emerging Issues Report 2021). See also, Baldwin, Cave and Lodge, *Understanding Regulation: Theory, Strategy, and Practice* (n 5) 84. Renn, 'The Systemic Risk Perspective: Social Perception of Uncertainty and Tipping Points' (n 15) 19. Rescher (n 22) 62.

30 François Ewald, 'Two Infinities of Risk' in Brian Massumi (ed), *The Politics of Everyday Fear* (University of Minnesota Press 1993) 222. Baldwin, Cave and Lodge, *Understanding Regulation: Theory, Strategy, and Practice* (n 5) 83. Ruth Levitas, 'Discourses of Risk and Utopia' in Barbara Adam, Ulrich Beck and Loon Joostvan (eds), *The Risk Society and Beyond: Critical Issues for Social Theory* (Sage Publication 2000) 200.

cross-sectoral (i.e., factors taking place in several fields are intertwined, such as trade, environment, transport, and health) and causal relationships are stochastic.³¹ Therefore, traditional legal concepts, such as causality, foreseeability, and negligence, lose their significance in the risk society.³²

2 Risk, Catastrophe and Uncertainty

The dawn of the risk society is not synonymous with a fatalistic or catastrophic outlook of the future.³³ Therefore, it is essential to distinguish between modern risk, catastrophe, and uncertainty. Risk is always abstract. Once it materialises, the consequences could be considered a catastrophe,³⁴ which Posner defines as an event with “a very low probability of materialising but that if it does materialise will produce a harm so great and sudden as to seem discontinuous with the flow of events that preceded it.”³⁵ Catastrophic risks are also referred to as “low-occurrence, high-impact risks” and evidence shows that these risks receive more attention in risk governance.³⁶ Complex risks require careful consideration of how resources are allocated while being aware that a particular policy may reduce risk while at the same time creating new hazards and other novel risks.³⁷ For example, in geoengineering research, international law is a co-creator of risk and not a passive recipient of scientific and policy developments. Catastrophic risks include both externally imposed risks and morally cognisable risks, including volcanic explosions, tsunamis, nuclear waste leakage, chemical pollution, massive biodiversity loss, bioterrorism, poor geoengineering deployment, and the most recent example, the COVID-19 pandemic.

31 Renn and others (n 16) 3. Klaus Lucas, Ortwin Renn and Carlo Jaeger, ‘Systemic Risks: Theory and Mathematical Modeling’ (2018) 1 *Advanced Theory and Simulations* 1800051. Renn, ‘The Systemic Risk Perspective: Social Perception of Uncertainty and Tipping Points’ (n 15) 22–23.

32 Rescher (n 22) 61.

33 Ibid.

34 Beck, *World at Risk* (n 12) 9. Some scholars have also theorised about the existence of ‘global catastrophic risks’ as those that could inflict severe damage to human societies. See Nick Bostrom and Milan Ćirković, ‘Introduction’ in Nick Bostrom and Milan Ćirković (eds), *Global catastrophic risks* (OUP 2008).

35 Richard Posner, *Catastrophe: Risk and Response* (OUP 2004) 6.

36 Jeroen van der Heijden, *Risk Governance and Risk-Based Regulation: A Review of the International Academic Literature* (State of the Art in Regulatory Governance Research Paper – 2019.01. Wellington: Victoria University of Wellington and Government Regulatory Practice Initiative. 2019) 12.

37 Bostrom and Ćirković (n 34) 2.

War and the ruling of tyrants have also been categorised as catastrophic risks.³⁸ The Russian invasion of Ukraine that started on 24 February 2022 is a painful reminder of the devastating consequences of war, ranging from millions of internally displaced persons to numerous others who have already fled the country to find refuge in neighbouring States. Ukraine's economy and health system have also been severely affected and since Russia is a major exporter of oil and natural gas, the global economy has not been immune to the war.³⁹ Once a catastrophic risk materialises, mitigation is not only costly, but the consequences may not always be contained, and the damage may be irreversible. For instance, unilateral sanctions that are used to combat the threat to peace or acts of aggression have other far-reaching consequences for trade, finance, transport, and society at large.

Finally, when the future becomes unmeasurable, we leave the realm of risk and enter the field of uncertainty. While risk, to some extent, is predicted and measured, uncertainty relates to unknown future scenarios that cannot be assessed or predicted.⁴⁰ The management of uncertainty is not based on statistical calculations but rather on expectations, "professional judgment, ordinary foresight, rule of thumb,"⁴¹ or "multivalent degrees of belief."⁴² Notably, According to the 9/11 Commission, the terrorist attacks that occurred on 9/11 in New York were not prevented due to "failures of imagination."⁴³ Arguably, policy and decision-makers alike adopt rules and make decisions while facing uncertainty and need to be able to contemplate multiple future scenarios.⁴⁴ The contributors to this book reflect on future and diverse regulatory

38 Ibid.

39 David A Leon and others, 'The Russian Invasion of Ukraine and Its Public Health Consequences' (2022) 15 *The Lancet Regional Health Europe* 1. Patricia Sánchez Juanino and Stephen Millard, *What is the Economic Impact of the Russia-Ukraine Conflict?* (National Institute of Economic and Social Research 2022). 'How many Ukrainians have fled their homes and where have they gone?' *BBC News* (<<https://www.bbc.com/news/world-60555472>>).

40 Rescher (n 22) ch. 6.

41 Pat O'Malley, 'Governmentality and Risk' in Jens Zinn (ed), *Social Theories of Risk and Uncertainty: An Introduction* (Blackwell Publishing 2008) 72.

42 Kevin Clermont, 'The Logic of Uncertainty in Law and Life' (2020) 19 *Law, Probability and Risk* 181 at 206.

43 Bridget Hutter, 'A Risk Regulation Perspective on Regulatory Excellence' in Cary Coglianese (ed), *Achieving Regulatory Excellence* (Brookings Institution Press 2017) 102.

44 Mónika Ambrus, Rosemary Rayfuse and Wouter Werner, 'Risk and International Law' in Mónika Ambrus, Rosemary Rayfuse and Wouter Werner (eds), *Risk and the Regulation of Uncertainty in International Law* (OUP 2017).

frameworks while dealing with numerous uncertain futures in trade, transport, and the environment.

3 Reflecting on the Regulation of Risk: A Diverse and Developing Agenda

While legal systems traditionally contend to provide legal certainty, i.e., stability and predictability *vis-à-vis* rights and obligations,⁴⁵ risk may be seen as a potential threat to legal certainty due to its relation to danger, harm, or peril.⁴⁶ In this case, risk is connected to harm⁴⁷ which becomes the object of legal regulation.⁴⁸ The role of the law is then to prevent, mitigate and eventually compensate for the negative consequences of risk. However, risk itself cannot be repaired because of its abstract nature,⁴⁹ nor can it be absolutely prevented without jeopardising human progress. The acceptance or tolerance of specific risks in the name of human progress reveals its multidimensional nature. It entails that risk-taking is a worthwhile endeavour due to perceived or expected benefits.⁵⁰ Overall, risk may be assessed, managed, and minimised using legal instruments that afford legal, economic, and technical measures. As Black explains, it is nothing novel for the legal system to regulate risk to protect

45 Humberto Ávila, *Certainty in Law* (Springer 2016). Ken Kress, 'Coherence' in Dennis Petterson (ed), *A Companion to Philosophy of Law and Legal Theory* (2 edn, John Wiley & Sons 2010).

46 Jenny Steele, *Risks and Legal Theory* (Hart Publishing 2004) 3. Oberdiek, 'Risk' (n 2) 579. Rescher (n 22) 1. van der Heijden, *Risk Governance and Risk-Based Regulation: A Review of the International Academic Literature* (n 36).

47 The meaning of the term 'regulation' is often made controversial. For the purpose of this book, the term is to be understood as 'the intentional use of authority to affect behaviour of a different party according to set standards, involving instruments of information-gathering and behaviour modification.' See Robert Baldwin, Martin Cave and Martin Lodge, 'Introduction: Regulation – the Field and the Developing Agenda' in Robert Baldwin, Martin Cave and Martin Lodge (eds), *The Oxford Handbook of Regulation* (OUP 2010) 12.

48 Black (n 18).

49 Note that due to the abstract nature of risk, Ewald argues that risk "knows nothing of the binary divisions of classical juridical thought – permitted and prohibited, legal and illegal. All it knows is the endless chain of discrete quantities." Ewald (n 30) 221.

50 On the dimensionality of risk see Baruch Fischhoff, Stephen Watson and Chris Hope, 'Defining Risk' (1984) 17 *Policy Sciences* 123 at 125.

human health, guarantee transport safety, secure well-functioning markets, or protect the environment.⁵¹

Risk, however, is not only the object of regulation but also used as a basis for regulation. In other words, it can also be perceived as a fundamental tool for decision making that *justifies* a regulatory action.⁵² Regulatory intervention in such a case is then justified in the name of risk prevention, for example, to guarantee safety, health, or a clean environment.⁵³ Defining and assessing the boundaries of legitimate regulatory intervention have attracted much scholarly interest.⁵⁴ It has been contended that certain risks should be managed by the individual and not by the State. Some typical examples include dietary choices, or personal financial stability. In principle, one could argue that an individual should have the freedom to decide what to eat. In contrast, others could contend that regulatory intervention is needed considering the exponential rise of diseases such as diabetes.⁵⁵ States may nudge individuals into healthier dietary choices by imposing, for instance, taxes on sugary products. Individuals may also be expected to manage their own financial independence, for example, through savings and investments, while regulatory intervention may be justified to prevent financial risks, for example, through pensions.⁵⁶ Much has been debated about the type of risks that should be collectively or individually managed in connection to the welfare State's role, individual freedom and paternalism.⁵⁷ Giddens, for example, characterises the welfare State

51 Black (n 18) 303–306. Baldwin et al. explain that “regulation can be seen as being inherently about the control of risks” Baldwin, Cave and Lodge, *Understanding Regulation: Theory, Strategy, and Practice* (n 5) 83.

52 Black (n 18). Steele (n 46) 18–33.

53 Black (n 18) 306.

54 See for example Giddens (n 3). Rachel Friedman, *Probable Justice: Risk, Insurance, and the Welfare State* (The University of Chicago Press 2020). Nikolas Rose, *Powers of Freedom: Reframing Political Thought* (CUP 1999).

55 “a large proportion of illnesses are related both to lifestyle practises ... It doesn't make any sense to suppose that liability in these circumstances can remain wholly with the collectivity, whether this be government or an insurance company. Giddens (n 3) 9.

56 Black (n 18) 306.

57 Bauman, Beck and Giddens initially theorised about the individualisation of risk in the context of the risk society. Zygmunt Bauman, *Liquid Modernity* (Polity Press 2000). Beck, *Risk Society: Towards a New Modernity* (n 7). Giddens (n 3). In general, individualisation of risk means taking individual responsibility for our daily choices. For example, if the scientific community largely agrees that smoking is related to cancer, individuals who decide to continue smoking face a risk of getting sick in the future. The question that remains controversial is whether such risks should be collectively addressed. See also, Matt Dawson, ‘Reviewing the Critique of Individualization: The Disembedded and Embedded Theses’ (2012) 55 *Acta Sociologica* 305.

as a collective risk manager. However, the boundaries between individual and collective risks are far from settled.

Connected with the discussion of risk is the management and regulation of risk to anticipate, prevent, control and mitigate future adverse consequences, potential harm, and loss. Different techniques and regulatory approaches may be employed to counter or manage risk. The following section provides a brief overview of selected regulatory alternatives:

3.1 *Risk-Based Regulation*

As risk became pervasive and morally cognisable in human societies, regulatory responses also proliferated, leading to a perceived regulatory crisis in many industrialised States during the 1980s and 1990s.⁵⁸ Over-regulation and high costs characterised this crisis.⁵⁹ In this context, risk-based regulation emerged as a benchmark of good and cost-effective regulatory practices⁶⁰ that requires establishing priorities for regulatory action.⁶¹ It includes a process for risk identification, scoring (e.g., from low, medium, high, or catastrophic risk),⁶² assessment, monitoring, and evaluation. In these processes, economic (e.g., ecosystem services valuations, cost-benefit analysis) and scientific techniques (e.g., risk assessment) justify a chosen regulatory decision.⁶³ An illustration of a process could be found in international environmental law, where environmental impact assessments (EIAs) have become a central tool for the

58 Bridget Hutter, *The Attraction of Risk-based Regulation: Accounting for the Emergence of Risks Ideas in Regulation* (2005) 1. “For many social scientists, risk regulation is a very modern phenomenon: a real expression of what some have termed the “risk society.” This is a society in which there is an orientation to the future and a belief that we can control and manage risk” Hutter, ‘A Risk Regulation Perspective on Regulatory Excellence’ (n 43) 102.

59 Ibid.

60 Elizabeth Fisher, ‘Risk Regulatory Concepts and the Law,’ *Risk and Regulatory Policy: Improving the Governance of Risk* (OECD Reviews of Regulatory Reform 2010). Robert Baldwin and Julia Black, ‘Driving Priorities in Risk-based Regulation: What’s the Problem?’ (2016) 43 *Journal of Law and Society* 565. Hutter, ‘A Risk Regulation Perspective on Regulatory Excellence’ (n 43). Olivier Borraz and others, ‘Why Regulators Assess Risk Differently: Regulatory Style, Business Organization, and the Varied Practice of Risk-based Food Safety Inspections Across the EU’ (2022) 16 *Regulation & Governance* 274 at 275.

61 Baldwin, Cave and Lodge, *Understanding Regulation: Theory, Strategy, and Practice* (n 5) 281.

62 “There is, however, considerable variation across regimes and jurisdictions in the approaches that are taken to risk scoring. Some systems are highly quantitative and some are heavily qualitative.” Ibid 282.

63 Hutter, ‘A Risk Regulation Perspective on Regulatory Excellence’ (n 43) 104.

identification of national and transboundary environmental risks. EIAs provide relevant information to decision-makers and promote public scrutiny.⁶⁴

Risk-based regulation is increasingly popular across multiple jurisdictions and has been widely adopted in areas such as environment, food safety, transport, consumer law, and finance.⁶⁵ However, it is also subject to several criticisms and challenges. First, it is not entirely clear how regulators prioritise, score, and assess risks. Although risk-based regulation is considered to promote efficient and consistent regulation, some empirical evidence points to the contrary. For example, in the field of food safety, Borraz et al. found substantial differences among four European Union (EU) member states applying risk-based inspections. According to these authors, risk-based approaches may have negligible impacts on “enforcement practices without more reflection on the assumptions, conceits, and institutional contexts that shape how risk is understood and used by regulators from country to country.”⁶⁶ Baldwin and Black explain the challenges regulators face in defining risk and prioritising those that need regulatory attention. They found three main factors influencing the definition and scoring of risk, i.e., theory and ideology, available operational resources and “political, communicative or reputational factors, stemming from their need to maintain their reputation and legitimacy.”⁶⁷ Rothstein et al. also point out differences in implementing risk-based approaches in several sectors, including “finance, health and safety and environmental regulation.”⁶⁸ However, these authors do find evidence of improved environmental quality achieved thanks to risk-based regulation.⁶⁹

Second, risk-based regulation depends heavily on reliable information, which is not always available.⁷⁰ Gathering data may be costly and time-consuming, while the data may not necessarily be reliable in uncertain scenarios. Finally, the most substantial criticism against risk-based regulation is the perceived

64 Alan Boyle and Catherine Redgwell, *Birnie, Boyle, & Redgwell's International Law and the Environment* (4 edn, OUP 2021) 184.

65 Julia Black and Robert Baldwin, ‘When Risk-based Regulation Aims Low: Approaches and Challenges’ (2012) 6 *Regulation & Governance* 2. Emilia Mišćenić and Aurélien Raccach (eds), *Legal Risks in EU Law: Interdisciplinary Studies on Legal Risk Management and Better Regulation in Europe* (Springer 2016). SO Johnsen and others, ‘Risk-based Regulation and Certification of Autonomous Transport Systems’ (Safety and Reliability – Safe Societies in a Changing World 2018).

66 Borraz and others (n 60) 289.

67 Baldwin and Black (n 60) 566.

68 Henry Rothstein and others, ‘The Risks of Risk-based Regulation: Insights from the Environmental Policy Domain’ (2006). 31 *Environment International* 1056 at 1063.

69 *Ibid.*

70 Hutter, ‘A Risk Regulation Perspective on Regulatory Excellence’ (n 43) 104.

hyper-legalization of internal procedures. It appears that organisations are more concerned about preventing reputational risks and may be distracted from the actual management of societal risks.⁷¹ In the following sub-sections, we briefly overview two holistic frameworks developed to overcome some of the perceived limitations of risk-based regulation.

3.2 *International Risk Governance Council*

The International Risk Governance Council (IRGC) was founded in the early 2000s in Geneva to support stakeholders, such as governments, civil society organisations and industries, in their efforts to *govern* risk.⁷² Professor Ortwin Renn is the prominent leader of this project with a holistic perspective to respond to the risk society. While risk-based regulation intends to identify the most “important” risks and “fix” them, traditional risk assessment, management and communication may not be sufficient. Especially in a regulatory environment based on hierarchical governmental structures and where the focus is exclusively on public or private regulators.⁷³ Renn et al. focus instead on governance that we understand as legal and policy frameworks encompassing a wide range of stakeholders (both public, private and other civil society organisations), norms and processes involved in decision making at national, regional and international levels. Governance implies a dialogue between these stakeholders and, therefore, means a “nonhierarchically organised structure encompassing state and non-state actors bringing about collectively binding policies without superior authority.”⁷⁴

IRGC focuses mainly on what the Organisation for Economic Co-operation and Development (OECD) initially labelled as systemic risks,⁷⁵ distinctive to the risk society. Systemic risks are cross-sectoral and cannot be understood, framed or managed from a silo perspective. Climate change, biodiversity loss, artificial intelligence and autonomous transport vehicles, to name a few, are examples of systemic risks whose causes and consequences are routed in

71 Michael Power, ‘The Nature of Risk: The Risk Management of Everything’ (2004) 12 Balance Sheet 19 at 25.

72 Ortwin Renn, *White Paper on Risk Governance: Towards and Integrative Approach* (The International Risk Governance Council 2005). Ortwin Renn, Andreas Klinke and Marjolein van Asselt, ‘Coping with Complexity, Uncertainty and Ambiguity in Risk Governance: A Synthesis’ (2011) 40 *Ambio* 231. Renn and others (n 16). Lucas, Renn and Jaeger (n 31).

73 Renn, Klinke and van Asselt (n 72) 231–232.

74 Ibid.

75 Organisation for Economic Co-operation and Development (OECD), *Emerging Systemic Risks in the 21st Century: An Agenda for Action* (OECD Publications 2003).

large-scale technological, societal and political processes. These risks are characterised by,

high complexity, transboundary effects, stochastic relationships, and nonlinear cause–effect patterns with tipping points and often associated with less public attention than they deserve. Systemic risks range from natural hazards, environmental threats, and financial crisis to cybersecurity. Due to their special features, systemic risks are overextending established risk management and creating new, unsolved challenges for policy making in risk governance. Their negative effects are often pervasive, impacting fields beyond the obvious primary areas of harm.⁷⁶

The IRGC then offers a generic four-stage process, i.e., pre-assessment, appraisal, characterisation and evaluation, and management, coupled with cross-cutting aspects common to all stages. The framework can then be tailored to the specific risk considering the societal, political and economic context.⁷⁷ In the pre-assessment stage, the relevant stakeholders are identified, and the problem, including its scope, is framed together with early warning signals of known risks.⁷⁸ The appraisal stage relates to two related matters, i.e., risk assessment (hazard identification, risk characterisation and exposure and vulnerability), and a concern assessment to grasp the social perception of risks, the concerns and potential impacts.⁷⁹ In the characterisation and evaluation stage, both risk evaluation (e.g., risk tolerability and acceptability) and knowledge characterisation are conducted (e.g., risk profile, risk scoring and risk reduction alternatives).⁸⁰ In the final management stage, decision-making and implementation take place. Apart from monitoring and control, the implementation phase requires giving feedback to the stakeholders to revise or improve future management decisions.⁸¹ The proposed IRGC stages include cross-cutting aspects that refer to open and transparent communication, stakeholder engagement and accounting for the context where risk is being governed.⁸² Concerning

76 Renn, 'The Systemic Risk Perspective: Social Perception of Uncertainty and Tipping Points' (n 15) 15.

77 International Risk Governance Council (IRGC), *Introduction to the IRGC Risk Governance Framework, revised version* (EPFL International Risk Governance Center 2017).

78 Ibid 11–12.

79 Ibid 13–16.

80 Ibid 17–21.

81 Ibid 23–26.

82 Ibid 27–32.

systemic risk, the IRGC proposed seven steps to meet this governance challenge. We summarise these steps in Figure 1.1.

Arguably, the IRGC can be seen as a practical tool that embodies adaptive governance, which is by no means extraneous to the legal system.⁸³ The latter emphasises a learning by doing approach and intends to evaluate over time which management policies and instruments are more or less successful in achieving a determined goal.

3.3 *Good Regulatory Intervention Design*

Professors Julia Black and Robert Baldwin developed the Good Regulatory Intervention Design (GRID) to give regulatory visibility to low-impact risks. Black and Baldwin noticed that risk-based regulation primarily focuses on low-occurrence, high-impact risks, which are then prioritised in the regulatory agenda to prevent the materialisation of severe harmful consequences. However, high-occurrence low-impact risks may go unnoticed, yet if their impacts are cumulative and the harm considerable, these risks then transform into high-impact risks.⁸⁴ A case in point is littering, which has been pointed out as an important marine and land pollution source.⁸⁵ There is also the possibility that risks once considered tolerable become unacceptable by local communities.⁸⁶ This case could occur, for example, after the establishment of waste treatment plants. Even if the regulator finds these plants tolerable, increasing odours may trigger social resistance.⁸⁷ The GRID framework considers two main factors, the nature of low-impact risk (for example, whether those risks are stable or dynamic, systemic or non-systemic, or whether they tend to accumulate) and the nature of the regulatee (i.e. the willingness and capacity

83 This framework has been applied for example to Arctic shipping regulation. Floris Goerlandt and Ronald Pelot, 'An Exploratory Application of the International Risk Governance Council's Risk Governance Framework to Shipping Risks in the Canadian Arctic' in Aldo Chircop and others (eds), *Governance of Arctic Shipping: Rethinking Risk, Human Impacts and Regulation* (Springer 2020).

84 Black and Baldwin, 'When Risk-based Regulation Aims Low: Approaches and Challenges' (n 65) 6–8.

85 Aleke Stöfen-O'Brien, *The International and European Legal Regime Regulating Marine Litter in the EU* (Nomos 2015).

86 "Secondly, a regulator's giving a risk a low priority may be contested by consumers, local residents, politicians, NGOs, and industry. The result may be that the regulator loses public and political support. An example in the environmental sector is noise and odours." Black and Baldwin, 'When Risk-based Regulation Aims Low: Approaches and Challenges' (n 65) 7.

87 *Ibid* 9.



FIGURE I.1 IRGC and the governance of systemic risks. The graphic describes seven steps designed to govern systemic risks. Note: The authors made this graphic, but the content of the graphic comes entirely from International Risk Governance Council (IRGC), *Guidelines for the Governance of Systemic Risks* (IRGC 2018).

to comply).⁸⁸ This timely framework challenges the perceived assumption that low-impact risk should not be prioritised and explains why such risks deserve much more attention.

4 Consideration of Risk in This Collection

The contributors of this book provide a comprehensive insight into risk in the areas of transport, trade and the environment. Risk management can take the form of insurance; dispute settlement; sanctions; export control; interaction between industry standards and prescriptive rules; deepening of regime interaction; adaptive and ecosystem-based regulatory approach; smart contracts; and the adaptation of traditional legal categories to meet, for instance, technological changes. The contributions in the book do not use a common approach or method simply because there is no single comprehensive risk framework that could adequately accommodate the various issues addressed in this collection. However, all the chapters remain true to the core theme of risk and engage with question(s) such as: How is risk conceived in areas of transport, trade and environment in light of contemporary developments and concerns such as technology deployment, climate change, political upheaval, evolving geopolitics, and the COVID-19 pandemic? How does the law in the areas of transport, trade and environment translate risk into rights and obligations? What legal tools, such as dispute settlement mechanisms, contractual frameworks, and governance structures, are available to effectively manage the changing risk landscape?

The book covers both public and private law issues that concern risk and does not restrict the scope to studies that are region or jurisdiction specific; in fact, the legal framework considered includes national, regional and international legal orders. Overall, this book highlights the importance of dialogue and collaborative decision-making on risk issues between policymakers, judicial or quasi-judicial actors, industry stakeholders and scientists.

Altamimi in “The UN Arms Trade Treaty (ATT): A Multilateral Trade and Security Treaty Not Regulated by International Trade Law?” considers the relationship between the ATT (which is substantively and procedurally a trade and security regulating treaty) and international trade law. He argues that the

88 Julia Black and Robert Baldwin, ‘When Risk-based Regulation Aims Low: A Strategic Framework’ (2012) 6 *Regulation & Governance* 131. Robert Baldwin, Julia Black and Gerard O’Leary, ‘Risk Regulation and Transnationality: Institutional Accountability as a Driver of Innovation’ (2014) 3 *Transnational Environmental Law* 373.

above-mentioned relationship remains unclear, particularly as the ATT alludes neither to the World Trade Organization (WTO) law, nor to the core obligations of international trade law. The lack of clarity of the relationship between the two regimes has the potential to cause jurisdictional and enforcement issues. Altamimi contends that ATT regime should be reformed, international trade law rules and principles be added to the ATT treaty, and the WTO best legal practices for effective enforcement be utilised.

Argüello and Johansson in “Ice Management Research and the Arctic Marine Environment” discuss geoengineering research governance with particular emphasis on the Arctic Ocean and novel ice management techniques, i.e., Arctic marine cloud brightening, flooding-refreezing and Arctic Ocean albedo enhancement. According to the authors, there is no comprehensive legal regulation of geoengineering research and while governance before deployment is fundamental, governance before research is just as crucial. In this context, they argue for a constructive and morally cognisable understanding of risk where law plays a decisive role in the legal imaginary of geoengineering. By focusing on geoengineering research, i.e., an activity prior to deployment, it becomes evident how risk governance is not exclusively concerned about managing existing risks but rather about shaping the future.

Basu Bal, Rajput and Chen in “Divide and Conquer or Unite to Trade: Trade Facilitation Along the China-Europe Railway Corridors” highlight that global value chains are subservient to networks that underpin the exchange of goods, money and information. They submit that the resilience of these networks is increasingly being tested through conflicts, geopolitics, and legal barriers. They focus on the trade facilitation reforms along a railway network, namely the Chongqing-Duisburg link, to examine the legal and regulatory fragmentation which poses a risk for utilisation and/or furthering of physical and digital infrastructures. The chapter’s authors take a forward-looking perspective to consider what may be done to develop a regional agenda for harmonised trade facilitation in China-Europe railway corridors and propose a tripartite approach to manage fragmentation.

In “The Meaning of “Accident” under the Montreal Convention in Light of CJEU Jurisprudence,” Bokareva critically discusses how “accident” under the Montreal Convention has been construed by the Court of Justice of the European Union (CJEU) and other common law courts in the UK, US, Australia and Canada. The author adopts an internal perspective about risk in a multi-level regulatory environment. She warns about the risk of creating legal conflicts at the international and European Union (EU) level. In particular, Bokareva qualifies the CJEU’s approach to treaty interpretation as disconcerting. Legal

uniformity and certainty are at risk by not considering judgments on similar issues of other highest courts in State Parties to the Montreal Convention.

Chuah in “Admissibility of Air and Marine Accident Investigation Records in Arbitration and Litigation” examines air and marine casualty investigation reports and their changing function in relation to risk. Investigation reports have traditionally been used to identify the contributing causes of an accident, recognise additional risks and learn from previous mistakes. In essence, the rationale for transport investigations is forward-looking to prevent accidents in the future. Arguably, casualty investigation reports are fundamental for an adaptive risk governance perspective. However, the author notices a growing tendency to use these reports in judicial and arbitral proceedings to prove liability or fault. This tendency reflects a traditional understanding of risk that aims to find linear causal relations. Yet, Chuah considers that litigation expediency should not sacrifice the conventional rationale for transport investigations.

Dackö in “When Economic Sanctions Lead to Conflict of Laws and Real Risks for Businesses” deals with “decoupling”, a term commonly used to explain the effects of different trade and security policy measures leading to the ripping apart of international value chains and the insulating of trade into regional hubs. The author draws out that economic sanctions imposed by one country often target another country, which in turn will try to block the effects of such sanctions, sometimes by legal measures, resulting in a clear legal clash – a conflict of laws. Businesses are then often left to make difficult choices, having to discontinue trade and thereby face economic and legal consequences.

In “Risks Posed by the COVID-19 Pandemic Regarding the Carriage of Goods and Passengers by Sea: Considerations on Seafarers’ Rights and Health Protection” Echebarria Fernández submits that the seafarers bore the heaviest brunt during the COVID-19 pandemic. Contractual issues arose from delays, which for example, threatened the fulfilment of contracts, and payment to seafarers. Border closures and governmental restrictions prevented seafarers from disembarking, repatriating after their contract ended or changing crews to continue and maintain the global supply chain. The inability to disembark jeopardised the health and safety of the seafarers. Echebarria Fernández in this chapter discusses the government’s measures and their effects on the maritime and shipping industry, including solutions and consequences.

International shipping is subject to many different rules and regulations, which together frame the market conditions of the industry. Framing a coherent – or level – playing field for an industry that by nature is truly international, is not an easy task. Often, there are chances of overlapping legislation promulgated by two competing organisations that generate the risk of conflict

or regulatory overkill. Through the contribution “International Shipping Who Levels the Playing Field?”, Eftestøl and Yliheljo consider the role of the main regulator of international shipping, namely the International Maritime Organization (IMO), and that of the EU which exercises its competence on certain shipping matters, to demonstrate the interplay between the two organisations as regards GHG emissions from international shipping. In the recent past, IMO has faced regulatory competition from the EU which has itself tried to solve regulatory gaps by preparing regional solutions to identified regulatory needs. The authors enquire whether a Brussels Effect on the rules and regulations in this area can be observed.

Flodén and Woxenius in “Risk in Transporting Dangerous Goods via RoRo and RoPax Shipping” investigate how prescriptive regulations for dangerous goods, especially the IMDG Code, the Baltic Agreement and ADR, affect transport operations and the overall risk of RoRo and RoPax shipping in Northern Europe. This investigation is important as roll-on, roll-off (RoRo) and roll-on-passenger (RoPax) shipping serve intra-regional trade and travel, handle a wide mix of goods, of which approximately 4% are dangerous and pose risks of destruction of marine and coastal habitats and particularly the loss of health, life and property for passengers and crew. Flodén and Woxenius highlight that to manage maritime transport restrictions for dangerous goods, transport planners can delay, reroute or transform consignments; however, stiff competition and a lack of knowledge may cause consignors to misdeclare and/or send undeclared dangerous goods, nonetheless. Thus, for safety precautions and risk management to succeed in supply chains, the appropriate declaration of substances is imperative.

In “Scrubber Technology: Bad News for the Marine Environment” Hassellöv looks at the risks associated with exhaust gas cleaning systems, also known as scrubbers. These are being introduced on increasing numbers on ships as a way to enable the continued use of heavy fuel oils while still complying with tightened rules on sulphur emissions. However, while the scrubbers significantly reduce sulphur emissions and also other pollutions to the air, all but very few scrubber systems generate extensive emissions of heavily acidified wash water to the sea which also includes pollutants such as polycyclic aromatic hydrocarbons (PAH) and heavy metals. Not only does this seem like a clear example of transforming one type of pollution into another in contravention of UNCLOS. A narrow focus on reduction of emissions of sulphur oxides to the atmosphere has resulted in potentially devastating consequences for the marine environment being overlooked, thereby showing the severe risks associated with introducing technical solutions without a proper assessment of their overall environmental impacts.

The use of unmanned maritime vehicles and the potential of autonomous transport raise interesting questions of maritime law as to what happens should such property be subject to maritime casualties. “Autonomous Wrecks” by Kern discusses key issues or problems that arise because of the special characteristics of unmanned maritime vehicles and autonomous transport in wreck removal situations and how those can be handled under the Nairobi International Convention on the Removal of Wrecks (WRC).

In the chapter “High Seas Marine Protected Areas: Impact on Shipping and the IMO” Krabbe examines the draft text on marine protected areas (MPAs) on the high seas in the new treaty on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ). With a growing demand for area-based protection measures in high sea areas, it becomes important to ask what trade-offs such measures may give rise to in areas where shipping has traditionally tended to use the shortest and most direct routes, irrespective of the ecological values affected. Routing measures may be valuable instruments for protecting vulnerable ecosystems but typically result in longer shipping routes. This calls for evaluating the impacts of such measures, in particular on fuel-consumption and voyage times. Not only because it enables a more well-informed discussion on the costs to industry but also because the measures can imply trade-offs with other environmental objectives such as reduced CO₂ emissions. Neglecting this entails a risk of making decisions that are counterproductive from a wider environmental perspective.

In “Shipping and the Ecosystem Approach” Langlet looks at how the need for management that considers specific environmental needs and vulnerabilities on local and regional scales can be combined with the international regulation of shipping. Inclusive and adaptive forms of governance pose a risk to the values protected by internationally harmonised regulation, i.e. the expediency and efficiency of shipping as a global mode of transport. On the other hand, the harmonised nature of marine environmental regulation risks undermining the pursuit of effective protection and management of vital environmental and health objectives at a local scale. Langlet inquires to what extent and how the regulation of the environmental effects of shipping can allow for regional and local conditions to be considered and enable relevant management responses to be put in place to address local needs, while also recognising the importance of international shipping for the pursuit of other societal objectives.

“Autonomous Shipping: Some Reflections on Navigational Rights and Rescue at Sea” by Leopardi examines key rules and principles related to the topic of his contribution. The examination encompasses law of the sea, the International

Convention for the Safety of Life at Sea, the International Convention for Maritime Search and Rescue and the International Convention on Salvage. Leopardi submits that autonomous and unmanned ships are in a predominately similar position as other ships when it comes to navigational rights. However, he contends that autonomous and unmanned ships are in some respects outside the scope of international maritime rescue law. Therefore, legislators need to re-examine the efficacy of the risk mitigation aspects of maritime rescue law to address the emerging shortcoming.

Liu in “Maritime and Aviation Law: A Relational Retrospect and Prospect on Unmanned Ships and Aircraft” presents a relational comparative analysis of respective laws focusing on unmanned ships and unmanned aircraft. She indicates that the technological advancements and increasing demands are shaping the trend towards a new era in maritime transportation, but a regulatory framework is yet to materialise. For instance, a legal definition of unmanned ships is lacking. Liu recommends that lawmakers in the maritime sphere be inspired from aviation and emulate the ICAO endorsed operation-centric and risk-based regulatory approach for unmanned aircraft systems. Further, IMO can conduct a full risk assessment of autonomous ships and their operations in different environments to reach a risk-based categorisation scheme and apply commensurate regulatory measures.

From a property law perspective, Martinson assesses the definition of ships as implemented in Swedish law in “Some Perils of Turning Small Ships into Big Boats: On the Relevance of Addressing the Real Issues in Law.” One may think that property law is concerned with things or objects, but in this contribution, the author argues how this legal branch deals with conflicts of interest among people. The legal definitions of objects, such as ships, necessarily make some inclusions and some exclusions. In this case, such legal definitions create risks that may, for example, negatively affect the identification of several interests. In legal proceedings, definitions could mask the real conflicts of interest or hide the characteristics that the parties typically have. While legal definitions are important, Martinson makes a crucial remark that “vessels do not have to be seen as objects only. The conflicts of interest can be about enterprises, projects, and also human beings.”

In “The International Regulatory Framework of MASS Disruption” Mejia engages in a regulatory scoping exercise about maritime autonomous surface ships (MASS) and their place in current and future regulatory frameworks. The development of autonomous marine technologies is a typical example of the ‘risk society’ posing challenges to the legal system. As an object of regulation, MASS raises questions about whether existing legal structures are suitable to regulate this disruptive technology. Mejia reflects on the unintended risks that

MASS may be accompanied by, including IT-related failures, cyberattacks and legal fragmentation. This chapter challenges the reader to frame MASS beyond a purely technocratic perspective but rather in a broader social context of the region where the acceptability of the technology poses its own challenges.

Mukherjee in “Salvage Agreement and Contract Salvage: Risk Dynamics in Salvage Law” delves into the question of risk as it pertains to salvage services from the opposite perspectives of the shipowner and the salvor. The chapter rests on the submission that the LOF-type salvage agreement is not a contract. The author observes that the LOF-type agreement is rapidly declining and being increasingly replaced by expressly stated salvage remuneration typical of contracts proper, which is not dependent on the vagaries of arbitral awards, and which reduces the salvor’s financial risk considerably.

Naidoo through “(Smart) Contractual Networks in the Carriage of Goods by Sea” explores how smart transactional technologies may be embedded in business networks (“smart contractual networks”). Drawn from socio-legal contractual scholarship, the concept of “contractual networks” situates and views the bilateral contract as contractually networked to a series of other connected relationships and contracts in the network. To reflect on conceptual and normative issues pertaining to smart contractual networks, Naidoo asks whether smart contracts alter the understanding of contractual networks, or will contractual networks be shaped by technologies that underpin their operation, e.g., contractual networks that will develop around blockchain?

Rajput in “Restricting International Trade through Export Control Laws: National Security in Perspective” deliberates on the current geo-political dynamic characterised by the rise of China on the world stage and the imposition of export restrictions as a strategy to address matters of national security. As the US-China trade war continuously unfolds and manifests in novel ways, this chapter considers the export control framework that is put in place by China for control/consolidation of the rare earths sector through People’s Republic of China Export Control Law (ECL) and the proposed Administrative Regulation on Rare Earths (ARE) in context of the security exception under General Agreement of Tariffs and Trade Article XXI. The rare earths are widely deployed in defense, automotive, electronics, renewable energy industries and the prognosis made by Rajput is that China may potentially utilise ECL and ARE framework to restrict export of rare earths to the US as tit-for-tat national security claims in view of their deteriorating relationship. Overall, the discussion in this chapter highlights the risk for WTO as an organisation and for value chains that depend on rare earths.

While the shipping industry is largely risk averse, the ‘greening’ of shipping requires substantial investments in new technologies that are often associated

with significant uncertainties. In “Legal Tools for Overcoming Perceived Risks in Green Shipping” Rebelo finds that to overcome barriers associated with uncertainty surrounding technology selection and optimal solutions, ship-owners must be incentivised through access to capital and clear guidance on the choice of measures. Against this backdrop, she inquires how green finance frameworks can help de-risk low-carbon shipping technologies by providing clarity and legal certainty on technology selection and criteria.

“Third Party Direct Rights of Action against Insurers under UK Law and International Maritime Liability Conventions” by Thomas confronts the question – “To what extent should third parties enjoy direct rights of action against liability insurers?” This may be characterised as a question of public policy and the position may vary significantly in different jurisdictions which leads to legal uncertainty. In many jurisdictions, third parties continue to occupy a difficult position and the UK is one of them. The position has been marginally qualified by statutory developments, most recently the Third Parties (Rights against Insurers) Act 2010, but such third-party rights as are recognised by the statute continue to be very limited. This chapter compares English law with the insurance regime in emergent international maritime liability conventions where direct third-party rights of action are coupled with mandatory insurance and much more openly entertained. The chapter highlights the way in which third party rights are established on a much different platform with insurers perceived as directly responsible for compensating third parties.

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The UN Arms Trade Treaty: A Multilateral Trade and Security Treaty Not Regulated by International Trade Law?

Abdulmalik M. Altamimi

Every modern war threatens to involve half the world, bring disaster to world economy, and blot out civilization. The question is urgent then: What will be done about the armaments industry?

ENGELBRECHT and HANIGHEN, *Merchants of Death* (1934)¹



1 Introduction

Regulation of the international arms trade was promulgated following the Second World War, in particular for the preservation of international peace and security. The drafters of the 1945 United Nations (UN) Charter were aware of the risks posed by an unregulated arms industry. This led them to instruct the UN Security Council and the Military Staff Committee under Article 26 to establish a system for the regulation of armaments to ensure ‘the least diversion of armaments of the world’s human and economic resources’.² However, during subsequent decades, the conduct of arms exporting States tended to be primarily governed by nonbinding rules.³ This issue was addressed in December 2014, when the UN Arms Trade Treaty (ATT) entered into force as a legally binding instrument, fulfilling the definition of an international agreement governed by public international law, being purported to regulate the conventional arms trade’s “transfer” activities of ‘export, import, transit,

1 HC Engelbrecht and FC Hanighen, *Merchants of Death: A Study of the International Armament Industry* (Dodd, Mead and Company Inc. 1934) 261.

2 Art 26 citing Article 47 of the United Nations, Charter of the United Nations (adopted 26 June 1945, entered into force 24 October 1945) 1 UNTS XVI.

3 See the Wassenaar Arrangement between 42 States <www.wassenaar.org/about-us/> accessed 28 April 2021.

trans-shipment, and brokering'.⁴ A number of scholars have previously examined the relationship between “linkages issues” and international trade law, including in relation to the World Trade Organisation (WTO) and environmental protection, along with health policies and labour relations.⁵ The focus has generally been placed on WTO, due to it being regarded as the principal organ and arbiter of international trade law. While these issues vary by degree in their legal relation to the law and practice of WTO, an area with one of the strongest linkages is the conventional arms trade, i.e. that dealing in armaments other than nuclear weapons.⁶ However, this aspect has been seldom the subject of such close examination.

The origin of ATT in public international law is clearly manifest in its text, which includes repeated citing of the UN Charter in the preamble, along with international human rights law, and international humanitarian law.⁷ Moreover, ATT prescribes a number of international procedures for the peaceful settlement of pertinent disputes.⁸ However, the relationship between the ATT (which is substantively and procedurally a trade and security regulating treaty) and international trade law remains unclear, particularly as the ATT alludes neither to the WTO law, nor the core obligations of international trade law. However, the ATT does (albeit briefly and indirectly) refer to the principle of non-discrimination when maintaining that the treaty should be implemented in “non-discriminatory manner”.⁹ Despite regulation of the conventional arms trade being recognised as vital for international trade, peace and security, pertinent studies of the legal and international relations aspects have been “surprisingly limited”.¹⁰ This chapter therefore contends that the absence of international trade obligations from the ATT presents a number of issues in urgent need of examination, i.e. if an ATT exporting State Party has determined that ‘there is an overriding risk of any of the negative consequences’ of

4 Art 2:2 of the Arms Trade Treaty (ATT) (adopted 2 April 2013, entered into force 24 December 2014) 3013 UNTS 3.; Art 2:1(a) the Convention on the Prevention and Punishment of the Crime of Genocide (adopted 9 December 1948, entered into force 12 January 1951) UNTS 78, 277.

5 See Martin Daunton and others, *The Oxford Handbook on the World Trade Organization* (OUP 2012); Jose Alvarez, ‘The WTO as Linkage Machine’ (2002) *American Journal of International Law* 146.

6 Art 2:1 of the ATT (n 4).

7 Arts 9 and 11:4 of the ATT (n 4).

8 *ibid*, Principles and Article 19 of the ATT (n 4).

9 *ibid*, Preamble and Arts 5:1 and 7:1 of the ATT (n 4).

10 Laurence Lustgarten (ed), *Law and the Arms Trade: Weapons, Blood and Rules* (Hart Publishing 2020) i. See C Weeramantry, *Universalising International Law* (Martinus Nijhoff Publishers 2003) 205; Barry Kellman, ‘Controlling the Arms Trade: One Important Stride for Humankind’ (2014) *Fordham International Law Journal* 687.

authorising export of conventional arms; (i.e. undermining peace and security), such a State ‘shall not authorize this export’.¹¹

Nonetheless, should an ATT State Party, which is also a WTO Member State, refuse this authorisation, its conduct would be considered as follows. Firstly, it would violate Article XI:1 of the WTO General Agreement on Tariffs and Trade (GATT).¹² Secondly, it would violate the ATT preambular principle of acting in accordance with ‘the responsibility of all States, in accordance with their international obligations, to effectively regulate the international trade in conventional arms’.¹³ Thirdly, it would raise a conflict of obligation, particularly since differing international rules apply to the conventional arms trade; for instance, Article 6:2 of the ATT: ‘a State Party shall not authorize any transfer of conventional arms ... if the transfer would violate its relevant international obligations under international agreements to which it is a Party’. This primarily refers to *jus ad bellum* and *jus in bello* rules, although (as stated above) export restrictions would violate the core international trade law obligations of WTO/ATT states.

An equitable conflict appears in the relationship between WTO national security exceptions and ATT, primarily due to its remaining undecided whether the security exceptions under GATT Article XXI:b apply to all trade in conventional arms during times of war and peace. Thus, it is crucial to explore the applicability of GATT Article XXI:b to the international trade in conventional arms, as arms traded on the illicit market have generally been legally traded during times of relative peace, before being diverted and exploited for use in conflicts as they arise.¹⁴ Conventional arms (i.e. ammunitions, parts, and components) represent an international industry worth several billions of US dollars and, as such, are freely traded between States and merchants. This raises the issue of how these could be completely exempted from WTO law, due to their potential for being used for legitimate security purposes, or illegally traded on illicit markets,¹⁵ i.e. how can tradeable and legally permitted goods be exempted from international trade law?

11 Art 7:3 of the ATT (n 4).

12 See GATT Article XI:1 in World Trade Organization, *The Legal Texts: The Results of the Uruguay Round of Multilateral Trade Negotiations* (20th printing, CUP 2013) 437. [The WTO Legal Texts]. For a further discussion about national security interests within the ambit of GATT Article XX, see the chapter by Trisha Rajput in this volume.

13 Art 6:2 of the ATT (n 4).

14 UN, *Toward an Arms Trade Treaty: Establishing Common International Standards for the Import, Export, and Transfer of Conventional Arms*, General Assembly, A/63/334 (26 August 2008) [Report of the Group of Governmental Experts].

15 Byron Doenges, ‘The International Arms Trade’ (1976) Challenge 14–20.

Additionally, it remains overlooked that the international arms trade covers not only the end products (i.e. rifles or aircrafts), but also their components and parts, which can involve several WTO Members who are both ATT States and non-States Parties. Prior to the establishment of ATT, a number of scholars considered all trade in conventional arms to be excluded from WTO law at all times. However, their argument remained unfounded, as it was based solely in consideration of GATT Article XXI, but without examining ATT, along with pertinent WTO's rules and disputes, and ATT and WTO law relationships to public international law.¹⁶ These open questions have the potential to cause jurisdictional and enforcement issues, despite ATT maintaining that 'the implementation of this Treaty shall not prejudice obligations undertaken by States Parties with regard to existing or future international agreements'.¹⁷ This chapter does not argue for the inclusion of conventional arms trade in WTO law, but rather that ATT reforms should add international trade law rules and principles to the treaty, as well as utilising WTO best legal practices for effective enforcement. For example, WTO rules and mechanisms can regulate State subsidisation, and the proliferation of conventional arms in a highly effective manner.

According to the ATT timeline, 2021 is the starting year for any interested State Party to propose amendments to this treaty.¹⁸ This indicates that scholarly evaluation of ATT it is now timely, in order to assist with such proposals. Therefore, this chapter undertakes: firstly, a critical overview of ATT, secondly, an in-depth examination of ATT and its relationship with international trade law, by listing its findings and recommendations. In addition, practitioners will find recommendations for reforming the ATT to assist States Parties in administering their arms export control systems.

2 The Arms Trade Treaty and International Trade Law

This section examines whether international trade rules have been regarded as binding parameters for a potential multilateral arms trade treaty. It has been generally acknowledged that prior to the adoption of the ATT by the UN General Assembly in April 2013, there was a considerably greater number of binding

16 See Zeray Yihdego, *The Arms Trade and International Law* (Hart publishing, 2007) 96–97; Miriam Pemberton and Steven Staples, 'Security Exception and Arms Trade' (*Institute for Policy Studies*, 1 April 2000) <https://ips-dc.org/security_exception_arms_trade/> accessed 1 May 2021.

17 Art 26:1 of the ATT (n 4).

18 Art 20:1 of the ATT (n 4).

international rules regulating trade in fruits than in conventional arms.¹⁹ The UN-led negotiations for creating ATT date back to December 2006, when a draft resolution entitled ‘Toward an Arms Trade Treaty: Establishing Common International Standards for the Import, Export and Transfer of Conventional Arms’ (the 2006 Resolution) was adopted by the General Assembly (by a vote of 153 in favour to one against, this being the United States (US)).²⁰ The 2006 Resolution recognised the right of all States to trade and retain conventional arms for self-defence and security purposes, alongside the role played by Non-governmental Organisations (NGOs) and civil society to enhance cooperation and transparency ‘in the field of responsible arms trade’.²¹ It also highlighted in relation to the conventional arms trade ‘the growing support across all regions for concluding a legally binding instrument, negotiated on a non-discriminatory, transparent and multilateral basis, to establish common international standards’.²²

The 2006 Resolution further requested that the UN Secretary-General seek additional consultations, as well as establish a group of governmental experts to draft a legally binding instrument.²³ The Group of Governmental Experts (the Experts) submitted a report to the UN Secretary-General in mid-2008 concerning “the feasibility, scope, and draft parameters” for a potential arms trade treaty, which observed that ‘global arms production and trade constituted a significant contribution to the economy and employment in a number of countries [and] trade in arms had become globalized and more competitive’.²⁴ However, the Experts also noted that the conventional arms trade has ‘caused immense human suffering and political instability in different parts of the world [and] that combating illicit trade and unlawful transfers to non-State actors must be adequately addressed’.²⁵ Furthermore, when it came

19 For example, few sets of guiding principles apply to conventional arms trade, such as 1996 UN Disarmament Commission Guidelines for International Arms Transfers, and 1998 European Union (EU) Code of Conduct on Arms Exports. See UN, Report of the Disarmament Commission, A/51/43, (22 May 1996); European Union, EU Code of Conduct on Arms Exports, EU Council 8675/2/98, Rev. 2, 5 June 1998; UN, The Arms Trade Treaty, General Assembly, A/Res/67/234 B (11 June 2013).

20 UN, Toward an Arms Trade Treaty: Resolution Adopted by the General Assembly, A/RES/61/89 (6 December 2006).

21 *ibid.*

22 *ibid.*

23 *ibid.*

24 UN, Toward an Arms Trade Treaty: Report of the Group of Governmental Experts, para. 14 (n 14).

25 *ibid.* para. 23. See Laurence Lustgarten, ‘The Arms Trade: A Critical Introduction’ in Lustgarten (n 10) 6–23.

to the treaty draft's parameters: 'experts agreed that principles enshrined in the UN Charter would be central to any potential arms trade treaty' and that other parameters would include international human rights law, international humanitarian law, and the 1996 UN Disarmament Commission Guidelines for International Arms Transfers.²⁶

The Experts recalled the key principles of the UN Disarmament Commission Guidelines including, 'ensuring that the level of armaments is commensurate with [States'] legitimate self-defence and security requirements, including their ability to participate in UN peacekeeping operations'.²⁷ Additionally, they stated that such a treaty could, if 'non-discriminatory and resistant to political misuse', both prove feasible and remain within the parameters of the UN Charter.²⁸ The Experts concluded by stating the need to undertake further consideration of two issues, i.e. 'that there were different motivations for conventional arms production and acquisition, and that weapons being traded on the illicit markets most often started out as legally traded weapons'.²⁹ They also pointed out that 'to prevent diversion of conventional arms ... all States [should] ensure that their national systems and internal controls are at the highest possible standards'.³⁰

The issues highlighted by the Experts were subsequently addressed by an Open-ended Working Group, established by a General Assembly resolution in late 2008.³¹ The Group stated that, following the Experts' report, a number of further elements should be considered for 'establishing common international standards for the import, export and transfer of conventional arms which would provide a balance giving benefit to all'. In addition, the principles of the UN Charter and 'other existing international obligations' should remain 'at the centre of such considerations'.³² Between 2010 and 2013, these constitutive elements were envisaged, presented and debated by the UN Member States at four Preparatory Committees, and two Conferences in 2012 and 2013.³³

26 UN, *Toward an Arms Trade Treaty: Report of the Group of Governmental Experts*, para. 24 (n 14).

27 *ibid.* para. 8.

28 *ibid.* para. 17, 24.

29 *ibid.* Summary.

30 *ibid.*

31 UN, *Toward an Arms Trade Treaty: Establishing Common International Standards for the Import Export and Transfer of Conventional Arms*, A/RES/63/240 (8 January 2009).

32 UN, *Draft Report of the Open-ended Working Group Toward an Arms Trade Treaty*, General Assembly, A/AC.277/2009/L.4, para. 20 (16 July 2009).

33 Documents at the UN Conference on the Arms Trade Treaty (UN) <www.un.org/disarmament/convarms/att/2013-conference/2013-att-documents/>. See Statements on the

Interestingly, the US and Russia (who had been considered accountable for the failure of 2012 conference to reach a consensus on a final treaty) participated in all of the committees and conferences.³⁴

2.1 *The Scope and Parameters of the Arms Trade Treaty*

‘The Compilation of Views on the Elements of an Arms Trade Treaty’ for the UN Conference on the ATT of 2012 constitutes a significant UN document relating to the ATT negotiation, one that demonstrates the concerns of a number of Member States when it comes to the implications of international trade law.³⁵ The conference commenced with the then-UN Secretary-General Ban Ki-moon, stating that the absence of any treaty dealing with conventional arms was ‘a disgrace’.³⁶ The UN Member States interested in creating an ATT submitted detailed views concerning the proposed principles, objectives, parameters, scope, and implementation. For example, in relation to scope, Bulgaria noted that ATT should not regulate the licensing of either production or manufacture, because it is already ‘subject to regulation under international trade law and, as such, within the purview of bilateral or multilateral trade agreements and/or contracts’.³⁷

This led to many Member States including Ecuador expressing the view that ‘the criteria that States must consider in deciding whether a transfer should be authorised must be objective, transparent, consistent, predictable and non-discriminatory’.³⁸ For these States in particular, the criteria or parameters of the treaty need to be guided by the principles of non-discrimination and transparency.³⁹ In addition, other States expressed similar views concerning the issue of implementation, i.e. that an ATT should be implemented in a non-discriminatory manner.⁴⁰ Furthermore, Guatemala suggested

Arms Trade Treaty (UN) <www.un.org/disarmament/convarms/att/2013-conference/2013-att-statements/> accessed 1 May 2021.

- 34 *ibid*, unlike Russia, the US made only two statements during the 2012 and 2013 negotiations. See Gro Nystuen and Kjolv Egeland, ‘The Potential of the Arms Trade Treaty to Reduce Violation of International Humanitarian Law and Human Rights Law’ in Cecilia Bailliet and Kjetil Larsen (ed), *Promoting Peace Through International Law* (OUP 2015) 215.
- 35 UN, Compilation of Views on the Elements of an Arms Trade Treaty, General Assembly, A/CONF.217/2 (10 May 2012) [The Compilation of Views].
- 36 UN, Secretary-General, ‘In Remarks to Conference on Arms Trade Treaty, Calls Absence of Global instrument Dealing with Conventional Weapons ‘a Disgrace’ (UN, 3 July 2012) <www.un.org/press/en/2012/sgsm14394.doc.htm> accessed 1 May 2021.
- 37 UN, the Compilation of Views, (n 35) 13.
- 38 *ibid* 31, see the views of Algeria, Cuba, India, Indonesia, Liechtenstein, and Switzerland.
- 39 *ibid*.
- 40 *ibid*, see the views of Indonesia, Singapore, and Vietnam.

the establishment of mechanisms for compliance assistance, information exchange, and annual reporting, in order to ensure effective and transparent implementation.⁴¹ Finally, States also highlighted that it should be stated in both parameters and implementation that national control systems for the authorising and licensing of transfers of arms must be consistent, predictable and transparent.⁴²

Despite the 2012 ATT Conference being unable to reach a consensus as a result of objections from a number of Member States, the States established a process whereby the failure to reach consensus could be circumvented by a UN General Assembly resolution. The General Assembly adopted a resolution to this effect in January 2013, which mandated that a conference be convened in March 2013.⁴³ With the exception of New Zealand, the participants of the 2013 conference did not consider international trade law to be of concern, due to the draft treaty being almost ready for adoption. However, New Zealand objected to the insertion of the phrase “under its jurisdiction” in ATT Article 7 on Export and Article 8 on Import, by stating that this phrase introduced:

[A] confusing element – or potentially a jurisdictional gap – into the text. If a country is not controlling the physical exports or imports of items from its territory – then who is, and who is it that would be responsible for ensuring compliance with the provisions of the ATT? I note that in the WTO context ... references to “imports” or “exports” are not qualified by any reference to “under the [Contracting Parties] jurisdiction” (e.g. see GATT 1994 Articles, I, II, III or VIII) ... It is not clear to me, Mr President, why the ATT should need a different regime for exports and imports than is applied, for example, in the WTO ... States must not be able to opt out from their obligations under the ATT.⁴⁴

This indicates that New Zealand based its question on the valid presumption that: A) the applicable law to the ATT/WTO States’ regulations of all exported and imported goods is the WTO law, and b) this law is not qualified by any references to the WTO Member States’ own jurisdictions, because of WTO rules,

41 UN, *Compilation of Views on the Elements of an Arms Trade Treaty Addendum*, General Assembly, A/CONF.217/2/Add.1 (27 June 2012).

42 See the views of Liechtenstein and Switzerland, UN, *the Compilation of Views* (n 35).

43 UN, *The Arms Trade Treaty*, General Assembly, A/RES/67/234 (4 January 2013).

44 UN, *Statement by New Zealand, Arms Trade Treaty Conference* (18–23 March 2013) <www.un.org/disarmament/convarms/att/2013-conference/2013-att-statements/> accessed 1 May 2021.

including GATT Article X on the publication and administration of trade regulations.⁴⁵ However, the 2013 negotiations retained a number of different opinions relating to the overall scope and parameters of ATT. Thus, the US strongly argued that ATT ‘is not an arms control treaty, not a disarmament treaty–, it is a trade treaty regulating a legitimate activity’.⁴⁶ Furthermore, in relation to the question of parameters, Ghana noted in a statement delivered on behalf of 103 States that ‘the text still needs to better reflect existing international legal norms and standards’.⁴⁷

However, two Members States (i.e. Cuba, and Kuwait on behalf of the Arab group) submitted statements expressing disappointment with the final draft. Cuba contended that the end-product was ‘an unbalanced text that favours arms-exporting States, which are granted privileges detrimental to the legitimate interests of other States, including on defence and national security issues’.⁴⁸ Kuwait, on the other hand, expressed regret that the Arab States’ proposals were overlooked, as they included ‘the need to develop a mechanism for the settlement of disputes arising from a denial of permission to transport or export arms, by which importing States could have guarantees that the application of the treaty would not be politicised’.⁴⁹ However, some of the above suggestions and proposals were eventually included in the final draft, and on 2 April 2013 the General Assembly adopted the ATT by an overwhelming majority of 154 States in favour.⁵⁰ As of August 2022, there have been 111 States Parties to the ATT.

45 See GATT art X, *The WTO Legal Texts* (n 12) 435–436.

46 UN, Statement of Assistant US Secretary of State, Thomas Countryman, Arms Trade Treaty Conference (23 March 2013). See UN, Opening Statement by UK Ambassador Joanne Adamson, Arms Trade Treaty Conference, (18 March 2013) <www.un.org/disarmament/convarms/att/2013-conference/2013-att-statements/>. After the overwhelming vote in favour of the ATT, the US accepted the text with one of its representatives saying, ‘This treaty sets a floor, not a ceiling for the responsible international trade in conventional arms’, See the UN, ‘Overwhelming Majority of States in General Assembly Say ‘Yes’ to the Arms Trade Treaty’ (UN, 2 April 2013) <www.un.org/press/en/2013/ga11354.doc.htm> accessed 10 May 2021.

47 UN, Statement Delivered by Ghana on Behalf of 103 States, Arms Trade Treaty Conference (25 March 2013).

48 UN, Statement by the Representative of Cuba, General Assembly, A/CONF.217/2013/3 (1 April 2013).

49 UN, Statement by the Representative of Kuwait, General Assembly, A/CONF.217/2013/4 (2 April 2013).

50 UN, The Arms Trade Treaty, General Assembly, A/Res/67/234 B (11 June 2013).

2.2 *Lessons Learned from the Negotiations of the Arms Trade Treaty*

The ATT negotiations revealed three important aspects of the origin of international trade law, alongside its principles, and implications for this treaty, as discussed below. Firstly, States were guided by the spirit and principles of international trade law, most notably non-discrimination and transparency.⁵¹ The ATT negotiators (comprised of States' representatives, international and regional organisations, and NGOs) were aware that the prioritisation of economic interests over security, created an unbalanced arms trade threatening security and stability, both nationally and internationally.⁵² However, the negotiators did not fully elaborate on the broad conception of security to highlight the connection between human security and economic security, particularly as weakness or loss of the latter, results in the former becoming unattainable.⁵³ Some of ATT negotiators declared that the balance of the conventional arms trade had been realised in the evolving concept of an arms trade, which commenced as a 'responsible arms trade', for legitimate purposes (i.e. the UN peacekeeping operations), alongside the ATT term of 'legitimate trade for peaceful purposes'.⁵⁴

Nonetheless, Stavrianakis subsequently claimed that 'rather than signalling the victory of human security, the ATT is better understood as facilitating the mobilisation of legitimacy for contemporary liberal forms of war fighting and war preparation'.⁵⁵ This was primarily due to the arms exporting States championing ATT and justifying 'their arms export practices in terms of morality, responsibility and legitimacy', including explaining these practices 'by reference to [their] national regulatory regimes that exceed the standards set out in the ATT'.⁵⁶ Stavrianakis argued that this resulted in 'these justifications and regimes serv(ing) to shield [arms exporting States'] weapons transfers and use from scrutiny and accountability'.⁵⁷ Therefore, the end-product consisted of

51 See the Compilation of Views (n 35).

52 See Statements on the Arms Trade Treaty (n 33).

53 See the statement by the representative of the Control Arms Coalition at the Arms Trade Treaty Preparatory Committee (3 March 2011) see Statements on the Arms Trade Treaty (n 33).

54 UN, Declaration by Permanent Representative of France to the Conference on the Arms Trade Treaty on Behalf of China, Russia, the UK and the USA, (18 March 2013). See the 2006 Resolution (n 20); UN, Toward an Arms Trade Treaty: Report of the Group of Governmental Experts (n 14); the ATT (n 4).

55 Anna Stavrianakis, 'Legitimising Liberal Militarism: Politics, Law and War in the Arms Trade Treaty' (2016) *Third World Quarterly* 840.

56 *ibid.*

57 *ibid.* See Efrat who found that common law arms-exporting States prefer weaker international regulation of arms; Asif Efrat, *Governing Guns, Preventing Plunder: International Cooperation Against Illicit Trade* (OUP 2012) 77. See Bromund who cited Harold Koh, then

an unbalanced trade treaty, one favouring arms exporters and therefore inadequate for the purposes of protecting international peace and security.

Secondly, the ATT refers (albeit indirectly and briefly) to international trade law because it stipulates under Article 2:2 that ‘for the purpose of this treaty’ the so called “transfer” of conventional arms activities is comprised of: ‘export, import, transit, trans-shipment and brokering.’⁵⁸ This forms an explicit reference to the fact, for the transparent and effective implementation of ATT, these transfer activities require invoking the rules and procedures of international trade. Thirdly, a number of negotiating developing States expressed dissatisfaction with the fact that, despite ATT being purported to fairly regulate the conventional arms trade (in order to preserve international peace and security) its final draft is unfavourable to their trade and security needs, including the assistance required to implement this treaty.⁵⁹ This clear expression of discontent also invokes the two key international trade rules of the Most-Favoured-Nation and National Treatment, founded on the principle of non-discrimination, i.e. that States must not discriminate between their trading partners, nor discriminate between imported and domestically produced goods with respect to internal taxation or other regulatory measures, respectively.⁶⁰

These rules are essential for the establishment of a level playing field as a policy goal for the competing interests of traders, particularly as they are regularly invoked by all trading States.⁶¹ However, ATT does not specify these basic rules of international trade in order to effectively uphold the principle of non-discrimination and so protect a State Party national security. Furthermore, unlike the WTO, the ATT has no legal standard for non-discrimination that takes into account the intent, effect, and comparability of any tradable armaments

US State Department Legal Advisor, who stated that international law treaty-making process that created the ATT poses a threat to the US constitution, see Theodore Bromund, ‘The UN Arms Trade Treaty and Gun Grab’ (*The Heritage Foundation*, 5 March 2013) <www.heritage.org/commentary/the-un-arms-trade-treaty-and-the-gun-grab> accessed 10 May 2021.

58 Art 2:2 of the ATT (n 4).

59 See Cuba and Kuwait Statements (n 48–49). See March 2013 Statements by the representatives of Bangladesh, Cambodia, and Ethiopia, see Statements on the Arms Trade Treaty (n 33).

60 Peter Van den Bossche and Werner Zdouc, *The Law and Policy of the World Trade Organisation: Text, Cases and Materials* (4th edn., CUP 2018) 339, 412.

61 See GATT art I on the Most-Favoured-Nation Treatment, and Article III on the National Treatment’ clauses, which have been frequently invoked by the WTO Member States, see the WTO-Disputes by Agreement- GATT 1994 <www.wto.org/english/tratop_e/dispu_e/dispu_agreements_index_e.htm> accessed 1 May 2021.

at issue.⁶² Overall, the international trade law principles of non-discrimination and transparency have been regarded as binding parameters for a potential multilateral arms trade treaty. The following section further examines the relationship between the ATT and international trade law.

3 The Arms Trade Treaty and the World Trade Organisation Law

The ATT is first and foremost a trade regulating treaty one that can be viewed as sharing similar principles and practices with the WTO. Therefore, similar to a typical multilateral or bilateral trade treaty, the ATT contains a number of articles on trade law principles rules and procedures, including export, import, and compliance reporting.⁶³ The ATT dual object is to 'establish the highest possible common international standards for regulating, or improving, the regulation of the international trade in conventional arms [and] prevent and eradicate the illicit trade in conventional arms and prevent their diversion'. In addition, its implementation process is primarily a cooperative enforcement method of compliance review undertaken by States Parties.⁶⁴ Moreover, ATT maintains that this serves the purpose of *inter alia*, i.e. 'promoting cooperation, transparency and responsible action by States Parties in the international trade in conventional arms'.⁶⁵ However, if a dispute arises between States Parties concerning the interpretation or application of ATT, they are permitted to select the coercive enforcement method of judicial settlement,⁶⁶ while States Parties can also settle their disputes by any alternative dispute resolution method, i.e. negotiations and arbitration.⁶⁷

It is notable that the ATT settlement procedures have not yet been invoked, thus raising questions relating to their viability, as well as the legal capacities of States Parties.⁶⁸ The ATT key articles (particularly 6 and 7 on Prohibition and Export, and Article 11 on Diversion, and differing enforcement procedures) draw to varying degrees on international trade law. The principle of non-discrimination concerning export and import requirements, and rules on

62 Simon Lester and others, *World Trade Law: Texts, Materials and Commentary* (3rd edn, Hart Publishing 2018) 259–263.

63 See arts 7, 8 and 13 of the ATT (n 4).

64 See arts 1, 5 and 13–16 of the ATT (n 4).

65 Arts 1 of the ATT, see on transparency Article 5:5 of the ATT (n 4).

66 Art 19 of the ATT (n 4).

67 *ibid.*

68 The ATT Secretariat confirmed in an email received by the author in October 2020 that Article 19 has not been invoked by States Parties.

subsidisation and dumping apply to all internationally traded goods, including conventional arms.⁶⁹ For example, Tocoian found that ‘a 10% increase in military spending leads to an increase in exports of arms and ammunition between 5% and 10%.’⁷⁰ In legal trade terms, this increase is a form of subsidy, one that can cause dumping of arms on the international markets, and thus ultimately their diversion to illicit markets.⁷¹ The proliferation of conventional arms is generally sustained by a belief that higher defence spending equals increased security.⁷² For example, the Stockholm International Peace Research Institute (SIPRI) noted total global military expenditure rose to \$1981 billion in 2020, with the US being the largest military spender.⁷³

Furthermore, the conventional arms trade not only covers the finished products, but also their components parts, which can involve a number of WTO/ATT state parties. This is illustrated by a recent German embargo on arms exports destined for Saudi Arabia, in which Germany (an ATT State Party) justified its export restrictions on aircrafts’ components because of the Yemeni civil war. However, this ban impacted on the manufacturing of these aircrafts in the United Kingdom (also an ATT State Party), which consequently disputed its legality because it allegedly endangered the security interests of the European Union, as well as Saudi Arabia, the aircrafts’ recipient and ATT non-State Party.⁷⁴

69 See the words: Contraband, Goods, and Unascertained Goods in Elizabeth Martin (ed), *A Dictionary of Law* (5th edn., OUP 2003) 113, 221, 514.

70 Oana Tocoian, ‘The Home Market Effect in International Arms Trade’ (2015) *Economic Inquiry* 1751. See Asif Efrat, ‘Toward Internationally Regulated Goods: Controlling the Trade in Small Arms and Light Weapons’ (2010) *International Organization* 97.

71 Paul Holden and others, *Indefensible: Seven Myths that Sustain the Global Arms Trade* (Zen Books 2016) 58–64.

See Peter Evans, ‘The Financing Factor in Arms Sales: The Role of Official Export Credits and Guarantees’ in SIPRI, *SIPRI Yearbook 2003: Armaments, Disarmament, and International Security* (OUP 2003) 540. Stohl and Grillot’s list of “Legal Transactions to the Illicit Market”, and example on the challenge faced by the US in keeping track of its conventional arms and munition in Iraq post-2003 invasion, see Rachel Stohl and Suzette Grillot, *The International Arms Trade* (Polity Press 2009) 90, 100–102 citing United States Government Accountability Office, (*Operation Iraqi Freedom*, 22 March 2007) <www.gao.gov/assets/260/257967.pdf> accessed 1 May 2021.

72 Holden (n 71) 11–38; Richard Bitzinger, ‘The Globalization of the Arms Industry: The Next Proliferation Challenge’ (1994) *International Security* 170.

73 SIPRI Press Release, ‘World Military Spending Rises to Almost \$2 Trillion in 2020’ (*SIPRI*, 29 April 2021) <www.sipri.org/media/press-release/2021/world-military-spending-rises-almost-2-trillion-2020> accessed 1 May 2021.

74 Deutsche Welle, ‘Germany Rebuffs UK Call to Lift Ban on Arms Export to Saudi Arabia’ (*Deutsche Welle*, 2 February 2019) <www.dw.com/en/germany-rebuffs-uk-call-to-lift-ban-on-arms-exports-to-saudi-arabia/a-47596782> accessed 2 December 2020.

Additionally, the ATT States Parties are required to observe the ATT preambular principle that States are ‘determined to act in accordance with ... the responsibility of all States, in accordance with their international obligations’.⁷⁵ This principle, ATT Article 9 on regulating conventional arms trade ‘in accordance with relevant international law’, and Article 16:2 on seeking assistance from *inter alia* international organisations, require the ATT to draw on the best international legal practices for regulating international trade in conventional arms. Moreover, the principle of systemic integration (as expressed under Article 31:3(c) of the Vienna Convention on the Law of Treaties (VCLT)) applies to the interpretation of ATT, namely that ‘there shall be taken into account ... any relevant rules of international law applicable in the relations between the parties’.⁷⁶

However, Casey-Maslen argued that, despite the clarity of the wording of ATT Article 2(2) in relation to the trade “transfer” activities, ‘the precise scope of the term ‘trade’ was deliberately left ambiguous in the ATT’.⁷⁷ He also claimed that, although the export and import of conventional arms falls within the scope of WTO law, it is regrettable to see ‘the absence of any reference to trade agreements, the WTO or the principles of trade law’ in ATT.⁷⁸ Nonetheless, the ATT and WTO law share a similar purpose of establishing a fair competition between exporters and importers, as well as creating a stable and predictable multilateral trading system.⁷⁹ This system has been sustained by the reciprocal and non-discriminatory interactions between consenting states since the creation of the WTO’s predecessor, the GATT in 1948. Nonetheless, in response to the common unilateral nature of arms trade, the ATT does not contain any reciprocal obligation.

Furthermore, ATT and WTO also share a similar process of enforcement, primarily undertaken through an obligation of conformity. Carmody, in reference to procedural fairness noted that ‘WTO law is not a body of law that places direct emphasis on fairness. Instead, its most immediate concern is the ‘equality of competitive conditions’. This concern is tied to the general orientation

75 Preamble, the ATT (n 4).

76 The VCLT (n 4). See art 26:1 of the ATT (n 2).

77 Stuart Casey-Maslen, ‘The Title of the Treaty’ in Andrew Clapham and others, *The Arms Trade Treaty: A Commentary* (OUP 2016) 15.

78 *ibid.* 16 citing Joost Pauwelyn, ‘UN Arms Trade Treaty’ (*International Economic Law and Policy Blog*, 1 November 2012) <<https://ielp.worldtradelaw.net/2012/11/un-arms-trade-treaty.html>> accessed 1 May 2021.

79 See Ralph Ossa, “Trade Wars and Trade Talks with Data” (2014) *The American Economic Review* 4104.

of WTO law as an order of obligations,⁸⁰ as manifested in the obligation of conformity, which stipulates that a WTO Member State shall ensure the conformity of its laws with its obligations under WTO law (WTO Agreement Article (XVI:4), along with WTO Dispute Settlement Understanding Articles (19:1) (22:1) and (22:8)).⁸¹

However, the argument for excluding the conventional arms trade from international trade law is twofold: A) the WTO national security exceptions apply to all forms of trade in conventional arms at all times, and b) the ATT has created a self-contained regime that is separate from other international legal systems. Deciphering the first basis requires starting with the second general aspect, namely whether the ATT has created a self-contained regime separate from general international law, and therefore is, in essence, a *lex specialis* arms control regime with its own *sui generis* law.⁸² Although the ATT references two international trade law principles, along with international humanitarian and human rights obligations (thus making it a unique international legal system) no author has claimed that it has, to date, become a self-contained regime, because it is well-entrenched in public international law.⁸³

In terms of trade and security rules and enforcement procedures, the ATT is a by-product of international law-making, and can be best regarded as a soft legal regime influenced by hard law, informal rules, and international standards for controlling the conventional arms trade.⁸⁴ Furthermore, when for analytical purposes, the self-contained concept was applied to the WTO system, scholars found WTO had not been 'decoupled' from the secondary rules of general international law of state responsibility.⁸⁵ By analogy (and considering its

80 Chios Carmody, 'Fairness as Appropriateness: Some Reflections on Procedural Fairness in WTO Law' in Arman Sarvarian and others, *Procedural Fairness in International Courts and Tribunals* (British Institute of International and Comparative Law 2015) 278 citing (The Appellate Body Report, Japan-Taxes on Alcoholic Beverages, page 16, WT/DS8/AB/R, adopted 4 October 1996).

81 Julien Chaisse, 'Deconstructing the WTO Conformity Obligation: A Theory of Compliance as a Process' (2015) *Fordham International Law Journal* 5.

82 Yihdego (n 16) 299. See Anja Lindroos, 'Addressing Norm Conflicts in a Fragmented Legal System: The Doctrine of *Lex Specialis*' (2005) *Nordic Journal of International Law* 27.

83 See Echart Klein, 'Self-Contained Regime' 2006 *Max Plank Encyclopedia of International Law* <<https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1467?prd=EPIL>> accessed 1 May 2021.

84 See Holden (n 71) 80–81; On informal rules see Joost Pauwelyn, 'Rules-Based Trade 2.0? The Rise of Informal Rules and International Standards and How They May Outcompete WTO Treaties' (2014) *Journal of International Economic Law* 739.

85 Bruno Simma and Dirk Pulkowski, 'Of Planets and the Universe: Self-contained Regimes in International Law' (2006) *European Journal of International Law* 483. See Ulf Linderfalk, 'State Responsibility and the Primary-Secondary Rules Terminology- The

strong emphasis on State responsibility) the ATT cannot be either interpreted, or effectively implemented, in the absence of the international primary and secondary rules of obligations stemming from the treaty obligations, as well as the legal consequences of breaching those obligations.⁸⁶ For example, the ATT obligation forbidding a State Party from authorising the transfer of arms to any other State Party employing such weapons to commit genocide, is derived from the UN Genocide Convention. According to Clapham, if this obligation is breached, then exporting State Party is considered complicit in this crime, and (like the recipient State) liable for reparation.⁸⁷ In this case, both international primary and secondary rules of obligations are interlinked, due to being derived from an identical international source of law.

3.1 *The ATT and the WTO National Security Exceptions*

Proponents of the exemption of the conventional arms trade from WTO law reason that (regardless of its primary purpose of regulating essentially trade 'transfer' activities) ATT consists of a security treaty.⁸⁸ This infers that it forms a unique system, incapable of being connected to other international or regional legal systems, i.e. the WTO or regional trade agreements. It remains to be seen whether a conflict of jurisdiction will be caused by ATT Articles 15, 16 and 26 on relationships with other international agreements, due to the States Parties seeking cooperation and assistance with implementation after breaches of international or regional trade obligations. Additionally, the general indifference to the trading of conventional arms without referencing the concepts of "conditional contraband" (i.e. trading arms for peaceful uses), and "absolute contraband" (i.e. banning armaments primarily used for war) has significantly

Role of Language for an Understanding of the International Legal System' (2009) *Nordic Journal of International Law* 53.

86 Report of the ILC on the Work of its Twenty-Fifth Session, ILC Yearbook 1973, vol. 2, p. 161, at p. 169.

87 See art III:e of the Convention on the Prevention and Punishment of the Crime of Genocide (adopted 9 December 1948, entered into force 12 January 1951) UNTS 78, 277. Clapham also stated that State responsibility under the ATT regime entails that 'the offending state may be responsible for a breach of the treaty even before any act of genocide takes place; its liability under the ATT is for breach of the treaty obligation in authorising the transfer rather than for the consequences of any eventual genocide'. See Clapham and others, (n 77) 207. On the ATT and international criminal law see Lustgarten (n 10) 387–388 and Nina Jorgensen, 'State Responsibility for Aiding or Assisting International Crimes in the Context of the Arms Trade Treaty' (2014) *American Journal of International Law* 722.

88 See Yihdego; and Pemberton and Staples (n 16).

weakened the proposal to exclude all conventional arms trade from the WTO purview at all times.⁸⁹

It can thus be argued that the export and import of conventional arms can fall within the scope of the WTO as a result of GATT Article XI:1 on the General Elimination of Quantitative Restrictions. This Article stipulates that:

No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licences or other measures, shall be instituted or maintained by any [Member State] ... on the exportation or sale for export of any product destined for the territory of any other [Member State].⁹⁰

The WTO Analytical Index listing of products excluded from the application of GATT Article XI:1 does not include conventional arms, inferring that the export or import prohibitions or restrictions on trading such arms would violate WTO law.⁹¹ Nonetheless, the WTO Analytical Index acknowledges that:

Since practically all Members maintain some form of quantitative restrictions (e.g. prohibitions or restrictions relating to nuclear material, narcotic drugs, weapons, etc.), [The WTO Council for Trade in Goods' Decision on Notification Procedures for Quantitative Restrictions] seeks to provide transparency on the policy reason that justifies them. Provisions under the GATT 1994 that may allow a Member to introduce or maintain a quantitative restriction include ... Article XXI (security exceptions).⁹²

GATT Article XXI:b provides that a WTO Member State cannot be prevented from taking any action that:

[I]t considers necessary for the protection of its essential security interests ... (11) relating to the traffic in arms, ammunition and implements

89 Martin (n 69)113–114. See John Grant and J Craig Barker, *Parry & Grant Encyclopaedic Dictionary of International Law* (3rd edn, OUP 2009) 125.

90 GATT art XI:1, *The WTO Legal Texts* (n 12).

91 WTO Analytical Index: GATT 1994-Article XI (Practice) <www.wto.org/english/res_e/publications_e/ai17_e/gatt1994_art11_oth.pdf>. See WTO Analytical Index: GATT 1994-Article XI (Jurisprudence) <www.wto.org/english/res_e/publications_e/ai17_e/gatt1994_art11_jur.pdf> accessed 2 December 2020.

92 *ibid.*

of war and to such traffic in other goods and materials as is carried on directly or indirectly for the purpose of supplying a military establishment; [or] (III) taken in time of war or other emergency in international relations.⁹³

However, it is debatable whether these exceptions apply to all aspects of the conventional arms trade and at all times. Moreover, it remains undecided whether GATT Article XXI:c (which stipulates that the GATT does not prevent a State Party 'from taking any action in pursuance of its obligations under the United Nations Charter for the maintenance of international peace and security'), applies unconditionally to either the authorisation of conventional arms for peaceful purposes or restrictions for reason of security. It is thus argued that, when it comes to justiciability, GATT Article XXI:c proves less problematic than Article XXI:b. This is due to the ability of WTO Member States to impose economic sanctions (including an arms embargo) in compliance with decisions of the UN Security Council.⁹⁴ Furthermore, Casey-Maslen argued that exceptions to GATT Article XXI:b are inapplicable to the arms trade, particularly during times of peace and for non-military uses.⁹⁵ He highlighted the wide discretion available for WTO Member States and ATT States Parties to self-interpret their 'essential security interests' in order to breach their WTO and ATT obligations, by stating:

While the scope of the terms 'military establishment' may be wide, it certainly does not encompass civilian trade and it is questionable whether it extends to exports for the purpose of law enforcement by police forces. Moreover, the ATT focuses on the adverse consequences in a recipient state (not the security interest in the exporting state); indeed, an exporting state might define its 'essential security interest' in a way that would benefit from a transfer, as Article 7(1) of the treaty seems to imply, notwithstanding the negative consequences for civilian populations in the recipient state. At the same time, GATT Article XXI gives broad discretion to a WTO member to define what 'it considers' necessary to protect 'its essential security interests', and this could include export restrictions based on concerns for negative consequences in the recipient state

93 GATT art XI:1, *The WTO Legal Texts* (n 12).

94 Bossche and Zdouc (n 60) 628.

95 Casey-Maslen, 'The Title of the Treaty' (n 77) 15.

which, indirectly, may affect also the security interests of the exporting state.⁹⁶

Casey-Maslen concluded by highlighting that even the exception contained within the preamble of the WTO Technical Barriers to Trade Agreement (TBT) can be considered inapplicable to the international trade in conventional arms.⁹⁷ The TBT preamble stipulates that it does not prevent a WTO Member State from taking measures necessary for *inter alia* 'the protection of human ... life or health or for the prevention of deceptive practices'. However, Casey-Maslen maintained that this exception 'governs the technical quality of the arms or ammunition being exported, as opposed to the decision whether or not to export arms to certain recipients'.⁹⁸

3.2 *The State Subsidisation of the Arms Industry*

The preceding points can be demonstrated by the 1997 Canada-Aircraft dispute, which illustrated the legal risk of having trade discrimination in disguise as a result of the disconnection between conventional arms trade and WTO law. In this dispute, Brazil alleged that the Canadian government's programme of subsidies to aerospace and defence corporations for the production of civilian aircrafts was "prohibited export subsidies" in breach of Article 3 of the Agreement on Subsidies and Countervailing Measures (SCM).⁹⁹ One of the corporations benefiting from this programme was Bombardier, which at the time provided military aviation services.¹⁰⁰ However, the Panel ruled against Canada, finding that certain measures were inconsistent with Article 3 of the SCM.¹⁰¹

Following this ruling, Canada redesigned its programme to make it 'WTO-friendly', in particular by announcing a \$30 million subsidy programme for the

96 *ibid.* See the Analytical Index of the GATT-Article XXI Security Exceptions, Page 602 (WTO) <www.wto.org/English/res_e/booksp_e/gatt_ai_e/art21_e.pdf> accessed 11 May 2021.

97 Casey-Maslen, 'The Title of the Treaty' (n 77) 15.

98 *ibid.* See Lowenfeld who stated, 'Since Article XXI is a self-judging measure and no procedure has ever been created to subject a contracting party's assertion of national security to international scrutiny, the provision has the potential to become a significant means for evading GATT obligations'. Andreas Lowenfeld, *International Economic Law* (2nd edn, OUP 2008) 37.

99 DS70: Canada- Measures Affecting the Export of Civilian Aircraft.

100 Bombardier Inc, Press Release, 'Bombardier Announces Sale of its Military Aviation Services Unit' 10 June 2003 <<https://bombardier.com/en/media/news/bombardier-announces-sale-its-military-aviation-services-unit>> accessed 10 May 2021.

101 The Panel Report, Canada-Measures Affecting the Export of Civilian Aircrafts, WT/DS70/R, (adopted 14 April 1999) para. 10.1.

same corporations, but this time for the production of new weapons, as permissible under GATT Article XXI.¹⁰² This dispute did not end with the Appellate Body (AB)'s ruling, which upheld the Panel's findings, because Brazil filed three WTO complaints against Canada for similar export subsidies to the civilian aircrafts industry (last one in 2017).¹⁰³ Commenting on the 1997 dispute, Staples noted that 'the WTO gives exemplary protection to government actions that develop, arm and deploy armed forces and supply military establishment. Article XXI of the GATT allows government free reign for actions taken in the interest of national security ... in this case, the [Canadian] government was forced down the path of a military economy'.¹⁰⁴ Similarly, Feffer contended that the national security exception 'channels money from the civilian to the military sector [and] protects countries' subsidies for military production from international trade rules'.¹⁰⁵ Nonetheless, developed States have generously subsidized their arms industries during times of economic stability and crisis, allegedly for the purpose of protecting their national security interests at home and abroad.¹⁰⁶

One concerning outcome has resulted from States' arms procurement and subsidisation of the conventional arms industry in the name of national security: there has been uncontrollable proliferation of conventional arms which causes violence and criminality both domestically and internationally.¹⁰⁷ For

102 Canadian Press, '\$30 million for Defence Contractors' *Canadian Press, Ottawa* (18 October 1999).

103 See DS71: Canada-Measures Affecting the Export of Civilian Aircraft; DS222: Canada-Export Credits and Loan Guarantees for Regional Aircraft; and DS522: Canada Measures Concerning Trade in Commercial Aircraft.

104 Steven Staples, 'The Relationship Between Globalization and Militarism' (2000) *Social Justice* 18.

105 John Feffer, 'Globalization and Militarization' (*Institute for Policy Studies*, 4 October 2005) <https://ips-dc.org/globalization_militarization/> accessed 1 May 2021. See Tocoian (n 70).

106 For example, between 1996 and 2020 Lockheed Martin Corporation received \$1.8 billion in subsidies from the US government. The corporation has benefited from the US patronage during times of economic crises too, for instance, in the first half of 2020 it received \$1.1 billion because of the COVID-19 pandemic. Other corporations which benefited from the US financial support during this period include, Raytheon Technologies Corp. (\$410 million), L3 Harris Technologies Inc. (\$74 million) and Northrop Grumman Corp. (\$70 million). See SIPRI (n 73); Good Jobs First, 'Subsidy Tracker Partner Company Summary: Lockheed Martin' (*Good Jobs First*, 2020) <<https://subsidytracker.goodjobsfirst.org/parent/lockheed-martin->>; Anthony Capaccio, 'Lockheed, Boeing Got Half of 2.3 billion in Pentagon Virus Cash' (*Bloomberg*, 22 July 2020) <www.bloomberg.com/news/articles/2020-07-22/lockheed-boeing-got-half-of-2-3-billion-in-pentagon-virus-cash> accessed 14 June 2021.

107 See Allan Lichtman, *Repeal the Second Amendment: The Case for a Safer America* (St Martin's Publishing Group 2020); Engelbrecht and Hanighen, *Merchants of Death* (n 1).

instance, the dumping of conventional arms has taken place in developing States, potentially causing a “blowback effect” to the arms exporting State, that is the importing State or non-State actors using these arms to target their designated enemies, including the arms exporting State.¹⁰⁸ A well-documented example of such blowback concerns the US involvement in both Iraq and Afghanistan, following the collapse of their respective US-allied governments. In both cases, terrorist groups employed US-made armaments to wage a global war.¹⁰⁹ The challenges inherent in regulating the subsidisation of arms exports thus exposes the flaws in ATT enforcement, as analysed below. The following section also examines how transparency should be firmly embedded within ATT mechanisms.

4 The Arms Trade Treaty Enforcement System

Due to its role in regulating the trade and security obligations of States Parties, the ATT requires a higher level of conformity than the WTO. However, as illustrated by the following factors, it currently falls short of being a comprehensive multilateral trade and security treaty. Firstly, rather than setting down strictly binding provisions and timeframes, the ATT contains inadequate wording on enforcement and transparency; for example, Article 14 on enforcement reads ‘[E]ach State Party shall take appropriate measures to enforce national laws and regulations that implement the provisions of this Treaty’. In addition, Article 19 on the dispute settlement procedures is too brief to assure compliance,¹¹⁰ including the need to foresee the common situation of States failing to agree on how to resolve disputes within a specific timeframe.¹¹¹ This infers that ATT cannot be regarded as strictly binding, when some of its core obligations (i.e. on Implementation, Diversion and Reporting) contain recommendatory words i.e. States Parties being “encouraged” to act.¹¹²

The weakness of ATT thus impacts on one of the key principles concerning the observance of treaties, i.e. the *pacta sunt servanda* (as set out under

108 See Stohl and Grillot (n 71); Holden (n 71).

109 Stohl and Grillot (71) 90, 100–102; Aisha Ahmad, *Jihad & Co.: Black Markets and Islamist Power* (OUP 2017) 32–37, 148–150; Holden (n 71) 58–64.

110 See arts 5(4) and 14 of the ATT (n 4).

111 Article 19 maintains “1. States Parties shall consult and, by mutual consent, cooperate to pursue settlement of any dispute ... through negotiations ... 2. States Parties may pursue, by mutual consent, arbitration to settle any dispute between them ...” see the ATT (n 4).

112 See arts 5(3–4); 7(7); 11(5–6); 12 (2–3); 13 (2); 15(2–6); 16(3) of the ATT (n 4).

Article 26 of VCLT) that ‘every treaty in force is binding upon the parties to it and must be performed by them in good faith’.¹¹³ In addition, as it stands, the ATT invites both good and bad faith performance, which poses considerable risks for an arms trade industry suffering from endemic corruption and secrecy.¹¹⁴ Secondly, the ATT States Parties have not yet invoked the key legal rules of international trade, nor their exceptions, primarily in response to the ATT ambiguity. The international rules on trade liberalisation are subject to a number of exceptions regulating the State’s inherent rights of freedom of trade and security, as specified under GATT Articles XIV, XX, and XXI, and supplemented by other WTO Agreements and explicated by a number of WTO Dispute Settlement Body (DSB) rulings and recommendations.¹¹⁵

The only ATT guiding rules capable of being regarded as legitimate exceptions for States Parties to deviate from their trade obligations are: firstly, the preambular point that State Parties recognise ‘the legitimate political, security, economic and commercial interests of States in the international trade in conventional arms’.¹¹⁶ Secondly, this point being reiterated as a preambular principle in the treaty with an additional sentence specifying that respect for the legitimate interests of States includes their rights to ‘produce, export, import and transfer conventional arms’.¹¹⁷ Nonetheless, these preambular points and principles are inadequate exceptions potentially susceptible (particularly when it comes to arms exporting States) to misinterpretation and breaches.¹¹⁸

Thirdly, the ATT lacks any appropriate mechanism to scrutinise a State Party’s arms export control system, or to penalise such a State for breaching its international legal obligations. ATT Article 7(2) gives arms exporting and importing State Parties the right to adopt their own “risk mitigating programmes”. However, it should be acknowledged that this right has been abused by arms exporting States, and many importing States lack the capacity to implement this programme.¹¹⁹ For instance, a number of arms importing States have failed

113 Art 26 of the VCLT (n 4).

114 Art 13:3 of the ATT permits States Parties without explanation to exclude from their annual reports any ‘commercially sensitive or national security information’, the ATT (n 4). See Yashuito Fukui, ‘The Arms Trade Treaty: Pursuit for the Effective Control of Arms Transfer’ (2015) *Journal of Conflict and Security Law* 301; Laurence Lustgarten, ‘The Arms Trade: A Critical Introduction’ in Lustgarten (n 10) 20–23; Holden (n 71) 135–152.

115 The WTO: Disputes by Agreement: GATT 1994: <www.wto.org/english/tratop_e/dispu_e/dispu_agreements_index_e.htm> accessed 1 May 2021.

116 Preamble, the ATT (n 4).

117 Principles, the ATT (n 4).

118 See Laurence Lustgarten, ‘The Arms Trade Treaty: Achievements, Failings, Future’ (2015) *International and Comparative Law Quarterly* 569; Stavrianakis (n 55).

119 Art 7(2) the ATT (n 4). Lustgarten (n 10) 94.

to uphold their arms end-user agreements, as a result of the lack of capacity, causing the diversion of arms to illicit markets.¹²⁰

Fourthly, the ATT suffers from a lack of available legal remedies for non-ATT State Parties (Third States) and non-State actors impacted by this treaty implementation, or the lack thereof.¹²¹ This is evident in ATT Articles 6 and 7 concerning Prohibitions and Export, as well as Articles 5 (Implementation), 14 (Enforcement), and 19 (Dispute Settlement) which provide rules for ATT States Parties only. Thus, if a third State arms exporter or importer, or NGO representing the legitimate rights and interests of traders or civilians, have been affected by an ATT State Party's misinterpretation or mis-implementation, they can only seek enforcement, protection, or recovery of rights through the offending ATT State Party. This represents a significant obstacle for both ATT and all its stakeholders.¹²²

4.1 *The ATT Function of Cooperative Enforcement*

In terms of legal practice, the ATT held six Conferences of States Parties (CSPs) between 2015 and 2020, and (according to the ATT) CSP functions include considering 'amendments to this Treaty in accordance with Article 20 [six years after the entry into force of this Treaty, i.e. 2021] [and] issues arising from the interpretation of this Treaty'.¹²³ The 2016 CSP2 proved the most significant in terms of proposals for implementation and transparency with the States Parties establishing three standing Working Groups on: firstly, Treaty Universalisation (WGTU), secondly, Transparency and Reporting (WGTR), and thirdly, Effective Treaty Implementation (WGETI).¹²⁴ These groups assist States Parties in implementing the ATT according to their respective mandates, while during CSP4 "the WGETI Chair established three Sub-working groups to focus

120 Tobias Vestner, 'Prohibitions and Export Assessment: Tracking Implementation of the Arms Trade Treaty' (2019) The Geneva Centre for Security Policy Research Paper <www.gcsp.ch/publications/prohibitions-and-export-assessment-tracking-implementation-arms-trade-treaty> accessed 30 April 2021.

121 Some of the major exporters and importers of conventional arms are third States such as the US and Egypt see Stohl and Grillot (n 71) 138; Elli Kytomaki, 'The Defence Industry, Investors and the Arms Trade Treaty' (*Chathamhouse*, 2014) <www.chathamhouse.org/publication/defence-industry-investors-and-arms-trade-treaty> accessed 1 May 2021.

122 Jennifer Erickson, *Dangerous Trade: Arms Exports, Human Rights, and International Reputation* (Columbia University Press 2015) 152.

123 Art 17:4 of the ATT (n 4).

124 Working Groups, (ATT) <<https://thearmstradetreaty.org/working-groups.html?templateId=117307>> accessed 1 May 2021.

on specific areas of Treaty implementation”, i.e. ATT Article 5, Articles 6 and 7, and Article 11.¹²⁵

The CSP2 was also important for establishing the ATT Voluntary Trust Fund (VTF) to ‘support national implementation of the Treaty and encourage all States Parties to contribute resources to the Fund’.¹²⁶ The beneficiaries of VTF projects have been ATT States Parties, Signatory States and other States demonstrating a political commitment to acceding to the ATT.¹²⁷ ATT treaty universalisation, along with the active and consistent participation of NGOs and civil society in the ATT six CSPs, can be considered to have raised States’ awareness of the security implications of an unregulated arms trade industry. Furthermore, this enables a stronger argument to be made in favour of customary international law, as (according to Article 38 of the VCLT) international custom ensures a rule in a treaty becomes binding on a third State;¹²⁸ i.e. an ATT peremptory norm against genocide is binding on third States, due to it constituting a customary rule of international law.¹²⁹ This permits ATT to support third parties in directly protecting their rights under the jurisdiction of an offending State Party, to hold it accountable to its treaty obligations.¹³⁰

Nevertheless, ATT is rendered ineffective by the lack of specified legal remedies in the treaty, readily invoked by affected State and non-State actors and enforced by its mechanisms, because, *inter alia*, States Parties’ cooperation in enforcing third parties rights cannot be legally guaranteed in the absence of obligatory rules and a judicial or quasi-judicial enforcement body.¹³¹ Thus, a treaty primarily founded on soft law obligations, is incapable of supporting its States Parties (let alone third parties) to enforce their rights and obligations.¹³² Commenting on the ATT, Holden noted that:

The weakness of the Arms Trade Treaty ... is a further commentary on how States around the world, in particular those that are the biggest

125 *ibid.* The CSP5 ended the Sub-working group on Article 5 and established a Sub-working group on Article 9.

126 Voluntary Trust Fund, (ATT) <<https://thearmstradetreaty.org/voluntary.html>> accessed 1 May 2021.

127 *ibid.*

128 Art 38 of The VCLT (n 4).

129 See James Crawford, *State Responsibility: The General Part* (CUP 2013) 106 citing art 41 of the UN Draft Articles on the Responsibility of States for Internationally Wrongful Acts 2001.

130 *ibid.*

131 Erickson (n 122) 152.

132 Holden (n 71) 80–81.

arms producers, so effectively manipulate the international regulatory environment in the interests of arms manufacturers rather than global citizens. Perhaps it is the beginning of a bigger debate, and the treaty can be radically revised over time. But as it stands, it will do little to limit the worst parts of the arms trade.¹³³

However, although WTO suffers from the identical issues concerning third parties, its binding rules provide effective remedies for Member States representing the legitimate interests of their traders, while the WTO DSB has offered security and predictability by monitoring and securing compliance.¹³⁴ Moreover, the WTO has made some progress in the effective management of trade risks; for example, by assisting Member States regulating factors associated with non-communicable diseases.¹³⁵ The WTO experience in general can be considered highly instructive for both ATT law and practice. In brief, international arms control and the WTO law are two academic fields divided by a common subject: The study of international trade law. The WTO enforcement mechanisms are explicated below to demonstrate the similarities between ATT and WTO, as well as the mutually beneficial cross-fertilisation between the two systems for the upcoming ATT reform.

4.2 *The ATT and the WTO Enforcement Mechanisms*

This subsection compares ATT and WTO enforcement mechanisms, in order to highlight the strengths and weaknesses of both multilateral trading systems. The ATT and WTO share the same original purpose of regulating the international trade of merchandised goods, but differ markedly in terms of compliance and enforcement. The ATT primary enforcement mechanisms are stipulated briefly in Article 14 on enforcement and Article 19 on dispute settlement. However, the ATT is mainly enforced by cooperative enforcement mechanisms, by means of reporting, and voluntary consultations between States Parties, being influenced by the incentive to comply as a result of the potential reputational costs to the State.¹³⁶ Erickson; for instance, argued that, even during

¹³³ Holden (n 71) 81.

¹³⁴ See John Jackson and Carlos Vazquez 'Some Reflections on Compliance with WTO Dispute Settlement Decisions' (2002) *Law and Policy in International Business* 555.

¹³⁵ Tania Voon and Andrew D Mitchell, 'International Trade Law' in Tania Voon, Andrew Mitchell, and Jonathan Liberman (eds.), *Regulating Tobacco, Alcohol, and Unhealthy Food* (Routledge 2016) 92–94. See Justin Paul and Rajiv Aserkar, *Export Import Management* (OUP 2013).

¹³⁶ See the ATT arts 13 on reporting and Articles 17:7, 15:3 and 19:1 on consultations. See Erickson (n 122); Rachel Brewster, 'Unpacking the State's Reputation' (2009) *Harvard International*

and following the ATT negotiation, ‘States’ varied concerns for compliance can be traced primarily to the threat of reputational damage from “irresponsible” arms transfers in domestic politics.¹³⁷

In addition, Erickson pointed out that ‘concern for international reputation may pressure States to commit to new policies, but without international accountability mechanisms, those policies’ ability to inspire compliance may be limited.¹³⁸ These policies include risk mitigating programmes; for example, a system for licencing arms exports and end-user agreements, but without international legal accountability, they lack efficacy.¹³⁹ Furthermore, SIPRI reported in 2021 that the ATT’s enforcement problems have persisted namely ‘shortfalls in compliance with mandatory reporting and a decline in the number of publicly available reports’.¹⁴⁰ Nevertheless, unlike ATT, the WTO contains both a designated compliance body, (i.e. DSB) and an implementation review mechanism, the Trade Policy Review Body (TPRB).¹⁴¹ The sole objective of these WTO mechanisms is to deter non-compliance generally arising from either ‘norm ambiguities’ and/or ‘capacity limitations’.¹⁴²

The WTO DSB consists of representatives from all Member States’ governments and has authority to *inter alia* ‘adopt panel, AB and arbitration reports, [and] maintain surveillance over the implementation of recommendations and rulings contained in such reports’.¹⁴³ The WTO dispute settlement process is formed of three main stages: ‘(I) consultation between the parties; (II) adjudication by panel, and if applicable, by the AB; and (III) the implementation of ruling, which include the possibility of countermeasures in the event of failure

Law Journal 23; Dietrich Earnhart and Robert Glicksman, ‘Coercive vs. Cooperative Enforcement: Effect of Enforcement Approach on Environmental Management’ (2015) *International Review of Law and Economics* 135.

137 Erickson (n 122) 5.

138 *ibid* 7.

139 See Jutta Brunnée, ‘International Legal Accountability Through the Lens of the Law of State Responsibility’ (2005) *Netherlands Yearbook of International Law* 3.

140 SIPRI, *SIPRI Yearbook 2021: Armaments, Disarmament and International Security* (SIPRI, 2021, page 24) <https://sipri.org/sites/default/files/2021-06/sipri_yb21_summary_en_v2_0.pdf> accessed 15 June 2021.

141 Jutta Brunnée, ‘Compliance Control’ in Geir Ulfstein and others (eds), *Making Treaties Work: Human Rights, Environment and Arms Control* (CUP 2007) 382.

142 *ibid* 373.

143 The WTO DSB, (WTO) <www.wto.org/english/tratop_e/dispu_e/dispu_body_e.htm> accessed 1 May 2021.

by the losing party to implement the ruling'.¹⁴⁴ All are subject to separate time-frames, and permit and encourage amicable settlements.¹⁴⁵

The legal motive for the initiation of consultation is that once a State has anticipated, that 'a decision or a proposed course of action' may harm its rights and obligations. Thus consultation can prove 'a way of heading off a dispute', by engaging in dialogue with the offending State, so as to find a mutual solution.¹⁴⁶ Furthermore, the WTO also acknowledged that 'a majority of disputes so far ... have not proceeded beyond consultations, either because a satisfactory settlement was found, or because the complainant decided for other reasons not to pursue the matter further'.¹⁴⁷ However, it is incorrect to assume that the existence of the WTO DSB, and in particular the AB, makes it the sole arbiter of legality, rather than the WTO as an institution, since it is primarily comprised of political organs for decision-making.¹⁴⁸ This can be viewed as a caricature of legality, including its reductionist views of how and where to improve compliance, which miss the crucial point that dispute settlement forms only one element of interactional international law.¹⁴⁹

There are a number of bodies and organs that jointly exceed the DSB in importance (i.e. the TPRB, various committees, working parties on accession, and working groups) all of whom play a pivotal role in maintaining compliance with WTO obligations. According to paragraph A(1) of the WTO Trade Policy Review Mechanism (TPRM) (i.e. the TPRB enforcement mechanism), the objectives of the review includes improving 'adherence by all members to the WTO rules, disciplines and commitments'.¹⁵⁰ Moreover, the TPRM likely impact is 'to 'shame' Members into compliance and to support domestic opposition to trade policy and practices inconsistent with WTO law'.¹⁵¹ Thus, the TPRM is best regarded as 'an implementation review mechanism' performing a significant enforcement role complementing the work of the WTO compliance

144 The WTO- The Process – Stages in a Typical WTO Dispute Settlement Case (WTO) <www.wto.org/english/tratop_e/dispu_e/dispu_settlement_cbt_e/c6s1p1_e.htm> accessed 1 May 2021.

145 *ibid.*

146 JG Merrills, *International Dispute Settlement* (5th edn, CUP 2011) 2.

147 *ibid.*

148 Robert Wolfe, 'See You in Geneva? Legal (Mis)Representations of the Trading System' (2005) *European Journal of International Relations* 339.

149 Jutta Brunnée and Stephen J Toope, *Legitimacy and Legality in International Law: An Interactional Account* (CUP 2010) 108–114.

150 The WTO TPRM, (WTO, 1 January 2019) <www.wto.org/english/docs_e/legal_e/29-tprm_e.htm> accessed 2 December 2020.

151 Bossche and Zdouc (n 60) 103. See Mathias Kende, *The Trade Policy Review Mechanism: A Critical Analysis* (OUP 2018); Brewster (n 136).

body of DSB.¹⁵² Overall, the WTO can be viewed, in terms of enforcement, as more advanced than the ATT, not only as a result of the former's rich legal history and jurisprudence, but also for its strict rules and procedures for Member States legal interactions and enforcement.

5 Findings and Recommendations for Reforming the Arms Trade Treaty

The textual defects and inadequate enforcement procedures of ATT ensures that it remains incomparable to the WTO, and hence is in need of reform, as discussed below. Firstly, the ATT needs to establish a clear connection between the trade and security impact of an unregulated conventional arms industry, as well as any diversion of arms to the illicit markets. As alluded to earlier, the subsidisation of the arms industry in the name of national security is one of the main causes of the diversion of arms to poorly regulated developing countries. The aforementioned "blowback effect" to an arms-exporting State clearly highlights the risk of disconnecting conventional arms trade from security, and the weakness of the argument focusing on sovereignty. The ATT treaty and system should thus assist States in realising the risks associated with an unregulated arms industry, as well as utilising the best international legal practices for the effective management of these risks.

Secondly, the main legal and political incentives for States to seek international adjudication is to ensure compliance with international legal obligations, as well as manage domestic politics and defend their interests.¹⁵³ However, the ATT voluntary dispute settlement system lacks these crucial incentives, resulting in States Parties trading arms with neither transparency nor accountability, thus misinterpreting and mis-implementing the ATT and jeopardising the security interests of non-State parties. Thirdly, despite the positive impact of the State's international reputation, the ATT cannot rely solely on cooperative enforcement through reporting and consultation, without the coercive enforcement mechanism of a standing DSB with a strict timeframe, as well as the surveillance and monitoring of implementation. Fourthly, the ATT should adopt an interactional legal process, in particular by establishing compulsory diplomatic and quasi-judicial enforcement mechanisms, alongside councils

152 See Brunnée, 'Compliance Control' (n 141) 382.

153 See Christina Davis, *Why Adjudicate? Enforcing Trade Rules in the WTO* (Princeton UP 2012).

for States Parties' continuous regulated interactions in relation to interpretation, implementation and transparency.¹⁵⁴

The ATT remains pertinent during times of relative peace or conflict; inferring that its States Parties need to maintain their legal interaction in order to ensure optimal compliance with ATT obligations. In addition, the ATT and WTO's focus on the obligation of conformity can be read as the construction of 'an interactional theory of compliance', as a result of ATT/WTO States engagements in the legal process of determining the obligation to comply through cooperative enforcement, so demonstrating that compliance is a 'dialectal process in a continuum'.¹⁵⁵ Thus, the WTO regulatory system should be adopted for managing international trade in conventional arms, due to the following three reasons: first, the ATT, albeit its ambiguity, does not explicitly exclude WTO law, hence the direct and indirect references to the WTO law and its core international trade principles by ATT negotiating States. Second, the ATT "transfer" trade activities, principles of non-discrimination and transparency, and enforcement through the obligation of conformity, ensures WTO constitutes the most pertinent archetypal system for the ATT reform. Finally, the ATT and the WTO shared issues of subsidisation and dumping of goods, require rules and mechanisms such as those of the WTO's, for effectively regulating the conventional arms trade.

6 Conclusion

This chapter has: First examined the issues arising from the ATT's lack of international trade law and practice, especially the WTO rules and procedures, and second, highlighted that the trade law deficit in ATT has led to major defects negatively impacting the enforcement of international legal obligations of States Parties. The key finding is that the ATT's legal history, core obligations and mechanisms, along with its relationship to other international legal systems, demonstrate that it is firmly embedded in both the legal theory and practice of international trade law.

Nonetheless, the significance of trade law has gradually retreated as ATT (re)negotiations have progressed, resulting in arms exporting States subsequently being able to evade international accountability for breaching the

¹⁵⁴ See Brunnée and Toope (n 149).

¹⁵⁵ Chaisse (n 81); Jackson and Vazquez (n 134).

ATT, due to reliance on their own arms control systems. Moreover, some of these States have promoted a risky culture of “collective guilt”, in which none can be held legally responsible or complicit in crimes caused by an illegal transfer of conventional arms. Nonetheless, ATT lacks standing enforcement bodies to: firstly, ensure effective compliance and transparency, and secondly, enforce the trade law obligation of conformity within open forums for States legal interactions. This highlights the ATT need for reform, since it is neither strictly binding nor voluntary, but lacks implementation, and thus risks losing any international legal relevance.

This chapter concludes that ATT should learn from the WTO dialectical process of enforcement through different legal interactions settings i.e. councils, DSB, and TPRB. In addition, the ATT should create a cooperative enforcement mechanism for strategically managing and rectifying risks arising from treaty breaches. This mechanism should possess the authority to cooperate with the arms control departments of States Parties, in order to ensure breaches do not reoccur.

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Ice Management Research and the Arctic Marine Environment

Gabriela Argüello and Julia Johansson

1 Introduction

In 2019, the Intergovernmental Panel on Climate Change (IPCC) highlighted the cryosphere's fundamental role in redistributing "natural and anthropogenic carbon dioxide (CO₂) and heat."¹ However, several decades after the negotiation of the 1992 United Nations Convention Framework Convention on Climate Change (UNFCCC), "anthropogenic emissions of greenhouse gases are the highest in history."² Even if the 2015 Paris Agreement is fully implemented, it will most likely not prevent the ongoing warming of the Arctic Ocean.³ Thus, ice loss and retreat will continue.⁴ This scenario may bring solar radiation management (SRM) techniques to the fore. SRM is a category of geoengineering⁵ that includes various techniques. SRM aims to increase the Earth's albedo, i.e., capacity to reflect solar radiation, and therefore decrease "global average temperatures."⁶ SRM has no impact on emissions per se, so while lower average temperatures may contribute to sustaining ice sheets and snow patterns, it has no effect on other detrimental effects of increasing CO₂ emissions, including ocean acidification.

1 Intergovernmental Panel on Climate Change (IPCC) 'The Ocean and Cryosphere in a Changing Climate' (24 September 2019) 3.

2 Intergovernmental Panel on Climate Change (IPCC) 'Climate Change 2014 Synthesis Report: Summary for Policymakers' (2014) 2.

3 Arctic Monitoring and Assessment Programme (AMAP) 'Snow, Water, Ice and Permafrost in the Arctic: Summary for Policy-makers' (2017) 8.

4 Importantly, it does not mean however that mitigation efforts are meaningless. A substantial reduction of emissions will stabilise the Arctic. Nonetheless, "the changes underway in the Arctic are expected to continue through at least mid-century, substantial global reductions in net greenhouse gas emissions can begin to stabilize some trends (albeit at higher levels than today) after that." *ibid* 6.

5 Also known as climate engineering, refers to the "deliberate large-scale intervention in the Earth's climate system to moderate global warming." The Royal Society 'Geoengineering the Climate: Science, Governance and Uncertainty' (September 2009) ix.

6 "Various techniques have been proposed to produce this effect; these involve brightening the Earth's surface, introducing reflective matter into the atmosphere, or inserting light scattering material in space between the Sun and the Earth." *ibid* ix and 23.

The political, technical, environmental, and ethical questions of traditional SRM techniques, e.g., stratospheric aerosol injection, have been extensively discussed. However, in recent years, novel ice management techniques have been claimed to be different from traditional SRM techniques since the former are regionally constrained and potentially reversible. These techniques have even been compared to reforestation,⁷ but critics also highlight the potential risks of such techniques.

In general, the literature points out four risks of geoengineering that have been roughly labelled as moral hazard, 'slippery slope,' international conflict escalation, and governance trap. The moral hazard risk indicates that mitigation efforts would diminish if technology became a cheaper and 'simpler' alternative for counteracting climate change.⁸ Slippery slope refers to two related problems. One is that control of technologies will lead to decision biases and then inexorably to deployment. The second is technology lock-ins, where one is obliged to continue deployment for extended periods (mainly of SRM techniques) because a sudden termination could lead to rapid temperature increases.⁹ International conflict escalation may result from research following the path of least resistance, e.g., in States with lax or in-existent regulation or rogue research and deployment.¹⁰ Finally, the governance trap refers to multiple regulatory structures within institutions pursuing a particular objective that may incidentally claim jurisdiction over geoengineering.¹¹ Historically, instead of triggering a governance negotiation process, these risks have cast a shadow over geoengineering research, leading to governance stagnation.

In this chapter, we analyse geoengineering research governance of the marine environment, emphasising novel ice-management techniques in the Arctic Ocean. We will utilise the four risks outlined in this discussion, demonstrating why geoengineering research is heading towards a governance trap.

7 Daniel Bodansky and Hugh Hunt, 'Arctic Climate Interventions' (2020) 35 *The International Journal of Marine and Coastal Law* 596, 608.

8 The first proponent of the moral hazard was Stephen Schneider, 'Geoengineering: Could – or Should – We Do It?' (1996) 33 *Climate Change* 291.

9 Albert Lin, 'Avoiding Lock-in of Solar Geoengineering' (2020) 47 *Northern Kentucky Law* 139. Catriona McKinnon, 'Sleepwalking into lock-in? Avoiding wrongs to future people in the governance of solar radiation management research' (2019) 28 *Environmental Politics: Symposium on 'Geoengineering: Governing Solar Radiation Management'* 441.

10 Albert Lin, 'The Missing Pieces of Geoengineering Research Governance' (2016) 6 *Minnesota Law Review* 2509. Michael Burger and Justin Gundlach, 'Research Governance' in Michael Gerrard and Tracy Hester (eds), *Climate Engineering and the Law: Regulation and Liability for Solar Radiation Management and Carbon Dioxide Removal* (CUP 2018).

11 Burger and Gundlach (n 10) 280–281.

There is currently no comprehensive legal regulation on geoengineering research in the marine environment. The common international policy standpoint appears to be ‘governance before deployment.’¹² We argue, however, that comprehensive ‘governance before research’ is also required, something that is currently missing. The UNCLOS general legal framework and the 1996 Protocol to the 1972 London Convention on dumping do not adequately address the particular geoengineering research risks. Thus, the international community should negotiate a multilateral governance framework concerning geoengineering research. This framework can, later on, be complemented by a technique-by-technique approach regulation.

The rest of the chapter is structured as follows: Section 2 briefly introduces ice management research. Section 3 provides an overview of ice management techniques and the Arctic marine environment and describes why Arctic ice management research has local, regional, and global legal implications. Section 4 discusses law as a risk co-creator. Section 5 examines the legal framework applicable to ice management research. Section 6 evaluates the fragmented governance structure and suggests the negotiation of a multilateral framework. In Section 7, the authors present the conclusions.

2 Setting the Scene: Ice Management Research

Novel SRM techniques to preserve ice in the polar regions, including the Arctic Ocean, are also called ‘ice management’ or ‘ice interventions.’ This labelling appears to imply that while specific SRM techniques, e.g., stratospheric aerosol injections, could have unknown risks and severe global consequences, some techniques could be regionally deployed, and their repercussions would also be regional.¹³ The terminology could also denote that ice management or other interventions are different from geoengineering because their deployment is less risky. In the words of Desch and others, ice management could be categorised as geoengineering if used “to increase summer sea ice and therefore increase the albedo in the Arctic, but the primary goal is to restore the

12 “There is a broad consensus on several basic points pertaining to the relationship between climate engineering research and its governance. First, governance should precede deployment of climate engineering technology even if governance does not precede all research.” *ibid* 269.

13 Steven Desch and others, ‘Arctic Ice Management’ (2017) 5 *Earth’s Future* 107, 112. Bodansky and Hunt (n 7) 596.

Arctic sea ice to its state before anthropogenic climate change.”¹⁴ Bodansky and Hunt make a similar argument, i.e., “Arctic interventions differ in important respects. They are closer in kind to conventional mitigation and adaptation and should be evaluated in similar terms.”¹⁵ Independently of the nuances that researchers use to categorise their research, all these techniques are catalogued in this chapter as SRM techniques.

SRM research includes both activities and technology. Research activities comprise modelling and laboratory experiments¹⁶ and field experimentation at small, medium and large scales. Field research is particularly controversial since it may be categorised as deployment. SRM *technology* is defined as material entities, e.g., machines, tools, apparatus, and immaterial entities such as processes that purposely intend to modify the Earth’s climate. When used with this particular intention, material entities of technology become relevant from a governance perspective. Overall, geoengineering technology is not always innovative, but the novelty could lie in its application. Rebelo (in this volume) discusses in-depth the risks associated with technology innovation.

Ice management techniques are a case in point where ordinary technology is used, such as pumps and glass particles,¹⁷ but its potential use to modify the climate is what brings this technology into the realm of geoengineering. The technological challenges ice management faces concern the geographical scale the technology needs to cover and the deployment under the harsh Arctic weather.¹⁸

3 Ice Management in the Arctic Ocean

Preserving the ice of the Arctic Ocean has both local and global repercussions. The polar regions uptake and redistribute “natural and anthropogenic carbon

14 Desch and others, (n 13) 111–112. See also, L Field and others, ‘Increasing Arctic Sea Ice Albedo Using Localized Reversible Geoengineering’ (2018) *Earth’s Future*. S Tilmes and others, ‘Can regional climate engineering save the summer Arctic sea ice?’ (2014) 41 *Geophysical Research Letters* 880. Lisa Miller and others, ‘Implication of Sea Ice Management for Arctic Biogeochemistry’ (2020) 101 *EOS*.

15 Bodansky and Hunt (n 7) 596.

16 Modeling and laboratory studies pose little to no risk of impact to the climate, environment, or society, and so new governance mechanisms are not likely to be needed. Asilomar Scientific Organizing Committee, *The Asilomar Conference: Recommendations on Principles for Research into Climate Engineering Techniques* (November 2010) 18.

17 *Infra* Section 3.1.

18 Desch and others (n 13) 121.

dioxide (CO₂) and heat.”¹⁹ With rising temperatures, the ice of the Arctic Ocean is diminishing both in thickness and extent, which endangers its capacity to regulate the Earth’s climate. For example, ice retreat increases the absorption of solar radiation, triggering further ice loss.²⁰ Besides, declining permafrost will contribute to greenhouse gas emissions in the future.²¹ The global consequences include sea-level rise, ocean circulation variation in the North Sea, changes in weather patterns “in lower latitudes, even influencing Southeast Asian monsoons.”²² From a local perspective, climate change dramatically disrupts the arctic marine environment, including coastal erosion, redistribution of species, algae blooms and changes in ecosystems.²³ Certainly, a warming Arctic Ocean will no longer be a remote and isolated environment. In fact, its current changes have already had ripple effects across the world.²⁴

3.1 *Ice Management Techniques*

This section presents the novel SRM techniques that could potentially save the ice of the Arctic Ocean.²⁵ Focusing on SRM in the Arctic Ocean comes with the realisation that mitigation efforts, i.e., gradual reduction of greenhouse gas emissions, will most likely not prevent, at least until mid-century, the ongoing warming of the Arctic Ocean and the continuous ice loss and retreat. Consequently, it is worth exploring whether law could enable SRM research in this area or not.

19 IPCC, *The Ocean and Cryosphere in a Changing Climate* (n 1) 3.

20 Donald Perovich and others, ‘Sunlight, water, and ice: Extreme Arctic sea ice melt during the summer of 2007’ (2008) 35 *Geophysical Research Letters* 1.

21 AMAP (n 3) 5. Susan Natali and others, ‘Large loss of CO₂ in winter observed across the northern permafrost region’ (November 2019) 9 *Nature Climate Change* 852.

22 AMAP (n 3) 3–6.

23 OA Anisimov and others, ‘Polar regions (Arctic and Antarctic) Climate Change 2007: Impacts, Adaptation and Vulnerability’ in ML Parry and others (eds), *Climate Change 2007: Impacts, Adaptation and Vulnerability Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (CUP 2007) 665.

24 “The Arctic is bearing the brunt of global warming, and these effects have the potential to trigger a series of tipping points, which, in turn, scientists worry, could irreversibly alter the balance of the earth’s system, at least as it prevailed during the last 10,000 years of the Holocene.” Klaus Dodds and Mark Nuttall, *The Arctic: What Everyone Needs to Know* (OUP 2019) 203.

25 Consequently, traditional SRM techniques, such as space-based reflectors and stratospheric aerosols injection, are outside the scope of this chapter. Carbon dioxide removal (CDR) techniques are also excluded from this chapter.

3.1.1 Arctic Marine Cloud Brightening

Marine cloud brightening enhances the reflection of clouds' solar radiation. Dispersing seawater over the ocean increases "cloud droplet concentration ... and thus cloud albedo."²⁶ In other words, it intends to make clouds whiter to decrease the absorption of solar radiation. This technique is presented as a regional alternative to preserve ice in the Arctic Ocean and, therefore, some studies suggest that a potential deployment could be regionally constrained.²⁷ Latham and others even argue that marine cloud brightening could "weaken hurricanes and reduce coral bleaching."²⁸ In the event of unforeseen consequences, the deployment could be terminated and after a few days, the seawater droplets would "rain or settle out of the atmosphere."²⁹ The main challenge is devising the technology (pumps, vessels, aircraft) to disperse the necessary seawater droplets. Whether marine cloud brightening could be, in fact, regionally constrained is a matter of controversy. Uncertainties remain concerning large-scale changes in weather patterns, ocean currents³⁰ and ozone depletion.³¹

3.1.2 Flooding – Refreezing

In 2017, Desch and others claimed that Arctic sea ice could be increased during winter by using wind-powered pumps to spray seawater on "the top surface of the ice."³² Once in contact with the ice, pumped water will freeze, Arctic sea ice will thicken and the melting rate during the summer will decrease.³³ The challenge to pump the amount of water required is considerable under extreme weather conditions.³⁴ This technique is presented as benign since its

26 John Latham and others, 'Marine cloud brightening: regional applications' (2014) 372 *Philosophical Transactions of the Royal Society A* 12.

27 Latham and others mention that marine cloud brightening "differs from some other SRM strategies in that it could in principle also be deployed on a much less than global scale, thus offering a range of regional applications." *ibid* 3. According to Desch "Sulfate aerosols would effectively block sunlight, but with considerable negative side effects; a more environmentally benign mechanism would seem to be the technique of marine cloud brightening, by which cloud cover is increased by introduction of cloud condensation nuclei into the lower atmosphere" Desch and others,' (n 13) 112.

28 Latham and others (n 26) 1.

29 The Royal Society (n 5) 28.

30 *ibid* 28.

31 Hannah Horowitz and others, 'Effects of Sea Salt Aerosol Emissions for Marine Cloud Brightening on Atmospheric Chemistry: Implications for Radiative Forcing' (2020) 47 *Geophysical Research Letters* 1.

32 Desch and others (n 13) 112.

33 *ibid* 112–116.

34 *ibid*.

ambition is to restore historical ice sea levels and in this regard, Bodansky and Hunt consider it similar to reforestation.³⁵ Even if unintended consequences were to occur, those would be localised and probably feasible to revert.

Nonetheless, Desch and others also highlight that changes in precipitation patterns, effects on “frequency of mid-latitude storms,” and ecosystem alteration (due to significant deployment of wind-powered pumps) remain to be scrutinised. Miller and others raise serious concerns about the apparent innocuous nature of this technique. They explain the chemistry of ice and snow and how the natural ice formation process and melting result in the “exchange of materials with both the atmosphere and underlying water.”³⁶ This natural process is not replicated when water is pumped on the top of the ice surface. This technique could “alter the ... chemical characteristics of the ice with consequences for the biogeochemistry and ecology of the sea ice, the ocean and the atmosphere.”³⁷

3.1.3 Arctic Ocean Albedo Enhancement

In 2018, Field and others proposed preserving Arctic sea ice through *reversible and local* geoengineering.³⁸ The authors propose to apply glass particles to sea ice. The particles will increase the reflectivity of solar radiation to restore historical ice levels.³⁹ The technique is presented as benign because its deployment seems to have negligible effects on fish and birds.⁴⁰ However, it remains to be answered how these particles will behave in the marine environment (sinking, floating and dissolving rate), their potential marine pollution effect, and the impacts on marine ecosystems.⁴¹ According to Field and others, the “optimal vehicle for deployment must combine long travel range, durable construction, and immense cargo volume due to the packing density of the material.”⁴² Miller and others emphasise possible changes in atmospheric chemistry caused by glass particles, particularly halogen and sulphur compounds.⁴³

35 Bodansky and Hunt (n 7) 608.

36 Miller and others (n 14) 2.

37 *ibid.*

38 Field and others (n 14) 897.

39 *ibid* 882.

40 *ibid* 883.

41 *ibid* 900.

42 *ibid.*

43 Miller and others (n 14) 4.

3.2 *Arctic Ice Management: A Global Issue*

SRM techniques were recognised as an international law matter from the outset due to its regional and global environmental risks.⁴⁴ Arctic ice management techniques are presented as reversible and localised. The previous section highlighted ice management techniques' potential regional and global risks from a natural science perspective. Although the local setting, the Arctic is not regionally constrained. The Arctic is foremost a political construction⁴⁵ and from a political and legal perspective, it is an international region.

Defining the Arctic is not without controversy. Figure 2.1 shows that the Arctic's natural boundaries, including the marine environment, are subject to several delimitations. Characteristics such as temperature, i.e., 10°C July isotherm;⁴⁶ the presence of permafrost; and treeline,⁴⁷ have been used to describe different 'natural' boundaries of the Arctic. Today, the most accepted spatial delimitation comprises "terrestrial and marine areas north of the Arctic Circle (66°32'N), and north of 62°N in Asia and 60°N in North America, modified to include the marine areas north of the Aleutian chain, Hudson Bay, and parts of the North Atlantic Ocean including the Labrador Sea."⁴⁸ This regional delimitation (Figure 2.1 purple line) includes eight States, i.e., Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States of America (U.S.).

The Arctic marine environment comprises areas within the national jurisdiction of five Arctic coastal States (i.e., Canada, Denmark, Norway, Russia, and the United States of America) and areas beyond national jurisdiction (i.e., the high seas and the area) where all of the international community has vested interests, rights and obligations. Potential geoengineering research and governance must carefully consider these jurisdictional features.

Figure 2.1. This figure is found at AMAP, Chapter 2: Physical/Geographical Characteristics of the Arctic in AMAP Assessment Report: Arctic Pollution Issues. Arctic Monitoring and Assessment Programme (AMAP), Oslo, 1998. The Arctic as defined by temperature (yellow line), the Arctic marine environment (blue line), the Arctic circle (dotted line) and the

44 Joshua Horton and Jesse Reynolds, 'The International Politics of Climate Engineering: A Review and Prospectus for International Relations' (2016) 18 *International Studies Review* 438–440.

45 On the history about the transformation of the Arctic into a distinctive region see Douglas Nord, *The Arctic Council: Governance within the Far North* (Routledge 2016).

46 Janine Murray, 'Physical/Geographical Characteristics of the Arctic' in Arctic Monitoring and Assessment Programme AMAP, *Assessment Report: Arctic Pollution Issues* (1998) 9.

47 *ibid* 9–10.

48 *ibid* 10.

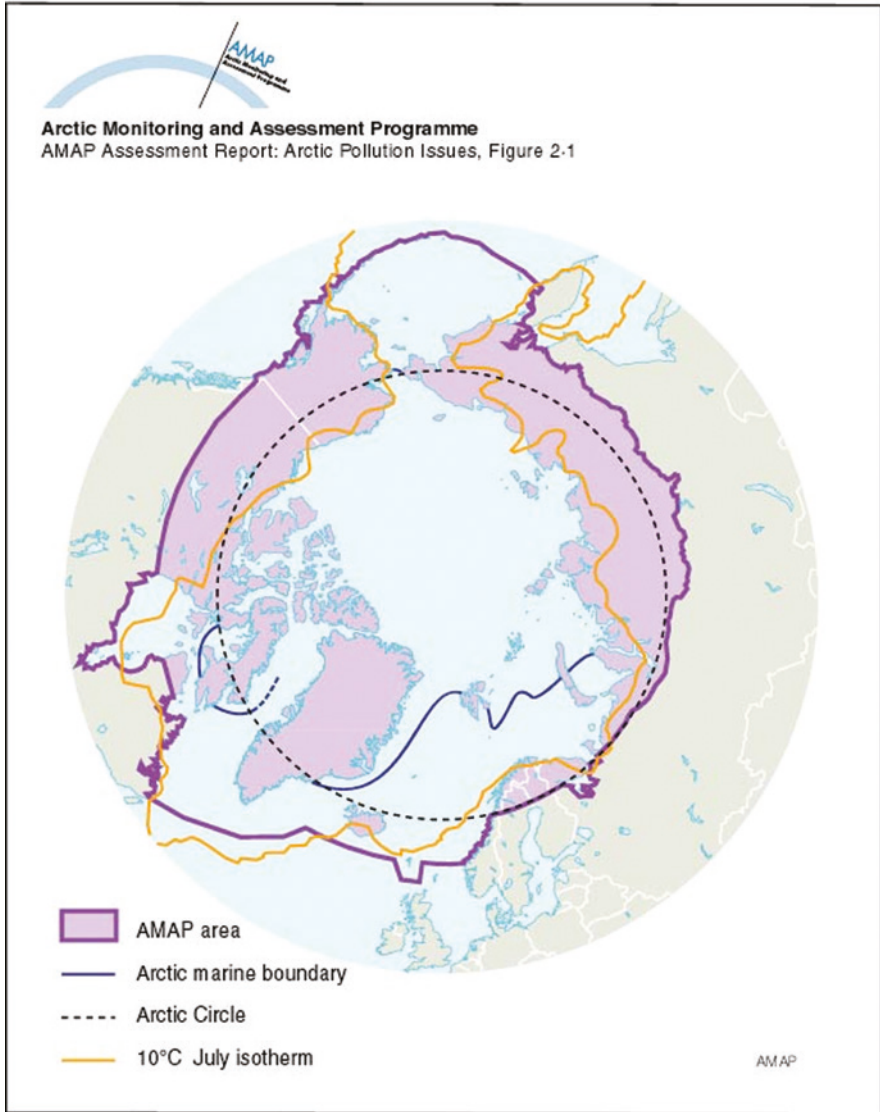


FIGURE 2.1 Arctic boundaries
Note: *ibid.*

assessment area of the Arctic Council working group Arctic Monitoring & Assessment Programme (AMAP). AMAP's geographical coverage intends to incorporate several definitions of the Arctic.

This section illustrated the issue of climate geoengineering as a global problem within a local setting. While geoengineering aims to mitigate the global issue of climate change, it is a concrete measure that will be conducted in a specific physical location. From a legal perspective, this physical location has national, regional and global connotations. Thus, this chapter assumes that there is an additional value in examining the practice of geoengineering in such a local setting, rather than just as an abstract concept.

4 The Role of Law in the Risk Governance of Geoengineering Research

As has been demonstrated above, geoengineering is a risky business. Geoengineering governance thus holds great potential for future scenarios. This also follows from the theoretical perspective of risk governance that this chapter draws from, namely, understanding risk as constructive. Risks are not merely something pre-existing that should be handled upon discovery.⁴⁹ This perhaps becomes even clearer in the context of the risk that is the centre of attention here: climate change. As we witness the legacy of earlier choices, we are forced to consider the consequences of current and future actions. This is illustrated to the extreme in so-called risk/risk scenarios or “clashes of precaution”, such as geoengineering.⁵⁰ Geoengineering is an excellent example of how, when addressing one of the most profound risks to today's society, climate change, technological development is still often posed as the answer.

49 Risk is a verb rather than a noun. Following this, risk governance is about “rearticulating the collapsed future of late modernity,” which then is decisive for the following course of action. Gerda Reith, ‘Uncertain Times: The Notion of ‘Risk’ and the Development of Modernity’ (2004) 13 *Time & Society* 383, 398.

50 Grant Wilson, ‘Minimizing Global Catastrophic and Existential Risks from Emerging Technologies Through International Law’ (2013) 31 *Virginia Environmental Law Journal* 307, 359. Floor M Fleurke, ‘Catastrophic Climate Change, Precaution, and the Risk/Risk Dilemma’ in WG Werner, Rosemary Rayfuse and Monika Ambrus (eds), *Risk and the Regulation of Uncertainty in International Law* (OUP 2017). Rosemary Rayfuse and Shirley V Scott, ‘Mapping the impact of climate change on international law’ in Rosemary Rayfuse and Shirley V Scott (eds), *International law in the era of climate change* (Edward Elgar 2012) 19–20.

This reasoning comprises the inherent paradox that technological development also contributes to the current state of affairs regarding the climate, disclosing the dual nature of technology. It thus becomes clear that technology can mitigate as well as trigger new risks, all while at the same time changing the perception of socially accepted risks.⁵¹ With this in mind, we argue that risk governance in the case of geoengineering research needs to focus on how to mitigate existing and future risks and prioritise and choose between different risks. The result of this exercise will be of utmost relevance for future risk scenarios.

On the same note, Corry argues that mere visions of geoengineering help “to constitute the climate as a directly governable entity in certain ways” and thus have consequences on their own.⁵² In this chapter, we pick up from this and argue that international law holds the same potential, as it plays a significant role in shaping those visions through the governance of the associated risks. Consequently, law is seen as a co-creator of risk. These “legal imaginaries of the future” help establish a preferred interpretation of an issue and promote alternative visions.⁵³ This approach also responds well to the shift in international law from *ex-post* regulation toward proactive governance.⁵⁴

As mentioned above, SRM techniques comprise research and deployment, both of which require governance structures. The example of SRM research, as opposed to deployment, interacts well with the theoretical approach. Thus, this delimitation is also a methodological choice. Our ambition is to make the constructiveness of risk visible. By focusing on this prior activity, which is needed to make deployment possible, it becomes clear how risk governance is not about managing existing risks but rather about shaping the future. The future existence/non-existence of geoengineering deployment and its consequences will be directly affected by the existence/non-existence of geoengineering research.⁵⁵ Drawing on Sheila Jasanoff, geoengineering research is the

51 As is also explored by Rosemary Rayfuse, ‘Public International Law and the Regulation of Emerging Technologies’ in Roger Brownsword, Eloise Scotford and Karen Yeung (eds), *The Oxford Handbook of Law, Regulation and Technology* (OUP 2017).

52 Olaf Corry, ‘Globalising the Arctic Climate: Geoengineering and the Emerging Global Polity’ in Kathrin Keil and Sebastian Knecht (eds), *Governing Arctic Change: Global Perspective* (Palgrave Macmillan 2017), 66.

53 WG Werner, Rosemary Rayfuse and Monika Ambrus, ‘Risk and International Law’ in WG Werner, Rosemary Rayfuse and Monika Ambrus (eds), *Risk and the Regulation of Uncertainty in International Law* (OUP 2017), 5–6.

54 Rayfuse (n 51) 500–501.

55 This division between governance of research versus deployment has been made by many before. See e.g. Lin, ‘The Missing Pieces of Geoengineering Research Governance’ (n 10) 2546; McKinnon (n 9) 445–450. Lisa Dilling and Rachel Hauser, ‘Governing

songline that needs to be sung to pave the way for deployment.⁵⁶ As pointed out by, i.e., Catriona McKinnon, the geoengineering community is already tuning up and thus, so should law.⁵⁷

Before moving on to the regulatory framework, something should be said about the precautionary principle. The principle is the basis of contemporary environmental regulation and risk governance is closely connected to it.⁵⁸ In the case of geoengineering research, the precautionary principle can be used as an argument in favour of or against geoengineering research.⁵⁹ Both lines of reasoning have also been carefully examined and advocated in the scientific community.⁶⁰ Therefore, the precautionary principle does not provide the 'right answer' on whether geoengineering research should or should not be allowed.⁶¹ If used as a magic formula, it could conceal the political agenda of

geoengineering research: why, when and how?' (2013) 121 *Climatic Change* 1. Jennie Stephens and Kevin Surprise, 'The hidden injustices of advancing solar geoengineering research' (2020) 3 *Global Sustainability*. Jane Flegal and Aarti Gupta, 'Evoking equity as a rationale for solar geoengineering research? Scrutinizing emerging expert visions of equity' (2018) 18 *International Environmental Agreements: Politics, Law and Economics* 45, who all specifically argue for or focus on governance of geoengineering research.

56 Sheila Jasanoff, 'The Songlines of Risk' (1999) 8 *Environmental Values* 135. Jasanoff refers to Bruce Chatwin, *The Songlines* (Vintage 1998).

57 McKinnon (n 9) 442. See also Cinnamon Carlarne, 'Arctic dreams and geoengineering wishes: the collateral damage of climate change' (2011) 49 *Columbia journal of transnational law* 637.

58 The principle is commonly considered to be a part of customary international law, which binds all states notwithstanding any treaty, Rayfuse (n 51) 512. "Although omitted as an explicit principle within UNCLOS itself, the precautionary approach has evolved within both treaty law and custom to provide a fundamental component of the decision-making process in the context of activities likely to have a significant detrimental impact on the marine environment, and this has been confirmed by the International Court of Justice (ICJ) and the Seabed Disputes Chamber of the International Tribunal for the Law of the Sea (ITLOS)." Karen Scott, 'Mind the Gap: Marine Geoengineering and the Law of the Sea' in Robert Beckman and others (eds), *High Seas Governance: Gaps and Challenges* (Brill/Nijhoff 2018) 44.

59 This duality is also demonstrated by e.g. Fleurke (n 50) 200; Elizabeth Tedsen and Gesa Homann, 'Implementing the Precautionary Principle for Climate Engineering Special Issue on Climate Change Geoengineering (Part I)' (2013) 2013 *Carbon & Climate Law Review* 90. Karen Scott, 'International Law in the Anthropocene: Responding to the Geoengineering Challenge' (2013) 34 *Michigan Journal of International Law* 309.

60 See for example Philomene Verlaan, 'Geo-Engineering, the Law of the Sea, and Climate Change Thematic Focus: Climate Change and the Law of the Sea' (2009) *Carbon & Climate L Rev* 446. Jesse Reynolds and Floor Fleurke, 'Climate Engineering Research: A Precautionary Response to Climate Change' (2013) 2 *Carbon & Climate Law Review* 101. Kerstin Güssow and others, 'Ocean iron fertilization: Why further research is needed' (2010) 34 *Marine Policy* 911.

61 See also Fleurke (n 50) 203.

geoengineering, making geoengineering research seem objective and neutral when several circumstances connected to geoengineering relate to different values. For example, in the Arctic environment, where this chapter is situated, the interests of the local indigenous population may well collide with the international geoengineering agenda.⁶² Although no experiments have yet taken place in the Arctic marine environment; researchers conducted a field experiment concerning Arctic marine cloud brightening on a shallow lake in Barrow, Alaska. Although the researchers claimed they had the permission to conduct such experiments, Arctic local community members were critical and argued they had no knowledge about the activities taking place in Barrow.⁶³ Thus, geoengineering research governance should be mindful of this and resist a solely technical framing of the issue.⁶⁴ Domestic authorisation processes should include environmental, social, and economic considerations and public participation processes. Public participation weighs stakeholders' interests and elicits their local knowledge to devise criteria concerning the research legitimacy, the management and oversight structures.⁶⁵

5 Ice Management Research and the Law of the Sea: Current Regulatory Framework

This section analyses the current legal framework applicable to ice management research in the Arctic Ocean. From a regulatory perspective, the Arctic Ocean is governed by UNCLOS. All Arctic coastal States except the U.S. are parties to this Convention. However, the U.S. is bound to customary law, including customs codified or that have emerged from UNCLOS. In several forums, the

62 Corry (n 52) 71.

63 Dru Jay, 'Arctic Geoengineering Experiment is Dangerous, Lacks Community Consent: Inupiaq Organizer' *Geoengineering Monitor* <www.geoengineeringmonitor.org/2019/02/arctic-geoengineering-experiment-is-dangerous-lacks-community-consent-inupiaq-organizer/> accessed 10 August 2022.

64 The Royal Society (n 5) xi. See also Flegal and Gupta (n 55) 56.

65 Asilomar Scientific Organizing Committee (n 16) 9. Science and Technology Committee, *The Regulation of Geoengineering* (House of Commons 18 March 2010). Stephen Gardiner and Augustin Fragnière, 'The Tollgate Principles for the Governance of Geoengineering: Moving Beyond the Oxford Principles to an Ethically More Robust Approach' (2018) 21 *Ethics, Policy & Environment* 143. Rob Bellamy, Javier Lezaun and James Palmer, 'Public Perceptions of Geoengineering Research Governance: An Experimental Deliberative Approach' (2017) 45 *Global Environmental Change* 194. Engineering National Academies of Sciences, and Medicine, *Reflecting Sunlight: Recommendations for Solar Geoengineering Research and Research Governance* (The National Academies Press 2021).

U.S. refers to the law of the sea as the relevant legal framework⁶⁶ to regulate the Arctic Ocean. In the Ilulissat Declaration, Arctic Coastal States affirmed:

the law of the sea provides for important rights and obligations concerning the delineation of the outer limits of the continental shelf, *the protection of the marine environment*, including ice-covered areas, freedom of navigation, *marine scientific research*, and other uses of the sea. We remain committed to this legal framework and to the orderly settlement of any possible overlapping claims. (emphasis ours)⁶⁷

Additionally, in 2017, Arctic States, including the U.S., adopted a treaty on Enhancing International Arctic Scientific Cooperation.⁶⁸ The preamble recognises UNCLOS, Part XIII on marine scientific research as the relevant legal framework. Additionally, article 6 explicitly requires scientific applications to be processed in a manner consistent with UNCLOS.

UNCLOS does not explicitly regulate ice management research. However, Part XIII provides a general framework governing marine scientific research in areas within and outside national jurisdiction. An amendment (not in force) to the London Protocol explicitly regulates ocean fertilisation, a CDR technique.

UNCLOS strives to balance individual and community interests. In principle, ice management research is not prohibited and its legality must be analysed in the light of the specific maritime zone, the jurisdictional rights and obligations of States and the provisions concerning marine environmental protection. Customary law principles, such as the no-harm rule, cooperation, and the peaceful use of the sea, are also endorsed in the provisions to conduct marine scientific research.⁶⁹ Any marine scientific research must follow UNCLOS' general principles prescribed in articles 238–241. According to UNCLOS, marine scientific research is a right to be exercised in accordance with its jurisdictional

66 Megan Campbell, *United States Arctic Ocean Management & the Law of the Sea Convention* (OCEANS 2008). It is important to notice, that this paper was written reflecting the author's opinion and "do not necessarily reflect the views of NOAA, DOC or the U.S. Government."

67 Arctic Ocean Conference, *Ilulissat Declaration* (Greenland 28 May 2008). retrieved from <<https://cil.nus.edu.sg/wp-content/uploads/2017/07/2008-Ilulissat-Declaration.pdf>> accessed 10 August 2022.

68 Agreement on Enhancing International Arctic Scientific Cooperation (adopted 11 May 2017, entered into force 23 May 2018) <<https://oarchive.arctic-council.org/handle/11374/1916> archive> accessed 10 August 2022.

69 United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 397 (UNCLOS) arts 240(a), 242, 243.

framework. It is not, however, an absolute right.⁷⁰ Its exercise is subject to several conditions prescribed in Article 240. For instance, marine scientific research cannot ‘unjustifiably’ interfere with other uses of the sea, e.g., shipping or fishing and must be exercised “in compliance with all ... regulations ... for the protection and preservation of the marine environment.”⁷¹ These principles impose limitations on the exercise of marine scientific research. Article 240 also intertwines marine scientific research with Part XII on the protection of the marine environment. The latter becomes a valuable framework for evaluating ice management research. It is important to note that several global and regional treaties and soft law instruments amplify Part XII. Such instruments deal, for example, with marine pollution prevention, such as the London Convention and its Protocol or with the conservation of marine biological diversity. Such treaties may qualify or impose further conditions on marine geoengineering research.

5.1 *UNCLOS Jurisdictional Framework*

5.1.1 Areas within National Jurisdiction

Internal waters are subject to the full sovereignty of the Arctic coastal States⁷² and are assimilated to land territory. International law imposes almost no restriction on the management of domestic environments. The most significant limitation on sovereignty concerns transboundary harm enshrined in the no-harm rule. This customary law principle imposes the duty to prevent significant “harm to the territory of other States and to collaborate in preserving the environment beyond national boundaries.”⁷³ So, as long as ice management research has no significant transboundary effects and is conducted in light of UNCLOS’ Part XII, coastal States have the sovereign right to legislate the matter as they please. No field ice management experiments have taken place in the Arctic marine environment. While researching Arctic Ocean

70 Myron H Nordquist and others (eds), *United Nations Convention on the Law of the Sea 1982: A Commentary*, vol IV (Martinus Nijhoff Publishers. 1991) 455.

71 UNCLOS (n 69) art 240(c) (d).

72 There is only one exception, according to UNCLOS (n 69) Article 8.2.: “[w]here the establishment of a straight baseline in accordance with the method set forth in article 7 has the effect of enclosing as internal waters areas which had not previously been considered as such, a right of innocent passage as provided in this Convention shall exist in those waters.”

73 Gabriela Argüello, *Marine Pollution, Shipping Waste and International Law* (Routledge Research in International Environmental Law, Routledge 2019) 37. See also *Trail Smelter*, (*United States v. Canada*), 3 R.I.A.A 1905 (1938 and 941) and the *Lac Lanoux Arbitration*, (*France v. Spain*), 24 ILR 101 (1957).

albedo enhancement, Field and others conducted small field experiments within domestic environments, i.e., lakes, in Canada and the United States. One particular field experiment was conducted in the Arctic on a shallow lake in Barrow, Alaska.⁷⁴

In the territorial sea, Arctic coastal States also enjoy sovereignty subject to one limitation, i.e., the right of innocent passage. Coastal States have the exclusive right to regulate marine scientific research.⁷⁵ Arctic Ocean albedo enhancement and Arctic marine cloud brightening may require ships to disperse glass particles or seawater droplets. Ships carrying out research or survey activities do not fall into the meaning of innocent passage and are subject to Arctic coastal State's jurisdiction. As in internal waters, ice management research could be treated as a municipal law as long research has no significant transboundary effects. Coastal States "have the exclusive right to regulate, authorise and conduct marine scientific research."⁷⁶ Flooding requires building wind-driven pumps. Coastal States have jurisdiction over those installations.⁷⁷ If building these structures is allowed, Arctic coastal States have the right to request ships to avoid certain parts of the territorial sea to protect the pumps and safeguard marine scientific research.⁷⁸ However, States are also obliged to provide alternative routes where ships can exercise their innocent passage right.⁷⁹

In the Exclusive Economic Zone (EEZ) and continental shelf, Arctic coastal States have sovereign rights over natural resources and have the jurisdictional right to regulate marine scientific research and jurisdiction over marine environmental protection. Other States enjoy, among others, the right of navigation and the right to conduct marine scientific research "with the consent of the coastal State."⁸⁰ In principle, ice management research cannot hamper freedom of navigation by making passage impossible or subject to restrictions (previous notification). Overall, coastal States enjoy a significant degree of discretion concerning the authorisation and regulation of marine scientific research. The limitations are the rights enjoyed by other States, e.g., navigation and the obligations concerning the marine environment.

74 Field and others (n 14) 883–888.

75 UNCLOS (n 69) art 245.

76 *ibid.*

77 *ibid* art 258.

78 *ibid* art 21(1)(c)(g).

79 *ibid* arts 24 and 245.

80 *ibid* arts 56, 77 and 246.

Concerning ice management research, Field and others consider the Fram Strait to be a feasible location to conduct field albedo enhancement experiments.⁸¹ The waters forming such Strait are mainly territorial waters and EEZ of Denmark and Norway, and the authorisations of these coastal States are required. The discretion arguably lessens if States or international organisations intend to conduct marine scientific research in the EEZ of another State. According to Article 246(3), ‘in normal circumstances’⁸² coastal States *must not uphold consent* to States or international organisations if these subjects intend to conduct research for “peaceful purposes and in order to increase scientific knowledge of the marine environment for the benefit of all mankind.” According to Scott, this phrase relates to ‘pure’ scientific research,⁸³ which has “a privileged position in the presumption that coastal States will normally consent to research carried out in their exclusive economic zones or on their continental shelves.”⁸⁴ It appears that ice management research is not subject to Article 246(3) because it does not primarily intend to increase ‘scientific knowledge of the marine environment’ rather than increase scientific knowledge to counteract climate change effects. Therefore, coastal States preserve their discretion to uphold consent. The right to uphold consent to conduct marine scientific research by third States or international organisations remains if the proposed research includes the activities detailed in Article 246(5). Particularly relevant for ice management research is the right to uphold consent if the research includes introducing harmful substances into the marine environment. Arctic Ocean albedo enhancement considers introducing glass particles on the ocean’s surface that could arguably constitute a harmful substance. Miller and others discuss the possible negative consequences of introducing glass particles for the biogeochemistry of marine ecosystems.⁸⁵

5.1.2 Areas outside National Jurisdiction

Marine scientific research is a freedom of the high seas.⁸⁶ Apart from the general framework established in UNCLOS Part XIII, Article 87(2) of UNCLOS

81 Field and others (n 14) 889.

82 “Normal circumstances” may exist in spite of the absence of diplomatic relations between the coastal State and the researching State” UNCLOS (n 69) arts 56, 77 and 246.

83 “The concept of marine scientific research usually covers two types of research, namely, ‘fundamental or ‘pure’ research and ‘applied’ or ‘resources-oriented research’ Yoshifumi Tanaka, *The International Law of the Sea* (3 edn, CUP 2018) 434.

84 Karen Scott, *Not an Intractable Challenge: Geoengineering MSR in ABNJ* (Brill/Nijhoff 2021) 198.

85 Miller and others (n 14) 1–6.

86 UNCLOS (n 69) art 87(1)(f).

provides that freedoms of the high seas must be exercised “with due regard for the interests of other States in their exercise of the freedom of the high seas.” For ice management research, this implies a case-by-case analysis of the proposed activity, its scale and location. This information shall be used to assess whether the research unjustifiably interferes with other uses of the high seas. According to Article 143(1), in the Area, there is also a right to conduct marine scientific research “exclusively for peaceful purposes and for the benefit of mankind as a whole” and in accordance with UNCLOS Part XIII.⁸⁷ Article 143(1) relates to ‘pure’ research, which at this stage covers the ice management techniques presented in this chapter. The International Seabed Authority (ISA) does not have a ‘general competence’ to regulate marine scientific research in the Area.⁸⁸ It appears that States parties to UNCLOS enjoy a high degree of discretion to allow ‘pure’ geoengineering techniques. Each State party must assess whether such research complies with Part XII and XIII of UNCLOS. No field ice management research has yet taken place on the high seas or the area of the Arctic Ocean.

5.1.3 Agreement on Enhancing International Arctic Scientific Cooperation

This agreement implements UNCLOS’s obligations to promote international cooperation and create favourable conditions for integrating scientific efforts to conduct marine scientific research.⁸⁹ The third preambular paragraph reiterates the “urgent need for increased actions to mitigate and adapt to climate change”, and the preamble is telling since it recognises that earth’s climate and the oceans are interdependent. According to article 1, scientific activities “means efforts to advance understanding of the Arctic through scientific research, monitoring and assessment.” Such broad formulation could include ice management research. In fact, the Agreement could inadvertently facilitate geoengineering research.

The agreement has no bearing on the jurisdictional framework previously discussed.⁹⁰ The aim is to expedite decision-making procedures in accordance with the jurisdictional competences of the parties. Parties are obliged to

87 *ibid* art 143.

88 Donald Rothwell and Tim Stephens, *The International Law of the Sea* (2 edn, Hart Publishing Ltd 2016) 361.

89 UNCLOS (n 69) arts 242(1) and 243.

90 art 16 of the Agreement (n 68) prescribes: “Nothing in this Agreement shall be construed as altering the rights or obligations of any Party under other relevant international agreements or international law.”

develop legal and administrative procedures to facilitate the processes to allow researchers⁹¹ access to research areas (e.g., visas, clearances), infrastructure, facilities, and data.⁹² States are obliged to promote education and foster the training of future Arctic researchers.⁹³ Research areas include zones within national jurisdiction identified by the parties in Annex I of the Agreement and areas beyond national jurisdiction.

5.2 *The London Protocol*

The permissive framework to conduct marine scientific research that we have previously discussed is not *per se* a shortcoming of UNCLOS. This treaty is not an isolated instrument; it is an ‘umbrella treaty’ because it bridges several conventions concluded before and after its adoption.⁹⁴ One of these instruments is the 1996 London Protocol to the 1972 London Convention on dumping, which explicitly regulates marine geoengineering (research and deployment). The Protocol applies to all maritime zones, other than internal waters.⁹⁵

In 2013, the State parties to the 1996 London Protocol on dumping adopted the following marine geoengineering definition:

deliberate intervention in the marine environment to manipulate natural processes, including to counteract anthropogenic climate change and/or its impacts, and that has the potential to result in deleterious effects, especially where those effects may be widespread, long lasting or severe.⁹⁶ (not in force)

91 art 1 of the Agreement (n 68) refers to researchers as participants who are defined as: “Parties’ scientific and technological departments and agencies, research centers, universities and colleges, and contractors, grantees and other partners acting with or on behalf of any Party or Parties, involved in Scientific Activities under this Agreement.”

92 *ibid* arts 5, 6, and 7.

93 *ibid* art 8.

94 Alan Boyle, ‘Reflections on the Treaty as a Law Making Instrument’ in Alexander Orakhelashvili and Sarah Williams (eds), *40 Years of the Vienna Convention on the Law of Treaties* (British Institute of International and Comparative Law 2000) 9.

95 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (adopted 7 November 1996, entered into force 24 March 2006) 36 I.L.M. 1 (1997) (London Protocol) art 1(7).

96 art 5 bis. Eight Meeting of the Contracting Parties to the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, *Annex IV: Resolution LP. 4(8) on the Amendment to the London Protocol to Regulate the Placement of Matter for Ocean Fertilization and other Marine Geoengineering Activities* (18 October 2013). The amendments are not in force yet.

This definition arguably includes ice management techniques. Since the ocean is an important carbon sink, ocean-related geoengineering has initially focused on carbon dioxide removal (CDR), particularly ocean fertilisation techniques, while little progress has been made concerning SRM techniques.⁹⁷ The Protocol also includes the following Article 6(bis)(1):

[c]ontracting Parties shall not allow the placement of matter into the sea from vessels, aircraft, platforms or other man-made structures at sea for marine geoengineering activities listed in annex 4, unless the listing provides that the activity of the subcategory of an activity may be authorised under a permit. (not in force)

This broad formulation indicates that the current regulatory trend in the law of the sea concerns the restriction of marine geoengineering activities. Two conditions qualify this general restriction. First, the Article refers to activities involving ‘placement of matter *into* the sea.’ Second, the restricted geoengineering activities are those established in Annex 4, i.e., ocean fertilisation.⁹⁸ None of the ice management techniques discussed in this chapter relate to ocean fertilisation.

Of course, in the future, more geoengineering techniques could be included in Annex 4. Consequently, Article 6 (bis)(1) could be relevant for ice management. It is not without controversy whether ice management techniques qualify as ‘placement of matter into the sea.’ Introducing glass particles to the ocean surface to enhance Arctic albedo falls within the scope of Article 6(bis)(1). Whether flooding and Arctic marine clouding brightening are within this Article’s scope is subject to debate. First, both techniques intend to use seawater. One can argue that ‘sea water’ is considered ‘matter’ for the purposes of this Article since the water is placed for marine geoengineering purposes. While flooding intends to place under seawater into the top surface of ice-covered areas in the Arctic Ocean, Arctic marine clouding brightening does not place matter into the water column. Seawater particles are intended to seed marine stratocumulus clouds.⁹⁹ If the phrase ‘into the sea’ encompasses the water column and seabed of the marine environment, the atmosphere above the water

97 Scott, *Not an Intractable Challenge: Geoengineering MSR in ABNJ* (n 84). 194.

98 This is CDR technique defined in Annex 4 (1)(1) of the amendment (n 96) as “any activity undertaken by humans with the principal intention of stimulating primary productivity in the oceans. Ocean fertilization does not include conventional aquaculture or mariculture or the creation of artificial reef.”

99 Latham and others (n 26) 2.

column would be excluded.¹⁰⁰ The London Protocol defines sea as “all marine waters ... as well as the seabed and the subsoil thereof; it does not include sub-seabed repositories accessed only from land.” From this definition, it appears that Arctic marine clouding brightening would not be subject to Article 6(bis)(1).

One could also argue that the restriction refers to both deployment and research, but this is not the case. It refers exclusively to ocean fertilisation deployment. Annex 4 prescribes that ‘legitimate scientific research is allowed subject to a permit.’ To this end, Annex 5 includes an assessment framework for marine geoengineering research. This general framework is complemented by a specific risk assessment framework for scientific research involving ocean fertilisation adopted in 2010.¹⁰¹ The framework assessment in Annex 5 is a first step towards establishing conditions that qualify ‘legitimate scientific research.’ It establishes, among others, the objectives and purpose of research, consultation, assessment and risk management. Annex V puts ‘pure’ scientific research into a privileged position by demanding no “financial and/or economic gain arising directly from the experiment or the outcomes.”¹⁰²

100 Whether the atmosphere above the water column is part of the marine environment is controversial. According to Harrison, “several proposals advanced during the negotiation process included the air space above the water column within the definition of the *marine environment*, although none of them were adopted ... even if one accepts that UNCLOS ‘does not address directly the problem of pollution of the atmosphere itself,’ it explicitly covers ‘pollution of the marine environment from or through the atmosphere,’ thereby recognizing the complex interactions between the atmosphere and the oceans.” James Harrison, *Saving the Oceans through Law: The International Legal Framework for the Protection of the Marine Environment* (OUP 2017) 24.

101 Fifth Meeting of the Contracting Parties to the London Protocol, *Resolution LC-LP.2(2010) on the Assessment Framework for Scientific Research Involving Ocean Fertilization* (14 October 2010). The assessment framework for marine geoengineering research adopted in 2010 is not binding. Article 6(bis)(2) prescribes: Contracting Parties shall adopt administrative or legislative measures to ensure that the issuance of permits and permit conditions comply with provisions of annex 5 and takes into account any Specific Assessment Framework developed for an activity and adopted by the Meeting of the Contracting Parties. Verlaan explains that the 2010 assessment framework “will be legally binding when the amendments to the LP enter into force.” Philomene Verlaan, ‘London Convention and London Protocol: New Regulation of Marine Geo-engineering and Ocean Fertilization’ (2013) 28 *Marine and Coastal Law* 729.

102 Eight Meeting of the Contracting Parties to the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (n 96).

6 Governance Structure: Current Trends and Future Outlook

6.1 *The Governing Trap: A Permissive Framework for Conducting Ice Management Research*

UNCLOS provides a permissive framework where ice management research is easily accommodated and, therefore, engaging in geoengineering research is to a great degree a matter of discretion and ethics.¹⁰³ Such discretion extends from the labelling of the research as geoengineering or something else (e.g., atmospheric studies, ice management), to the description of the scale, i.e., small, medium, large, to the risk assessment, to the appraisal of whether such research complies with Part XII and XIII of UNCLOS. It also inevitably leads to an *ex-post-facto* evaluation to determine whether States complied with their obligations related to cooperation and protection of the marine environment.

It also leads to reactive regulation, as in the ocean fertilisation case, where regulatory efforts were triggered after research activities fuelled an international outcry.¹⁰⁴ A further by-product of reactive regulation is a fragmented regulatory response. Once again, ocean fertilisation is a case in point. This fragmented regulatory response paves the way toward the 'governance trap' where multiple organisations partially govern geoengineering research with little coordination and overlapping mandates. The ice management techniques described in this chapter could be subject to multiple regimes, including, for example, the law of the sea (marine pollution in particular), the Convention on Long-Range Transboundary Air Pollution, the Convention for the Protection of the Ozone Layer and its protocol and the Convention on Biological Diversity.¹⁰⁵ The result will be regulatory fragmentation and overlapping.

Fragmentation constrains regulatory effectiveness. Even if the amendment to the London Protocol enters into force, its success will be limited. This Convention has only 53 State parties¹⁰⁶ and the amendment will enter into

¹⁰³ Scott, *Not an Intractable Challenge: Geoengineering MSR in ABNJ* (n 84).

¹⁰⁴ Zach Horton, 'Going Rogue or Becoming Salmon? Geoengineering narratives in Haida Gwaii' (2017) 97 *Cultural Critique* 128.

¹⁰⁵ Convention on Long-Range Transboundary Air Pollution (adopted 13 November 1979 entered into force 16 March 1983) 1302 UNTS 217. United Nations Convention on the Law of the Sea (adopted 10 December 1982 entered into force 1 November 1994) 1833 UNTS 397. Vienna Convention for the Protection of the Ozone Layer (adopted 22 March 1985 entered into force 22 September 1988) 1513 UNTS 293. Montreal Protocol on Substances that Deplete the Ozone Layer (adopted 16 September 1987 entered into force 1 January 1989) 1522 UNTS 3. Convention on Biological Diversity (adopted 5 June 1992 entered into force 29 December 1993) 1760 UNTS 79.

¹⁰⁶ International Maritime Organization (IMO), *Status of IMO Treaties: Comprehensive information on the status of multilateral Conventions and instruments in respect of which the*

force after two-thirds of the parties deposit their acceptance. About dumping, Article 210(6) of UNCLOS prescribes that “national laws, regulations and measures shall be no less effective in preventing, reducing and controlling such pollution than the global rules and standards.” Due to the limited number of parties, the protocol still does not qualify as ‘global rules and standards.’ Scott even argues that legitimate geoengineering research relates to the “placement of matter for a purpose other than the mere disposal thereof.”¹⁰⁷ Therefore, Article 210(6)¹⁰⁸ is not applicable because this placement cannot be legally considered dumping.

In accordance with 21.3 of the London Protocol and the principle *pacta tertiis nec nocent nec prosunt*, the amendment will only bind the accepting parties. Only six States (Estonia, Finland, Germany, Netherlands, Norway and United Kingdom) have accepted it.¹⁰⁹ Under the general umbrella of UNCLOS, non-state parties to the London Protocol can accommodate as ‘legal’ geoengineering research. In the Arctic Ocean, the effectiveness of this amendment will be even lower since two Arctic coastal States, i.e., The United States of America and Russia, are not parties to the London Protocol.

Piecemeal regulation and non-consensus negotiations amplify regulatory fragmentation. The London Protocol amendment was apparently adopted by consensus. However, disagreements expressed by the parties were not addressed in the proposed text.¹¹⁰ Such disagreements may explain why the amendment has yet to enter into force. A majority rule approach to treaty negotiation could have negative consequences. For example, in the case of marine geoengineering, if dissatisfied, State parties have treaty law measures to circumvent the amendment. Parties could withdraw the Protocol and enter into a subsequent agreement.¹¹¹ Overall, following this example of ice management

International Maritime Organization or its Secretary-General performs depositary or other functions (15 September 2020) 555.

107 UNCLOS (n 69) art 1(5)(b.11).

108 Scott, *Not an Intractable Challenge: Geoengineering MSR in ABNJ* (n 84) 201–202.

109 IMO (n 106) 560.

110 Japan, for example, stated that “it feared some fishing aspects could be inadvertently regulated by this amendment. While not wishing to stand in the way of consensus, Japan stressed that fisheries are an important issue from a Japanese perspective ... and it was consequently concerned that the amendment might not be accepted” COP to the London Protocol, *LC 35/15 Report of the Thirty-Fifth Consultative Meeting and the Eighth Meeting of Contracting Parties to the London Protocol* (14–18 October 2013) 4.13.

111 Vienna Convention on the Law of Treaties (adopted 23 May 1969, entered into force 27 January 1980) UN Doc.A/Conf.39/27, 1155, UNTS 331, 8 ILM 679 art 41. In theory, State parties could potentially modify or suspend the treaty or parts of it, but these alternatives are not without difficulty. Treaty modification and suspension must fulfill the requirements

techniques, to be successful and avoid an international conflict escalation and governance trap, the governance of geoengineering research requires a consensus approach.¹¹² Consensus mitigates fragmentation and allows smooth legal development. This will be further explored in the following section.

6.2 *Towards a Multilateral Governing Framework*

If climate change reaches a point where SRM geoengineering deployment will be inescapable, as some researchers contend,¹¹³ we need to establish an international research agenda setting the objectives, priorities, coordination mechanisms for funding, transfer of technology, and public participation processes. Solid scientific evidence is the only basis to assess whether geoengineering is feasible, effective, and safe. Some would argue that a research moratorium is the best governance alternative.¹¹⁴ This could be the case and such a decision must be taken by consensus at the international level since the most pressing question is related to geoengineering ethics,¹¹⁵ i.e., whether humankind should engage in geoengineering and the mechanism to manage risks that will emerge. If research is the gate to future deployment, its governance cannot be left to a piecemeal approach. Thus, we argue for *consensus* multilateral negotiations to adopt a framework geoengineering treaty.

A starting point to this multilateral negotiation is adopting an umbrella convention to flesh out shared values. The Convention should also create two treaty organs or organisations: one in charge of coordination and one in charge of research development oversight. One organisation/treaty organ should be in charge of developing cooperation mechanisms between the existing international organisations, both global and regional, that could eventually claim

of articles 41, 42 and 43 of the Vienna Convention. When making such an appraisal, one must consider that the London Protocol is not an isolated instrument regulating exclusively the relations of the parties. It must be analyzed in the light of UNCLOS and other treaties dealing with marine pollution since they are interconnected. Concerning the interconnection of treaty law see Joost Pauwelyn, 'Bridging Fragmentation and Unity: International Law as a Universe of Inter-Connected Islands' (2004) 25 Michigan Journal of International Law 903.

112 Sophie Gambardella, 'The Stormy Emergence of Geoengineering in the International Law of the Sea' (2019) 13 Carbon & Climate Law Review: CCLR 122 129, who criticises a "strong decline of multilateralism" and the "political stalemates."

113 Rob Bellamy and Peter Healey, "Slippery slope' or 'uphill struggle'? Broadening out expert scenarios of climate engineering research and development' (2018) 83 Environmental Science and Policy 1.

114 Timm Betz and Barbara Koremenos, 'Monitoring Processes' in Jacob Katz Cogan, Ian Hurd and Ian Johnstone (eds), *The Oxford Handbook of International Organizations* (OUP 2016).

115 Gardiner and Fragnière (n 65) 143.

jurisdiction over geoengineering research. In practice, the current regulatory and institutional framework can govern geoengineering research if coordination and common work agendas are established.¹¹⁶

The second organisation/treaty organ should be similar to the Intergovernmental Panel on Climate Change (IPCC), with the capacity to provide policymakers with state-of-the-art scientific reports on the risks and opportunities of geoengineering techniques. Finally, the proposed framework treaty should be complemented by a technique-by-technique regulation because current scientific knowledge on climate geoengineering shows that there is no one size fits all governance response to geoengineering. CDR and SRM are categories representing an initial effort to differentiate their characteristics and risks. However, CDR and SRM include a range of techniques, each deserving particular regulation. Technique-by-technique regulation may be adopted within the framework of existing legal regimes. The adoption of ocean fertilisation regulation under the London Protocol is a case in point.

Groundwork to build this umbrella Convention already exists. From an environmental perspective, Annex V of the London Protocol is a valuable starting point to define 'legitimate geoengineering research.' From a soft law perspective, researchers and scientific groups alike have put forward guiding principles concerning geoengineering. The most relevant are the Oxford Principles on geoengineering research,¹¹⁷ the Tollgate Principles,¹¹⁸ and the Asilomar Principles.¹¹⁹

Scientists from the Royal Society and academics developed the Oxford Principles, which the Science and Technology Committee of the United Kingdom House of Commons endorsed with certain modifications.¹²⁰ The principles are:

- 1) geoengineering to be regulated as a public good;
- 2) public participation in geoengineering decision-making;
- 3) disclosure of geoengineering research and open publication of results;
- 4) independent assessment of impacts; and
- 5) Governance before deployment.¹²¹

116 See e.g., Scott, 'International Law in the Anthropocene: Responding to the Geoengineering Challenge' who proposes a geoengineering protocol to the 1992 UNFCCC. For further reflections of governance options, see also Daniel Bodansky, 'The who, what, and wherefore of geoengineering governance' (2013) 121 *Climatic Change* 539.

117 The Oxford Principles are published in <www.geoengineering.ox.ac.uk/www.geoengineering.ox.ac.uk/oxford-principles/principles/index.html> accessed 10 August 2022.

118 Gardiner and Fragnière (n 65)

119 Asilomar Scientific Organizing Committee (n 16).

120 Science and Technology Committee (n 65).

121 The Oxford Principles (n 117).

The Tollgate Principles highlight the geoengineering ethic's dimension and they give substantive content to each Oxford principle. Particularly relevant for our discussion is recognising that governance before research is a necessary component of governance before deployment. Especially field research, on many occasions, depending on the scale, is no different from geoengineering deployment.¹²² Burger and Gundlach also argue that "research is unlikely to advance steadily without adequate governance."¹²³

The Asilomar principles result from a conference where leading experts from academia, governmental and non-governmental organisations met to discuss the future of geoengineering. These principles follow to some extent the Oxford principles:

- 1) Promoting collective benefit;
- 2) Establishing responsibility and liability;
- 3) Open and cooperative research;
- 4) Iterative evaluation and assessment; and
- 5) Public involvement and consent.¹²⁴

As Reynolds comments, these principles represent a self-regulatory approach.¹²⁵ They are an attempt to make geoengineering research visible to policymakers. In other words, these principles aim to trigger a formal regulatory response. As such, they can certainly be used as a stepping-stone to build a common set of values for research governance.

A multilateral negotiation also needs to address essential questions of the moral hazard risk, i.e., whether geoengineering is, in fact, humanity's last resort or should be seen as complementary to mitigation and adaptation endeavours.¹²⁶ A crucial subject is the establishment of boundaries between laboratory and field experimentation and the meaning of small, medium, and large-scale field experimentation. This is relevant to elucidate if field experimentation will be allowed or subject to a moratorium (maybe large-scale field experimentation could be considered close to deployment rather than research).

Without a multilateral framework for geoengineering research, regionalism is an alternative worth exploring, especially concerning the Arctic marine environment. The Arctic Council is the leading regional organisation able

122 Gardiner and Fragnière (n 65) 159–161.

123 Burger and Gundlach (n 10) 265.

124 Asilomar Scientific Organizing Committee (n 16) 9.

125 Jesse Reynolds, 'Solar geoengineering to reduce climate change: a review of governance proposals' (2019) 475 *Proceedings of the Royal Society A* 12.

126 Horton and Reynolds (n 44).

to govern geoengineering research. The mandate of the Arctic Council is to promote cooperation and coordination “among Arctic States, indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable development and environmental protection of the Arctic.”¹²⁷ The reference to *common issues* could easily accommodate geoengineering research.¹²⁸ Additionally, the working and expert groups of the Arctic Council are active in the development of Arctic science scientific data collection, analysis, and outreach activities by making available summaries of their work to policymaking bodies.

The Royal Society pointed out the need to address geoengineering in a broader ethical, social, legal, and political frame rather than limiting its governance to a purely technical and scientific matter.¹²⁹ The tripartite structure of the Arctic Council is particularly valuable to situate geoengineering research governance in this broader context. The organisation comprises eight States, six indigenous permanent participants and observers (i.e., non-Arctic States, intergovernmental and inter-parliamentary organisations, and NGOs).¹³⁰ This structure transforms the Arctic Council into a platform that accommodates diverse or even conflicting interests of States and actors, including international organisations, indigenous communities, industry representatives, and civil organisation society. The organisation possesses inbuilt flexibility to engage actors from local to global, private and public. The possibility to engage a wide array of actors counteracts regulatory fragmentation to some extent.

The Arctic Council can map the legal regimes applicable to the Arctic marine environment and the authorities with potential jurisdiction over geoengineering research. Suppose such authorities, e.g., the Conference of the Parties to the London Convention or the Convention on Biological Diversity, enact regulation on geoengineering research. In that case, the Arctic Council can advise member States on the alternatives to implement and enforce such regulations in a coordinated matter.

A strength of the Arctic Council and its working groups is the adoption of numerous scientific reports in areas concerning the oceans, pollution,

127 Ottawa Declaration, *Declaration on the Establishment of the Arctic Council* (September 19 1996) art 1(a).

128 Bjørnar Egede-Nissen and Henry Venema, *Desperate Times, Desperate Measures: Advancing the geoengineering debate at the Arctic Council* (International Institute for Sustainable Development (IISD) (2009)).

129 The Royal Society (n 5) d xi.

130 Nord (n 45) Ch 2.

biodiversity, climate with an Arctic focus.¹³¹ With geoengineering research, the Arctic Council can serve a similar purpose. That endeavour would highlight the regional opportunities and risks of geoengineering and provide input to decision-making. The law-making capacity of the Arctic Council is, however, limited.¹³² Although the competence of the Arctic Council includes enacting soft law and even “new binding legal instruments,”¹³³ there is a persistent ‘low commitment level’ of the member States to the Arctic Council to allow the institution to transition to a treaty-based organisation with a permanent budget.¹³⁴

7 Conclusions: Let the Genie out of the Bottle?

Scientific evidence indicates that the Arctic marine environment will continue to warm during the following decades, even in the most promising climate change mitigation scenario. The result will be the loss of ice both in thickness and extent. Preserving the Arctic ice is paramount for global climate regulation and to protect marine Arctic ecosystems. Recent scientific research advances the possibility of deploying geoengineering techniques to restore Arctic sea ice to its historical levels. Ice management is argued to be reversible and its consequences regionally constrained, but sceptical views already confront these bold affirmations.

Overall, geoengineering research is happening. The genie is already out of the bottle. Exposing the risks of geoengineering, i.e., moral risk, slippery slope, governance trap, and international conflict escalation, does not automatically deter further research. We argue that international law is a co-creator of risk and not a passive recipient of scientific and policy developments and must take this role seriously. Currently, it is not comprehensively addressing geoengineering research governance. This inaction is already shaping the future, not only of research but also of deployment. From a regulatory perspective, the future now includes a permissive and discretionary framework

131 The work of the Arctic Council can be consulted at its webpage <<https://arctic-council.org/en/>> accessed 10 August 2022.

132 For further reflections on the capacity and potential of the Council to act relating to geoengineering, see Jane Long, ‘A Prognosis, and Perhaps a Plan, for Geoengineering Governance’ (2013) 7 *Carbon & Climate Law Review*: CCLR 177.

133 ‘Framework for the Strengthening the Arctic Council’ in Senior Arctic Officials (SAO) Report to Ministers. Nuuk, (Greenland, May 2011).

134 Timo Koivurova, ‘Limits and possibilities of the Arctic Council in a rapidly changing scene of Arctic governance’ (2010) 46 *Polar Record* 146, 148.

that easily accommodates geoengineering research. This is heading towards a governance trap, i.e., ex-post evaluation of research, reactive regulation, regulatory fragmentation, and multiple institutions claiming jurisdiction.

In the absence of multilateral research governance, we argue that the Arctic Council should take a leading coordinator role concerning geoengineering research in the Arctic. In this scenario, and considering the structure of the Arctic Council, the future of geoengineering research will not be exclusively informed from a technocratic perspective but rather a broader social, economic and political context of the region.

Finally, we argue for a multilateral treaty negotiated by consensus and for the establishment of an organisation similar to the Intergovernmental Panel on Climate Change (IPCC). By establishing the common values of what geoengineering research should entail, law will either enable the path towards or ward off a climate engineering revolution.

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Divide and Conquer or Unite to Trade: Trade Facilitation along the China-Europe Railway Corridors

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1 Introduction and Background

During the past ten years, railway corridors linking different cities in China and the European Union (EU) have been showcased as a means to further bilateral trade and investments.¹ While these corridors have been promoted as the success story of the Belt and Road Initiative (BRI), a closer look at their formation reveals that they are simply natural prolongations of the ‘Develop the West’ strategy that was adopted by China three decades ago, when it joined the World Trade Organization (WTO) in 2001. This strategy led to major investments in China’s central and western provinces,² that covers almost seventy percent of its land area.³ The strategy guided the expansion and building of

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- 1 The development of railway connections between China and Europe can be divided into three primary corridors. (1) The northern corridor has three prongs extending from China, all of which join the Trans-Siberian Railway routes that runs through Russia. (2) The middle corridor called the New Eurasian Land Bridge (NELB) spans from the Pacific port of Lianyungang in China running through China, Kazakhstan, Russia, Belarus to Rotterdam in the Netherlands. At present, most containers are transported using this middle corridor that crosses the Chinese-Kazakh border at either Alashankou/Dostyk or Khorgos/Altynkol. The north and the middle corridors meet in the Urals near Yekaterinburg. The goods continue to the European Union via Belarus and are unloaded onto standard European gauge flatcars in Malaszewicze on the Polish-Belarusian border. A small number of trains from China have their terminus in the Baltic States. (3) A nascent southern corridor called the Trans-Caspian International Transport Route is an intermodal land and sea connection running through the Caspian Sea, the Caucasus and the Black Sea stretching to Europe is currently under development. See X Zhang, H-J Schramm, “Assessing the Market Niche of Eurasian Rail Freight in the Belt and Road Era” (2020) *International Journal of Logistics Management*.
 - 2 Formally inaugurated in 2000, the ‘Develop the West’ strategy contained a number of different policy objectives to develop the western regions, building on earlier efforts, and reflecting more of a policy realignment in China. For a comprehensive discussion on the topic, see D Ma, T Summers, “Is China’s Growth Moving Inland? A Decade of ‘Develop the West’” (2009) *Chatham House*, 3, online: Chatham House <www.chathamhouse.org/sites/default/files/public/Research/Asia/1009pp_chinasgrowth.pdf> accessed 11 October 2021.
 - 3 The strategy covered 6 provinces (Gansu, Guizhou, Qinghai, Shaanxi, Sichuan and Yunnan), 5 autonomous regions (Guangxi, Inner Mongolia, Ningxia, Tibet and Xinjiang), and 1 municipality (Chongqing). “Western development strategy” *Xinhua* (22 December 2009),

transport infrastructure such as river-ports, airports, roads and railway networks.⁴ Chongqing, Xi'an and Chengdu, the largest three cities covered under the strategy, emerged as inland multimodal transport hubs and generated new trade flows.⁵ In 2011, some of the businesses operating from these cities identified and responded to the demand for efficient freight services along pre-existing railway infrastructure, which finally led to the emergence of the China-Europe railway corridors.⁶

In common parlance, a transport corridor is a 'linear area that is defined by one or more modes of transportation like highways or public transit which share a common course'.⁷ Therefore, 'development often occurs around transport corridors, creating linear agglomerations'.⁸ Evidently, such a definition is very narrow when compared with the immensity and diversity of the China-Europe railway corridors and the ambitions of the BRI. A wider definition found in logistics literature, which defines a transport corridor as 'a design based on using a high-density flow along an artery and short capillary services to nodes of the corridor',⁹ adopts a more holistic view and is suitable to describe the China-Europe railway corridors. Notably, the wider definition

online: Xinhua <www.chinadaily.com.cn/china/westdevelopment/2009-12/22/content_9215054.htm> accessed 11 October 2021.

- 4 For discussion on transportation issues related to this strategy, see J W Garver, "Development of China's Overland Transportation Links with Central, South-West and South Asia" (2006) *The China Quarterly*, No. 185, 1–22; also see, N Yu, M Jong, S Storm, J Mi, "The growth impact of transport infrastructure investment: A regional analysis for China (1978–2008)" (2012) *Policy and Society*, 31:1, 25–38, online: Taylor & Francis Online <www.tandfonline.com/doi/full/10.1016/j.polsoc.2012.01.004> accessed 11 October 2021.
- 5 J Jakóbowski, M Kaczmarek, K Popławski, "The Silk Railroad. The EU-China rail connections: background, actors, interests" (2018) *Centre for Eastern Studies (OSW) No. 72, 6*, online: OSW <www.osw.waw.pl/sites/default/files/studies_72_silk-railroad_net.pdf> accessed 11 October 2021.
- 6 In 2011, the electronics and automotive sectors with support from leading logistics service providers started to experiment with various railway routes to connect their European and Asian supply chains. For example, Hewlett Packard (HP) started sending notebook computers from its factory in Chongqing through Kazakhstan, Russia, Belarus and Poland to Duisburg in Germany using block trains. Shipping one container by train costed HP about USD 10,000, which was about one-third the cost of air transit and twice the cost of shipping by sea. See C Rastogi, J-F Arvis, *The Eurasian Connection: Supply-Chain Efficiency along the Modern Silk Route through Central Asia* 44–45, online: World Bank <<https://elibrary.worldbank.org/doi/pdf/10.1596/978-0-8213-9912-5>> accessed 11 October 2021.
- 7 "Transport corridor", *Wikipedia*, online: Wikipedia <https://en.wikipedia.org/wiki/Transport_corridor> accessed 11 October 2021.
- 8 *ibid.*
- 9 J Woxenius "Generic framework for transport network designs: Applications and treatment in intermodal freight transport literature", (2007) *Transport Reviews* 27(6) 733–749.

distinguishes a corridor from a tunnel, as the ‘capillaries’ act as ‘doors’ that lead to new opportunities.¹⁰

Interestingly, in just 10 years, the China-Europe railway corridors have opened many ‘doors’ for trade and transport for several businesses and landlocked countries.¹¹ From that point of view, the BRI undoubtedly has aided the rapid expansion of railway services and made the corridors a nebulous network of routes which are tied to a common geographical orientation.¹² Such an approach is in line with the shift in production patterns, and the need to enable landlocked developing countries to participate more fully in global value chains, as recognized in the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014–2024.¹³ However, the BRI linkage

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- 10 There is mutual relationship between transport corridors and trade where one fosters the other. They are connected in the same way as the connection between economics and infrastructure. Corridors lead to increased productivity, lower transport costs, affects trade relationships and the location of production factors; see P Rietveld, FR Bruinsma, *Is Transport Infrastructure Effective? Transport Infrastructure and Accessibility: Impacts on the Space Economy*, (Springer, 1998). A successful transport corridor is often being followed by an integration that goes deeper than the physical infrastructure; see P Srivastava, “Regional Corridors Development in Regional Cooperation”, ADB Economics Working Paper Series No. 258, Asian Development Bank, Mandaluyong City, Philippines, ISSN 1655-5252 (2011), online: Think-Asia <<https://think-asia.org/bitstream/handle/11540/2029/EconomicsWP258.pdf?sequence=1>>; also see, A Hope, J Cox, Development Corridors, Coffey International Development (2015), online: <https://assets.publishing.service.gov.uk/media/57a08995e5274a31e00016a/Topic_Guide_Development_Corridors.pdf> accessed 11 October 2021.
- 11 Landlocked countries often lag behind their maritime neighbours in overall development and external trade. While the relatively poor performance of many landlocked countries can be attributed to distance from coast, it has been argued that several aspects of dependence on transit neighbours are also important. Four such types of dependence: 1) dependence on neighbours’ infrastructure; 2) dependence on sound cross-border political relations; 3) dependence on neighbours’ peace and stability; and 4) dependence on neighbours’ administrative practices. See, ML Faye, JW, McArthur, JD Sachs, T Snow, “The challenges facing landlocked developing countries” (2004) *Journal of Human Development*, 5(1) 31–68.
- 12 The China-Europe railway network connects 62 Chinese cities with 51 European cities in 15 countries. Jingxi Mo, “Customs clearance eased for international freight train users”, The State Council of the People’s Republic of China (3 March 2020), online: ENGLISH.GOV.CN <http://english.www.gov.cn/statecouncil/ministries/202003/03/content_WS5e5daf62c6doc201c2cbd64d.html> accessed 11 October 2021.
- 13 More information on the Vienna Programme of Action is available online: <www.un.org/ohrrls/content/vienna-programme-action> accessed 11 October 2021.

has also raised suspicion in the minds of many who perceive these corridors as a means to fulfil the geopolitical ambitions of China.¹⁴

Be that as it may, so far, investment in hard infrastructure along the corridor has mostly been in facilities where change of gauge is necessary.¹⁵ Therefore, it is only logical to assume that the imminent role of the BRI in the development of the corridor would be to further and support trade facilitation reforms. Such an assumption is reasonable because the investment needed in transport infrastructure to reduce transit time by one hour is substantially more than that needed to reduce border crossing processing time by an hour. In addition, experiences from other corridors show that trade facilitation at times is more important than the transport infrastructure itself.¹⁶ The BRI Vision and Actions document¹⁷ lends policy support to expedite trade facilitation reforms¹⁸ by

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- 14 S Olinga-Shannon, M Barbesgaard, P Vervest, "The Belt and Road Initiative (BRI): An Asia Europe People's Forum (AEPF) Framing Paper" (November 2019) 7–8, online: <www.tni.org/files/publication-downloads/bri_framing_web_en.pdf> accessed 11 October 2021.
- 15 See "Bridging Borders: Infrastructure to Connect Asia and Beyond", Asian Infrastructure Finance 2019 at 90, AIIB available online: <www.aiib.org/en/news-events/asian-infrast-structure-finance/common/base/download/AIIB-Asian-Infrastructure-Finance-2019-Report.pdf> accessed 11 October 2021.
- 16 This is exemplified by studies in the ASEAN region by S Stone, A Strutt, "Transport Infrastructures and Trade Facilitation in the Greater Mekong Subregion", *Trade Facilitation and Regional Cooperation in Asia* (2010) 156; also in Africa by S Teravaninthorn, G Raballand, "Transport prices and costs in Africa: a review of the main international corridors", World Bank Publications (2009); and also in South East Asia by R Banomyong, "Multimodal transport corridors in South East Asia: a case study approach", Doctoral Thesis, Cardiff Business School, Cardiff University, UK (2000).
- 17 The BRI policy document lists five key priority areas: policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people bonds. See "Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road" (28 March 2015), issued by the National Development and Reform Commission (NDRC), Ministry of Foreign Affairs, and Ministry of Commerce with authorization of the State Council, online: Belt and Road Forum <<http://2017.beltandroadforum.org/english/1100/2017/0410/c22-45.html>> accessed 11 October 2021.
- 18 International institutions such as the WTO, the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) and the Organisation for Economic Co-operation and Development (OECD) have adopted broad and progressive definitions of trade facilitation that include simplification and standardization of procedures, practices, formalities and associated information flows relevant for movement of goods. The various definitions proposed by these international institutions refer not only to the government agencies that are concerned with the transit of goods but also include entities that conduct business associated with trade. Both UN/CEFACT and OECD include within the ambit of trade facilitation information flows for the purpose of movement of goods from seller to buyer and making payments. For a discussion on definitions and scope of trade facilitation refer to A Basu Bal, T Rajput, "Trade in Digital Era: Prospects and Challenges for an International Single Window Environment", in F Amtenbrink, D

recommending establishment of single windows to reduce customs clearance costs along the corridors. Thus, from the above vantage point, this chapter utilizes the Chongqing-Duisburg railway link to highlight the ongoing trade facilitation reforms that are underway in the countries/regions along the New Eurasian Land Bridge (NELB), and present selected implementation related challenges.¹⁹ The focus of the chapter is on the digital aspects of trade facilitation measures, namely single windows that are established by customs

Prévost, RA Wessel, eds., *Netherlands Yearbook of International Law 2017: Shifting Forms and Levels of Cooperation in International Economic Law: Structural Developments in Trade, Investment and Financial Regulation*, (Springer, 2017) 306–7.

- 19 There are daily train connections from Chongqing to Duisburg. Chongqing is located strategically in China's central-western region and is part of the Yangtze Economic Belt. The Chongqing-Xinjiang-Europe International Railway (also known as Yuxinou, a name derived from a combination of its Chinese characters – Yu (Chongqing), Xin (Xinjiang) and Ou (Europe)), has played a pioneering role in the opening up of China-Europe railway corridors. Duisburg is a city in Germany that enjoys a strategic location and serves as a logistics hub for Germany, France and the Benelux region. See P Oltermann, "Germany's 'China City': how Duisburg became Xi Jinping's gateway to Europe", *The Guardian* (1 August 2018), online: The Guardian <www.theguardian.com/cities/2018/aug/01/germanys-china-city-duisburg-became-xi-jinping-gateway-europe>. According to Yuxinou (Chongqing) Logistics, the train journey from Chongqing to Duisburg takes 12–15 days and the frequency has increased from 17 runs in 2011 to more than 1000 runs in 2018. See "Chongqing: On Track for Europe via the Yuxinou Rail Route", *HKDTC*, online: *HKDTC* <<https://hkmb.hktdc.com/en/1XoADYAW/hktdc-research/Chongqing-On-Track-for-Europe-via-the-Yuxinou-Rail-Route>> accessed 11 October 2021. The Chongqing-Duisburg railway link, which is part of the NELB, is chosen as the focus of this chapter because of three main reasons: (1) consistency – it is one of the first link to open between China and Europe in 2011, it has a daily service since 2018, and it has turned out to be a profitable link for the carriers; (2) suitability to discuss trade facilitation issues – the northern Trans-Siberian Railway routes are long and not frequently used for China-Europe services, the southern Trans-Caspian International Transport Route is still under development, and most importantly trade facilitation initiatives have recently been undertaken at both China-Kazakhstan border and Belarus-Poland border; and (3) subject matter of joint research – the authors of this chapter have conducted joint research for the past three years as part of a collaboration arrangement between Chinese and Swedish universities, focusing on digital infrastructures that are being built as part of the BRI, by visiting the Chongqing PFTZ and conducting interviews with Chinese government officials on various logistics and digital infrastructure projects that are being executed by the provincial government in Chongqing to facilitate the railway corridors. This chapter takes a forward-looking perspective to consider what more may be done to develop a regional agenda for trade facilitation along the China-Europe railway corridors. Note that some of the facets of the Chongqing-Duisburg railway link mentioned in reasons (1) and (2) above can also be gleaned from R Pomfret, *China's Belt And Road Initiative, The Eurasian Landbridge, And The New Mega-regionalism*, Series on China's Belt and Road Initiative Series – Volume 10, 28–9.

authorities of countries or regional blocs, and single window interoperability which is crucial for the exchange of information between the different customs authorities along a corridor.

Following this introduction, section 2 makes an inventory of the various single window initiatives that have recently been undertaken in the countries situated along the Chongqing-Duisburg railway link. Here, the progress and implementation of single window reforms in China, Kazakhstan, Belarus, and Poland is reviewed in contextual detail to set the ground for discussion on single window interoperability and cross-border data flows. Section 3 of the paper then proceeds to identify and discuss the first challenge for single window interoperability, namely, the legal and regulatory fragmentation that exists due to the multiplicity of international and regional institutions and instruments that govern railway transport and customs procedures along the China-Europe railway corridors. Section 4 then highlights that countries along the corridor may adopt different approaches to handle data related issues which is fundamental to cross border interoperability of single windows. This section in particular utilises the issue of personal data protection as an example to demonstrate how the different approaches adopted by the EU and China may impair seamless movement of trade data across borders. While trade facilitation efforts are crucial for seamless connectivity, the political relationship between the countries of the corridor impacts the deepening of the trade facilitation efforts and long-term viability of a corridor. Therefore, section 5 elucidates the ongoing interactions between China, the Eurasian Economic Union (EAEU), and the EU, which point towards the efforts made to achieve single window interoperability along the railway corridors. While the ongoing Russia-Ukraine conflict have stalled progress of the Eurasian corridors and may witness several steps backwards in the near future, but the provisioning of digital infrastructure and the digitalization strategy along the railway corridors requires a long-term view. With that in mind, section 6 briefly considers the Digital Silk Road (DSR) component of BRI, and then highlights the emergence of further legal and regulatory fragmentation, which if not managed effectively, may create hurdles in the future expansion of the railway corridors. Section 7 concludes the chapter by presenting a strategy for tripartite collaboration between China, the EAEU and the EU to manage legal and regulatory fragmentation along the railway corridors.

It is submitted that as the BRI is premised primarily on the Chinese government's policy objectives and not on demand from the private sector. Therefore, the quantum of trade that will flow along these corridors remains to be determined. In addition, economists are still examining whether the transport corridors will to a significant extent lead to trade creation or trade diversion.

Therefore, the real demand for new trade routes and the balance in the trading relationship of China and the BRI partner countries is beyond the scope of this chapter. Also excluded from the scope is the analysis of the suitability, sustainability and long-term viability of the physical infrastructure projects that are being built and funded by Chinese interests. In addition, unilateral sanctions and countermeasures imposed because of the Russia-Ukraine conflict is briefly touched upon without giving any detailed consideration in this chapter.

2 Single Window Initiatives along the Chongqing-Duisburg Railway Link

If border control is organized in such a way that traders submit documentation and/or data requirements for the importation, exportation, or transit of goods through a single-entry point to the participating authorities or agencies, then it could offer specific benefits to all stakeholders involved in international trade carried through the railway corridors.²⁰ For more than a decade, single window systems and their benefits have been widely recognized and promoted by several international and regional organizations concerned with trade facilitation.²¹ Single window systems enable carriers, logistics service providers and traders to submit standardized documents and data that is required for import, export and transit formalities in electronic form to the customs and other control authorities at the border crossing.²² Such a single window could

20 Single window systems allow government authorities to save costs and increase revenue collection through streamlined processes. Also, the traders and transporters save the hassle of multiple submission of paper work and quicker clearing of goods. In addition, the transportation, banking and insurance industries chance to benefit due to reduced information asymmetry engendered through efficient exchange of information electronically. See Basu Bal, Rajput (n 18).

21 Among them are the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), the UNECE and its Centre for Trade Facilitation and Electronic Business (UN/CEFACT), the WCO, the United Nations Network of Experts for Paperless Trade and Transport in Asia and the Pacific (UNNEXT), the Association of Southeast Asian Nations (ASEAN), United Nations Conference on Trade and Development (UNCTAD) and the WTO.

22 Single window is defined by the WCO as: 'an intelligent facility that allows parties involved in trade and transport to lodge standardized information and documents with a single-entry point to fulfil all import, export and transit regulated regulatory requirements', (WCO 2008). This is largely in line with UN/CEFACT Recommendation No. 33, "Recommendation and Guidelines on establishing a Single Window", (2005), online: UNECE <www.unece.org/fileadmin/DAM/cefact/recommendations/rec33/rec33_trd352e.pdf> accessed 11 October 2021. Single window is referred as 'intelligent' because it is a vehicle for providing

be introduced at national and/or cross-border levels.²³ Article 10.4 of the Trade Facilitation Agreement (TFA) requires WTO member States to establish and maintain a single window.²⁴

A national single window that consolidates and processes regulatory information, usually covers different modes of transport. Therefore, linking railway information systems at border crossings with a national single window would reduce the need for resubmission of similar information across modes and maximize the opportunities for simplification of border crossing formalities. Moreover, information flowing through a single window is relevant for risk management which allow border agencies to separate legitimate traders from non-compliant ones, reduce random customs checks and permit low-risk consignments to clear faster. The main benefits from use of single window systems are trade facilitation, efficient electronic data exchange among stakeholders, and support for redesign and streamlined business processes.²⁵

For seamless sharing of information and better integration of systems in the China-Europe railway corridors, interoperability between all the national single windows is necessary. Interoperability is defined as the ability of two or more systems or components to exchange and use information across borders

shared services that include computation of duties/taxes, fees and charges administered by agencies at the border, coordinated risk management, shared operational controls and orchestration of interagency business processes and workflows. See, "Understanding Single window Environment", Volume 1, WCO, online: WCO <www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/single-window/compendium/swcompendiumvol1parti.pdf> accessed 11 October 2021.

23 The international guidance on the legal framework related to national and cross-border exchange of trade data required for single window operations is provided in UN/CEFACT Recommendation No. 35, "Establishment of Single Window Legal Framework for International Trade", (2013), online: UNECE <www.unece.org/fileadmin/DAM/trade/Publications/ECE-TRADE-401E_Rec35.pdf> accessed 11 October 2021.

24 WTO, Agreement on Trade Facilitation, WT/L/931, 15 July 2014. The TFA entered into force on 22 February 2017 after obtaining two-thirds acceptance from WTO's 164 Members. The text of the TFA is available online: WTO <www.wto.org/english/docs_e/legal_e/tfa-nov14_e.htm> accessed 11 October 2021. Article 10.4 of the TFA calls for WTO members 'to endeavour to establish or maintain a single window, which enables traders to submit documentation and/or data requirements for importation, exportation, or transit of goods through a single-entry point to the participating authorities or agencies. After the examination by the participating authorities or agencies of the documentation and/or data, the results shall be notified to the applicants through the single window in a timely manner.'

25 For a comprehensive discussion on single windows, see "Understanding Single window Environment", (n 22).

without additional effort on the part of the trader.²⁶ Interoperability between the national single windows along the railway corridors would (potentially) allow seamless flow of G2G information, B2G/G2B and B2B information.²⁷ However, maturity of interconnectivity and interoperability between customs and various border regulatory agencies, logistics service providers and other stakeholders within a country has to reach a certain threshold, for customs administrations to perform the cross-border flow of data or a digital handshake with other customs administrations in a bilateral or a multilateral arrangement. The remainder of this section makes an inventory of the single window initiatives that the countries along the Chongqing-Duisburg railway link have undertaken and the level of maturity they have achieved to strive for interoperability.²⁸

2.1 *Single Window Reforms in China*

For more than a decade, China has been proactive in developing its single window infrastructure and has coordinated its implementation efforts with related international developments and supporting initiatives at the WTO,²⁹ WCO,³⁰ UN/CEFACT,³¹ UNCTAD,³² and

26 Interoperability standards are laid down in UN/CEFACT Recommendation No. 36, “Single Window Interoperability”, (2017), online: UNECE <www.unece.org/fileadmin/DAM/trade/Publications/ECE-TRADE-431E_Rec36.pdf> accessed 11 October 2021.

27 The acronyms refer to government-to-government (G2G), business-to-government (B2G), government-to-business (G2B) and business-to-business (B2B).

28 Single windows vary in scope and implementation modalities due to differences with respect to involved stakeholders, transactions covered, territorial coverage and other relevant aspects. This section of the chapter does not go into the technical details regarding the functioning of different single windows. Single window initiatives of China, Kazakhstan, Belarus and Poland are discussed as the border control takes place at these countries for trains using the Chongqing-Duisburg railway link.

29 See (n 24).

30 The International Convention on the Simplification and Harmonization of Customs procedures (Kyoto Convention) (1973) (as amended on 26 June 1999) entered into force in 2006. The convention has 128 contracting parties as on 11 October 2021. For position as regards ratifications and accessions to the convention, a list is available online: WCO <www.wcoomd.org/en/Topics/Facilitation/Instrument%20and%20Tools/Conventions/pf_revised_kyoto_conv/Instruments> accessed 11 October 2021.

31 UN/CEFACT is a subsidiary, intergovernmental body of UNECE which serves as a focal point within the United Nations Economic and Social Council (ECOSOC) for trade facilitation recommendations and electronic business standards. The various UN/CEFACT recommendations related to single windows are discussed later in this section of the chapter.

32 UNCTAD, through its Automated System for Customs Data (ASYCUDA) programme has been involved with customs modernization and computerization for more than three

UNESCAP.³³ The Chinese General Administration of Customs (GAC) led the creation of 'China E-Port' which functions as its national single window trading environment, harnessing information and communication technology to catalyse the transformation and modernization of its customs system into an integrated information platform focusing on clearance management and enforcement. The GAC coordinated the legal reforms for single window implementation in three phases.³⁴ The first phase included the preliminary work on a regulatory and legal framework for the customs organization; the second through the improvement of accountability, transparency and legislation for greater efficiency in trade; and the third included further regulatory reforms to comply with the obligations of the WTO. Alongside that, the GAC itself underwent transformation which is often informally referred to as five phases of China Customs reforms.³⁵

The establishment of the single window in China is backed by several regulations and Laws. The most important of them are the amended Customs Law of 2000³⁶ and the Electronic Signature Law of 2004.³⁷ The Electronic Signature Law, for example, governs the accuracy and completeness of the data in single window systems by provisioning for approval certificates for electronic signature. For cross-border application, article 26 of this Law stipulates that a certificate issued abroad can only be recognized if China has an agreement with the country of issuance. The provision mentions that according to the principle of reciprocity and after approval, the validity of the overseas certificate can be determined, but does not stipulate any clear approval procedures and/or

decades. Kazakhstan uses ASYCUDA for its national single window. See note 63 below for more information.

- 33 UNESCAP prepared the "Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific", 2016E/ESCAP/RES/72/4. China is a signatory to the Agreement and the text is available online: UN <www.un.org/ga/search/view_doc.asp?symbol=E/ESCAP/RES/72/4&Lang=E> accessed 11 October 2021.
- 34 United Nations Development Program (UNDP), (2006), "China Customs Modernization for Trade Facilitation and Equitable Development", online: UNDP <https://info.undp.org/docs/pdc/Documents/CHN/00043936_PRODOP.pdf> accessed 11 October 2021.
- 35 See "China E-Port Towards a Single Window Trading Environment", UNNExT Brief No. 14 (June 2015), online: UNESCAP <www.unescap.org/sites/default/files/brief14.pdf> accessed 11 October 2021.
- 36 An English translation of the Customs Law of the People's Republic of China is available online: MOFCOM <<https://english.mofcom.gov.cn/aarticle/policyrelease/international/policy/200705/20070504715848.html>> accessed 11 October 2021.
- 37 The Electronic Signature Law of the People's Republic of China was passed at the 11th meeting of the Standing Committee of the 10th National People's Congress on 28 August 2004.

methods. In view of the above, if China and a foreign country does not have a relevant agreement, or in the absence of applicable principle of reciprocity, the validity of a certificate of electronic signature may not be recognized. At present, China has not signed special treaties or bilateral agreements with other countries that explicitly mention the recognition of electronic signatures, but only in certain agreements a legal basis can be found. For example, article 6 in chapter 12 of the Free Trade Agreement (FTA) signed between China and Australia in 2015, provides for mutual recognition of digital certificates and electronic signatures, encourages the use of digital certificates, improves the acceptance of electronic texts, and encourages research and development cooperation between the two sides in the field of e-commerce.

The State Council Guidelines on E-Port, promulgated by the central government in 2006 and 2012, served as important policy documents to define the major institutional arrangements and to map the way forward.³⁸ Two additional policy documents on single windows were promulgated by the State Council in 2014 and 2015, which contributed to the fulfilment of China's obligations under the WTO TFA.³⁹ Based on the mandate set by the policy document from 2015, ports in 10 cities and 5 municipalities across China instituted their respective sub-national single window systems.⁴⁰ Later, various inland transport hubs in central and western China were asked to implement sub-national single window systems as they connect different countries in Asia and Europe by railways, roads and inland waterways.⁴¹

38 The guidelines from 2006 focused on the basic coordination mechanism and responsibility of the stakeholders, while in 2012 the guidelines highlighted the strategic goal of E-Port for the next 5 years.

39 Document No. 68 of the State Council [2014] entitled "Notice of the State Council on Issuing and Implementing the 'Three Mutual' Reform Plan to Promote the Construction of Large Customs Clearance" and Document No. 16 of the State Council [2015] entitled "Several Opinions of the State Council on Improving Port Work to Support Foreign Trade Development". These two policy documents steered the implementation of the provisions of the TFA on single windows in China.

40 Document No.16 of the State Council [2015], *ibid.*, set the goal for establishment of a single window at all ports in China by 2017. Based on this document, the GAC promoted single window systems in all sea ports and subsequently in inland transport hubs. For more information, see "Single Window System to be Promoted to All Sea Ports", GAC (16 February 2015), online: GAC <<https://english.customs.gov.cn/Statics/8fc6ce8b-65c3-4912-9e79-09255658d2f2.html>> accessed 11 October 2021.

41 Based on the experience of implementing single windows in the port cities, in 2017, China rolled out a standardized single window for customs clearance throughout the country. See "Standard Edition of Single Window for Promoting International Trade" GAC (10 March 2017) available in Chinese, online: GAC <www.customs.gov.cn/customs/302249/hgzssldzj/jhls81/667820/index.html> accessed 11 October 2021.

Data standardization is a foundational element of single window operation. Standardized data sets allow efficient exchange of information between government agencies, and between traders and trade regulators. Accurate and standardized data submissions make it possible to integrate and share trade data, promote efficient operation of international supply chains, enhance the ability and efficiency of national border management, and assist government authorities to increase tax revenue.⁴² Since 2015, China has revised its domestic standards on trade data, consistent with UN/CEFACT recommendations.⁴³ However, some data standards still remain to be coordinated due to uneven development level in different customs areas. To address this problem, China has set up 18 PFTZs, and has pressed for coordination among these zones. Such a strategy is useful as the PFTZs exploit the comparative advantages of each region; strengthen the interaction and cooperation among the eastern, western and central regions; and comprehensively improve the openness of the Chinese economy.⁴⁴ Also, in November 2015, China's State Port Office set up a single window data coordination and simplification (cargo declaration) project, which resulted in the implementation of some of the UN/CEFACT's recommendations on single windows through formulation of the 'Single Window Metadata Catalogue for International Trade' and the 'Single Window Metadata Set for International Trade'.⁴⁵ Presently, the Chinese single window system

42 See D Liang, "Research on Establishment and Application of Single Window Data Element Set for International Trade", (2014) *Customs and Economic and Trade Research*, Issue 6, 3.

43 UN/CEFACT, Recommendation No. 34, "Data Simplification and Standardization for International Trade", (2013), online: UNECE <www.unece.org/fileadmin/DAM/cefact/recommendations/rec34/ECE_TRADE_400_DataSimplificationand_Rec34E.pdf> accessed 11 October 2021.

44 The Shanghai PFTZ was launched in 2013, followed by several more in 2015, 2017, 2018 and 2019. For a comprehensive discussion on these zones see, X Fan, J Xu "Report on the Development of Pilot Free Trade Zones in China", in: Y Tao, Y Yuan (eds) *Annual Report on the Development of China's Special Economic Zones*, Research Series on the Chinese Dream and China's Development Path (Springer, Singapore, 2018).

45 For a detailed discussion on the topic see D Liang, "The Implementation and Enlightenment of ACE/ITDS in the United States", (2016) *Customs and Economic and Trade Research*, Issue 5, 16. The China (Shanghai) International Trade Single Window remains the most sophisticated subnational Single Window system, which is organized as a public private partnership, and continues to serve as a beacon for the rest of the country. It is operated by Shanghai E&P International Inc. E&P International Inc. and provides enhanced single window capabilities, including both B2G and B2B functionalities. More information is available online: E&P International <www.easipass.com/en/index.html> accessed 11 October 2021.

serves as a one-stop customs clearance for the entire mainland, allowing companies to declare cargo and taxes with a single submission.⁴⁶

The implementation of single window in Chongqing is briefly discussed to trace the development of a sub-national single window system in a municipality that serves as a regional transport and logistics hub, and an important gateway for the train corridors connecting China and Europe. In October 2017, the Chongqing municipality inaugurated a standardized sub-national single window system called the ‘Chongqing International Trade Single Window’.⁴⁷ The single window is built on the notion of the ‘three mutual’ reform plan, namely, mutual information-sharing across departments, mutual recognition of supervision, and mutual assistance in law enforcement at ports.⁴⁸ Subsequently, in May 2018, the municipal government in Chongqing adopted the Measures for Promoting Cross-Border Trade Facilitation at Chongqing Port (Trial), mainly to reduce the overall customs clearance time and costs.⁴⁹ The Measures are adopted to facilitate document processing, provide free electronic document exchange, facilitate the handling of import and export licenses; carry out ‘parallel operation’ of port logistics where various regulatory agencies would pursue border control activities concurrently; implement time-limited operations for port logistics;⁵⁰ lower port operating fees; reduce trade finance cost;⁵¹ and

46 “China’s one-stop customs clearance facilitates international trade”, *Xinhua* (30 November 2017), online: Xinhua <www.chinadaily.com.cn/business/2017-11/30/content_35134431.htm> accessed 11 October 2021.

47 The establishment of the sub-national single windows is mandated through Document No. 16 of the State Council [2015] (n 93).

48 The wording ‘three mutual’ appears in the title of Document No. 68 of the State Council [2014] (n 39).

49 Y Chen, “Pioneer of Opening-up in Hinterland China: Chongqing Embraces the World”, *iChongqing* (12 March 2019), online: *iChongqing* <www.ichongqing.info/2019/03/12/pioneer-of-opening-up-in-hinterland-china-chongqing-embraces-the-world/> accessed 11 October 2021.

50 For example, the Chongqing International Trade Single Window subscribes to customs clearance status information from the supervision department system and pushes it to airports, ports, railway systems and related enterprises in real time. In addition, goods circulation status information is subscribed from airports, ports and railway systems and sent to relevant units in real time.

51 The Chongqing Logistics Financing Service Co. Ltd. (CLFS) was established by the local government in Chongqing on 25 December 2017 to serve as a one stop shop in the delivery of integrated financial services to traders operating in the Chongqing PFTZ. For more information on CLFS see <<https://cqfn.com/index.html>> accessed 11 October 2021. Also, for a wider discussion on how China is approaching trade finance matters along the railway corridors, see A Basu Bal, T Rajput, “Maritime Rules for Rail Carriage: China’s Initiative to Incorporate Rules from the Road to the Belt”, in PK Mukherjee, M Mejjia, J Xu, eds., *Maritime Law in Motion* (Springer, 2019), 39, 39–58. China submitted a proposal to

establish publicity systems for port charges, port operation hours and methods of consultation and complaint.

The single window in Chongqing is still a work in progress as more functionalities are slated to be added to the system in due course. For example, the export tax rebate declaration function will be added in the near future.⁵² In addition, the Chongqing single window has connected and shared information with some of the BRI participating countries on a pilot basis.⁵³ One such pilot is the China-Singapore (Chongqing) Demonstration Initiative on Strategic Connectivity, which is envisaged to strengthen data and information integration between the Chongqing and the Singaporean single windows leading to cross-border connectivity in the near future.⁵⁴

2.2 *Single Window Reforms in Kazakhstan and Belarus*

Kazakhstan and Belarus are both members of the EAEU and therefore customs matters are mostly under the competence of the Union.⁵⁵ The new EAEU Customs Code from 2018 lays down a substantial part the legislative framework for single window implementation in the Union.⁵⁶ Through the Customs Code, several competencies were transferred from the national customs

UNCITRAL for preparing an instrument on railway consignment notes to facilitate use of letters of credit along the railway corridors, see “Possible future work regarding railway consignment notes” – Proposal by the Government of the People’s Republic of China, A/CN.9/998 (14 June 2019), online: UN <<https://undocs.org/A/CN.9/998>>. accessed 11 October 2021.

52 Overall Plan of China (Chongqing) Free Trade Zone.

53 Task Division of Chongqing to Implement Measures Supported by State Council for Deepening Reform and Innovation in Free Trade Zone, Chongqing Government [2019] No.3.

54 Article 21, Regulations of China (Chongqing) Free Trade Zone.

55 A discussion on Russia is excluded as there is free movement of goods between EAEU members.

56 In 2009, the Agreement on Customs Code of Customs Union was created under the auspices of the Eurasian Economic Community (EurAsEC). This Code introduced the common comprehensive legal framework in the Customs Union. The EurAsEC was subsequently terminated from 1 January 2015 after the launch of the EAEU. In April 2017, the Treaty on the Customs Code of the Eurasian Economic Union replaced the earlier Code and the new Code is applied in the EAEU from 1 January 2018. For a discussion on the new Code, see ES Smolina, RN Seryomina (2019), “Prospects for the Functioning of the New Customs Code of the Eurasian Economic Union” in S Ashmarina, M Vochozka eds., *Sustainable Growth and Development of Economic Systems*, (Contributions to Economics, Springer, 2019) 77–85. Also, an unofficial translation of the Code from Russian to English is available online: Eurasian Economic Commission (EEC) <[www.eurasiancommission.org/en/act/tam_sotr/dep_tamoj_zak/SiteAssets/Customs Code of the EAEU.pdf](http://www.eurasiancommission.org/en/act/tam_sotr/dep_tamoj_zak/SiteAssets/Customs%20Code%20of%20the%20EAEU.pdf)> accessed 11 October 2021.

administrations of each EAEU member to the Eurasian Economic Commission (EEC).⁵⁷ Article 80 of the Customs Code recommends the creation of a single window for all customs operations by economic operators.⁵⁸ Each EAEU member State develops its national single window on its own in accordance with approved plans and concepts.⁵⁹ There are no plans for creation of one integrated regional mechanism single window for all EAEU member States.⁶⁰

As Kazakhstan is a landlocked country, trade facilitation reforms are imperative for expanding its own trade volumes, and also for supporting transit trade.⁶¹ Kazakhstan, as a member of the WTO, implemented its national single

57 The EEC is the executive body of the EAEU responsible for implementing decisions, upholding the EAEU treaties and managing the day-to-day business of the EAEU.

58 Factual Presentation on the Treaty of the Eurasian Economic Union (Goods and Services), WT/REG358/1 (13 July 2018) 49, online: WTO <https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S009-DP.aspx?language=E&CatalogueIdList=247690,247198,247057,246747,246770,246600,246477,246375,246410,246363&CurrentCatalogueIdIndex=3&FullTextHash=&HasEnglishRecord=True&HasFrenchRecord=True&HasSpanishRecord=True> accessed 11 October 2021.

59 In 2017 the Eurasian Economic Commission appraised the status of development of national single windows of the EAEU member States. The results of these estimates are available in English online: EEC <www.eurasiancommission.org/ru/act/tam_sotr/edinoe_okno/Documents/g281012-en.pdf> accessed 11 October 2021.

60 In accordance with the main directions in development of the single window mechanism in the system of regulation of foreign trade activities (adopted by the decision of the Supreme Eurasian Economic Council No. 68 of 29 May 2014) and the plan of their realization (adopted by the decision of the Supreme Eurasian Economic Council No. 19 of 8 May 2015) the EAEU member States endeavour to coordinate their efforts in developing national single windows in order to ensure the interoperability between them and possibility of informational exchange. The above was submitted by the delegations of Belarus, Kazakhstan, and Russia at the WTO, made in relation to queries on the "Factual Presentation on the Treaty of the Eurasian Economic Union (Goods and Services)" (n 58). The delegation of Ecuador raised queries on the modus operandi of the single window of each EAEU member state and interconnectivity of customs services through single window. See "Questions and Replies on Treaty of the Eurasian Economic Union (Goods and Services)", WT/REG358/3/Rev.1 (22 November 2018) 6, online: WTO <<https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/REG/358-3R1.pdf&Open=True>> accessed 11 October 2021.

61 It is estimated that by the year 2030 the cargo turnover on Khorgos Gate bordering China will reach 35 million tonnes; see A Gussarova, F Aminjonov, Y Khon, "The Eurasian Economic Union and the Silk Road Economic Belt: Competition or Convergence? Implications for Central Asia" (July 2017), online: Friedrich-Ebert-Stiftung <<https://library.fes.de/pdf-files/bueros/kasachstan/13620.pdf>> accessed 11 October 2021. Kazakhstan's role is important in the BRI because it supports the railway transport that connects Western part of China with Europe. The Khorgos gate connects China and Kazakhstan through rail, road and oil pipeline; see L Watanabe, F Merz, B Zogg, "Kazakhstan: A Centerpiece in China's Belt and Road", *CSS Analyses*, No. 249 (September 2019) online: Center for Security

window in 2019.⁶² Kazakhstan received assistance from UNCTAD to apply the ASYCUDA, which provides the basis for the single window portal.⁶³ Kazakhstan is also a party to the revised Kyoto Convention of 1999, and at present its single window provides a single access point in the process for customs clearance of goods and for procuring necessary permits from government agencies.⁶⁴ The implementation of the single window is also a part of the country's wider digitalization strategy.⁶⁵

Belarus, as a member of the EAEU, *de-facto* has been fulfilling some of the WTO obligations since 2012, but currently is not a member of the WTO. Belarus is in the process of developing a single window based on article 10 of the TFA,⁶⁶ but that is yet not operational.⁶⁷

2.3 *Single Window in Poland*

Poland, as a part of the EU, is integrated with the half-century old economic and customs union.⁶⁸ The single window facility in Poland is part of the EU Single

Studies, Zurich <<https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/pdfs/CSSAnalyse249-EN.pdf>> accessed 11 October 2021. Kazakhstan is poised to become the largest transit hub of the Central Asian region for goods between China and Europe in the near future; see Malika Orazgaliyeva, "Kazakhstan has turned into 'competitive transit hub', Nazarbayev tells Belt and Road" *The Astana Times* (27 April 2019), online: *The Astana Times* <<https://astanatimes.com/2019/04/kazakhstan-has-turned-into-competitive-transit-hub-nazarbayev-tells-belt-and-road-forum/>> accessed 11 October 2021.

62 "Kazakhstan rolls out a single window to boost trade", online: UNCTAD <<https://unctad.org/news/kazakhstan-rolls-out-single-window-boost-trade>> accessed 11 October 2021.

63 ASYCUDA is an integrated customs management system, designed and developed for customs administrations and the trade community to comply with international standards when fulfilling import, export and transit related procedures. For more information on ASYCUDA, see "Automated System for Customs Data In Action: Compendium 2019", online: UNCTAD <https://unctad.org/en/PublicationsLibrary/dtlasycudamisc2019d2_en.pdf> accessed 11 October 2021.

64 See "Regulatory and procedural barriers to trade in Kazakhstan", ECE/TRADE/407 (2014) 32, online: UNECE <www.unece.org/fileadmin/DAM/trade/Publications/ECE-TRADE_407E-Kazakhstan.pdf> accessed 11 October 2021.

65 More information on digital strategy of Kazakhstan is available online: Digital Kazakhstan <<https://digitalkz.kz/en/transit-to-digital-state/>> accessed 11 October 2021.

66 Article 10.4 of TFA (n 24).

67 It is only a matter of time when Belarus will have an operational single window.

68 The EU's Customs Union was first provided for in the Treaty of Rome and in 1968 it abolished the customs duties levied at the borders between members of the European Community. Today, it is a single trading area where all goods can circulate freely, whether produced in the EU or outside its borders. See "Celebrating the Customs Union: the world's largest trading bloc turns 50", online: EC <https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4265> accessed 11 October 2021.

Window environment for customs, which is focused on customs formalities and involves stakeholders dealing with cross-border movement of goods. The objective of this single window is to enable economic operators to electronically lodge, on a one-time basis, all the information required under customs and non-customs legislation for EU cross-border movements of goods. The e-Customs Decision (Decision No 70/2008/EC) of the European Parliament and of the Council of 15 January 2008 on a paperless environment for customs and trade continues to provide the legal basis for the establishment and use of the EU Single Window environment for customs.⁶⁹

3 Efforts to Remove Legal and Regulatory Fragmentation in Railway Transport and Customs for Trade Facilitation along Eurasian Corridors

The first challenge to achieve single window interoperability, as introduced in the foregoing section, is legal and regulatory fragmentation at border crossings. The century old physical railway infrastructure connecting China and Europe may be put to blame for such fragmentation. Several institutions and legal instruments already subsist at various levels and in different forms to cater to international transportation by railway.⁷⁰ Some of these instruments govern border crossings because international transportation by railway involves several intermediate frontier formalities. When varying national legislation on two sides of a border is compounded with multiple border control requirements that are enforced separately by customs and various other government agencies, then border crossing becomes a long-drawn process, full of inordinate delays.

Before progressing with the discussion on fragmentation, it is important to note that in this chapter the expression 'legal and regulatory' is used in conjunction with one another as it is not always possible to draw a bright line between 'legal' and 'regulatory' questions. This is particularly relevant when legal concepts define an authority's regulatory perimeter. For example,

69 For more information see "The EU Single Window environment for customs", online: EC <https://ec.europa.eu/taxation_customs/general-information-customs/electronic-customs/eu-single-window-environment-for-customs_en – heading_5> accessed 11 October 2021.

70 Railway laws are formulated at international, regional, multilateral, bilateral or national levels. Depending on the level, the laws could be in the form of conventions, agreements, protocols, domestic legislation, and regulations.

whether a railway consignment note is a negotiable document or not correspond to a legal concept (*i.e.*, document of title under property law), which would then determine the regulatory perimeter for capital adequacy for banks when extending trade finance to exporters/importers transporting their goods using the railway corridors (*i.e.*, a document of title offers security and lowers the risk for lenders as per banking procedures). In practice, ‘legal’ and ‘regulatory’ questions are often approached from the perspective of regulation before they are addressed at the level of legal concepts. This chapter does not separate ‘legal’ and ‘regulatory’ questions as that requires a more reflective and iterative process. It is also relevant to note that the expression ‘law’, from a common law perspective, encompasses both principal and subordinate legislation as well as customary and case law. It is thus a holistic term. Regulations invariably fall under the rubric of subordinate, secondary or subsidiary legislation as distinguished from Acts which are undoubtedly of the principal or primary variety. By contrast, in many civil law jurisdictions and the EU, Regulations have the status of principal or primary legislation. In China a ‘Law’ is the equivalent of the Act in common law jurisdictions and a Regulation has the status of principal or primary legislation but resides at a lower threshold compared with ‘Law’. The distinction is based on the level and status of the national promulgating authority.

Figure 3.1 below depicts several overlapping legal and regulatory regimes on border crossings that applies to the China-Europe railway corridors. This chapter describes such a state as legal and regulatory fragmentation along the railway corridors, which is the result of increased proliferation of international institutions with overlapping jurisdictions and ambiguous boundaries creating overlapping instruments and sometimes inconsistency.⁷¹

The remainder of this section elucidates the fragmentation depicted in the diagram above through a discussion of various laws and regulations that govern border crossings, by broadly categorising them under railway and customs. The discussion also encompasses regional institutions and agreements that

71 For a discussion on fragmentation, see M Koskenniemi & P Leino, “Fragmentation of International Law? Postmodern. Anxieties”, 15 *Leiden J. Int’l L.* 553–579 (2002); see also, “Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law”; Report of the Study Group of the International Law Commission, Finalized by Martti Koskenniemi. UN Doc A/CN.4/L.682 and Add.1 and Corr. 1. New York: International Law Commission, 2006, online: UN <https://legal.un.org/ilc/documentation/english/a_cn4_l682.pdf> accessed 11 October 2021.

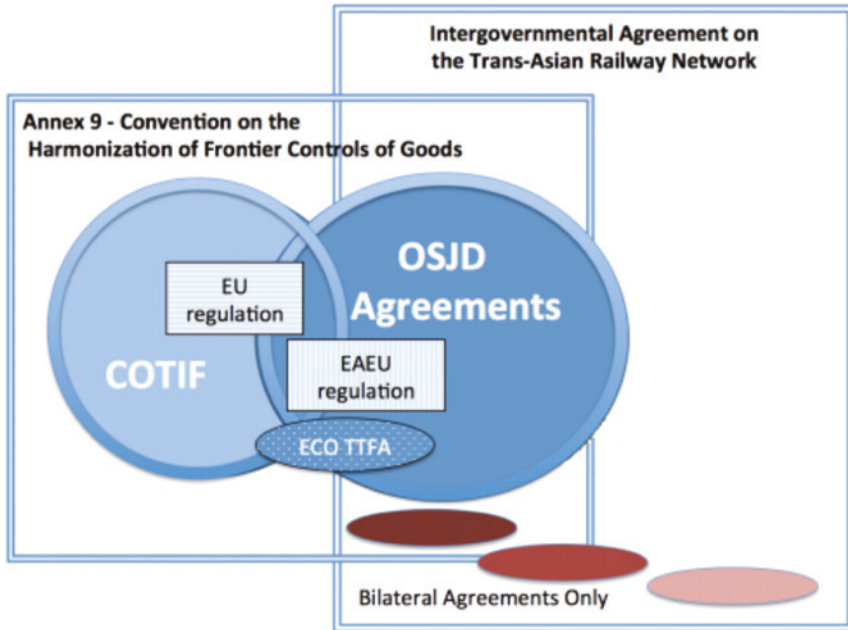


FIGURE 3.1 Fragmented legal and regulatory regimes on railway and customs in Eurasia
 Note: See “Study on Border Crossing Practices in International Railway Transport”,
 ibid 28.

ADAPTED FROM UNESCAP STUDY ON BORDER CROSSING PRACTICES IN
 INTERNATIONAL RAILWAY TRANSPORT

are connected to cross-border railway transport, that are ultimately relevant for trade facilitation along the Chongqing-Duisburg railway link.⁷²

72 Bilateral agreements also address different aspects relevant for cross-border railway transport. While some of the bilateral agreements specifically regulate railway services and processes at border railway stations, the granular discussion is excluded from the scope of this chapter. For a non-exhaustive list of bilateral and tripartite agreements on railways and customs, which exist in some of the countries that are part of the China-Europe railway corridors, see Annex 5 of the “Study on Border Crossing Practices in International Railway Transport”, UNESCAP, Bangkok (2018) 199–203, online: UNESCAP <www.unescap.org/sites/default/files/Study%20on%20Railway%20Border%20crossings%2046218.pdf> accessed 11 October 2021.

3.1 *International Railway Laws*

International railway institutions and instruments are popularly referred to using acronyms of French or Russian names, as the case may be.⁷³ The two international organizations, namely OTIF and OSJD, play a key role in coordination and arrangement of transport along the China-Europe railway corridors.⁷⁴ Both organizations coordinate railway laws, operating rules and key transport documents. Additionally, OSJD coordinates policy, transit tariff, wagon use, train timetables, safety and technical standards for infrastructure and rolling stock.⁷⁵ OTIF and OSJD foster two different international legal regimes for freight transport, namely COTIF/CIM⁷⁶ and SMGS,⁷⁷ respectively.

73 In this sub-section of the chapter, the expanded names are provided in the footnotes to maintain continuity in the main text.

74 OTIF stands for the French abbreviation of Intergovernmental Organisation for International Carriage by Rail, and the EU plays a leading role in the organization. OSJD stands for the Russian abbreviation of Organisation for Cooperation between Railways, and its membership has its history in the former Communist bloc. A comprehensive discussion about the two organizations can be found in Y Zhu, V Filimonov, "Comparative Study of International Carriage of Goods by Railway Between CIM and SMGS", (2018) *Frontiers of Law in China* 13, 115–136. Also, see "Monograph Series on Transport Facilitation of International Railway Transport in Asia and the Pacific", UNESCAP, ST/ESCAP/2681, 18–22, online: UNESCAP <www.unescap.org/sites/default/files/pub_2681_fulltext.pdf> accessed 11 October 2021.

75 See Zhu and others, *ibid*.

76 OTIF promulgated the COTIF which is the French abbreviation for the Convention Concerning International Carriage by Rail, 1980. COTIF is the 'umbrella' Convention that presented in a consolidated manner the regulations on contracts of international carriage of passengers and goods, use of vehicles, railway infrastructure, *etc*. For carriage of goods, Appendix B to the Convention, as amended by the 1999 Protocol, along with certain other subsequent amendments is relevant. This Appendix is generally referred to as CIM and is the abbreviation of the Uniform Rules Concerning the Contract for International Carriage of Goods by Rail. The OTIF body of international legal rules has the character of an international treaty according to international law because it is subject to signatures, ratifications, acceptances, approvals and accessions from the member States in order to enter into force. Accordingly, CIM in its member States has a formal status of a ratified convention. See *ibid*.

77 OSJD created the SMGS, which is the abbreviation for the Russian title of the Agreement on International Railway Freight Transportation, along with amendments in force from 1 July 2015. SMGS by its nature is an interdepartmental agreement, as the signatories are ministries representing government transport authorities, railway companies, and affiliated enterprises. In a socialist setup these organizations were invariably related to the government and therefore the SMGS was designed to produce an internal legal effect. However, with the disintegration of the Soviet Union and the transition of some members towards a market economy resulted in the SMGS to have an external effect. For a more detailed discussion on this, see Zhu and others (n 32).

While countries in Western Europe and Central Asia are party to COTIF/CIM,⁷⁸ China, Russia and several countries in Eastern Europe follow SMGS.⁷⁹ There are some countries along the three corridors that participate in both COTIF and SMGS.⁸⁰ The discussion below focuses primarily on issues related to contract of carriage and consignment notes under the two regimes.⁸¹

COTIF/CIM, under articles 6 and 7, stipulates that the contract of international carriage of goods by railway is a consensual contract, with the consignment note being only a documentary proof. Under these articles, a great degree of contractual freedom is permitted in order to offer flexibility, enabling the parties to the contract of carriage to contractually agree certain conditions such as itinerary, transit periods and surcharges. The opportunity to have a single contract for carriage of goods and to have a single consignment note for railway freight traffic among contracting parties at the respective territories where COTIF/CIM rules are applicable, is provided as well. At the border stations between the COTIF/CIM countries, it is neither necessary to conclude a new contract, nor to issue a new consignment note. The single contract/consignment note identifies the contractual carrier with whom the consignor has concluded the contract of carriage, as well as successive carrier(s), if applicable, that shall take over the goods at specified border stations. Article 26 of COTIF/CIM provides that with acceptance of the goods and the consignment note at the border crossing, successive carriers(s) will become a party of the contract and be liable to continue with carriage of goods under the same contract/consignment note. The carrier may also entrust the performance of the carriage, in whole or in part, to a substitute carrier, nevertheless the carrier will remain liable in respect of the entire carriage. While article 7 of COTIF/

78 Currently the COTIF/CIM has more than 50 parties, including Germany, France, United Kingdom, Poland, Slovakia, Romania, Turkey, Iraq, Iran, Azerbaijan, and Pakistan, to name a few. The EU acceded to the COTIF/CIM in July 2011 by virtue of Council Decision 2013/103/EU. Russia participates in the COTIF since 1 February 2010 only with regard to two short lines in the Baltic harbour areas.

79 Out of the 28 government transport authorities that are members to the SMGS, notable for the discussion are Azerbaijan, Belarus, China, Georgia, Iran, Kazakhstan, Kyrgyzstan, Moldavia, Mongolia, Russia Tadjikistan, Turkmenistan, Uzbekistan and Ukraine. The EU-member States, namely, Bulgaria, Hungary, Poland, Latvia, Lithuania, Romania, Slovakia and the Czech Republic are parties to the COTIF and also participates in the SMGS.

80 Azerbaijan, Iran and Georgia participate in both COTIF and SMGS. The EU-member States that participate in both the regimes are listed in note 80 above.

81 A discussion on wagons and railway infrastructure are excluded as they are not directly related to trade facilitation and single windows, which is the remit of the discussion in section 3 of this chapter.

CIM stipulates the mandatory particulars of the consignment note, the design of the consignment note is left within the competence of international associations of carriers, in practice the International Rail Transport Committee (CIT), through model contracts. COTIF/CIM, through article 6(9), makes an electronic consignment note equal to a paper-based note from a functional point of view. This provision provides legal bases for introduction of electronic exchange of consignment notes data.⁸²

The other railway regime, SMGS, through articles 7–8 and 14–16, requires carriers and shippers to enter into a formal contract for carriage and an obligation for carriers to set and publish transport tariffs.⁸³ It is possible to issue a single contract for carriage and a single consignment note for railway transport among contracting parties at the respective territories where SMGS apply. At the border stations between the SMGS countries, it is not required to conclude a new contract or issue a new consignment note. Pursuant to article 14(5), the single consignment note identifies the contractual carrier with whom the consignor has concluded the contract of carriage as well as successive carrier(s) that would take over the goods at specified border stations. With acceptance of the goods and the contract/consignment note at the border crossing, successive carriers(s) would become a party of the contract and be liable to continue with carriage of goods under the same contract/consignment note. According to article 15(4), a consignment note may be produced in electronic form, based on agreement between the railway and the consignor. This provision also creates the legal bases for introduction of electronic exchange of consignment notes data.⁸⁴

Following the disintegration of the Soviet Union and the expansion of trade between CIM and SMGS countries, a stronger need to promote legal interoperability between the two regimes was felt both nationally and internationally. This led to the effectuation of the CIM/SMGS consignment note in 2006 which is used for block trains, wagon groups, single wagons or containers, in either paper or electronic format.⁸⁵ The latest technical specifications for

82 For a comprehensive discussion on COTIF/CIM provisions on contract of carriage and consignment notes, see “UNESCAP Study on Border Crossing Practices” (n 73) 14–5.

83 Transport tariffs are regulated with OSJD Agreement on the International Railway Transit Tariff (MTT) and Agreement on the Uniform Transit Tariff (ETT).

84 See “UNESCAP Study on Border Crossing Practices” (n 73) 13–4.

85 The CIM/SMGS consignment note represents a bridge between the two legal regimes. At the border crossings between territories where SMGS to CIM or *vice versa* is applicable, re-consignment is no longer necessary and rewriting of data from one type of consignment note to other is no longer required. The use of CIM/SMGS consignment offers possibility

the electronic CIM/SMGS consignment note became available for use in July 2019.⁸⁶ The CIM/SMGS consignment note is recognized as a customs transit document and is accepted by banks to secure loans.

The historical presence of the two international legal regimes in the China-Europe railway corridors creates inconvenience for both shippers and carriers. Therefore, a broader harmonization effort is currently advancing under the auspices of the United Nations Economic Commission for Europe (UNECE) to offer “railway undertakings and their customers the opportunity to conclude a single contract of carriage for specific international transport of goods by railway (in particular between Europe and Asia) and to agree in this contract to apply a single international legal regime (known as an opt-in).”⁸⁷ In November 2009, UNECE established a Group of Experts Towards Unified Railway Law (URL) under its Working Party on Rail Transport (SC2) to develop an international railway instrument with active participation from OTIF, OSJD, CIT and several other important stakeholders in the railway sector.⁸⁸ Since then the group of experts have held several meetings and developed a draft international railway instrument covering a wide range of substantive issues, including transport documents, obligations of the parties, liability for loss or damage and delivery of goods.⁸⁹ Currently, the exact manners in which the URL will operate in conjunction with the existing railway conventions is being considered by the group of experts.⁹⁰ In 2019, China has also presented a proposal at the United Nations Commission on International Trade Law (UNCITRAL) on

to streamline railway processes at border crossings, which used to be compulsory re-shipment points. For a detailed discussion see Zhu and others (2018) (n 75) 121.

- 86 The technical specifications of the electronic CIM/SMGS consignment note are available online: CIT <www.cit-rail.org/media/files/documentation/freight/cim/e-fb_cim-smgs_en_2019-07-01.pdf?cid=120604> accessed 11 October 2021.
- 87 See UNECE, “Presenting the Unified Railway Law (URL) as a new UNECE statutory instrument for the international transport of goods by rail” (January 2019), online: UNECE <www.unece.org/fileadmin/DAM/trans/doc/2019/sc2/Information_Note_on_URL-e.pdf> accessed 11 October 2021.
- 88 The meeting documents are available online: UNECE <www.unece.org/trans/main/sc2/sc2_geurl_22.html> accessed 11 October 2021.
- 89 The most recent version of the draft URL is contained in: “Towards unified railway law in the pan-European region and along Euro-Asian transport: Draft of relevant legal provisions”, ECE/TRANS/2016/15 (15 December 2015), online: UN <<https://unece.org/transpart/documents/2021/10/informal-documents/towards-unified-railway-law-pan-european-region-and>> accessed 11 October 2021.
- 90 See UNECE, “Options available for converting URL into a legally binding instrument – URL as contract of carriage’s convention”, ECE/TRANS/SC.2/GEURL/2019/5 (1 April 2019), online: UNECE <www.unece.org/fileadmin/DAM/trans/doc/2019/sc2/ECE-TRANS-SC2-GEURL-2019-05e.pdf> accessed 11 October 2021.

possible future work towards the development of a negotiable transport document to facilitate multimodal carriage of goods, particularly along the China-Europe railway corridors.⁹¹ It is likely that UNCITRAL will soon start preparatory work towards the development of a new international instrument on multimodal negotiable transport documents that could also be used for contracts involving carriage by railway.⁹² Also, a proposal to include provisions about negotiable transport document in the URL is currently under consideration of the group of experts at UNECE.⁹³ Overall, several international institutions and national governments are working in tandem to realize the possibility to perform carriage of goods along the China-Europe railway corridors under one legal system with one contract of carriage and one consignment note.

3.2 *International Customs Laws*

At the international level, the revised Kyoto Convention of 1999 sponsored by the World Customs Organization (WCO) is an important instrument that harmonizes and simplifies customs procedures.⁹⁴ Although the Convention does not have provisions exclusively for railway transport, it is relevant for customs formalities at railway border crossings. The Convention includes standards, transitional standards and recommended practices, which are not directly applicable, but provide guidance on principles that the countries must use while adjusting their national customs legislation.

Another international instrument which does not address railway transport directly but is applicable for containerized cargo transport by railway is the Customs Convention on Containers of 1972. This Convention addresses the issues for standardized marking of containers; temporary admission of containers; and approval of containers for transport under Customs seal. The Annex 4 of the Convention details the regulations on technical conditions

91 See (n 51).

92 See “Possible future work regarding railway consignment notes” – Note by the Secretariat, A/CN.9/1034 (11 May 2020), online: UN <<https://undocs.org/pdf?symbol=en/A/CN.9/1034>> accessed 11 October 2021.

93 See “Proposal on provisions about a negotiable transport document in the Unified Railway Law” (15 April 2020), online: UNECE <www.unece.org/fileadmin/DAM/trans/doc/2020/sc2/ECE-TRANS-SC.2-GEURL-2020-03.pdf> accessed 11 October 2021.

94 The International Convention on the Simplification and Harmonization of Customs procedures (Kyoto Convention) (1973) (as amended on 26 June 1999) entered into force in 2006. The convention has 128 contracting parties as on 11 October 2021. For a position as regards ratifications and accessions to the convention, a list is available online: WCO <www.wcoomd.org/en/Topics/Facilitation/Instrument%20and%20Tools/Conventions/pf_revised_kyoto_conv/Instruments> accessed 11 October 2021.

applicable to containers, which may be accepted for international transport under Customs seal.

There is also an international instrument which applies to free movement of goods across frontiers and their temporary admission into a Customs territory with relief from duties and taxes. The WCO's Customs Convention on Temporary Admission, known as the 'Istanbul Convention' of 1990 is designed to combine into a single instrument all the existing provisions on temporary admission which are found in a multitude of conventions and agreements, and also to harmonize procedures in pursuit of economic, humanitarian, cultural or touristic objectives. This Convention is relevant for international railway corridors as it prescribes the temporary admission procedure for railway rolling stock; together with their normal spare parts, accessories and equipment carried on board such as any special equipment for the loading, unloading, handling and protection of cargo. As per the Convention, temporary admission could be granted without a customs declaration or security being required. This Convention is fairly successful and many of the contracting parties to the revised Kyoto Convention subscribe to this instrument as well.⁹⁵

While the above international instruments provide an overarching framework on matters related to customs, the finer practical aspects related to railway transport can be found in two other international instruments, namely, the International Convention on the Harmonization of Frontier Controls of Goods of 1982, and the Intergovernmental Agreement on the Trans-Asian Railway Network of 2006.⁹⁶ Interestingly, the groupings of countries that

95 The Istanbul Convention entered into force on 27 November 1993 and has 72 contracting parties as on 25 November 2020. For a position as regards ratifications and accessions to the convention, a list is available online: WCO <www.wcoomd.org/-/media/wco/public/global/pdf/about-us/legal-instruments/conventions-and-agreements/conventions/pg0302eb.pdf?la=en> accessed 11 October 2021.

96 The International Convention on the Harmonization of Frontier Controls of Goods of 1982, entered into force on 15 October 1985 and currently has 58 parties; the list of contracting parties is available online: UNECE <www.unece.org/trans/conventn/legalinst_51_BCF_HFCG.html> accessed 11 October 2021. The Intergovernmental Agreement on the Trans-Asian Railway Network of 2006, entered into force on 11 June 2009 and currently has 20 parties; the list of contracting parties is available online: UN <https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XI-C-5&chapter=11&clang=_en> accessed 11 October 2021. Another instrument called the International Convention to Facilitate the Crossing of Frontiers for Goods Carried by Rail of 1952, advocates facilitation of crossing the frontiers for goods carried by railway. This convention has 12 parties and is subscribed by European countries only; the list of contracting parties is available online: UN <https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XI-C-2&chapter=11&clang=_en> accessed 11 October 2021.

adhere to the above two customs instruments is similar to the groupings for COTIF and SMGS described above. The Convention from 1982 aims to facilitate international movement of goods through reduction of requirements, as well as the number and duration of border crossing controls by national and international co-ordination. The Annex 9 of the Convention targets the facilitation of border crossing procedures for international railway freight and introduces the guidelines and recommendations.⁹⁷ The Intergovernmental Agreement from 2006 represents a coordinated plan for development of railway lines of international importance in the region that includes: existing lines currently in use; and railway lines under construction, or planned, that are intended to be used for regular international transport in the future. The Agreement also identifies the railway lines of international importance and sets guiding principles related to technical characteristics of the Trans-Asian Railway network such as providing adequate capacity for efficient international movements and technical interoperability of the railway lines of neighbouring countries.⁹⁸

3.3 *Regional Institutions and Instruments*

Regional institutions such as the EAEU,⁹⁹ the Commonwealth of Independent States (CIS),¹⁰⁰ the Economic Cooperation Organization (ECO)¹⁰¹ and the EU¹⁰² have created instruments that contribute to matters pertaining to border

97 See "Study on Border Crossing Practices in International Railway Transport" (n 73) 19–20.

98 *ibid* 20–1.

99 The EAEU comprises of Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia encourages free movement of goods, services and provides for common policies among other things on customs regulation. More information on the EAEU is available online: EAEU <www.eaeunion.org/?lang=en> accessed 11 October 2021.

100 Presently the Commonwealth of Independent States (CIS) includes: Azerbaijan, Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan and Ukraine. More information on CIS is available in Russian online: CIS <www.cis.minsk.by/> accessed 11 October 2021. Several CIS instruments regulate railway border crossing through railway transport coordination and customs cooperation between member countries. The regulatory framework related to railways is available online: CIS <<https://e-cis.info/cooperation/3334/>> accessed 11 October 2021. Matters pertaining to customs is available online: CIS <<https://e-cis.info/cooperation/2880/>> accessed 11 October 2021.

101 The members of ECO are Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan. The ECO Transit Transport Framework Agreement (TTFA) of 1998 covers railway transport along with other modes of transport. This Agreement aims to facilitate the movement of goods and provides necessary facilities for transit through the territories of the Contracting Parties. More information on the ECO is available online: ECO <www.eco.int/> accessed 11 October 2021.

102 The Trans-European Transport Network (TEN-T) policy of the EU addresses the implementation and development of a Europe-wide transport network which includes all modes of transport including railways. The current TEN-T policy is based on Regulation

crossings along the China-Europe railway corridors. Recently, the Shanghai Cooperation Organisation (SCO) has been spearheading efforts aimed at streamlining customs procedures as well.¹⁰³ In addition, there is an agreement under the Transport Corridor Europe Caucasus Asia (TRACECA) transport programme that regulate railway transport.¹⁰⁴ Moreover, with assistance from regional institutions, the railways and border control authorities often implement various programmes and projects that lead to development of various knowledge products such as, performance measurements methodologies, performance indicators and monitoring mechanisms.¹⁰⁵ These knowledge products are of particular interest to policymakers as they assist in assessing and formulating trade facilitation reforms. The remainder of this sub-section

(EU) No 1315/2013, which is available online: EUR-Lex <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013R1315>> accessed 11 October 2021. In 2015, the EU-China Connectivity Platform was established to explore opportunities for further cooperation in the area of transport with a view to enhance synergies between the EU's approach to connectivity, including the TEN-T and China's BRI. More information is available online: EC <https://ec.europa.eu/transport/themes/international/eu-china-connectivity-platform_en> accessed 11 October 2021. The EU-China Connectivity Platform is discussed in more detail in section 5 of this chapter.

103 The role of SCO with respect to the railway corridors is discussed in section 5 of this chapter.

104 TRACECA was established in May 1993 in Brussels for the development of transport initiatives between the EU member States, the Caucasus and Central Asian countries. The EU and 12 States, namely Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Iran, Moldova, Turkey, Ukraine, Uzbekistan, Tajikistan, and Turkmenistan participate in this programme. The Basic Multilateral Agreement on International Transport for Development of the Europe-the Caucasus-Asia corridor of 1998 was agreed under the initiatives of the program for TRACECA. The Agreement regulates the international transport of goods and passengers under different modes of transport, including railway transport. With the Basic Agreement, the right for transit of international means of transport and goods is granted among contracting parties. An Inter-Governmental Commission is established to regulate the issues regarding the implementation and the application of the Basic Agreement. The technical annex on railways as part of the Basic Agreement promotes multilateral recognition of documents and cooperation at the level of competent authorities of the contracting parties in facilitation of border crossing operations.

105 For example, the Central Asia Regional Economic Cooperation (CAREC) Programme, supported by the Asian Development Bank (ADB), runs a Corridor Performance Measurement and Monitoring (CPMM) regional study that collects and analyses data on road and railway transport in 11 member countries (Afghanistan, Azerbaijan, China, Georgia, Kazakhstan, Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan, Uzbekistan). For further information see "Railway Sector Development in CAREC Countries", online: CAREC <www.carecprogram.org/?page_id=6798> accessed 11 October 2021.

briefly discusses selected EAEU instruments¹⁰⁶ as they are relevant for the ongoing trade facilitation reforms along the Chongqing-Duisburg railway link.

In the EAEU, the the main legal instrument is the Treaty on the Eurasian Economic Union of 2014,¹⁰⁷ which among all other issues addresses the Customs Union¹⁰⁸ and transport.¹⁰⁹ The Treaty also includes in Annex 24, the Protocol on Coordinated (Agreed) Transport Policy, concerning all modes of transport including railway transport in Part v; and Annex 2 to the above Protocol with regard to Procedure for Regulating Access to Rail Transport Services, including two related annexes.¹¹⁰ The provisions regarding principles of functioning of the Customs Union mandate application of common customs regulation, and in general free movement of goods between the territories of EAEU members, without the use of customs declarations and state control on transport, sanitary, veterinary-sanitary, and phytosanitary quarantine matters.¹¹¹ The Treaty on the Customs Code of the Eurasian Economic Union has been developed within the framework of the provisions of Article 32 of the Treaty on the Eurasian Economic Union and is applied in the EAEU from 1 January 2018.¹¹² The Customs Code, which is over 1,000 pages, synthesizes over 20 international treaties regarding the EAEU's conduct of international trade.¹¹³ The Code includes several aspects relevant for railway freight border crossings. The Code also mandates the establishment and use of single window for purposes of e-customs declarations, customs clearance, and release of goods.¹¹⁴ The Code, among other provisions, includes new rules on customs valuation, rules of origin, and authorized economic operators (AEO). Notably, through

106 In the EAEU there are large number of agreements, decisions and recommendations that regulate various aspects of railway transport of goods, customs and other regulatory clearance such as, administrative assistance between customs authorities, exchange of advance information on goods and transport means, use of electronic transmission of customs documents, customs transit and transit declaration, equipment on checking posts, *etc.* These documents are available through the Law Portal of the EAEU, online: EAEU <<https://docs.eaeunion.org/en-us/>>.

107 The working language of the EAEU is Russian. An English translation of the treaty is available online: UN <www.un.org/en/ga/sixth/70/docs/treaty_on_eeu.pdf> accessed 11 October 2021.

108 Part Two Customs Union and particularly Section VI Functioning of the Customs Union.

109 Part Three Common Economic Space and particularly Section XXI Transport.

110 Annex 1: Rules for Access to Rail Transport Infrastructure within the Eurasian Economic Union and Annex 2 Rules for the Provision of Rail Infrastructure Services within the Eurasian Economic Union.

111 Treaty on the Eurasian Economic Union, article 25.

112 See (n 56).

113 *ibid.*

114 A more detailed discussion is made in section 2.2 of this chapter.

the Joint Declaration on Cooperation on the Construction of Joint Eurasian Economic Union and the Silk Road Projects, signed on 8 May 2015, China and Russia pledged to support the BRI through appropriate actions of the EAEU.¹¹⁵ Therefore, it may be reasonably concluded that to a great extent, the recent overhaul of the EAEU's customs regime is in congruence with the BRI.

In summary, this section has shown that the legal and regulatory framework on border crossing along the China-Europe railway corridors is fragmented. Such fragmentation poses a challenge to seamless transportation of goods as different rules, documentation and/or data requirements and practices are imposed by the countries along the corridors.

4 Single Window Interoperability Depends on Data Flows

Another important challenge that may hinder achieving single window interoperability is the legal and regulatory fragmentation surrounding data flows. In the recent past, States and/or institutions have adopted different approaches towards promulgating laws including regulations governing the submission, receiving, using, sharing, retaining and archiving of data. In addition, the responsibilities and obligations imposed on participating entities in a single window environment in regard to security of data, besides issues of privacy and data protection, may vary depending on local interpretations.¹¹⁶ Therefore, orchestration of the legal framework for interoperability envisaged for railway corridors extends beyond customs and freight bureaucracy and in a contemporary context is dependent on agreements related to data flows.

The implementation of single window interoperability would be possible when data can flow seamlessly across borders along the railway corridors while ensuring information security of the stakeholders.¹¹⁷ International institutions

115 D J Lewis, "China-CEE ties on new economic path" *China Daily* (7 November 2016), online: *China Daily* <www.chinadaily.com.cn/opinion/2016-11/07/content_27298818.htm> accessed 11 October 2021.

116 For a discussion on legitimate use and sharing of data in a single window environment, see "Data: Ensuring Quality, Security & Privacy", Part VIII, Vol. 1, 18, online: WCO <www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/single-window/compendium/swcompendiumvolpartviii.pdf> accessed 11 October 2021.

117 Some of the other important issues that are connected to cross-border single window interoperability but not discussed in detail in this chapter includes business process analysis, data harmonization, data quality, messaging structures, connectivity options, and legal issues related to dematerialized documents.

engaged in assisting governments to develop cross-border single window interoperability systems emphasize that both functionality and infrastructure of single window systems ‘must be designed, implemented and operated in compliance with security policy, security design principles, security services agreement and standard operational procedures that protect information at a level of information security risk and data privacy acceptable by the key stakeholders’.¹¹⁸ However, there are some teething challenges specifically related to data flows.¹¹⁹

Data flows are regulated to varying extents across jurisdictions mainly to protect privacy of personal data; meet certain regulatory objectives; maintain national security; and promote domestic digital industrial policy.¹²⁰ Although the data submitted through single windows are largely trade related, but some amount of personal data is also included in the submissions made by various supply chain participants. At present, there are no comprehensive binding multilateral rules, specifically with respect to cross-border flow of personal data and privacy.¹²¹ Interestingly, the debate about trade data mainly revolves around three types of data, namely, the movement of personal data or more specifically personally identifiable information; sector specific data such as business or financial data; and the more recent trend towards a more sweeping and not always well-defined category of data referred to as ‘important’ data.¹²² Several international organizations that have an economic mandate, including the OECD, G-20, and APEC, have sought to develop best practice guidelines or principles related to cross-border data flows and privacy.¹²³ These guidelines,

118 “Cross-border Single Window Interoperability: A Managerial Guide” (2018) 34, online: UNESCAP <www.unescap.org/resources/cross-border-single-window-interoperability-managerial-guide> accessed 11 October 2021.

119 See “Trade and cross-border data flows”, TAD/TC/WP(2018)19/FINAL 12–13, online: OECD <[www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/TC/WP\(2018\)19/FINAL&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/TC/WP(2018)19/FINAL&docLanguage=En)> accessed 11 October 2021.

120 *ibid* 14.

121 Multilaterally agreed trade rules ensure a certain level of predictability for trade in goods through the General Agreement on Tariffs and Trade (GATT), and for services through the General Agreement on Trade in Services (GATS). However, there are little to no multilaterally agreed trade rules to ensure such predictability for cross-border data flows.

122 See “Trade and cross-border data flows” (n 120) 12–13.

123 The OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data (2013) is available online: OECD <www.oecd.org/internet/ieconomy/oecdguidelinesontheProtectionofPrivacyandTransborderFlowsOfPersonalData.htm> accessed 11 October 2021. The Asia-Pacific Economic Cooperation (APEC) Privacy Framework (2015) is available online: APEC <[www.apec.org/Publications/2017/08/APEC-Privacy-Framework-\(2015\)](http://www.apec.org/Publications/2017/08/APEC-Privacy-Framework-(2015))> accessed 11 October 2021. Under Japan’s leadership, the Group of Twenty (G20) launched the ‘Osaka Track’ and created the concept of ‘Data Free Flows with Trust’

although not legally binding, call for striking a balance between concerns over privacy with facilitating global data flows. In a single window environment, the challenge to strike such balance grows significantly as the obligations or policies in terms of data retention, open publication, or protection against personally identifiable information, *etc.* vary for each agency.¹²⁴ Both the EU and China, the two important stakeholders in the China-Europe railway corridors, have established prescriptive rules on cross-border data flows from different perspectives. A brief discussion of the regimes is necessary to determine the future course of trade facilitation negotiations along the railway corridors.

The EU protects privacy and personal data of its citizens and residents as a matter of fundamental rights.¹²⁵ The Privacy and Electronic Communications (ePrivacy) Directive,¹²⁶ which concerns the processing of personal data and the protection of privacy in the electronic communications sector including single windows, established a general prohibition on the processing of electronic communications content and metadata. In addition, the General Data Protection Regulation (GDPR)¹²⁷ maintains a high level of personal data protection in the EU and applies directly to cross-border trade involving personal data from the EU, even if an organization operates from outside the EU.¹²⁸ According to the provisions in Chapter V of GDPR, cross-border transfer of data is possible when – pursuant to article 45 of the GDPR, permits transfers to countries that the EC has decided have an ‘adequate level of protection’ of personal data; or transfers falling under one of the so-called safeguard situations outlined in article 46 where a transfer of personal data is allowed without the need for prior authorization from the EC (*e.g.*, the use of binding corporate rules or model clauses adopted by the EC); or in case where a transfer is

(DFFT); see “G20 Osaka Leaders’ Declaration”, online: Ministry of Foreign Affairs of Japan <www.mofa.go.jp/policy/economy/g20_summit/osaka19/en/documents/final_g20_osaka_leaders_declaration.html> accessed 11 October 2021.

124 See “Data: Ensuring Quality, Security & Privacy” (n 117) 20.

125 Arts. 7 and 8 of the Charter of Fundamental Rights of the EU; article 6(1) of the Treaty on EU.

126 Privacy and Electronic Communications Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002, as amended by Directive 2006/24/EC and Directive 2009/136/EC.

127 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (2016) OJ L119/1, hereinafter GDPR, entered into force in May 2018.

128 Art. 3(2) of GDPR.

covered by a range of specific derogations outlined in article 49.¹²⁹ In 2016, the EU and the United States (US) negotiated the adequacy decision on EU-US Privacy Shield to allow for the transatlantic transfer of personal data by certified organizations.¹³⁰ However, in July 2020, the Court of Justice of the European Union (CJEU) invalidated Decision 2016/1250 on the adequacy of the protection provided by the EU-US Data Protection Shield.¹³¹ The EC and the US have started negotiations on a successor arrangement to the EU-US Privacy Shield to comply with the judgement of the Court.¹³² Since 2017, the EU has actively engaged with some of its trading partners in Asia, Latin America and in the European neighbourhood to explore ways to develop and negotiate mutual adequacy decisions.¹³³ The EU has so far recognized more than a dozen countries and currently holding adequacy talks with one, but none of the non-EU countries along the China-Europe railway corridors are recognized.¹³⁴ Also, the EU is currently in the process of finalizing a Regulation to replace the ePrivacy Directive, which would be *lex specialis* to the GDPR and

129 For a simplified discussion on the topic, see “What rules apply if my organisation transfers data outside the EU?”, online: EC <https://ec.europa.eu/info/law/law-topic/data-protection/reform/rules-business-and-organisations/obligations/what-rules-apply-if-my-organisation-transfers-data-outside-eu_en> accessed 11 October 2021.

130 “Commission Implementing Decision (EU) 2016/1250 of 12 July 2016 pursuant to Directive 95/46/EC of the European Parliament and of the Council on the adequacy of the protection provided by the EU-U.S. Privacy Shield” (notified under document C(2016) 4176) (Text with EEA relevance), online: Eur-Lex <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L._2016.207.01.0001.01.ENG> accessed 11 October 2021.

131 For more information see “Judgment in Case C-311/18 *Data Protection Commissioner v. Facebook Ireland and Maximilian Schrems*”, Press Release No 91/20, Luxembourg (16 July 2020) online: CJEU <<https://curia.europa.eu/jcms/upload/docs/application/pdf/2020-07/cp200091en.pdf>> accessed 11 October 2021.

132 See “EU-US data transfers: How personal data transferred between the EU and US is protected” online: EC <https://ec.europa.eu/info/law/law-topic/data-protection/international-dimension-data-protection/eu-us-data-transfers_en> accessed 11 October 2021.

133 See Memo on “Digital Single Market – Communication on Exchanging and Protecting Personal Data in a Globalised World Questions and Answers”, (10 January 2017), online: EC <https://ec.europa.eu/commission/presscorner/detail/en/MEMO_17_15> accessed 11 October 2021.

134 EU have recognized Andorra, Argentina, Canada (commercial organizations), Faroe Islands, Guernsey, Israel, Isle of Man, Japan, Jersey, New Zealand, Switzerland, Uruguay and the US (to a limited extent (n 131 and 132) as providing adequate protection. Adequacy talks are ongoing with South Korea. See “Adequacy decisions: How the EU determines if a non-EU country has an adequate level of data protection”, online: EC <https://ec.europa.eu/info/law/law-topic/data-protection/international-dimension-data-protection/adequacy-decisions_en> accessed 11 October 2021.

would particularize and complement the latter in respect of privacy-related topics.¹³⁵

At the other end of the railway corridors, China has been quickly building its legal framework on data protection.¹³⁶ On 7 November 2016, the Standing Committee of the National People's Congress of China issued the Cybersecurity Law (CSL) (also referred to as the Network Security Law) that entered into force on 1 June 2017.¹³⁷ The CSL establishes an overarching regulatory framework to ensure network security and the law covers the construction, operation, maintenance and use of networks in China by international and domestic individuals and entities, as well as regulators' administration and supervision of network security. The CSL pays attention to the protection of personal information and individual privacy by standardising the collection and usage of such information.¹³⁸ The CSL defines security requirements for 'network operators', which are owners and administrators of networks and network service providers.¹³⁹ It is submitted that in addition to telecom operators and internet firms, a single window system that collects personal information may also be defined as 'network operator' and fall within the ambit of this law.

Article 31 of the CSL defines critical information infrastructure (CII) as infrastructure from important industries and sectors, such as transport and finance, that may pose severe threat to national security, people's livelihood, and public interests if their data is damaged or disabled or leaked.¹⁴⁰ Article 31 of the CSL further delegates to the State Council the authority to formulate

135 See "Proposal for a Regulation of the European Parliament and of the Council concerning the respect for private life and the protection of personal data in electronic communications and repealing Directive 2002/58/EC (Regulation on Privacy and Electronic Communications)", online: Eur-Lex <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52017PC0010>> accessed 11 October 2021.

136 See generally, J Xu, "Evolving Legal Frameworks for Protecting the Right to Internet Privacy in China", in JR Lindsay, TM Cheung, DS Reveron, *China and Cybersecurity: Espionage, Strategy, and Politics in the Digital Domain* (Oxford, 2015) 242–255.

137 Recently, on 10 June 2021, the Standing Committee of China's National People's Congress passed the Data Security Law (DSL), which took effect on September 1, 2021. The primary purpose of the DSL is to regulate data activities, safeguard data security, promote data development and usage, protect individuals and entities' legitimate rights and interests, and safeguard state sovereignty, state security, and development interests. The DSL, together with the CSL and the upcoming Personal Information Protection Law, will form an increasingly comprehensive legal framework for information and data security.

138 CSL, arts. 22, 41, 42, 43, 44 and 45 deals with collection of personal information.

139 CSL, art. 76.

140 CSL, art. 31.

specific regulations on the CII.¹⁴¹ With that delegated authority, on 27 April 2021, the State Council passed the Security Protection Regulations on the Critical Information Infrastructure (CII Regulation), which took effect on 1 September 2021. CII Regulation offers an even broader definition of the CII and provide the methods and factors of designating the CII. Articles 8 and 9 of the CII Regulation further delegate the competent industry regulators the authority to: (1) formulate the implementing rules to designate the CII for their industries and sectors, and (2) take charge of the security protection of the CIIs in their industries and sectors. Thus, if an industry regulator notifies a single window system to be CIIO, then it has to comply with the strictures of the CII Regulation.

Interestingly, China started to implement a pilot policy on cross-border data transfer in Lin Gang Zone located in the Shanghai PFTZ. The pilot policy briefly mentions the implementation of security assessments for cross-border data transfer, setting up information security maturity models and the filing of cross-border data transfer for certain sectors such as integrated circuit, artificial intelligence and life sciences and pharmaceutical, and for multinational companies that register their headquarters in that Zone.¹⁴² It remains to be seen how various industry regulators define and identify CII and whether a single window system would actually be considered as a CIIO.

5 Interactions for Cross-Border Single Window Interoperability – Exploring the Geopolitical Frame

Two pertinent observations that emerge from the discussion made in section 2 above are – that all countries except Belarus have an operational single window, and that the scope and extent of single window vary from one country/region to another. Given the above, if consensus is achieved on technical, legal and political matters, then it would be possible to have interoperable single window systems that allow secure cross-border exchange of G2G, B2G and B2B information between countries along the railway corridors.¹⁴³ But, achieving

141 See CSL, art. 31. Also, for a general discussion on hierarchy of Chinese legislation, see D Cao, *Chinese Law: A Language Perspective*, (London, Routledge, 2004).

142 See G Zhang, K Yin, “What you need to know about China’s new draft measures on cross-border data transfers” (27 August 2019), online: International Association of Privacy Professionals <<https://iapp.org/news/a/what-you-need-to-know-about-chinas-new-draft-measures-on-cross-border-data-transfers/>> accessed 11 October 2021.

143 UN/CEFACT Recommendation 36 (n 26), mentions four critical areas for successful implementation of interoperability, namely, policy and legal interoperability, people and

such a consensus is not easy. Moreover, the business needs for developing interoperability have to exist as well.¹⁴⁴ As this chapter follows a legalistic approach and the scope is cross-border in nature, this section scrutinizes various agreements, policy documents, and initiatives that are in place or may be promoted to strive for single window interoperability along the Chongqing-Duisburg railway link.

Currently, there are several ongoing interactions that involve China, the EU and the EAEU, in various possible combinations, that aspire to achieve single window interoperability. Some of these interactions are presented below to highlight that there could be the possibility for developing interoperability in the future; and that through such reciprocal influence, the development of a harmonized set of rules on interoperability for the railway corridors is being attempted.

5.1 *Interactions between China and the EAEU*

China and the EAEU entered into an agreement on trade and economic cooperation which contains provisions related to customs cooperation.¹⁴⁵ The Agreement includes provisions on customs cooperation,¹⁴⁶ single windows,¹⁴⁷ coordinated border management,¹⁴⁸ mutual recognition of AEOs,¹⁴⁹ *etc.* The

organizational interoperability, process and data interoperability, and platform and technical interoperability.

144 For example, see “Silk Road Transport Corridors”, which captures the growth potential of the railway corridors. In addition, the Logistics Performance Index (LPI) 2018 ranks countries on six dimensions of trade, including customs performance, infrastructure quality, and timeliness of shipments, see, “International LPI”, online: World Bank <<https://lpi.worldbank.org/international>> accessed 11 October 2021.

145 “Agreement on Economic and Trade Cooperation Between the Eurasian Economic Union and Its Member States, of the One Part, and the People’s Republic of China, of the Other Part”, (signed 17 May 2018 and entered into force 25 October 2019), online: EEC <https://docs.eaeunion.org/docs/en-us/01517817/iatc_21052018> accessed 20 October 2022.

146 Art. 6.10.

147 Art.6.15.

148 Art. 6.16.

149 Art. 6.17. China also fostered customs connectivity with EU through mutual recognition of AEOs. The joint statement between the EC and the GAC of China issued in 2015 is available online: EC <https://ec.europa.eu/taxation_customs/system/files/2016-09/aeo_joint-stat_en.pdf> accessed 11 October 2021. For a critical discussion on the EU-China mutual recognition of AEOs, see J Chuah, “The EU-China Mutual Recognition Agreement of Authorised Economic Operators (AEOS) – A Paradigm of Customs Cooperation?”, [2014] Int.T.L.R., Issue 4.

Agreement provides that the parties should develop their respective national single windows in accordance with international standards and best practices concerning trade facilitation and modernization of customs techniques and practices.¹⁵⁰ The Agreement also prompts at interoperability of single windows between China and the EAEU.¹⁵¹ Furthermore, article 6.20 of the Agreement provides that the parties will seek to reach consensus on the data elements for information exchange, and after that will endeavour to conclude the Agreement on Electronic Information Exchange.¹⁵² The prospect of an Agreement on Electronic Information Exchange is of particular interest as it may potentially address issues related to e-signatures, identification, authentication and authorization procedures, that are necessary for supporting cross border transactions through single windows.¹⁵³ The presence of the above provisions in the EAEU–China Agreement reflects that the parties are aware of the importance of the digital complement to the physical infrastructure for the success of transport corridors.

Also, in recent years, the SCO has been used as a platform for cooperation on trade facilitation between China and the EAEU. SCO is generally perceived as an institution focused on regional security.¹⁵⁴ However, Chinese scholars have always maintained that SCO is like ‘a cart with two wheels’, referring to the equal degree of importance attached to both security and economic cooperation.¹⁵⁵ The SCO platform possesses optimal mechanisms for launching a

150 Art. 6.15(1).

151 Art. 6.15(2) stipulates that “[t]he Parties shall endeavor to promote the interoperability between National Single Windows allowing the creation of conditions for mutual recognition of electronic documents and data necessary to carry out foreign trade activities and results of customs control for integrated border management. For these purposes, the Parties shall endeavor to develop institutional, legal and technical basis to ensure information exchange between National Single Windows”.

152 Eurasia Economic Union–China Agreement Art. 6.20(1), (2).

153 See Basu Bal, Rajput (2017) (n 18).

154 The creation of SCO was announced on 15 June 2001. Currently, SCO has eight members (China, Russia, Tajikistan, Kyrgyzstan, Kazakhstan, Uzbekistan, Pakistan & India); four observer States (Afghanistan, Belarus, Iran and Mongolia), six dialogue partners (Armenia, Azerbaijan, Cambodia, Nepal, Sri Lanka and Turkey); and four guest attendants (ASEAN, CIS, Turkmenistan and the UN). For more information on SCO see “About SCO”, online: SCO Secretariat <https://eng.sectsc.org/about_sco/> accessed 11 October 2021.

155 MI Qadir, S Rehman, “Expansion of Shanghai Cooperation Organization (SCO) Harbinger of Regional Peace and Prosperity”, *Journal of Political Studies*, Vol. 23, Issue – 1 (2016) 117–132.

broad negotiation process,¹⁵⁶ and the fact that a number of countries participate in both the SCO and the EAEU makes the prospects for such a dialogue more favourable.¹⁵⁷ The SCO has established mechanisms for political coordination that can ensure that negotiations can be held at the upper echelons of government and administration.¹⁵⁸

After the announcement of the BRI, the SCO has been particularly active in initiating customs cooperation between its members, observers and dialogue partners. In 2016, the SCO instituted a joint task force to address streamlined customs and harmonized border control, inspection, quarantine as well as certification and accreditation.¹⁵⁹ Subsequently, in November 2019, the SCO adopted the 'Concept of Cooperation between the Railway Administrations of the SCO Member States', which laid the legal foundation for development of cooperation for railway transport and interconnection in the SCO region.¹⁶⁰ Also, within the framework of the SCO, China has signed several interaction procedures and roadmaps on mutual recognition of AEOs. For example, in 2018, the heads of customs departments of Belarus and China signed the 'Procedure for cooperation on mutual recognition of the authorized economic operators' and the 'Roadmap for concluding an Agreement on mutual recognition of the status of an authorized economic operator' during the SCO Summit in Qingdao.¹⁶¹

156 R Alimov, "The Shanghai Cooperation Organisation: Its role and place in the development of Eurasia", *Journal of Eurasian Studies*, 9 (2018) 114–124.

157 All members of the EAEU somehow connected to the SCO either as members or observers or dialogue partners.

158 For more information on meetings of the Heads of State Council (HSC), Heads of Government Council (HGC) and other heads at various levels, see "About SCO" (n 155).

159 D Lewis, "China-CEE ties on new economic path", *China Daily* (7 November 2016), online: China Daily <www.chinadaily.com.cn/opinion/2016-11/07/content_27298818.htm> accessed 11 October 2021.

160 "Statement by Secretary-General of the Shanghai Cooperation Organisation Vladimir Norov at the 82nd session of the Inland Transport Committee of the UNECE", Geneva (26 February 2020), online: UNECE <www.unece.org/fileadmin/DAM/trans/events/2020/ITC/ppt/4c_SCO_speech_.pdf> accessed 11 October 2021.

161 For more information see "Within the framework of Shanghai Cooperation Organization Summit, Heads of Customs Departments of Belarus and China signed Interaction Procedure and Roadmap" (11 June 2018) online: State Customs Authorities of the Republic of Belarus <www.customs.gov.by/en/news-en/view/within-the-framework-of-shanghai-cooperation-organization-summit-heads-of-customs-departments-of-belarus-6984-2018/> accessed 11 October 2021.

5.2 *Interactions between the EU and China*

China and the EU are major trading partners.¹⁶² At present there is no legal instrument in effect that provides specifically for single window interoperability between China and the EU. However, the Agreement between the EU and China on cooperation and mutual assistance in customs matters has certain provisions that may be useful when building interoperability in the future.¹⁶³ Article 6 provides for the scope of customs cooperation which includes establishing and maintaining channels of communication between customs authorities to facilitate and secure the rapid exchange of information and facilitating effective coordination between the customs authorities. Article 7 provides that the ‘[c]ontracting [p]arties affirm their commitment to the facilitation of legitimate movement of goods and shall exchange information and expertise on measures to improve customs techniques and procedures and on computerized systems with a view towards implementing that commitment in accordance with the provisions of this Agreement’.

Also, in an effort to improve transport connectivity between China and Europe, the European Commission’s (EC) Directorate-General for Mobility and Transport (DG MOVE) and the National Development and Reform Commission of China (NDRC) established the EU-China Connectivity Platform (CP)¹⁶⁴ in 2015, which then successively featured in two documents of the EC, namely ‘Elements for a new EU strategy on China’ from 2016 and ‘EU-China – A strategic outlook document’ from 2019.¹⁶⁵ The main objective of the CP, as agreed by both sides, was to explore opportunities for further cooperation in the area of transport with a view to enhance synergies between the EU’s approach to

162 “China-EU – international trade in goods statistics”, online: eurostat <https://ec.europa.eu/eurostat/statistics-explained/index.php/China-EU_-_international_trade_in_goods_statistics> accessed 11 October 2021.

163 “Agreement between the European Community and the Government of the People’s Republic of China on cooperation and mutual administrative assistance in customs matters”, OJ L 375 (23 December 2004), online: Eur-Lex <[https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22004A1223\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22004A1223(01)&from=EN)> accessed 11 October 2021.

164 For policy and other related documents on this platform see “The EU-China Connectivity Platform”, online: EC <https://ec.europa.eu/transport/themes/international/eu-china-connectivity-platform_en> accessed 11 October 2021.

165 “Elements for a new EU strategy on China”, Brussels, JOIN(2016) 30 final (22 June 2016), online: <https://eeas.europa.eu/archives/docs/china/docs/joint_communication_to_the_european_parliament_and_the_council_-_elements_for_a_new_eu_strategy_on_china.pdf> accessed 11 October 2021. “EU-China – A strategic outlook”, Strasbourg, JOIN(2019) 5 final (12 March 2019), online: EC <<https://ec.europa.eu/commission/sites/beta-political/files/communication-eu-china-a-strategic-outlook.pdf>> accessed 11 October 2021.

connectivity, including the Trans-European Transport Network (TEN-T), and China's BRI.¹⁶⁶ During the first working group meeting of the CP that took place in February 2016, the primary focus was on the EU-China coordinated infrastructure planning, *i.e.*, the BRI and TEN-T, including opportunities for project cooperation in BRI third countries.¹⁶⁷ Trade and transport facilitation in the areas of standards, customs, interoperability, logistics, and border crossing rules for transport corridors were also discussed.¹⁶⁸

In 2019, under the CP, a joint study on sustainable railway-based transport corridors between Europe and China has been proposed.¹⁶⁹ The aim of the joint study to 'define the most appropriate railway corridors between Europe and China, identify the bottlenecks, identify and prioritize the missing links to improve the capacity and efficiency of railway corridors'.¹⁷⁰ The terms of reference of the joint study on transport corridors between Europe and China emphasize high level assessment of constraints that affect transport operations, and customs procedures has been identified as one area of work.¹⁷¹ In fact, enhancement of digital systems for efficient freight logistics, corridor data management or information management system has also been identified as key action areas.¹⁷² The 'EU-China Connectivity Platform 2019 Action Plan'

166 "The EU-China Connectivity Platform" (n 165).

167 FS Montesano, M Okano-Heijmans, "Economic Diplomacy in EU-China Relations: Why Europe Needs its Own 'OBOR'" *Clingendael Policy Brief*, Netherlands Institute of International Relations (June 2016), online: Clingendael <www.clingendael.org/sites/default/files/pdfs/Policy%20Brief%20Economic%20Diplomacy%20in%20EU%E2%80%93China%20relations%20-%20June%202016.pdf> accessed 11 October 2021.

168 *ibid.*

169 "EU-China Summit Joint statement" Brussels, (9 April 2019) para. 17, online: EC <<https://ec.europa.eu/transport/sites/transport/files/2019-eu-china-summit-joint-statement.pdf>> accessed 11 October 2021. It may be of interest to note that the UN General Assembly adopted a resolution entitled "The Role of Transport and Transit Corridors in Ensuring International Cooperation for Sustainable Development", A/RES/69/213 (30 January 2015), online: UN <<https://digitalibrary.un.org/record/790156?ln=en>> accessed 11 October 2021 which calls for efforts to promote regional economic integration and cooperation, including by improving cross-border transportation infrastructure, enhancing regional connectivity and facilitating regional trade and investment.

170 "EU-China Summit Joint statement", *ibid.*

171 "Terms of Reference of the Joint Study on Sustainable Railway-based Comprehensive Transport Corridors between Europe and China", Annex to the Minutes of the 4th Chairs' meeting, section 3.2.2, 3, online: EC <<https://ec.europa.eu/transport/sites/transport/files/2019-tor-joint-study-sust-railway-based-transport-corridors-europe-china.pdf>> accessed 11 October 2021.

172 *ibid* section 5, 4.

states that both sides will promote the construction of the CP, enrich the cooperation content and produce pragmatic cooperation achievements.¹⁷³

The ‘Strategic Framework for Customs Cooperation 2018 – 2020’ is another important instrument for strengthening EU-China customs cooperation for trade facilitation.¹⁷⁴ Even though the document does not mention single window expressly, it mentions implementation of automated data exchange, to ensure the stable exchange of data, and the establishment of a risk-related information exchange between the EU and China via the Customs Risk Management System in the context of implementation of phase 3 of the ‘Smart and Secure Trade Lanes Pilot’.¹⁷⁵

In December 2020, the EU and China agreed in principle on the negotiations for a Comprehensive Agreement on Investment (CAI).¹⁷⁶ Currently, both sides are working towards finalising the text of the agreement, which will be submitted for approval by the EU Council and for ratification once it is legally reviewed and translated. CAI aims to establish a deeper economic partnership, level playing field for business, and to open new market opportunities for the EU Member States and China.¹⁷⁷ While the CAI may be seen as a stepping stone

173 “China-EU Connectivity Platform 2019 Annual Action Plan”, online: EC <<https://ec.europa.eu/transport/sites/transport/files/eu-china-connectivity-platform-2019-action-plan.pdf>> accessed 11 October 2021.

174 “Enhancing EU-China Trade Security and Facilitation: Strategic Framework for Customs Cooperation 2018 – 2020 between the European Union and the Government of the People’s Republic of China”, Brussels, 9548/17 (22 May 2017), online: Council of the European Union <<https://data.consilium.europa.eu/doc/document/ST-9548-2017-INIT/en/pdf>> accessed 11 October 2021.

175 Customs Risk Management (CRM), according to the WCO Risk Management Guide, “is the systematic application of management procedures and practices which provide Customs with the necessary information to address movements or consignments which present a risk. The CRM is a means of customs authorities to improve trade facilitation processes by replacing full physical examinations of documents and shipments with planned and targeted working method determining the level and type of inspections”. The objective of CRM is the effective selection of high – risk shipments and traders for control while allowing lower or risk-free trade to pass freely and with minimum waiting times. See “WCO Customs Risk Management Compendium”, online: WCO <www.wcoomd.org/en/Topics/Facilitation/Instrument%20and%20Tools/Tools/Risk%20Management%20Compendium> accessed 11 October 2021.

176 For more information see online: <<https://ec.europa.eu/trade/policy/in-focus/eu-china-agreement/agreement-explained/>> accessed 7 April 2022.

177 “EU-China Summit, 9 April 2019”, online: Council of the European Union <www.consilium.europa.eu/en/meetings/international-summit/2019/04/09/> accessed 11 October 2021. affirms the high level of ambition will be reflected in substantially improved market access, the elimination of discriminatory requirements and practices affecting foreign investors, the establishment of a balanced investment protection framework and the

towards achieving a broader trade agreement, it may also serve as a basis for further trade related information exchange which could eventually call for single window interoperability. However, the question about the progression onto a trade agreement to establish deeper economic relationship will be determined by the success of the CAI and to what extent both sides can hold each other to the agreed standards in various areas.

It should be noted that the EU perception of China has changed considerably in the last three years. In the past, the EU had prioritized deepening of trade and commercial relationship with a 'realistic, assertive and multi-faceted approach'.¹⁷⁸ However, this position now stands greatly altered in view of security concerns and geopolitical uncertainty. The question of security has become somewhat central in the EU-China relationship. The ambition of the CP described above was to explore the synergies between BRI and EU connectivity initiatives such as TEN-T. Until recently, the connectivity projects between the EU and China remained open and experimental. However, at present, such projects are a subject of the EU's questions and concerns regarding level playing field, competition, and benefits for the EU industry. The EU currently seeks concrete progress on issues such as asymmetric market access, investment opportunities and state subsidies.¹⁷⁹ To address these concerns the EU has undertaken some steps such as screening of foreign direct investments into the Union to address 'potential risk to strategic industries' and possible 'loss of critical assets and technology'. Also, the proposal for a directive on corporate sustainability due diligence which is currently open for feedback until 23 May 2022, highlights the change in the EU posture towards supply chains.

More importantly, the EU's engagement with China's BRI projects now operates under the shadows of its very own connectivity strategy, the Global Gateway. Within the frame of Global Gateway, the EU is investing in a study on railway corridors between the EU and China and the possibility of corridors through Iraq, Syria, India, Pakistan, Iran and Afghanistan. The Global Gateway project can be considered as a rival project and the question remains open if it is launched to curb China's influence. The Global Gateway project to a great

inclusion of provisions on investment and sustainable development. Both sides agree to establish a political mechanism to continuously monitor the progress in the negotiations and to report to leaders by the end of the year on the progress made.

178 EU-China Connectivity Platform, Minutes of 4th chairs' meeting, 8 Apr. 2019, p. 1. See also European Commission, 'EU-China Summit: Rebalancing the strategic partnership', Press release, 9 Apr. 2019.

179 J-C Juncker, President of the European Commission, Remarks at the joint press conference following the EU-China Summit, European Commission, 9 Apr. 2019.

extent will redefine EU-China relationship and has the possibility of having a limiting effect on the BRI projects. It is important to note that the EU's relationship with China is dependent on the latter's participation in global affairs, its relationship with Russia and the US. With the ongoing Russia-Ukraine conflict, the EU's relationship with China will be determined by the extent of China's association and political and economic support towards Russia.

5.3 *The EU's Interaction with Belarus, Russia and Kazakhstan*

The EU has engaged independently with the constituent countries of the EAEU on matters relating to trade, development, *etc.*, but outside the framework of the EAEU.¹⁸⁰ Belarus is a crucial transit point for the Chongqing-Duisburg railway link. In the past, the EU engaged meaningfully with Belarus and was in the process of negotiating the EU-Belarus Partnership Priorities, which would set the strategic framework for cooperation in the coming years. The EU also provided Belarusian companies with funding, training, and support to export to new markets through the EU4 Business initiative.¹⁸¹ The 2021 EU4 Business Report on SME Support in the Eastern Partnership revealed that €53.07 million was spent on active projects in Belarus. However, this was 60.4% less compared with 2019. The EU-Belarus Twinning Project¹⁸² also follows the same trend of scaled back engagement with Belarus. In fact, the Twinning project with Belarus has been suspended until conditions allow following the October Council conclusions on Belarus (11660/20).¹⁸³

In 2020, there were widespread protests Belarus against President Alexander Lukashenko's re-election through a widely judged corrupt elections.¹⁸⁴ Following the elections, there was considerable political unrest in Belarus which resulted in the EU's withdrawal of its support for the central authorities to the maximum extent. In October 2020, the EU imposed sanctions on individuals and entities in response to the Belarusian authorities' unacceptable

180 See section 2.2 of this chapter above.

181 For EU4Business examples, see "EU Makes Businesses in Belarus Stronger", online: European Union External Action <https://eeas.europa.eu/sites/eeas/files/eu4business_belarus_en.pdf> accessed 11 October 2021.

182 "New EU-Belarus Twinning Project Launched in Minsk" (12 March 2020), online: European Union External Action <https://eeas.europa.eu/headquarters/headquarters-Homepage/76014/new-eu-belarus-twinning-project-launched-minsk_en> accessed 11 October 2021.

183 "Belarus: EU adopts conclusions" available online: <<https://www.consilium.europa.eu/en/press/press-releases/2020/10/12/belarus-eu-adopts-conclusions/>> accessed on 12 April 2022.

184 A Abdurasulov, "Belarus protesters battered, bruised but defiant after 100 days" available online: <<https://www.bbc.com/news/world-europe-54961111>> accessed on 12 April 2022.

violence against peaceful protesters, intimidation, arbitrary arrests and detentions, following the August 2020 presidential elections.¹⁸⁵ In response to the restrictive measures adopted by the EU, the Belarusian regime instrumentalized migrants for political purposes and launched hybrid attacks along the EU border.¹⁸⁶ Since December 2021, the EU has continued to progressively broaden the scope of sanctions. Moreover, following Belarus's role in Russia-Ukraine conflict, the EU has imposed tougher sanctions on Belarus which includes individual and economic sanctions targeting 22 people, restrictions on trade, a SWIFT ban for three Belarusian banks, prohibition on transactions with the Central Bank of Belarus, limits on the financial inflows from Belarus to the EU, prohibition on the provision of euro-denominated banknotes to Belarus.¹⁸⁷

EU-Russia relations are legally, hinged on the Partnership Cooperation Agreement, signed in June 1994, which sets the principal common objectives and establishes the institutional framework for bilateral contacts. In the past, the EU maintained a 'selective engagement' approach when engaging with Russia guided by the Foreign Affairs Council's five guiding principles.¹⁸⁸ There has also been an ambition of comprehensive agreement between Russia and the EU. However, following Crimea's annexation the relationship between the EU and Russia experienced a negative shift and the EU imposed economic sanctions on Russia.¹⁸⁹ The relationship has further soured with Russia's invasion

185 "Restrictive measures following the 2020 Belarus presidential elections" available online: <<https://www.consilium.europa.eu/en/policies/sanctions/restrictive-measures-against-belarus/>> accessed on 12 April 2022.

186 "Belarus border crisis: How are migrants getting there?" available online: <<https://www.bbc.com/news/59233244>> accessed on 12 April 2022.

187 "Russia's military aggression against Ukraine: EU agrees new sectoral measures targeting Belarus and Russia" available online: <<https://www.consilium.europa.eu/en/press/press-releases/2022/03/09/russia-s-military-aggression-against-ukraine-eu-agrees-new-sectoral-measures-targeting-belarus-and-russia/>> accessed 12 April 2022.

188 The Foreign Affairs Council in March 2016 outlined five guiding principles underlying the EU's relations with Russia: (1) implementation of the Minsk agreement as the key condition for any substantial change in the EU's stance towards Russia; (2) strengthened relations with the EU's Eastern Partners and other neighbours, including Central Asia; (3) strengthening the resilience of the EU (e.g. energy security, hybrid threats or strategic communication); (4) selective engagement with Russia on issues of interest to the EU; (5) need to engage in people-to-people contacts and support Russian civil society. The first principle implicitly links the duration of some of the EU sanctions to the progress made towards a peaceful resolution of the conflict in eastern Ukraine. See "Fact sheets on the European Union – Russia", online: European Parliament <www.europarl.europa.eu/factsheets/en/sheet/177/russia> accessed 11 October 2021.

189 The EU has imposed unilateral economic sanctions to target exchanges with Russia in specific sectors: (1) Limited access to the EU's primary and secondary capital markets for certain Russian banks and companies. (2) Export and import bans on the trade in

of Ukraine. The EU has imposed extensive sanctions on Russia that include individual sanctions, economic sanctions, restrictions on media, diplomatic measures, and restrictions on economic relations with the non-government-controlled areas of Donetsk and Luhansk Oblasts. EU currently has sanctions on Russia's financial, trade, energy, transport, technology, and defence sectors. Sanctions that target the transport sector include closure of the EU airspace to all Russian-owned and Russian-registered aircraft, closure of the EU ports to Russian vessels, prohibition on Russian road transport operators from entering the EU and prohibition on exports to Russia of goods and technology in the aviation, maritime and space industry.¹⁹⁰ Financial sanctions include prohibition on transactions with certain state-owned enterprises, prohibition on transactions with the Russian Central Bank, SWIFT ban for certain Russian banks, prohibition on the provision of euro-denominated banknotes to Russia, prohibition on public financing or investment in Russia and prohibition on investment in and contribution to projects co-financed by the Russian Direct Investment Fund, deposits to crypto-wallets, prohibition on the provision of credit rating services to any Russian person or entity.¹⁹¹ It should be noted that the EU has coordinated sanction with its partners such as the US and the UK. In response, Russia currently maintains various economic, punitive countermeasures.

arms and an export ban on dual-use goods for military use or military end-users in Russia. (3) No access to certain sensitive technologies and services that can be used for oil production and exploration. (4) Specific restrictions on economic relations with Crimea and Sevastopol apply, including an import ban on goods from the peninsula, an export ban on certain goods and technologies, restrictions on investment, and a prohibition on the supply of tourism services. (5) Measures concerning economic cooperation and suspension of any new financing operations in Russia by the European Investment Bank (EIB) and European Bank for Reconstruction and Development (EBRD). (6) Individual restrictive measures apply to more than 150 individuals and 40 entities, which are subject to an asset freeze and a travel ban because their actions undermined Ukraine's territorial integrity, sovereignty and independence. The list includes the speakers of the two chambers of the Russian Federal Assembly (the State Duma and the Federation Council), as well as the incumbent chair of the Russian Delegation to the EU-Russia Parliamentary Cooperation Committee. See Fact sheets on the EU, *ibid*; also see, "Russia: Council renews economic sanctions over Ukrainian crisis for six more months", online: European Council, <www.consilium.europa.eu/en/press/press-releases/2020/06/29/russia-council-renews-economic-sanctions-over-ukrainian-crisis-for-six-more-months/> accessed 11 October 2021.

190 "EU sanctions in response to Russia's invasion of Ukraine" available online: <<https://www.consilium.europa.eu/en/policies/sanctions/restrictive-measures-against-russia-over-ukraine/>> accessed on 12 April 2022.

191 *ibid*.

The EU adopted a strategy on Central Asia in 2019 with a view to strengthen regional cooperation, taking advantage of new opportunities in the region and addressing common challenges.¹⁹² The EU has the Enhanced Partnership and Cooperation Agreement (EPCA) that governs trade and economic relations with Kazakhstan, which entered into force on 1 March 2020.¹⁹³ This agreement establishes a legal basis for a legal relationship for EU-Kazakhstan relationship. The EU in the recent past has engaged at a deeper level with Kazakhstan. Currently there are several projects between the EU and Kazakhstan that span across several areas of interest such as energy, environment, technology, finance, and culture.¹⁹⁴ It is important to note that Kazakhstan's has close economic and political ties with Russia and is also a member of the SCO along with Russia, China and other countries. However, the question remains open about the way the Russia-Ukraine conflict will impact Kazakhstan's long-term relationship with Russia. If Kazakhstan remains neutral in its position, it may emerge not only as an attractive destination for investments in the Central Asian region but also may continue to engage in the future with the EU.

To sum up, at present, there exist no instrument or any ongoing negotiation to suggest that the EU is building a digital relationship with these three countries for single window interaction. The EU's relations with both Belarus and Russia now are defined mainly by unilateral sanctions and EU's engagement with these countries is not expected to be meaningful any time soon in the future. This has major implications for the railway links under the BRI. While the Russia-Ukraine conflict has disrupted selected supply chains, it is interesting to note that the Chongqing-Duisburg railway link is still operational. While block trains are still running between Chinese and European cities using the above route,¹⁹⁵ this does not mean that all is well. The complex framework of sanctions, and in particular financial sanctions, along with political and social censure have dissuaded most EU based logistics companies from accepting business that has any ties with Russia. This recent development has major consequences for the long-term viability of the Chongqing-Duisburg link, which

192 "Council conclusions on the New EU Strategy on Central Asia" available online: <<https://www.consilium.europa.eu/media/39778/st10221-en19.pdf>> accessed on 12 April 2022.

193 More information is available online: EC <<https://ec.europa.eu/trade/policy/countries-and-regions/countries/kazakhstan/>> accessed 11 October 2021.

194 See online: <https://www.eeas.europa.eu/kazakhstan/eu-projects-kazakhstan_en> accessed 11 October 2021.

195 S Ji, "What is the China-Europe Railway Express, and how much pressure is it under from the Ukraine crisis?", *South China Morning Post* (6 March 2022), online: The South China Morning Post <<https://www.scmp.com/economy/global-economy/article/3169239/what-china-europe-railway-express-and-how-much-pressure-it>> accessed 12 April 2022.

so far has been subsidised by China. More importantly, the complex interactions between the participating countries will determine if single window interoperability may eventually materialize.

6 Single Window Interoperability, Digitalization Strategy and Fragmentation

Cross-border single window interoperability is an advanced technology-based feature of trade facilitation, which requires prior investment in digital infrastructure. Therefore the level of trade facilitation is directly proportional to the availability of digital infrastructure, which is generally connected to the degree of economic development in the country.¹⁹⁶ Outside support is available to finance trade facilitation including provisioning of digital infrastructure, for instance through the WTO's TFAF Grant Program as mandated by the TFA,¹⁹⁷ or through multilateral financial assistance such as the ADB, New Development Bank, and Aid for Trade, but they are not adequate.

In recent years, another source of financing that can be accessed by countries to establish digital infrastructure along the railway corridors is through the Digital Silk Road (DSR).¹⁹⁸ The DSR, which was initially called the 'Information Silk Road' in the Vision and Actions document,¹⁹⁹ promotes investments in sectors ranging from e-commerce and telecommunication to scientific cooperation and the digital economy. The DSR comprises four interrelated, technology-focused components with the following objectives: first, to promote Chinese investments in digital infrastructure abroad, including next-generation cellular networks, fibre optic cables, and data centres;²⁰⁰ second, domestic investment

196 J Waters, "Unimpeded Trade in Central Asia: A Trade facilitation Challenge", *Transnational Dispute Management*, OBOR Special Edition (August 2017).

197 TFAF Assistance, online: WTO: TFAF <www.tfafacility.org/tfaf-assistance> accessed 11 October 2021.

198 The Digital Silk Road was proposed during the China-EU Digital Cooperation Roundtable in Brussels in July 2015. See "China, EU to promote digital Silk Road", *China Daily* (7 July 2015), online: China Daily <www.chinadaily.com.cn/world/2015-07/07/content_21202745.htm> accessed 11 October 2021).

199 See "Vision and Actions document" (n17).

200 Chinese companies have been involved in upgrading internet connections in several BRI countries in the form of new undersea cables linking east and west, and rolling out broadband in dozens of countries where such infrastructure is either underdeveloped or non-existent. See R Deeks, "The Digital Silk Road – China's \$200 billion project", *BBC Science Focus Magazine* (8 December 2018), online: Science Focus <www.sciencefocus.com/future-technology/the-digital-silk-road-chinas-200-billion-project/>; see also, S Prasso,

in China to develop advanced technologies, that includes satellite-navigation systems, artificial intelligence, and quantum computing;²⁰¹ third, promotion of e-commerce through establishment of digital free trade zones and regional logistics centres, and reduction of cross-border trade barriers;²⁰² and fourth, propagation of the Chinese notion of international digital environment through digital diplomacy and multilateral governance.²⁰³ Although the scope of the DSR is much bigger than creating interoperable single windows connecting China with the EAEU and the EU, it is reasonable to say that the DSR holds promise for a wider, more deeply textured digitalization strategy for the region.²⁰⁴ While the prospects of DSR are numerous, the largely undeveloped legal aspects are a major concern. Needless to mention, the DSR constitutes a trove of legal issues, such as internet governance, jurisdiction, conflict of laws, e-contracting, privacy, protection of personal data, cross-border and online

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- "China's Digital Silk Road Is Looking More Like an Iron Curtain", *Bloomberg* (10 January 2019), online: Bloomberg <www.bloomberg.com/news/features/2019-01-10/china-s-digital-silk-road-is-looking-more-like-an-iron-curtain>; see also, J Hillman, "Fear will not stop China's digital silk road", *Financial Times* (11 July 2019), online: Financial Times <www.ft.com/content/1c8fbef2-a332-11e9-a282-2df48f366f7d>. All accessed 11 October 2021.
- 201 There has been a massive expansion of China's BeiDou navigation satellite network to rival the US-owned Global Positioning System. See A Halappanavar, "China's Answer to GPS Is Now Fully Complete", *The Diplomat* (26 June 2020), online: The Diplomat <<https://thediplomat.com/2020/06/chinas-answer-to-gps-is-now-fully-complete/>>; see also N Goswami, "The Economic and Military Impact of China's BeiDou Navigation System", *The Diplomat* (1 July 2020), online: The Diplomat <<https://thediplomat.com/2020/07/the-economic-and-military-impact-of-chinas-beidou-navigation-system/>>. All accessed 11 October 2021.
- 202 Automation of custom procedures through DSR IT projects has been piloted in Malaysia, together with China's Alibaba, launched a Malaysian digital free trade zone. For more information see Malaysia Digital Economy Corporation (MDEC), which is an agency under the Ministry of Communications and Multimedia Malaysia, online: MDEC <<https://mdec.my/>> accessed 11 October 2021.
- 203 China has been active at multilateral institutions to establish technological standards related to telecommunications infrastructure. See A Beattie, "Technology: how the US, EU and China compete to set industry standards", *Financial Times* (24 July 2019), online: Financial Times <www.ft.com/content/0c91b884-92bb-11e9-ae1-2bd133ac3271> accessed 11 October 2021. Also, China advocates the principle of cyber sovereignty at international forums. See, Y Hong, GT Goodnight, (2020), "How to think about cyber sovereignty: the case of China", *Chinese Journal of Communication*, 13:1, 8–26.
- 204 J Blanchette, J Hillman, "China's Digital Silk Road after the Coronavirus", *Centre for Strategic and International Studies (CSIS)* (13 April 2020), online: CSIS <www.csis.org/analysis/chinas-digital-silk-road-after-coronavirus>; see also R Arcesati, "The Digital Silk Road is a development issue", *Mercator Institute for China Studies (MERICS)*, online: MERICS <<https://merics.org/en/analysis/digital-silk-road-development-issue>>. All accessed 11 October 2021.

dispute resolution, and the convergence of trade facilitation and e-commerce that require thorough investigation and development.²⁰⁵

7 Conclusion and Way Forward

At present, railway transport is used to carry only a small share of China-EU trade, and the BRI is not expected to change this in any substantial way.²⁰⁶ The growing interest in railway transport between Europe and China is understandable because the speed and reliability of transport is an important dimension of China-EU trade.²⁰⁷ Over the years, time-sensitive goods accounted for more than three-quarters of the value of China's exports to the EU, and more than 60% of the EU's exports to China.²⁰⁸ Therefore, trade facilitation reforms is vital for the continued development of the corridors.²⁰⁹ The formation of the EAEU has cut the journey time from China to Europe by around 5 days, which

205 In November 2019, China expressed its intention to strengthen participation in UN/CEFACT and to work on a digital Belt and Road based on open, international standards for sustainable trade and greater regional integration. See "UN/CEFACT standards can pave the 'digital silk road' and streamline trade for the Sustainable Development Goals", online: UNECE <www.unecf.org/info/media/news/trade/2019/uncefact-standards-can-pave-the-digital-silk-road-and-streamline-trade-for-the-sustainable-development-goals/doc.html> accessed 11 October 2021.

206 Rail transport is expected to grow in importance, taking more cargo out of the air, in relative terms, than off container ships. See B Cosentino, D Dunmore, S Ellis, A Preti, D Ranghetti, C Routaboul, "Research for TRAN Committee: The new Silk Route – opportunities and challenges for EU transport" (2018), online: European Parliament, <[www.europa.eu/RegData/etudes/STUD/2018/585907/IPOL_STU\(2018\)585907_EN.pdf](http://www.europa.eu/RegData/etudes/STUD/2018/585907/IPOL_STU(2018)585907_EN.pdf)> accessed 11 October 2021.

207 There are daily train connections from Chongqing to Duisburg. See (n19).

208 "Trade impacts of the Belt and Road Initiative" (June 2018), 8, online: ING <https://think.ing.com/uploads/reports/Tradebelt_final2.pdf> accessed 11 October 2021.

209 At present, industry led initiatives has reduced the transport time between China and Europe. For example, only block trains ply the Chongqing-Duisburg railway link. Yuxinou (Chongqing) Logistics Co. Ltd. is a forwarding agent, which has been established using joint-funds from railway companies of China, Russia, Kazakhstan and Germany, and the Chongqing Municipal Government, to organize the cargo for the block trains. More information is available online: iChongqing <www.ichongqing.info/2019/06/25/yuxinou-a-railway-corridor-connecting-chongqing-with-the-world/> accessed 11 October 2021. In addition, the railway companies from Russia, China, Mongolia, Kazakhstan, Belarus, Germany and Poland signed an agreement to deepen cooperation on the organization of container trains between China and Europe during the Belt and Road Forum in Beijing 2017; more information is available online: Railway Pro <www.railwaypro.com/wp/seven-countries-sign-agreement-china-europe-rail-container-organisation/> accessed 11 October 2021.

shows that political cooperation is necessary for reducing the number of border clearances, simplifying customs procedures, and harmonising technical standards to guarantee the required traffic capacity of the various transport corridors.²¹⁰

Currently there are no concrete legal provisions to support single window interoperability between all the countries in the Chongqing-Duisburg railway link. The change in political situation because of Russia-Ukraine conflict casts a long shadow on the political willingness to build seamless single window interoperability. Therefore, the question that remains is – what approach should be adopted to build interoperability? Interoperability is conceived between China and the EAEU at a regional level through an agreement on trade and economic cooperation.²¹¹ In the future, interoperability may eventually materialize organically between the EU and China, as the policy agenda on transport point in that direction.²¹² Therefore, one approach could be that the two separate interoperable single window environments may then serve as building blocks for a grand scheme for creation of interoperability along an entire corridor in the future.

While fragmentation in railway and customs laws including regulations along the corridors evolved over half-a-century and would require some time to get harmonized, the divergence in data protection law is of recent vintage. In the latter sphere, the EU is driven by privacy concerns and China is focused on security. Most of the other countries along the corridors have promulgated some sort of laws related to personal data protection, but nothing comprehensive like the EU or China.²¹³ At any rate, divergent national or regional approaches would only cause hardship to share data and collaborate meaningfully for all. One may argue that China's legislative approach towards data protection now leans towards the EU. That may be seen as a success for the EU in exporting its data protection standards to an important non-EU country like China, by incentivizing the adoption of an equivalent standard of protection to ensure easier transfer of data from the EU. However, China's approach is not merely a transplantation of the EU rules. Cyber-sovereignty and the dichotomy between the perspectives of privacy from private actors and privacy from the state are the most salient elements of the model that China is building.²¹⁴

210 See Jakóbowski and others (n 5) 33.

211 See (n 146).

212 See "EU-China Summit Joint statement" (n 170).

213 "Data Protection and Privacy Legislation Worldwide", online: UNCTAD <https://unctad.org/en/Pages/DTL/STI_and ICTs/ICT4D-Legislation/eCom-Data-Protection-Laws.aspx> accessed 11 October 2021.

214 See generally, J XU (n 137).

Given China's ambitions related to its cyber strategy and also the DSR, its voice on data flows will have an increasing impact generally, and also in developing single window interoperability in the railway corridors.

Given the economic and strategic realities as highlighted above, legal and regulatory fragmentation may soon pose as a serious risk for the further development of trade facilitation initiatives along the railway corridors. Fragmentation may sabotage the evolution of a more democratic and egalitarian international regulatory system in the Eurasian space, and in general undermine the normative integrity of international law.²¹⁵ In this context the geopolitical dimension of fragmentation is particularly noteworthy because the lack of digital infrastructure may attract certain middle countries in the railway corridors to submit to investments and technology from powerful States.²¹⁶ So, the question that arises is – could these powerful States influence the legislation related to data flows in these middle countries in a certain way? Based on the discussion on interactions related to cross-border single window interoperability made in section 5 above, it is likely that a multitude of competing institutions with overlapping responsibilities on transport and trade facilitation would provide the powerful States with an opportunity to abandon or threaten to abandon any given forum for a more sympathetic forum if their demands are not met. This may result in competition between institutions and can effectively marginalise the role of weaker States. To circumvent fragmentation, it is therefore necessary that States along the railway corridors –

- (I) enter into broad and integrative agreements and avoid a large number of narrow agreements that are functionally defined as exemplified in section 5 above;
- (II) formulate agreements based on frequently convened multilateral negotiations; and

215 For a detailed discussion on ways in which fragmentation is accomplished, see E Benvenisti and GW Downs, "The Empire's New Clothes: Political Economy and the Fragmentation of International Law" (2007) 60 *Stan L Rev* 595.

216 See M Guzdar, TJ Jermalavicius, "Between the Chinese Dragon and American Eagle: 5G Development in the Baltic States", International Centre for Defence and Security, Estonia (August 2020), online: ICDS <https://icds.ee/wp-content/uploads/2020/08/ICDS-Brief_Between-the-Chinese-Dragon-and-American-Eagle-5G-development-in-the-Baltic-states_August-2020.pdf>; C Sbeglia, "Tele2 selects Nokia for 5G core in Sweden, Baltics following Huawei ban", RCR Wireless News (11 January 2021), online: RCR Wireless <www.rcrwireless.com/20210111/5g/tele2-selects-nokia-for-5g-core-in-sweden-baltics-following-huawei-ban>; "Baltics caught between superpowers in China's 5G battle – Investigation", LRT English (10 September 2019), online: LRT <www.lrt.lt/en/news-in-english/19/1095729/baltics-caught-between-superpowers-in-china-s-5g-battle-investigation>. All accessed 11 October 2021.

(III) continue to engage with international and regional institutions even if they become more responsive to the interest of weaker States.

If a country or region along the railway corridors adopts a “divide and conquer” approach, where it would bargain with or compete on legal rules against those of other countries, or if it follows an intentional strategy of exploiting problems of coordination among multiple countries, then that may lead to uncertainty in the development of the corridors. Moreover, there is no straightforward way to determine whether the divide and conquer approach would reduce or enhance social welfare.²¹⁷ However, if there is a call for the countries along the corridors to unite to trade, following that call would invariably lead to efficient movement of goods, support sustainable economic growth and improve social welfare.²¹⁸ Therefore, countries along the China-Europe railway corridors should take decisive and definitive action in addressing the legal and regulatory fragmentation to ensure social and economic progress.

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²¹⁷ See generally, EA Posner, K Spier, and A Vermeule, “Divide and Conquer”, Discussion Paper No. 639, 5/2009, online: Harvard Law School <www.law.harvard.edu/programs/olin_center/papers/pdf/Vermeule_639.pdf> accessed 11 October 2021.

²¹⁸ See in general (n 10).

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The Meaning of “Accident” under the Montreal Convention in Light of CJEU Jurisprudence

Olena Bokareva

1 Introduction

The legal framework of aviation is relatively young. It can be recalled that air transport appeared on the global scene much later than maritime, rail and road transport. The first passenger flights were undertaken as adventures due to the technical characteristics of the planes. At present, the airplane is a common vehicle and is recognized as an efficient and safe method of travel. However, it was not so at the beginning.¹ Historically, on 17 December 1903, the Wright brothers undertook their first flight at Kitty Hawk, North Carolina. Since then, aviation has progressed remarkably. The same can be said about aviation law, which hardly existed, previously, but now it occupies an established position within the international legal system.²

At the beginning of the era of passenger carriage in aviation, a dire necessity for an international regime was perceived. The drafters of an anticipated future convention no doubt had a difficult mission to fulfill. They were tasked with developing a liability regime related to passengers in the event of an accident. Since aviation was still in its infancy, they had to come up with a regime that would strike a balance between support for a growing industry on the one hand and a suitable compensation system on the other.

As an outcome of this international effort, the first international instrument was negotiated and adopted in 1929. Its name was the Convention for the Unification of Certain Rules Relating to International Carriage by Air (Warsaw Convention).³ This Convention was amended several times by Protocols,⁴ and

1 Kelly C Grems, ‘Punitive Damages under the Warsaw Convention: Revisiting the Drafters’ Intent’ 41 *American University Law Review*, 1991, Volume 1, p. 141; Richard Gardiner, ‘The Warsaw Convention at Three Score Years and Ten’, 1999, *Air and Space Law*, Vol. xxiv, Number 3, p. 114.

2 Paul de Jersey AC, CJ, ‘Annual Conference Opening Address’, Aviation Law Association of Australia and New Zealand 22nd, <http://www.austlii.edu.au/au/journals/QldJSchol/2003/75.pdf> 13 October 2003, p. 1, accessed 31 May 2021.

3 It is notable that the Warsaw Convention was ratified or adhered to by almost all States and continues to apply in several of them.

4 The Hague Protocol, 1955; Montreal Protocol No. 4, 1975.

later by the new Montreal Convention in 1999. In the *travaux préparatoires* of the Montreal Convention, the Warsaw Convention was described as “one of the most widely adhered-to instruments of private international law”.⁵ It was also postulated that:

While complete unification of law neither attainable nor desirable, the Warsaw Convention laid down certain vitally important rules for international carriage by air. It determined the internationally accepted liability rules regarding passengers, baggage and cargo in case of accidents; it set out the requirements as to format and content of air transport documents; and it established ground rules regarding procedure.⁶

Subsequently, civil aviation underwent considerable changes and transformations giving rise to several amendments and finally the adoption of a new convention. The Convention for the Unification of Certain Rules for International Carriage by Air was signed on 28 May 1999 in Montreal, Canada by 52 participating States, and entered into force on 4 November 2003.⁷ This new convention incorporates provisions of the previous instruments in one document having its goal to create a uniform regime for air carrier liability. As described by one commentator, “the Montreal Convention is no longer a Convention for airlines. It is a Convention for consumers/passengers”.⁸

The global success of the Convention is evidenced by the fact that some 135 State Parties, including the EU, have adopted it, which has been hailed “a major triumph as an act of international uniformity”.⁹ That commentator admits that the Convention regardless of being perfect “represents the compromise for the difficult equitable balance of interest we all wanted, we all needed and which we were all hoping against hope for”.¹⁰ The Montreal Convention like its predecessor deals with international carriage of persons, baggage or cargo performed

5 International Conference on Air Law (Convention for the Unification of Certain Rules for the International Carriage by Air), Montreal. 10–28 May 1999. Volume I, Minutes, pp. 1–2.

6 *ibid.*

7 George N Tompkins Jr., “The 1999 Montreal Convention: Alive, Well and Growing”, *Air and Space Law* 34, no. 6, 2009, p. 421; Jeroen Mauritz, “Current Legal Developments: The ICAO International Conference on Air Law”, Montreal, May 1999, *Air and Space Law*, Vol. xxiv, No. 3, 1999, p.153.

8 Thomas J Whalen, “The New Warsaw Convention: The Montreal Convention”, *Air and Space Law*, Vol. xxv No.1, 2000, p. 14.

9 Robert Lawson QC, “The Montreal Convention 1999 at 21: Has it Come of Age or Passed its Sell-By Date?” *Air and Space Law* 45, No. 3, 2020, p. 267.

10 *ibid.*, p. 268.

by aircraft for reward. It creates a liability regime for bodily injury and death to a passenger, damage to cargo and delay related to passengers and cargo.

2 Liability Regime under the Montreal Convention and the Meaning of “Accident”

Liability of the carrier and the extent of compensation for damage is contained in Chapter III of the Convention. One of the most important provisions relating to carrier liability is Article 17 titled “Death and Injury of Passengers”. In it, there is a slight alteration from the Warsaw Convention, meaning that the jurisprudence based on it is still valid. Article 17(1) provides that:

The carrier is liable for damage sustained in case of death or bodily injury of a passenger upon condition only that the accident which caused the death or injury took place on board the aircraft or in the course of any of the operations of embarking or disembarking.

At this juncture one can distinguish between the liability for death and bodily injury under Article 17 and liability for damage and cargo provided in Article 18 which states the following:

The carrier is liable for damage sustained in the event of the destruction or loss of, or of damage to, any registered baggage or any cargo, if the occurrence which caused the damage so sustained took place during the carriage by air.

The carrier can be wholly or partly exonerated from liability as per Article 20 “if the carrier proves that the damage was caused or contributed to by the negligence or other wrongful act or omission of the person claiming compensation, or the person from whom he or she derives his or her rights ...”. Pursuant to Article 21 of the Montreal Convention, the carrier can limit its liability for damages in case of death or injury of passengers amounting to 113,100 SDRs¹¹ for each passenger.

While the Convention mentions “accident” in Article 17(1), the term is not defined in the Convention.¹² It is notable, however, that a number of courts

¹¹ Amended to “from 100,000 SDRs” in 2009.

¹² Paul S Dempsey, ‘Accidents & Injuries in International Air Law: The Clash of the Titans’ (October 24, 2011), *Korean Journal of International Law*, 2009, 235, *Annals of Air & Space*

have provided guidance as to its proper interpretation.¹³ Therefore, it is crucial to understand what this term means in the context of air law and the Montreal Convention. The word “accident” in its ordinary meaning is defined in a Dictionary as “an unintended and unforeseen injurious occurrence; something that does not occur in the usual course of events or that could not be reasonably anticipated”.¹⁴

In a leading case *Fenton v. J. Thorley and Co Ltd.* cited in several decisions relating to the Warsaw or Montreal Convention, the term “accident” was examined by the Law Lords.¹⁵ The case concerned a workman who suffered injury by an act of over-exertion in trying to turn a wheel. Lord Lindley held that:

The word ‘accident’ is not a technical legal term with a clearly defined meaning. Speaking generally, but with reference to legal liabilities, an accident means any unintended and unexpected occurrence which produces hurt or loss. But it is often used to denote any unintended and unexpected loss or hurt apart from its cause; and if the cause is not known the loss or hurt itself would certainly be called an accident. The word ‘accident’ is also often used to denote both the cause and the effect, no attempt being made to discriminate between them.

Lord McNaughton added, “the expression ‘accident’ is used in the popular and ordinary sense of the word as denoting an unlooked – for mishap or an untoward event which is not expected or designed”.

Another expression peculiar to Article 17(1) is “damage so sustained”. The Montreal Convention does not define the term “damage”, and is silent as to whether it should be interpreted as also including non-material damage. However, as noted by a duo of authors, the measure of damage is usually a prerogative of the national court.¹⁶ Notably, the term “bodily injury” used in the Montreal Convention 1999 excludes any compensation for mental damage,

Law, Vol. xxxiv, Institute of Air & Space Law, McGill University, 2009, available at SSRN: <https://ssrn.com/abstract=1948757>, p. 3, accessed 5 May 2021.

13 Paul de Jersey AC, CJ, ‘22nd Annual Conference Opening Address’, Aviation Law Association of Australia and New Zealand, 13 October 2003, p. 2.

14 Bryan A Garner, (Ed.), *Black’s Law Dictionary*, Ninth Edition.

15 [1903] AC 443.

16 M Clarke and D Yates, *Contracts of Carriage by Land and Air*, London/Singapore: LLP, 2004, p.332.

as explicitly stated in the *travaux préparatoires*.¹⁷ Lord Hope noted, *inter alia*, in *Sidhu* that:

No system of law can attempt to compensate persons for all losses in whatever circumstances. But the assumption is that, where a breach of duty has caused loss, a remedy in damages ought to be available.¹⁸

In *Cowden v. British Airways*, it was stated that the convention clearly provides a remedy for monetary loss flowing from "bodily injury" and also from delay to baggage.¹⁹ The judge further referred to the judgment in *Morris v. KLM* in which the House of Lords discussed the meaning of "bodily injury" in Article 17. After reviewing the international and domestic authorities, the Court held that the term "bodily injury" was not intended to include purely psychological injury.

Lord Wilberforce and Lord Fraser considered the precise meaning of "damage" in *Fothergill v. Monarch Airlines Ltd.*²⁰ They concluded that both "damage" and its French equivalent "dommage" are restricted to damage giving rise to monetary losses in Articles 17 and 19. It held that only compensatory damages can be awarded and not punitive damages, and that it does not create a cause of action in respect of psychological or emotional injury to a passenger caused by delays. Similarly, a claim for mental anguish caused by delay in the carriage of baggage cannot succeed.²¹ From the leading cases in the UK, USA and Canada,²² it can be gleaned that the courts in these countries adopted the same approach in concluding that Articles 17 and 19 of the convention do not permit the recovery of damages for distress, discomfort or loss of enjoyment unless an actual monetary loss or physical injury can be established by expert evidence.²³ In *Morris v. KLM*,²⁴ and later in *Deep Vein Thrombosis*,²⁵ it was held

17 Also known as pecuniary losses or damage for injured feelings, suffering and mental distress.

18 *Abnett (Known as Sykes) v. British Airways Plc Sidhu and Others v. Same* (HL), [1997] 2 Lloyd's Rep 76 (*Sidhu*), p. 88.

19 [2009] 2 Lloyd's Rep. 653.

20 [1980] 2 Lloyd's Rep. 295.

21 *Cowden v. British Airways*, [2009] 2 Lloyd's Rep., p. 656.

22 *Olympic Airways v. Husain*, (2004) 540 US 644, 124 S Ct 1221; *Air France v. Saks* 470 US 392, (1985); *Ehrlich v. American Eagle Airlines inc.*, (2004) 360 F. 2d (2nd Cir.); *Plourde v. Service aérien FBO inc. (Skyservice)*, 2007 QCCA 739; *Lukács v. United Airlines Inc. et al.*, 2009 MBCA 111; *Dawson v. Thomson Airways Ltd.*, [2014] EWCA Civ 845; *Lee v. American Airlines Inc.*, 355 F. 3d 386 (5th Cir. 2004).

23 *Cowden v. British Airways*, [2009] 2 Lloyd's Rep 653, per HHJ Orrell QC, p.656.

24 [2002] 1 Lloyd's Rep 745.

25 [2005] UKHL 72, 62.

that it was not the intention of the state parties of the Warsaw Convention's to provide compensation for purely psychological injury. The same view was confirmed in the decision in *Eastern Airlines, Inc. v. Floyd*.²⁶

In the *Stott* case, decided by the UK Supreme Court, their Lordships made it explicit that the time and place of the accident or mishap is of paramount importance; the convention sets the carrier's liability for whatever might physically happen to passengers between embarkation and disembarkation.²⁷

Another notable feature of the Montreal Convention is its exclusivity. This implies that where the carrier is liable under the convention, claims based on other causes of action are pre-empted. As Article 29 states:

In the carriage of passengers, baggage and cargo, any action for damages, however founded, whether under this Convention or in contract or in tort or otherwise, can only be brought subject to the conditions and such limits of liability as are set out in this Convention without prejudice to the question as to who are the persons who have the right to bring suit and what are their respective rights. In any such action, punitive, exemplary or any other non-compensatory damages shall not be recoverable.

Thus, any measures relating to matters with which the convention attempts to deal, irrespective of their legal nature, are precluded.²⁸ Remarkably so, most courts in common law jurisdictions have endorsed the exclusivity of a cause of action for passenger claims in international air carriage, and have dismissed claims where the convention did not provide a remedy including any non-material damage.²⁹ The leading case decided by the House of Lords³⁰ is *Sidhu* in which Lord Hope delivered a speech supported by other Law Lords. It is noteworthy that the decision in *Sidhu* has been applied and followed in numerous other cases decided by the English courts and in other common law jurisdictions.³¹ After analysing the history and background to the Warsaw Convention,

26 499 US 530 (1991).

27 *Stott v. Thomas Cook Tour Operators LTD.*, [2014] UKSC 15, paras. 28, 34, 35.

28 The predecessor of Article 29 of the Montreal Convention was Article 24(1) of the Warsaw Convention, which underwent slight changes during the drafting process; it was decided to add the phrase 'in contract or in tort or otherwise'. See Thomas J Whalen, 'The New Warsaw Convention: the Montreal Convention', xxv(1) *Air and Space Law*, 2000, p.136.

29 The two leading decisions confirming the exclusivity of the Warsaw Convention are *Abnett (known as Sykes) v. British Airways Plc* and *Sidhu and Others v. Same* (HL), [1997] 2 Lloyd's Rep 76 (*Sidhu*) and *El Al Israel Airlines Ltd. v. Tseng*, (1999) 525 US 155 (*Tseng*).

30 Now replaced by the Supreme Court of the United Kingdom.

31 *Cowden v. British Airways*, [2009] 2 Lloyd's Rep 653, per HHJ Orrell QC, p. 655; *Deep Vein Thrombosis and Air Travel Group Litigation*, [2005] UKHL 72, *Morris v. KLM*, [2002] UKHL

the *travaux préparatoires* and decisions made by the UK and foreign courts,³² Lord Hope held that:

To permit exceptions, whereby a passenger could sue outwith the Convention for losses sustained in the course of international carriage by air, would distort the whole system, even in cases for which the Convention did not create any liability on the part of the carrier.³³

That uniform interpretation of an international instrument like the Montreal Convention is of considerable significance has been observed in a number of decisions related to air transportation. It was rightly held in *O'Mara v. Air Canada*³⁴ as follows:

Given that a major purpose of the Conventions was to introduce consistency and uniformity in the international law applicable to air carriage, in interpreting the Convention, it is important that there be consistency in interpretation from one country to another, and, thus, there must be a very sound reason to depart from the precedents established from around the world.

In *Gontcharov v. Canjet* it was similarly held as follows:

It is therefore of fundamental importance that there be consistency in interpreting the provisions of the Convention from one country to another. However, where a body of case law interpreting a particular provision has been applied consistently in other jurisdictions, it would be a mistake to depart from it without very sound reasons.³⁵

One author remarks that the drafters did not aim for the Warsaw Convention to be an exclusive remedy for every injury associated with air travel and that there was no intention to provide absolute uniformity of remedy for all events

7; *Eastern Airlines Inc. v. Floyd*, (1991) 499 US 530; *Stott v. Thomas Cook Tour Operators Ltd.*, (SC), [2014] UKSC 15, para. 67, per Lady Hale (*Stott*), *Thibodeau v. Air Canada*, 2014 SCC 67, paras. 36–8, 47.

32 *Sidhu*, p.82.

33 *ibid*, p.84.

34 2013 ONSC 2931 (Perell, J.), para. 41.

35 111 O.R. (3d) 135 2012 ONSC 2279 Ontario Superior Court of Justice, Wilson J. June 4, 2012.

faced by air travellers.³⁶ The same author explains that at that time, the aviation industry was concerned with plane crashes, which could result in serious personal injuries and deaths and thus expose the industry to financially devastating claims.³⁷ In *King v. Bristow Helicopters LTD.* and *Morris v. KLM* it was reiterated that international uniformity of interpretation of Article 17 is highly desirable. Furthermore, it has been stated that:

It follows from the scheme of the Convention, and indeed from its very nature as an international trade law convention, that the basic concepts it employs to achieve its purpose are autonomous concepts. It is irrelevant what bodily injury means in other contexts in national legal systems. The correct inquiry is to determine the autonomous or independent meaning of "bodily injury" in the Convention.³⁸

In *Deep Vein Thrombosis* Lord Scott of Foscote stated that:

It is not the function of any court in any of the Convention countries to try to produce in language different from that used in the Convention a comprehensive formulation of the conditions which will lead to article 17 liability, or of any of those conditions. The language of the Convention itself must always be the starting point. The function of the court is to apply that language to the facts of the case in issue.³⁹

In *Olympic Airways v. Husain*,⁴⁰ a decision stemming from the US Supreme Court, Scalia J. observed in dissent that it is paramount to consider the decisions of other State parties while interpreting treaty provisions. He stated – “[u]nless there has been an accident, there is no liability, whether the claim is trivial, or cries out for redress”. Finally, he postulated that:

A legal construction is not fallacious merely because it has harsh results. The Convention denies a remedy, even when outrageous conduct and grievous injury have occurred, unless there has been an ‘accident’ ... It is

36 Howard Sokol, “Final Boarding Call – The Warsaw Convention’s Exclusivity and Preemption of State Law Claims in International Air Travel: *El Al Israel Airlines, LTD. v. Tseng*”, *St. Jones Law Review*, Volume 74, Winter 2000, Number 1, p. 249.

37 *ibid.*

38 *King v. Bristow Helicopters LTD.; Morris v. KLM*, [2002] UKHL 7, para. 4.

39 [2005] UKHL 72, para. 12.

40 (2004) 540 US 644, 124 S Ct 1221.

a mistake to assume that the Convention must provide relief whenever traditional tort law would do so.⁴¹

In *Air Link Pty Ltd. v. Paterson*⁴² Allsop P and Ipp JA of the New South Wales Court of Appeal held, *inter alia*, that the passenger’s injury must be caused by an unexpected or unusual event external to the passenger to be caused by an “accident”. In addition, they opined that the externality does not exclude an event, which involves the participation of the passenger, as long as the event was unexpected or unusual and was caused otherwise than by the passenger.⁴³

The requirement that the accident should be external to the passenger was tested in a number of other cases in the common law jurisdictions. How the requirement for externality may affect the outcome of the case is scrutinized below. Some of these cases include claims for spilling of hot drinks.⁴⁴ The first case examined is *Air France v. Saks*, a decision of the US Supreme Court, which laid the foundation for interpretation of the term “accident”; it was followed and confirmed by courts in the US and abroad.

2.1 Air France v. Saks

In that case,⁴⁵ a passenger felt severe pressure and pain in her left ear during the flight. Shortly afterwards, she consulted a doctor, who concluded that she had become permanently deaf in her left ear. She claimed that her hearing loss was caused by negligent maintenance and operation of the jetliner’s pressurization system. It was held by the Court that:

Liability under Article 17 arises only if a passenger’s injury is caused by an unexpected or unusual event or happening that is external to the passenger, and not where the injury results from the passenger’s own internal reaction to the usual, normal, and expected operation of the aircraft, in which case it has not been caused by an accident under Article 17.

The Court added that this definition should be flexibly applied after assessment of all the circumstances surrounding a passenger’s injuries. In reaching

41 *ibid.*, pp. 7–8.

42 [2009] NSWCA 251.

43 *ibid.*

44 See in particular *Buckley v. Monarch Airlines*, [2013] 2 Lloyds Rep 235 and *Lugo v. American Airlines*, (686 F Supp 373) and *Medina v. American Airlines*, US District Court, Southern District of Florida, Case No. 02-22133-CIV-COOKE/BROWN.

45 470 U.S. 392 (1985).

this conclusion, the Court scrutinized Article 17, including the *travaux préparatoires* and cases decided by the courts in other jurisdictions. It concluded that the text of Article 17 refers to an accident, which caused the passenger's injury, and not to an accident, which *is* (emphasis added) the passenger's injury, stressing that this distinction is significant. It was recognized that the meaning of "accident" is defined neither in the Convention, nor in the *travaux préparatoires*. Thus, in order to determine the meaning of the term "accident" in Article 17, the court referred to its French legal meaning since the Warsaw Convention was drafted in French. This examination revealed that the term "accident" in terms of its French legal meaning differs from the meaning of the term in Great Britain, Germany, or the United States. Thus, while the word "accident" is often used to refer to the event of a person's injury, it is also sometimes used to describe a cause of injury, and when the word is used in this latter sense, it is usually defined as a fortuitous, unexpected, unusual, or unintended event. The Court concluded that the text of the Convention suggests that the passenger's injury must be caused by an unexpected or unusual event.

The Court also noted that the causes of liability for persons were intended to be different from the causes of liability for baggage. As gleaned from *travaux préparatoires* – a passenger's injury must be caused by an accident, since "event" is too broad and could lead to an increase in claims.⁴⁶ The Court considered jurisprudence from other State parties to the Convention and found that:

European legal scholars have generally construed the word "accident" in Article 17 to require that the passenger's injury be caused by a sudden or unexpected event other than the normal operation of the plane.⁴⁷

The Court emphasized that any amendments to Article 17 of the Warsaw Convention can only be done by the State parties, and until then, this article cannot encompass carrier liability for injuries that are not caused by accidents.

The US Supreme Court's conclusion in *Saks*, and in particular, the opinion of O'Connor J regarding the interpretation of "accident" has been accepted and widely followed in the United States and in the courts of other State parties. The importance and authority of this judgment has been particularly mentioned and affirmed by the English courts in *Deep Vein Thrombosis*, *Morris v. KLM*, *Barclay v. British Airways Plc*⁴⁸ and *Labbadia v.*

46 ICAO Doc. Doc.9775-EN International Conference on Air Law Volume II – Documents, p. 154.

47 *Air France v. Saks*, 470 U.S. 392, (1985), p. 405.

48 [2008] EWCA Civ 1419.

Alitalia.⁴⁹ However, Lord Scott of Foscote in *Deep Vein Thrombosis* criticized the approach taken in *Olympic Airways v. Husain*⁵⁰ in that, what was interpreted in that case was not the language of the convention but rather the language of the leading judgment interpreting the convention (meaning *Saks*). His Lordship rightly mentioned that this approach might distort the essential purpose of the judicial interpretation.⁵¹

2.2 *Deep Vein Thrombosis*

Lord Scott of Foscote in his judgment made a number of important findings. From the outset, he repeated the importance of adopting a uniform interpretation of the Convention by the courts of the respective State parties.⁵² He further pointed out that the claimant does not need to establish the negligence of the carrier. At the same time, he stressed that in accordance with previous authorities, if a remedy for the injury is not available under the Convention, it is not available at all. In a similar manner as in *Saks*, he distinguished between the terms “accident” and “occurrence” in relation to baggage or cargo. Although both terms contemplate that something has happened, the term “occurrence” is more general. In contrast, the term “accident” denotes an occurrence having particular characteristics. Thus, the courts in several decided cases had to establish whether the occurrence qualified as an “accident”, and thus fell under Article 17.⁵³

In continuing the analysis of Article 17 Lord Scott of Foscote distinguished between bodily injuries and the “accident” which caused the bodily injury. He observed that:

The “unintended and unexpected” quality of the happening in question must mean “unintended and unexpected” from the viewpoint of the victim of the accident. It is the injured passenger who must suffer the “accident” and it is from his perspective that the quality of the happening must be considered.⁵⁴

He summarized that to obtain a remedy under Article 17 three requirements must be met. First, that a passenger sustained death, wounding or other bodily

49 [2019] 2 Lloyd's Rep 273.

50 (2004) 540 US 644, 124 S Ct 1221.

51 *Deep Vein Thrombosis* [2005] UKHL 72, para. 22.

52 *ibid.*, para. 1.

53 *ibid.*, para. 6 and 7.

54 *ibid.*, para. 14.

injury. Secondly, that an accident took place on board the aircraft or in the course of any of the operations of embarking or disembarking. Thirdly, that the death, wounding or bodily injury was caused by the accident, where “accident” is in reference to the cause rather than the injury itself.⁵⁵

In *Labbadia v. Alitalia*⁵⁶ the Court examined the term “accident” within the meaning of Article 17(1) of the Montreal Convention in a similar vein as in the above decisions. It was described as an autonomous concept; hence, for the sake of uniformity and certainty, domestic law principles and domestic rules of interpretation do not apply. It was also reiterated that as the Montreal Convention is an international instrument the definition of “accident” has been the subject of judicial interpretation in many jurisdictions. In that case, the components of an “accident” were also examined, and included the following: Was there an event? If so, was the event unusual, unexpected or untoward from the Claimant’s perspective? Was the event external to the Claimant?⁵⁷ As discussed above, this corresponds to the analysis of Article 17 made by other courts in similar cases.

2.3 *Barclay v. British Airways Plc*

A passenger suffered an injury to her right knee when she slipped on a plastic strip embedded in the floor of the aircraft while walking to her seat. There was no explanation for the cause of the slipping. The Court of Appeal dismissed the appeal and held that the term “accident” in Article 17(1) contemplated a distinct event, not being any part of the usual, normal and expected operation of the aircraft, which happened independently of anything done or omitted by the passenger. The causative event had to be “external” to the passenger. The court held that there was no accident that can be considered as external to the claimant. It was an instance of the passenger’s particular, personal or peculiar reaction to the normal operation of the aircraft.⁵⁸

The court stated further that the appellant must show that her injuries were caused by an accident within the meaning of Article 17(1). Thus, the scope of the term “accident” is critical since it cannot mean any occurrence on the aircraft, which causes injury. An example is when a member of the cabin staff slips in the gangway and spills hot coffee, burning a passenger. Finally, it was stated that this interpretation is consistent with the leading authorities

55 *ibid.*, para. 29.

56 [2019] 2 Lloyd’s Rep 273.

57 *ibid.*, para. 39.

58 *Barclay v. British Airways Plc*, [2008] EWCA Civ 1419, paras. 10 and 12.

from *Saks* onwards, which emphasize the importance of the causative event being "external" to the passenger.⁵⁹

2.4 **Buckley v. Monarch Airlines Ltd**

Mrs. Buckley asked for a warm cup of water to make a chocolate drink, which she kept in her handbag. She opened the sachet of hot chocolate and poured the powder into the cup. Shortly thereafter, she realized that the plastic cup had slid from the table onto her lap. She stated that she did not touch the cup or had begun to stir the powder into the water. According to her explanation, the tray table "moved up and down and was slightly flexible". The defendant objected that there was an "accident" for the purposes of Article 17 of the Convention and that the attendant checked that the lid of the cup was secure, and had placed the cup on the tray table in front of Mrs. Buckley, warning her that the cup contained hot water.

Against this background, the Court examined whether the injury was caused by "accident". It held that it was not necessary for the claimant to prove that the defendant had been negligent, but instead had to demonstrate that: (I) she suffered injury as a result of (II) an accident (III) on board the aircraft.⁶⁰ In other words, the claimant must establish a causal link between the incident and the injury, rather than to prove fault on the part of the defendant. Furthermore, the claimant must first establish facts, which amount to an "unexpected or unusual event" and then show that the event was "external", namely, that it was not caused or contributed to by the claimant herself.

As the injury was caused by the spillage of hot liquid, this is not a case of a "passenger's own internal reaction", nor is there any evidence to suggest that the spillage was caused by the "expected operation of the aircraft".⁶¹ The Court further found that the claimant probably removed the lid from the cup in order to add the chocolate powder and thus there was at least one occasion on which the claimant touched the cup.⁶² It concluded that the claimant had failed to establish that an "accident" which was external to the claimant in the sense of having happened independently of anything done by her. Thus, her claim was dismissed.

59 *ibid.*, para. 35.

60 *Buckley v. Monarch Airlines*, [2013] 2 Lloyds Rep 235, para. 36.

61 Para. 40.

62 Para. 50.

2.5 **Diaz Lugo v. American Airlines, Inc.**

In a decision rendered by the US District Court of Puerto Rico,⁶³ a passenger Ms Figueroa suffered injuries due to a cup of coffee sliding from a seat-back table and spilling over the claimant's lap. There was no suggestion that the passenger herself had knocked the cup. After the take-off, Ms Figueroa asked for a cup of coffee. She did not notice when the flight attendant had placed the cup on the table. While she was arranging some papers, the flight attendant asked if she wanted cream and sugar with the coffee. With a slight head movement, Ms Figueroa looked at the flight attendant and indicated – “yes”. Then, the coffee cup spilled on Figueroa's lap causing scalding. The Court found that the coffee spill was an unusual or unexpected event external to Figueroa and thus was an “accident” within the meaning of Article 17. It added:

When a person boards a plane, he does not expect that a cup of coffee will spill over his lap. The usual operation of an airplane does not require passengers to be spilled with hot coffee.⁶⁴

The Court pointed out that Ms Figueroa's injuries did not result from her internal reaction to normal airplane operations, but were caused by an unexpected event external to her, *i.e.*, coffee spilling over her body. The Court rejected the argument presented by the airlines that the spill was caused due to the plane's inclination, which is not an Article 17 “accident” and stated that the passenger must be able to prove that some link in the chain was an unusual or unexpected event external to the passenger. The Court concluded that the coffee spill is a link that meets that description but also added that the defendant Airline could avoid some or even all liability if it could prove that the passenger caused or contributed to the spill of the coffee.⁶⁵

2.6 **Medina v. American Airlines**

In that case,⁶⁶ Dr. Medina was served coffee during the flight. The flight attendant placed the cup of coffee with no lid in front of Dr. Medina on the folding tray table following which, the coffee spilled and the passenger suffered serious scalds, which took months to heal, and left visible scars. There was no evidence of any turbulence or other unexpected movement of the aircraft that caused or

63 686 F. Supp. 373 (D.P.R. 1988).

64 *ibid.*, p. 375.

65 *ibid.*, p. 376.

66 *Medina v. American Airlines*, US District Court, Southern District of Florida, Case No. 02-22133-CIV-COOKE/BROWN.

contributed to the accident. The Court concluded that American Airlines had met its burden of proving not only that Dr. Medina was comparatively negligent in causing the accident, but that he was its sole proximate cause. The only evidence there was, established that Dr. Medina attempted to drink it when, by his own admission, it was too hot to handle and he could have put it back on the tray and/or allowed some cooling to take place. The Court concluded that the Airline took all “necessary measures” to prevent the accident as required by Article 20(1) of the Warsaw Convention. It held further that the claim was based only on the testimony of the passenger; what he thought was “too hot” and what every other person may have thought was “too hot” does not create an issue that required any response.

Another interesting case that was settled with Ryanair for EUR 150,000 concerned an eight-year old girl who suffered serious scalding due to a hot chocolate spill. It took some time for her to recover and the incident left scars. As claimed, she took a sip of hot chocolate but due to a very high temperature, the paper cup fell on top of her. It was alleged by the claimant that Ryanair failed to provide a safe method for serving hot beverages suitable for minors; also, the child was not warned about the danger of hot drinks. Even though Ryanair denied all claims, they agreed to settle the claim without admission of liability.⁶⁷

3 EU Law and Jurisprudence on Carrier’s Liability and Air Passengers’ Rights

3.1 *Background*

At the outset, it is vital to understand the relationship between the EU and the Montreal Convention. The EU is a party to the Montreal Convention, together with all the EU Member States, and thus the Montreal Convention belongs to the so-called “mixed agreements”.⁶⁸ The convention was approved on behalf of the European Community by Council Decision 2001/539/EC, in which the matters covered by the Montreal Convention fall under the shared competence of the Community and its Member States. The Decision notes that the EU strives

67 Mary Carolan, ‘Girl (8) settles case with Ryanair for €150,000 over hot chocolate spill’, May 28, 2019, <www.irishtimes.com/news/crime-and-law/courts/high-court/girl-8-settles-case-with-ryanair-for-150-000-over-hot-chocolate-spill-1.3907158> accessed 31 May 2021.

68 Article 53(2) of the Montreal Convention entitles a Regional Economic Integration Organisation to join the Convention in the same way as a sovereign State.

for uniformity in the field of air carriage, but with the focus on application at the EU level.

In recent years there has been a significant number of preliminary rulings in the field of air transportation, in which the Court interpreted both the Warsaw and Montreal Conventions. Those cases illustrate the Court's approach to the interpretation of these conventions and raise various legal issues. The EU legislation on air carriage includes several regulations, among them Regulation (EC) No 889/2002, Regulation (EC) No 261/2004,⁶⁹ and Regulation (EC) No 1107/2006.⁷⁰ Notably, Regulation (EC) No 889/2002 implements the Montreal Convention regarding air carrier liability in cases of accidents. Article 3 provides that "the liability of a Community air carrier in respect of passengers and their baggage shall be governed by all provisions of the Montreal Convention relevant to such liability".

Regulation (EC) No 261/2004 establishes common rules on compensation and assistance to passengers in the event boarding is denied and of cancellation or long delays of flights. In the Preamble, a high level of protection for passengers is mentioned. As gleaned from the CJEU rulings, this objective has been continuously repeated by the Court as a ground for justification of its approach to the interpretation of the convention.⁷¹ Regulation (EC) No 261/2004 became a contentious issue in the *IATA* and *ELFAA* case.⁷² This landmark judgment laid the foundation for subsequent rulings concerning the interpretation of the Regulation and its compatibility with the Montreal Convention.⁷³ The analysis of the cases decided by the CJEU, leads to the conclusion that the Court of Justice made an attempt to interpret substantive provisions of the

69 Regulation (EC) No 889/2002 of the European Parliament and of the Council of 13 May 2002 amending Council Regulation (EC) No 2027/97 on air carrier liability in the event of accidents; Regulation (EC) No 261/2004 of the European Parliament and of the Council of 11 February 2004 establishing common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights, and repealing Regulation (EEC) No 295/91.

70 Regulation (EC) No 1107/2006 of the European Parliament and of the Council of 5 July 2006 concerning the rights of disabled persons and persons with reduced mobility when travelling by air.

71 Thomas J Whalen, 'The New Warsaw Convention: the Montreal Convention', *Air and Space Law*, Vol. 25 (1), 2000, pp. 14–15; see also Resolution on IATA Core Principles on Consumer Protection, adopted on the 69th IATA Annual General Meeting.

72 Case C-344/04, *IATA and ELFAA* [2006] ECLI:EU:C:2006:10.

73 Joined Cases C-402/07 and C-432/07 *Christopher Sturgeon and Others v. Condor Flugdienst GmbH and Stefan Böck and Cornelia Lepuschitz v. Air France SA. (Sturgeon)*, Joined Cases C-581/10 and Case C-629/10 *Nelson, TUI Travel and Others* [2012] ECLI:EU:C:2009:716 (*Nelson*).

Montreal Convention such as material and non-material damage, which is the prerogative of the national courts of State Parties. The exclusivity of the cause of action laid down in Article 29 of the Convention was hardly mentioned by the Court, despite the fact the EU is also a party to the Montreal Convention and has the same obligations under international law to perform treaties in good faith and not invoke the provisions of its internal law.

3.2 Decision GN v. ZU (Niki Luftfahrt)

A brief description of the facts of the case is presented below.⁷⁴ In 2015, GN, the applicant, a six-year old girl, travelled with her father, HM, from Spain to Austria. The flight was operated by Niki Luftfahrt. During the flight, HM was served a cup of hot coffee which, while it was placed upon the tray table in front HM, tipped over onto his right thigh and then onto GN's chest, causing her second-degree scalding. It could not be established whether the cup of coffee tipped over due to a defect in the folding tray table on which it was placed or due to vibration of the aircraft.⁷⁵ The claim for compensation for bodily injuries, estimated at EUR 8500 was based on Article 17(1) of the Montreal Convention. The defendant asserted that there was no accident in the context of the Montreal Convention, and thus, it is not liable under Article 17. The defendant also submitted that the concept of “accident” within the meaning of Article 17(1) requires the materialization of a hazard typically associated with aviation, a condition that was not fulfilled in this case.⁷⁶

The Regional Court upheld the applicant's claim for compensation. It was held that the damage sustained by GN was due to an accident caused by an unusual event that was based on an external action. It was further added that a hazard typically associated with aviation had materialized, since an aircraft is subject to varying, operationally inherent inclinations that could result in objects placed on a horizontal surface in the aircraft starting to slide, without any special manoeuvres being necessary for that to occur.⁷⁷ Subsequently, the Higher Regional Court in Vienna set aside the judgment delivered at first instance based on its analysis that Article 17 covers only accidents triggered by a hazard typically associated with aviation. The decision was appealed on a point of law (*Revision*) before the *Oberster Gerichtshof* (Supreme Court) Supreme Court which decided to stay the proceedings.⁷⁸

74 Case C-532/18, *GN v. ZU*, [2019] ECLI:EU:C:2019:1127 (*Niki Luftfahrt*).

75 *ibid.*, paras. 13–15.

76 Paras. 16 and 17.

77 Paras. 18–19.

78 Paras. 26–28.

The *Oberster Gerichtshof* (Supreme Court) stated that spillages of hot drinks or food onto the body of a passenger are recognized in the legal literature as “accident” in light of Article 17(1) of the Montreal Convention. Thus, this approach would result in the liability of the carrier. The Court of Justice by firstly examining Recitals 7 and 10 of Regulation (EC) No 889/2002 had submitted that the Regulation and the Montreal Convention could not be interpreted to weaken the protection of passengers and its dependants. The Court admitted that the concept of “accident” is not defined in the Montreal Convention. Therefore, it must be interpreted in its ordinary meaning in the light of the object and purpose of that convention.⁷⁹ It was found that the ordinary meaning given to the concept of “accident” is that of an unforeseen, harmful and involuntary event.⁸⁰ In its Judgment, the Court also made reference to paragraph 3 of the preamble to the Montreal Convention, where the States Parties, presumably recognize “the importance of ensuring protection of the interests of consumers in international carriage by air and the need for equitable compensation based on the principle of restitution”.⁸¹ Moreover, the limits established by the Convention enable passengers to be compensated easily and swiftly, without imposing a heavy compensation burden on air carriers.⁸² Finally, the Court ruled that:

Article 17(1) must be interpreted as meaning that the concept of ‘accident’ within the meaning of that provision covers all situations occurring on board an aircraft in which an object used when serving passengers has caused bodily injury to a passenger, without it being necessary to examine whether those situations stem from a hazard typically associated with aviation.

The Opinion of Advocate General Saugmandsgaard Øe is instructive in this regard.⁸³ As pointed out, the Court of Justice is faced with the definition of “accident” within the meaning of Article 17(1) of the Montreal Convention for the first time. The AG noted that neither Article 17, nor the *travaux préparatoires* provide any requirement that the event was caused by the hazard typically associated with aviation or has a causal link with the nature or the operation of the aircraft. The AG presumes that the drafters of the convention would have

79 Paras. 24–25.

80 Para. 35.

81 Para. 26.

82 Para. 40.

83 AG Opinion in Case C-532/18, *GN v. ZU*, ECLI:EU:C:2019:788.

included that in the convention explicitly.⁸⁴ In his Opinion, the AG refers to Article 31 of the Vienna Convention, to point out that the concept of “accident” under Article 17(1) of the Montreal Convention must be interpreted in accordance with the “ordinary meaning to be given to [the term concerned]”. A positive observation of the AG related to the necessity to consider the interpretation of that concept employed by various courts of state parties, in order to draw any inspiration from those judicial precedents, even though they are not binding for the Court.⁸⁵ As gleaned from the Opinion:

The victim must demonstrate that the event that occurred during the period of carriage by air, whether on board the aircraft or during the operations of embarking or disembarking, and that caused the physical injury relied on, first, is ‘sudden’ or ‘unusual’ and, second, has an origin ‘external’ to the person of the passenger concerned.⁸⁶

Additionally, a harmful event that is the result of the victim’s own reactions to the usual, normal and foreseeable functioning of the aircraft, or which was caused by the victim’s pre-existing state of health, cannot be classified as an “accident”. Here, the AG refers to the leading judgement of the U.S. Supreme Court – *Air France v. Saks*⁸⁷ on the interpretation of “accident” and proposed that the Court of Justice might apply the same criteria in the current case.⁸⁸ The AG also referred to two other US cases where it was held that the spilling of a hot beverage on a passenger on board an aircraft constituted an “accident” within the meaning of Article 17 of the Warsaw Convention.⁸⁹ Another positive tendency in the Opinion is the mention of “uniformity” as the purpose of the Montreal Convention, and in particular, Article 29 dealing with the exclusivity of the cause of action under the Montreal Convention.⁹⁰ Finally, the AG proposed that the Court answer the question in the following way:

Article 17(1), must be interpreted as meaning that any event that has caused the death or bodily injury of a passenger and that occurred on

84 *ibid.*, para. 38.

85 *ibid.*, para. 43.

86 *ibid.*, para. 44.

87 *ibid.*

88 *ibid.*, para. 45.

89 *Diaz Lugo v. American Airlines, Inc.*, (686 F. Supp. 373 (D.P.R. 1988) and *Wipranik v. Air Canada, and Others*, (2007 WL 2441066).

90 AG Opinion, para. 46.

board the aircraft, or in the course of the operations of embarking or disembarking, which is sudden or unusual and has an origin external to the person of the passenger concerned, is an ‘accident’ capable of rendering the air carrier liable, without it being necessary to examine whether the event is attributable to a hazard typically associated with aviation or is directly connected with aviation.⁹¹

If the judgment and the Opinion are compared, it is obvious that the Court did not take into consideration some of the propositions made by the Advocate General. In particular, the AG was explicit about the externality requirement, whereas the Court did not even mention it. Also, the AG referred to other cases on similar issues, but the Court did not embark on any such discussion. Even though it is not compulsory for the Court to follow the AG’s Opinion, in this particular case, it seems that the Advocate General was more precise and consistent with regard to the existing jurisprudence. One final remark is the use of the word “involuntary” in relation to accident which was not mentioned by the Advocate General. Only on one occasion was the word “accident” mentioned which was in footnote 46 where there is reference to *vocabulaire juridique*, apparently a translation from French. However, the Court is determined to use it in the Judgment, which seems to be problematic and has not been used by other courts in describing “accident”.

3.3 *Reaction to and Criticism of the Judgment*

It is not surprising that the ruling prompted discussion among scholars and lawyers who raised concerns about the interpretation of Article 17(1) by the Court of Justice. In their commentary on the judgment, one duo of authors have stated that airlines might be concerned by the heavy pro-consumer approach taken by the Court of Justice, which was already evident from the application of Regulation (EC) No 261/2004, and now moving towards the air carriers’ liability cases.⁹²

A remark of another author is that the judgment lacks clarity and was based on a purposive interpretation of the convention and its incorporation into the EU legal order rather than on the textual analysis of the language of the Convention.⁹³ The cited author recalled that the English Courts have also

91 *ibid.*, para. 62.

92 Simon Phippard and Sophie Stoneham, ‘ECJ: Airlines are Liable for Accidents to Passengers in Flight in the Absence of an Aviation-Related Hazard’, 2020, *TLQ* 59.

93 Jack Harding, ‘1 Chancery lane TATLA Newsletter’, <https://1chancerylane.com/wp-content/uploads/2020/01/TATLA-Newsletter-January-2020.pdf>, accessed 31 May 2021.

rejected the requirement that the accident should relate to a risk inherent in air travel but have instead focused on the need for externality as distinct from the passenger’s own conduct or reaction to the normal operation of the aircraft.⁹⁴

A notable scholar is critical of the judgment as being “ridden with policy arguments” and has pointed to the fact that the CJEU mainly focused on the proclaimed aim of the Montreal Convention to protect passengers. The same scholar submits that the Court’s reasoning is rather weak and provides no analysis of the *Saks* case, which remains the main authority on what constitutes an accident.⁹⁵

In another comment regarding this judgement, it was observed that the Court did not consider the case law from other State Parties, or that part of the AG’s Opinion which mentions the widely accepted definition of accident as a sudden or unusual event that is external to the passenger concerned. The Court’s definition of accident as being “an unforeseen, harmful and involuntary event” leaves absent the requirement of externality emphasized by the US and UK courts’ definition of “an unexpected or unusual event or happening that is external to the passenger”.⁹⁶ Another commentator has referred to Lord Phillips in *Morris v. KLM* who already stated that the “accident” does not have to relate to the operation of the aircraft or be a characteristic of air travel.⁹⁷ The judgment was also characterized as “regrettable and poorly reasoned” for the same above-noted reasons. The same author has expressed curiosity over whether this decision can distort the certainty and uniformity of that matter. In case it does, perhaps there is a necessity to revise Article 17 to reinforce the *Saks* interpretation.⁹⁸

Before closing this discussion, it is necessary to mention another judgment regarding interpretation of “accident” that has recently been rendered by the Court of Justice and is relevant to the present discussion. In Case C-70/20 *YL v. Alternhein Luftfahrt GmbH*,⁹⁹ a passenger claimed suffering a spinal disk

94 See in particular *Morris v. KLM*, [2002] 1 Lloyd’s Rep 745.

95 Georgios Leloudas, ‘A “Risk Characteristic To Air Travel” and Article 17 of The Montreal Convention 1999: Is The Talmudic Debate Resolved by the CJEU?’, 29 December 2019, <https://iistl.blog/2019/12/29/a-risk-characteristic-to-air-travel-and-article-17-of-the-montreal-convention-1999-is-the-talmudic-debate-resolved-by-the-cjeu/>, assessed 31 May 2021.

96 Christopher Loxton, ‘Slips on Snow and Coffee Spills – Divergent Meaning of ‘Accident’ Under the Montreal Convention?’, 2020, *TLQ* 81.

97 Robert Lawson QC, ‘The Montreal Convention 1999 at 21: Has it Come of Age or Passed its Sell-By Date?’, *Air and Space Law* 45, No. 3, 2020, p. 271.

98 *ibid.*

99 ECLI:EU:C:2021:379.

injury because of the hard landing and sought compensation in the amount of EUR 68,585. The airline objected that it was an accident and that hard landings are safer in a mountainous environment and within the normal operating range of the aircraft. In its Judgment, the Court referred to the case of *GN v. ZU* for the first time reiterating its initial interpretation of “accident” as unforeseen, harmful and involuntary event. In para. 35 the Court made an important statement as follows:

It is necessary to reject from the outset, however, an interpretation of the concepts referred to in the preceding paragraph based on the perspective of each passenger. In so far as perspectives and expectations may vary from one passenger to another, such an interpretation could lead to a paradoxical result if the same event were classified as ‘unforeseen’ and, therefore, as an ‘accident’ for certain passengers, but not for others.

The above statement is incompatible with the well-established position made in *Deep Vein Thrombosis* mentioned earlier where it was held – “It is the injured passenger who must suffer the ‘accident’ and from his perspective that the quality of the happening must be considered”.¹⁰⁰ It reveals that the Court’s interpretation implies a shift towards the assertion that negligence must be proven instead of focusing on whether there was an accident suffered by the passenger. Changing the commonly accepted interpretation of “accident” under Article 17 can lead to serious legal implications including the application of domestic negligence concepts which would be a highly undesirable result.¹⁰¹

4. Concluding Remarks

In concluding this chapter, several observations and resulting submissions are made by the author. Regarding the judgment in *Niki Luftfahrt*, it is observed that the numerous decisions stemming from the Court of Justice and hinging

¹⁰⁰ [2005] UKHL 72, para.14.

¹⁰¹ Georgios Leloudas, ‘Foreseeability and Article 17 of the Montreal Convention 1999: the CJEU has Stepped on a Very Slippery Slope’, 21 May 2021, <https://iistl.blog/2021/05/21/foreseeability-and-article-17-of-the-montreal-convention-1999-the-cjeu-has-stepped-on-a-very-slippery-slope/>, accessed 31 May 2021; see also Jack Harding, ‘The Montreal Convention – a Double-Edged Sword’, 2021, *TLQ* 112.

on the Montreal Convention have been largely debated and criticized.¹⁰² It is indisputable that the CJEU’s approach to interpretation of international conventions is somewhat disconcerting. It can be perceived as an obstacle to the uniform application and interpretation of the convention. Courts in some Member States have decidedly disagreed with the CJEU’s reasoning and are unwilling to apply its rulings in subsequent cases, whereas others have followed them. There is a further concern that the Court can establish and endorse its own unique approach to interpretation of the autonomous concepts of the Montreal Convention, which poses the potential risk of creating conflicts at both the EU and international levels. An outcome is that courts in the Member States will be under an obligation to comply with these rulings based on the supremacy of EU law. In this regard, it is instructive to refer to Article 27 of the Vienna Convention on the Law of Treaties 1969 which provides that “a party may not invoke the provisions of its internal law as justification for its failure to perform a treaty”. Article 31 is also of relevance and provides that “a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose”.

Be that as it may, it is advisable that the Court is more careful in its approach to interpreting the Montreal Convention regardless of it being adopted as EU law, and should consider judgments on similar issues made by the highest courts in other State Parties to the Montreal Convention. Otherwise, there is a serious risk that the Court will create a parallel pro-European interpretation of the convention, different from already established jurisprudence on the same issues. This in turn can undermine uniformity and legal certainty.

As seen from the above discussion, the notion of “accident” under the Montreal Convention has been dealt by the highest courts in various State Parties to the convention. The outcome of each case depended on the facts and particular circumstances in which the alleged event happened. Whether that event amounted to an “accident” under Article 17 of the Montreal Convention was carefully examined in each of the case. A common observation made by the majority of courts is the requirement of externality, *i.e.*, the accident must be external to the passenger in order to meet the criteria of Article 17. It was also evident that on some points, there was disagreement among the courts or sometimes even among the judges who rendered dissenting opinions on

102 O. Pollicino, ‘Legal Reasoning of the Court of Justice in the Context of the Principle of Equality between Judicial Activism and Self-Restraint’, *German Law Journal*, issue 5, no. 3, 2004, p. 283.

particular issues. This leads to the conclusion that the issue is at once crucial and complex. It is excellently described by a notable commentator:

That the highest courts in the U.S., U.K., and Australia which are all influential common law jurisdictions have spoken on the subject which is of some importance to the development of Air Law worldwide. That these courts have disagreed so fundamentally on these important issues however is troubling. This Clash of the Titans does not square well with a Convention intended for the Unification of Certain Rules for International Carriage by Air.¹⁰³

With due regard to the above statement, perhaps it is time to re-open this question to the State parties to the convention in order to re-consider Article 17 and clarify the notion of “accident” internationally. Be that as it may, uniformity and legal certainty must always be the goals for any convention that govern a global industry. It remains to be seen, whether the author’s proposal to amend Article 17 is practically feasible. Such an initiative will seemingly attract both supporters and opponents. As optimistically proposed by Callinan J. in *Povey v. Qantas Airways Limited* decided by the High Court of Australia:

Perhaps the time has come to revise these instruments in the light of increased knowledge and improved technology, in the interests both of consumers, and greater certainty of application.¹⁰⁴

Otherwise, the Court of Justice of the European Union can do this unilaterally in the years to come and create parallel jurisprudence on the Montreal Convention as was illustrated in *Niki Luftfahrt* and in a more recent case *YL v. Altenrhein Luftfahrt*. That would be manifestly undesirable.

103 Paul S Dempsey, ‘Accidents & Injuries in International Air Law: The Clash of the Titans’, October 24, 2011, *Korean Journal of International Law*, pp. 235–270; *Annals of Air & Space Law*, Vol. XXXIV, Institute of Air & Space Law, McGill University, 2009, available at SSRN: <https://ssrn.com/abstract=1948757>, accessed 31 May 2021.

104 [2005] HCA 3, 23 June 2005 M167/2004.

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Admissibility of Air and Marine Accident Investigation Records in Arbitration and Litigation

Jason Chuah

1 Introduction

Transport accident investigations are a matter for administrative law, generally speaking. It is largely for the state to regulate the purposes, powers and procedures for transport accident investigation agencies. These agencies or entities require state empowerment because of their potentially interventionist and intrusive powers. Although discretionary powers are a needful attribute of the investigative process, these powers need to be properly and legitimately provided for. That is however not a purely domestic law matter, it is argued. The provisions of the relevant international transport conventions and the workings of the international transport organisations (such as the International Maritime Organisation and the International Civil Aviation Organisation) are necessarily part and parcel of in the legal framework for the operations of these investigation bodies. It follows thus that the findings and reports of these investigative bodies, given their role in the safety of international transport, tend to carry much weight and imprimatur.

The focus of the chapter is largely on the purpose/s laid down in law for these bodies – involving air and marine casualties. The scope of the research is on air and maritime transportation as the international dimension is clearly more pronounced. The research problem is this. It seems incontrovertible that one of the more important aspects of an independent marine accident investigatory process is the production of an accident or casualty report at the conclusion because it enables lessons to be learnt and mistakes avoided in the future.¹ However, there has been a growing call to use these reports or findings² in judicial and arbitral proceedings to prove liability or fault, or, at the very least, causation. Indeed, it is quite understandable why litigants would wish to use the records – the evidence was produced by neutral, independent publicly appointed experts whose reputation was unimpeachable. Moreover, and especially, in an adversarial litigation system as is an inalienable feature of

1 See Malmberg, Lars-Göran, *Haveriutredningar – En rättslig studie över undersökningar i samband med olyckor i luften och till sjöss*, (2000) at 30.

2 Note that these findings are both of fact and opinion.

the common law system, being able to rely on evidence produced using public funds is exceedingly cost efficient.

A distinction perhaps might be made between the report and the records and documents in the possession of the respective investigation bodies in question. Broadly speaking the final reports are usually published and as they are in the public domain, a court or tribunal could take judicial notice of them.³ However, where they are sought to be used to prove fault or liability, special considerations might apply – after all, there is the exhortation from the IMO and ICAO that the accidents and incidents investigations are intended to apportion blame or liability.⁴ Other records, on the other hand, are not as a rule published. Although the policy objectives might be similar, different legal considerations might apply when deciding whether they could be compelled or admitted in arbitral and judicial proceedings. Thus, other than the issue of the evidence having the propensity to apportion blame or liability the court may, depending on the domestic systems, need to consider issues of data protection, privacy and prejudice.⁵

This chapter begins with an evaluation of the workings of these air and marine investigation bodies with a view of establishing what might constitute the general international consensus as to the purposes and processes of these bodies. This is followed up with a focus on legal provisions, drawing from different common law jurisdictions, dealing with the powers of the marine accident investigation and the air accident investigation bodies. As regards the methodology, cases where legal challenges have been made demanding production of accident investigation records (as against reports which are public) from

3 For instance, for the purposes of explaining the timeline, or values involved, or seamanship standards, or technical data etc. See for example the following recent UK cases concerning MAIB reports – *Warner v. Scapa Flow Charters* [2016] ScotCS CSOH101; *Keynvor Morlift Ltd v. The Vessel “Kuzma Minin”* [2019] EWHC 3557 (Admlty); *Margolle & Anor v. Delta Maritime Company Ltd. & Ors* [2002] EWHC 2452 (Admlty); *Davis v. Stena Line Ltd.* [2005] EWHC 420 (QB); *Lacey v. Palmer Marine Services Ltd & Anor* [2019] EWHC 112 (Admlty); *Nautical Challenge Ltd v. Evergreen Marine (UK) Ltd.* [2017] EWHC 453 (Admlty). Note though that in the UK, prior to 2005, MAIB reports were generally treated as entirely admissible. Most of the decisions do not concern the use of the reports or records to prove liability or apportion blame. As to AAIB reports, see for example *A v. B* [2019] EWHC 275 (Comm); *Rogers v. Hoyle* [2014] ewca Civ 257; *GKN Westland Helicopters Ltd & Anor v. Korean Air* [2003] EWHC 1120 (Comm); *Bristow Helicopters Ltd. & Anor v. Sikorsky Aircraft Corporation & Ors* [2004] EWHC 401 (Comm).

4 *Infra*, at pp 188, 190-191.

5 *Infra*, at pp 200-201.

key common law jurisdictions – notably the UK, Australia and Canada⁶ – have been scrutinised. It questions how these domestic systems which have a primarily *adversarial system* of procedural law deal with the issue of admissibility of the findings and reports of these bodies in judicial and arbitral proceedings. These three jurisdictions are also relevant as they have specifically not exercised an opt-out to any of the relevant ICAO rules on records and reports.⁷

The final substantive part of the chapter argues for better consistency and offers suggestions for improvement.

2 Transport Investigations Bodies – Purposes and Procedures

International conventions relating to air and maritime transport place a legal obligation on signatory states to facilitate the investigations of air or maritime accidents. As regards air transport, art 26 of the Convention on International Civil Aviation (Chicago Convention) provides expressly that, “in the event of an accident to an aircraft of a Contracting State occurring in another Contracting State, and involving either death, serious injury, or serious technical defect in the aircraft or air navigation facilities, the State in which the accident occurs will institute an inquiry into the circumstances of the accident, in accordance, *so far as its laws permit*, with the procedure which may be recommended by the International Civil Aviation Organization”.⁸ It is noteworthy thus that the investigation to be undertaken is to be consistent with the state’s own laws but the procedures should ideally be consistent with those recommended, from time to time, by the ICAO.⁹ This is an important provision as the international convention alone does not sufficiently provide for the actual workings and powers of the air accident investigation body. It is not novel that where carriers or other parties attempt to hamper the investigative process, national law can play a powerful role in ensuring that there is proper transparency and

6 Note of course that Quebec has a legal system which applies civil law notions to civil matters but uses the common law approaches in regards to public law, criminal law and federal law matters. Transportation safety investigation is a federal matter.

7 Notably Annex 13 of the Chicago Convention. The USA for example has opted out of parts of Annex 13.

8 emphasis added.

9 Annex 13 (Aircraft Accident and Incident Investigation) to the Convention provides further international requirements for the investigation of aircraft accidents and incidents. It spells out which States may participate in an investigation, such as the States of Occurrence, Registry, Operator, Design and Manufacture. It also defines the rights and responsibilities of such States.

disclosure. Likewise, the investigation body will rely on national law to perform its duties expeditiously. That may include the provision of judicial discretion and statutory conditions to protect the workings of the accident investigation bodies.

Although the Chicago Convention and its attendant supportive documents do not expressly state so, the purpose of the air accident investigation body is to ascertain the circumstances and causes of the air accidents and incidents with a view to avoiding similar occurrences in the future, rather than to ascribe blame to any person.¹⁰ This is important as it is oft presumed that witnesses and parties are more likely to be open and cooperative in the investigative process if blame or liability is removed from the equation. Indeed, as regards UK law, the *sole* objective of the investigation of an accident or incident, under the *Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996*¹¹ which set up the Air Accident Investigation Branch, is the prevention of accidents. It is not the purpose of the investigation to apportion blame or liability (reg 4), which reflects paragraph 3.1 of Annex 13 to the Chicago Convention¹² and *art 4(3) of Council Directive 94/56/EC of 21 November 1994* establishing the fundamental principles governing the investigation of civil aviation accidents and incidents.

As far as marine accident investigations are concerned, international law relating to accident investigations are prescribed in a number of international instruments. In brief, they are:

- SOLAS, Chapter I – General Provisions: Regulation 21 dealing with Casualties¹³

¹⁰ <www.icao.int/Newsroom/Documents/ICAO-Fact-Sheet_Accident-Investigation_2018-05.pdf> accessed 28 October 2022.

¹¹ SI 1996/2798.

¹² See too art 1.1.1 of the Manual of Aircraft Accident and Incident Investigation 2015 (ICAO, 2nd edn). The manual is intended to “to encourage the uniform application of the Standards and Recommended Practices contained in Annex 13 and to provide information and guidance to States on the procedures, practices and techniques that can be used in aircraft accident investigations”. (see p I–v of the Manual).

¹³ Reg 21 reads: “(a) Each Administration undertakes to conduct an investigation of any casualty occurring to any of its ships subject to the provisions of the present Convention when it judges that such an investigation may assist in determining what changes in the present regulations might be desirable.

(b) Each Contracting Government undertakes to supply the Organization with pertinent information concerning the findings of such investigations. No reports or recommendations of the Organization based upon such information shall disclose the identity or nationality of the ships concerned or in any manner fix or imply responsibility upon any ship or person”. [nb. This reg should be read alongside the IMO Maritime Safety Committee’s Resolution 255(84)].

- SOLAS, Chapter XI-1 – Special measures to enhance maritime safety: Regulation 6 dealing with additional requirements for the investigation of marine casualties and incidents¹⁴
- MARPOL, Article 8 dealing with reports on incidents involving harmful substances¹⁵
- MARPOL, Article 12 on casualties to ships¹⁶
- Load Lines Convention, Article 23 on casualties¹⁷

14 It reads: “Taking into account regulation I/21, each Administration shall conduct investigations of marine casualties and incidents, in accordance with the provisions of the present Convention, as supplemented by the provisions of the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) adopted by resolution MSC.255(84), and: (1) the provisions of parts I and II of the Casualty Investigation Code shall be fully complied with; (2) the related guidance and explanatory material contained in part III of the Casualty Investigation Code should be taken into account to the greatest possible extent in order to achieve a more uniform implementation of the Casualty Investigation Code; (3) amendments to parts I and II of the Casualty Investigation Code shall be adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I; and (4) part III of the Casualty Investigation Code shall be amended by the Maritime Safety Committee in accordance with its rules of procedure”.

15 It reads: “(1) A report of an incident shall be made without delay to the fullest extent possible in accordance with the provisions of Protocol I to the present Convention.

(2) Each party to the Convention shall: (a) make all arrangements necessary for an appropriate officer or agency to receive and process all reports on incidents; and (b) notify the Organization with complete details of such arrangements for circulation to other Parties and Member States of the Organization.

(3) Whenever a Party receives a report under the provisions of the present article that Party shall relay the report without delay to: (a) the Administration of the ship involved; and (b) any other State which may be affected.

(4) Each Party to the Convention undertakes to issue instructions to its maritime inspection vessels and aircraft and to other appropriate services, to report to its authorities any incident referred to in Protocol I to the present Convention. That Party shall, if it considers it appropriate, report accordingly to the Organization and to any other Party concerned”.

16 It states: “(1) Each Administration undertakes to conduct an investigation of any casualty occurring to any of its ships subject to the provisions of the regulations if such casualty has produced a major deleterious effect upon the marine environment.

(2) Each Party to the Convention undertakes to supply the Organization with information concerning the findings of such investigation, when it judges that such information may assist in determining what changes in the present Convention might be desirable”.

17 It prescribes: “(1) Each Administration undertakes to conduct an investigation of any casualty occurring to ships for which it is responsible and which are subject to the provisions of the present Convention when it judges that such an investigation may assist in determining what changes in the Convention might be desirable.

All these provisions call for investigations to be undertaken by the administration of the flag state. This general duty of the flag state is provided for in the Law of the Sea Convention.¹⁸ In 2008, the IMO adopted a new Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code).¹⁹ In conjunction with this important event, amendments were also made to SOLAS Chapter XI-1. The net effect was to make Parts I and II of the Code mandatory;²⁰ under the previous unamended SOLAS reg 1/21, state administrations were only dutybound to conduct an investigation of any casualty occurring to any of its ships “*when it judges that such an investigation may assist in determining what changes in the present regulations might be desirable*”.²¹ This new Code now makes investigations compulsory in the event of a “very serious marine casualty”.²² The investigation must be consistent with the standards and ideals set out in the Code.²³ The Code also recommends an investigation into other marine casualties and incidents, by the flag state of a ship involved, if it is considered likely that it would provide information that could be used to prevent future accidents.²⁴

Chapter 1 of the Casualty Investigation Code is particularly explicit about the purpose of marine accident investigations. It states, *inter alia*:

Marine safety investigations do not seek to apportion blame or determine liability. Instead a marine safety investigation, as defined in this Code, is an investigation conducted with the objective of preventing marine casualties and marine incidents in the future.

(2) Each contracting Government undertakes to supply the Organization with the pertinent information concerning the findings of such investigations. No reports or recommendations of the Organization based upon such information shall disclose the identity or nationality of the ships concerned or in any manner fix or imply responsibility upon any ship or person”.

18 Art 94 UNCLOS: “Each State shall cause an inquiry to be held by or before a suitably qualified person into every casualty or incident of navigation on the high seas involving a ship flying its flag and causing loss of life or serious injury to nationals of another State or serious damage to ships or installations or another State or to the marine environment. The flag State and the other State shall co-operate in the conduct of any inquiry held by other State into any such marine casualty or incident of navigation”.

19 Resolution MSC.255(84) (adopted on 16 May 2008).

20 Part III of the Code contains related guidance and explanatory material.

21 See n. 13.

22 Chapter 6.1 Casualty Investigation Code.

23 Chapter 6.2 Casualty Investigation Code.

24 Chapter 17 Casualty Investigation Code.

Article 1.1.1 of the Manual of Aircraft Accident and Incident Investigation²⁵ is more peremptory. It states:

The *sole* objective of an investigation into an aircraft accident or incident conducted under the provisions of Annex 13 shall be the prevention of accidents and incidents. Annex 13 also states that it is not the purpose of an investigation to apportion blame or liability. Any judicial or administrative proceedings to apportion blame or liability shall be separate from any investigation conducted under the provisions of Annex 13. [*italics mine*]

It is thus starkly patent that in both international aviation and maritime transport law, the purpose of the investigation is to better understand the hazards and risks²⁶ of accident, and to learn from errors so that future accidents could be averted. It is not for apportioning blame or liability, whether civil or criminal.

In the case of marine accidents, chapter 1.2 of the Casualty Investigation Code goes on to state:

A marine safety investigation should be separate from, and independent of, any other form of investigation. However, it is not the purpose of this Code to preclude any other form of investigation, including investigations for action in civil, criminal and administrative proceedings. Further, it is not the intent of the Code for a State or States conducting a marine safety investigation to refrain from fully reporting on the causal factors of a marine casualty or marine incident because blame or liability, may be inferred from the findings.

At first blush the policy objectives are clear. The investigation reports envisaged by the Code (and the IMO system) should be autonomous but does not preclude other legal processes used to apportion blame and liability. However, it is that separateness and independence principle referred to in chapter which has, at times, been tested to breaking point in domestic courts and arbitral tribunals.

25 Document 9756 (ICAO, 2nd edn) 2015.

26 NB. the Manual of Aircraft Accident and Incident Investigation requires investigators to look to “all immediate and underlying systemic causes and/or contributing factors” as there may be other hazards in the aviation system not directly connected with the causes of the accident needing attention.

3 Admissibility of Investigation Findings

An object of this chapter is to delineate the argument building strategy in litigation and to draw particular lessons from the judicial reasoning process. The research is particularly acute in systems of procedural law which are adversarial in nature. It has been said that the adversarial system is characterized by an impartial decision maker who evaluates contrasting presentations by adversaries to a dispute, evaluates the merits of those presentations, and renders a decision that distributes a positive outcome to one party and a corresponding negative outcome to the other.²⁷ In contrast, the inquisitorial system is characterized by a decision maker who retains substantial power to elicit evidence in an inquiry aimed at discovering the true facts underlying a dispute.²⁸ The inquisitorial system, at least in theory, allows for arguably better production of evidence as that process is by and large directed by the neutral arbiter or judge. In adversarial systems, again in theory, the challenges made by one against the other in respect of the production of evidence could have an adverse impact on the truth. The pursuit of truth of course may not always be necessarily “fair”.²⁹

Returning the matter at hand, from a private litigation standpoint, there are many benefits to be gained by being able to rely on not only the published report but also the statements, data and evidence collected by the investigators. It might even be argued that in the interest of transparency and truth, such materials should not be privileged. It is difficult to generalise how the safety boards or investigation bodies would respond. Clearly, some might refuse or object on the basis that compelled production of information might lead to future lack of cooperation from witnesses. On the other hand, some might acquiesce deciding that the risk is manageable. In the latter situation, it is vital to stress that production might not necessarily be permitted simply on the say so of the safety boards or investigation bodies. It is also argued that

27 See Sevier, J, ‘The truth-justice tradeoff: Perceptions of decisional accuracy and procedural justice in adversarial and inquisitorial legal systems’ (2014) 20(2) *Psychology, Public Policy, and Law* 212 citing Thibaut, J, & Walker, L ‘A theory of procedure’ (1978) *California Law Review* 66.

28 *ibid*, citing Crombag, HFM, ‘Adversarial or inquisitorial: Do we have a choice?’ in Van Koppen, PJ & Penrod, SD (Eds.), *Adversarial versus Inquisitorial Justice: Psychological perspectives on criminal justice systems* (2003) at pp. 21–25.

29 *ibid*; note too that researchers have found that cultural differences also influence the public’s perception of procedural fairness in either the adversarial or inquisitorial systems. See Anderson, RA & Otto, AL, ‘Perceptions of fairness in the justice system: A cross-cultural comparison’ (2003) 31 *Social Behavior and Personality*, 557.

such an important matter should not be within an unfettered and unguided discretion of the safety boards.

3.1 *Investigation Bodies – Powers and Judgment*

Indeed, as in some jurisdictions, like Australia, the investigation body has the power to issue a certificate attesting that public disclosure would not hamper investigations and thus records could be made available at civil proceedings,³⁰ their power is not unfettered. Judicial approval is nevertheless required. In exercising this residual power, the courts could prevent disclosure. In Australia, under the Transport Safety Investigation Act 2003 (Cth), before sanctioning production, the court must be satisfied that “any adverse domestic and international impact that the disclosure of the information might have on any current or future investigations is outweighed by the public interest in the administration of justice, ...”.³¹

In the UK, as regards marine accident investigations³² the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012³³ provide that the final say is with the court although the views of the Chief Inspector³⁴ would be taken into consideration. The court needs to balance the interests of justice in disclosure against any prejudice or likely prejudice to:

- a. the safety investigation into the accident to which the document or record relates;
- b. any future accident safety investigation undertaken in the United Kingdom; or
- c. relations between the United Kingdom and any other State, or international organisation.³⁵

³⁰ Though not criminal proceedings.

³¹ s 60(6).

³² It is important to stress that in the UK, there is a dual system of investigative powers – namely that the air transport incidents are governed by a set of constitutional and substantive rules different from those applicable to marine incidents. In Australia, on the other hand, a single empowerment Act governs both air and marine although the technical matters will differ. See below at pp. 205-206.

³³ These regulations were made by the UK Secretary of State pursuant to powers conferred by s 267 of the Merchant Shipping Act 1995.

³⁴ As to technical analysis commissioned by the Chief Inspector, such analysis and opinions expressed in the analysis may be made publicly available if the Chief Inspector considers it appropriate to do so. (reg 13(4)).

³⁵ Reg 13(5).

The court would also be dutybound to consider the wider public interest.³⁶ Similar provisions apply to air incidents *records*³⁷ as provided for by reg 18 Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996.

Despite the fact that the ultimate decision lies with the court, it is sensible to join the investigation bodies to any litigation or suit brought by one party against another for the use or quoting of the contents of reports and records produced by the investigation bodies. That would allow the investigation bodies properly to make clear their views and reasons.

3.2 *Blame and Liability – Policy and Evidentiary Presumptions*

It is trite that the purpose of the investigations is not to seek to lay blame or apportion legal liability for the accident or incident under investigation. However, although this spirit is expressed in most transport safety investigation legislations, the precise manifestations of this principle are not always explicit or fully fleshed out. This lack of boundary has allowed the courts to exercise considerable discretion in in sanctioning the production of records in judicial or arbitral proceedings.

In the UK, it is of much interest to note that specifically for marine investigations, the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 provide in reg 14(14) that:

If any part of any document or analysis it contains ... is based on information obtained in accordance with an inspector's powers ..., that part is inadmissible in any judicial proceedings whose purpose or one of whose purposes is to attribute or apportion liability or blame unless a Court, ..., determines otherwise.

The precise scope of this provision has not always been very clear although it is trite to say that the terms are essentially borrowed from the international provisions. A literal reading of the provision might suggest that such records would not generally be admissible in civil or criminal proceedings where liability or blameworthiness would be proved but whilst it is difficult to see any circumstance where the court would “determine otherwise”, that proviso could conceivably be given an expansive reading.

³⁶ Reg 13(6).

³⁷ As against the report which is published (reg 13).

A recent English case, *Ocean Prefect Shipping v. Dampskibsselskabet Norden AS* [2019] EWHC 3368 (Comm),³⁸ brings this matter into sharp focus. First, the facts. The *Ocean Prefect*, a British flagged vessel, ran aground when entering the port of Umm Al Quwain in the United Arab Emirates. As the ship was registered in the UK, the Marine Accident Investigation Branch (MAIB) undertook the investigations and the report was issued consequently in 2018.

As to the commercial background to the case, the ship was under charter and the owners claimed damages from the charterer alleging that the port nominated by the charterer was unsafe. Arbitration was then commenced in London as provided for by the arbitration clause. The owners sought to rely on the MAIB report in the proceedings. That was objected to by the charterer and the MAIB. The judge held that to allow admission of the report or even expert witnesses quoting from the report would be a breach of reg 14(14). The judge made clear that reg 14(14) applied to arbitral proceedings as well as judicial proceedings, despite the absence of an express reference to arbitration in the text of the regulation. That was because, according to the judge, the definition of “judicial proceedings” in the regulations is not exhaustive.³⁹ Moreover, the judge took pains to stress that arbitral proceedings are distinctly judicial in character. Any difference of legal treatment as regards the admissibility of such accident reports could not be justified. If reg 14(14) applies only to judicial proceedings strictly defined, then no permission would be necessary for the admission of such records and findings in arbitral tribunals. That would create an unacceptable imbalance in civil dispute resolution.

A salient aspect of the judgment in the English case was that the court confirmed that the requirement in the regulations (reg 13(5)) that the court should consider the views of the MAIB Chief Inspector would apply when deciding on whether discretion should be exercised in pursuant to reg 14(14). As to the test in reg 13(5),⁴⁰ it is clear that the threshold would be high given the privilege conferred on such records and reports by reg 14(14). It is important to stress that in *Ocean Prefect Shipping*, much was made of reg 14(14) by the judge – that is to say, *the refusal to order admission was based on the direct application of that regulation and not on some general presumptive principle*. Indeed, it needs to be

38 For a critical commentary of the case, see Chuah, J, ‘The Admissibility of Marine Accident Investigation Branch Reports in Arbitral Proceedings’ (2019) 25 Journal of International Maritime Law 365.

39 Reg 14(17) states that “judicial proceedings” “includes any civil or criminal proceedings before any Court, or person having by law the power to hear, receive and examine evidence on oath”. (emphasis added)

40 See above at p. 193.

pointed out that in the air accident investigation system there is no equivalent to reg 14(14).

The general presumptive principle conferring privilege on these records or reports, on the other hand, was relied on in the Australian case of *Elbe Shipping SA v. Giant Marine Shipping SA*.⁴¹ There, the plaintiffs had tried to subpoena the Australian Transport Safety Bureau for the production of documents and statements obtained by the Bureau in the course of its investigations.⁴² The plaintiffs were the owners of two other vessels whose hulls, it was alleged, were damaged by the oil spill caused. They had wanted the documents to support their legal claims against the owners of the *Global Peace* and others for compensation. The Australian Federal Court refused their application, stating that although the court had the jurisdictional power to order disclosure in the public interest, that power was restricted by statute. The information sought was “restricted information” under the Transport Safety Investigation Act 2003 (Cth) which could not be disclosed to any person, and even, a court of law.⁴³ The only exception is where “the court is satisfied that any adverse domestic and international impact that the disclosure of the information might have on any current or future investigations is outweighed by the public interest in the administration of justice, the court may order such disclosure”.⁴⁴ That is a very high threshold for any judicial tribunal, in the common law tradition. It was a threshold the Australian court was not prepared to cross.

In *Elbe Shipping*, the Australian court also reminded us that there is at the common law a tradition of not compelling witnesses who exercised judicial functions, including judicial inquiries and investigations.⁴⁵ Historically therefore the power or discretion of the court to compel witnesses of this ilk is not as wide as might be argued. This historical limitation on judicial discretion should continue to be reflected in cases where Parliament has clearly made a general presumption against compellability or admissibility of certain evidence. Judicial discretion is therefore to be exercised in a measured and disciplined manner.

41 [2007] FCA 1000.

42 The casualty in question was a collision between a tug and a bulk carrier, *The Global Peace*, at Gladstone Harbour, in 2006. The plaintiffs were seeking the production of witness statements, VTS records, survey results of the oil spill etc.

43 S. 60(2) Transport Safety Investigation Act 2003 (Cth).

44 S. 60(6) *ibid*.

45 The case referred to by the Australian Federal Court was the English decision in *Warren v. Warren* [1997] QB 488 (see also *Duchess of Kingston's case* (1776) 2 Sm L.C.); as to the current Australian position, see s 16 Evidence Act 1995 (Cth).

Following on with the theme of presuming against disclosure is an Irish decision – premised on the EU Council Directive 194/56/EEC. In *Stokes v. Minister for Public Enterprise*⁴⁶ the Irish High Court held that s 24 of the Irish Air Navigation (Notification and Investigation of Accidents and Incidents) Regulations SI. 205/1997 implementing the EU directive into Irish law is framed in a negative way meaning that no *general* right to disclosure of the report or records is created or established by the provision.⁴⁷ That section provides that the authorities shall not make the relevant records available *unless* the Court is of the view that the benefits resulting from disclosure outweigh the adverse domestic and international impact that disclosure may have on the instant or any future investigation.⁴⁸ On the language in the judgment, it is thus arguable that the Irish decision supported the finding of a rebuttable presumption against disclosure or admission.

In Canada, the test for disclosure, at least on paper, was set relatively high. The Canadian legislation in question is the Transportation Accident Investigation and Safety Board Act, s.c. 1989 (c. 3). Section 28 of the Act is structured and worded in a very similar manner to its cousins in Australia, Ireland and the UK. Hence, the recording or data is privileged, is to be used by the safety board for the purposes of its investigation, and is not to be released for use in litigation unless a court, having examined the recording *in camera*, and having heard submissions of the safety board, has concluded that “the public interest in the proper administration of justice outweighs in importance the privilege attached to the on-board recording ...”.⁴⁹ Section 28 clearly places much importance too on evaluating the potential adverse domestic or international effects on investigations that might result from access to reports and records (including cockpit voice recordings).⁵⁰

In an oft-cited case, *Moore v. Reddy*,⁵¹ Master Donkin concluded that Parliament intended that statements would remain privileged except in

46 [2000] IEHC 191.

47 At [23].

48 In that case, the Chief Inspector had released to the applicant an interim report and issued her, as a person likely to be adversely affected by the report (see s 18(1)), with a notice giving her the opportunity to respond to the report. Her application to have access to other records and data was rejected by the court on the basis that s 24 did not apply to such applications. It seems to follow from the Irish decision that s 24 would only apply to application for disclosure of or access to documents for judicial proceedings.

49 Quoting in part the judge at [4].

50 Given the provision's deference to Annex 13 of the Chicago Convention.

51 (1990), 44 C.P.C. (2d) 61, [1990] O.J. No. 308.

“exceptional cases” and articulated a test that would only order production when the evidence could not be otherwise obtained. The Master stated:

It seems to me that Parliament having decreed that there is a privilege subject to it being removed if there is a supervening public interest "in the circumstances of the case", Parliament meant the privilege to remain unless some feature of the case required revelation of the statement. That is, in general in most cases the statements would remain privileged but in exceptional cases they might be disclosed.⁵²

In that case, the judge had applied a test which concentrated on whether production of the statement was necessary because the information could not be obtained for one reason or another; where failure to produce the evidence would cause a miscarriage of justice. That test was applied in a number of subsequent decisions with various but minor adjustments.⁵³

In *Wappen-Reederei GmbH & Co. K.G. v. Hyde Park (The)* (“*The Hyde Park*”),⁵⁴ a shipowner had applied to compel the Transportation Safety Board to release copies of “bridge recordings”.⁵⁵ The court held that the following are questions that should be asked in considering the public interest:

- (I) the nature and subject matter of the litigation;
- (II) the nature and probative value of the evidence in the particular case and how necessary this evidence is for the proper determination of a core issue before the Court;
- (III) whether there are other ways of getting this information before the Court;
- (IV) the possibility of a miscarriage of justice.⁵⁶

⁵² At pp 63–64.

⁵³ See *Braun v. Zenair Ltd.* (1993), 13 O.R. (3d) 319, [1993] O.J. No. 917 (Gen. Div.); *Wappen-Reederei GmbH & Co. K.G. v. Hyde Park (The)*, [2006] 4 F.C.R. 272, [2006] F.C.J. No. 193; *Webber v. Canadian Aviation Insurance Managers. Ltd.*, 2002 BCSC 1414, [2002] B.C.J. No. 2270 (B.C.S.C.); *Desrochers Estate v. Simpson Air* (1981) Ltd. (1995), 36 C.P.C. (3d) 150, [1995] N.W.T. J. No. 46 (N.W.T. S.C.); *Chernetz v. Eagle Copters Ltd.*, [2004] 9 W.W.R. 325, [2003] A.J. No. 521, (Q.B.); also *R. v. C.W.W.* (2002), 204 N.S.R. (2d) 144, [2002] N.S.J. No. 191 (N.S. Youth Ct.) where the youth court, in relation to a criminal charge of a minor who had caused a derailment, held that the public interest would only be met in “rare cases”.

⁵⁴ [2006] 4 F.C.R. 272, [2006] F.C.J. No. 193.

⁵⁵ The so-called ship’s “voyage data recorder”.

⁵⁶ See also *White Estate v. E & B Helicopters Ltd.* (2008), 78 B.C.L.R. (4th) 131, [2008] B.C.J. No. 31 (Sup. Ct.).

In that case, the court concluded that as the recordings were such poor quality that their evidentiary value would not justify disclosure.

On the other hand, there is a trail of cases where the courts have applied a lower threshold for admissibility and disclosure, preferring almost a presumption that *openness, transparency and litigation cost* are in the public interest.

In the UK, the notable case in point is *Hoyle v. Rogers*⁵⁷ where the Court of Appeal admitted into evidence a report of the Air Accident Investigation Branch (AAIB) stating that it could not be assumed that allowing the report to be tendered in court proceedings would necessarily damage the role of the AAIB. The court said, perhaps somewhat controversially,

the exercise of the discretion is to be carried out in accordance with the overriding objective of dealing with cases justly and at proportionate cost. Whilst every case must depend on its own facts, that objective does not appear to me to be inherently likely to call for, or justify, the exclusion of evidence of this kind. On the contrary it would tend to favour its inclusion.⁵⁸

The reference to proportionate cost seems to place squarely an importance on cost effectiveness, so that if it will bring costs down because the litigants do not have to seek out alternative sources of information or evidence, that should tilt the exercise of discretion towards admission.

The court was also clear in moving away from any general normative acceptance that only exceptional and rare cases should there be a departure from the privilege rule. It should be observed that in *Ocean Prefect Shipping*, the court declined to follow *Hoyle v. Rogers* in refusing to order admission of the documents reasoning that in air casualty investigations, there is no equivalent in the law to reg 14(14) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012. So, it could not thus be concluded that *Ocean Prefect Shipping* was affirming some kind of general presumptive principle. The court was quite clear that it was merely applying the 2012 Regulations as are.

What is clear though about *Hoyle v. Rogers* is a demonstrable assertion of a more general openness and transparency principle in supporting the administration of civil and criminal justice. This line of thinking is gradually gaining traction too in Canada and Australia.

57 [2014] EWCA Civ 257.

58 At [81].

In *Société Air France v. NAV Canada; Greater Toronto Airports Authority & Ors*⁵⁹ the court in Ontario was asked to allow the production of cockpit voice recorder recordings in an action taken by passengers injured in a runway incident in Toronto Pearson Airport. The application was objected to by the air accidents investigators and the pilots trade union. They argued that it was not in the interests of aviation safety and would encroach illegitimately on the personal privacy of the pilots.

The judge, Strathy J, held stating quite explicitly that the test referring the miscarriage of justice or likely to cause serious injustice was “virtually impossible to apply on a prospective basis”⁶⁰ and asked rhetorically, “How can a party possibly know whether the CVR contains relevant, reliable and necessary evidence when access to it is prohibited?”⁶¹ The judge also felt the need to extend the question beyond the four corners of the case in question and ask if a refusal would actually damage the integrity of the judicial factfinding process and the reliability of the evidence before the court more generally. Furthermore, the judge was persuaded by the fact that in the case in point where class action was being pursued, an omission to support the class action would be to damage the public utility that class actions serve.

The court was also not prepared to let any argument of privacy or data protection trump the now more capacious notion of administration of justice or the public interest. In *Société Air France*, the court did not think that any infringement on privacy could not be serious, as communications of a purely personal nature would not be included in the disclosure. Moreover, the court concluded that:

the privacy concern is generally illusory because, in at least some jurisdictions, the CVR transcript is included in the report of the investigating authority and in others it is routinely published. Thus, in both the particular sense and the general sense, the pilots’ privacy has already been infringed.⁶²

That said, it should be pointed out that in many jurisdictions privacy or indeed data protection are not enshrined in law. Nevertheless, it must be said that simply because a failure to respect privacy or data might occur elsewhere does not make it right.

59 (2009) CanLII 69321 (ON S.C.); decision affirmed on appeal, (2010) ONCA 598.

60 At para 125.

61 At para 124.

62 At para 133.

The second strand to the privacy argument is that allowing disclosure could have a “chilling” effect on pilot communications during flight. The judge rejected this argument made by the pilots’ union outright stating that they had serious doubt as to whether “pilots would curtail critical communications, endangering their own safety and the safety of their passengers, simply because those communications might be disclosed in some future legal proceedings in the event of an accident”.⁶³ The *Société Air France* decision has been approved on all counts on appeal.

It is of some note to see this more capacious reading of the public interest is being applied by a Quebec court – although the Quebec court was required to apply common law approaches to a matter of federal law, such as transportation safety investigations, its cultural reference point is that closely reflective of the French civil law traditions. *Perhaps* that is why the judge in *Propair Inc. et a. v. Goodrich Corporation*⁶⁴ allowed the admission of cockpit voice recordings on the grounds that the proper administration of justice required for the evidence to be admitted. The judge, Viau J, also dismissed the pilots’ unions argument on privacy.⁶⁵ Permission to appeal was not granted on the basis that the judge was acting within the scope of their discretion.

In these important Canadian decisions, we see a confluence of thinking around the public interest and privacy.

As regards Australian case law, the High Court⁶⁶ decision in *Australian National Airlines Commission v. The Commonwealth*⁶⁷ is, what might be arguably called, the landmark decision. That decision predated the Transport Safety Investigation Act 2003 (Cth). What is particularly instructive in that case is the reliance by the court on general principles to order production or admission of the cockpit voice recorder. The application was objected to by the pilots’ union in the strongest terms – including a threat to withdraw from an agreement the union made with the Government to cooperate with air casualty investigations.

63 At para 136.

64 [2003] J.Q. No. 243, J.E. 2003-67 (S.C.).

65 The judge said: “*Les deux pilotes décédés dans l’écrasement n’étaient membres ni d’ALPA ni D’ACPA. Et, à l’examen, force est de constater que le seul intérêt de ces associations est de bloquer tout accès à l’enregistrement. Invoquant un vague droit à la vie privée, elles s’objectent partout où elles peuvent le faire, tentant de transformer en une sorte de débat public des causes d’intérêt privé. Elles n’ont aucun autre intérêt dans les présentes affaires et les éléments de preuve qu’elles présentent sont loin d’être convaincants. Elles renforcent plutôt cette attitude d’opposition radicale et systématique qui n’a été, semble-t-il, retenue nulle part ailleurs, en Amérique du Nord du moins.*” (at para 13).

66 The High Court is the highest court in Australia (s 71 Constitution of Australia).

67 (1975) 132 CLR 582.

That agreement had made it plain that the purpose of a casualty investigation was not to apportion fault or liability, but merely to learn from the casualty to improve air safety. This dispute clearly shows the sensitivities involved. The High Court however ruled that CVR is not a document falling within what is termed “Crown privilege”.⁶⁸ The court considered that the detriment to the public interest in the proper administration of justice which would have been occasioned by a refusal of inspection was considerable. Without the evidence the litigants could not prove their case for negligence. An inspection of this judgment shows that the court considered the exceptions to disclosure are very limited and there should always be an addressal of the public confidence aspect in the general administration of justice. The judge said:

The withholding from parties of relevant and material documents, unless justified by the *strongest* considerations of public interest, is apt to undermine public confidence in the judicial process. [emphasis added]

Indeed, in at least one decision, *Cifuentes v. Fugro Spatial Solutions Pty Ltd*⁶⁹ Murray J stated quite simply that “it is sufficient to say that in this case I was so satisfied [that s 60(6), Transport Safety Investigation Act 2003 is met], and ordered the disclosure of all relevant restricted information”.⁷⁰ There was no deliberation or evaluation or testing of the criteria at all.

The net conclusions from these jurisdictions are that there has been a gradual shift away from a strict test of the public interest; the English court in *Rogers v. Hoyle* has probably gone further than the Australian and Canadian cases by referring specifically to the cost element in litigation as forming the wider public interest in the administration of justice. That pragmatic consideration of

68 The court drew on a range of authorities from the UK; Mason J said, “It has always been recognized that the cases in which production will be refused on the ground of Crown privilege are “exceptional cases”, to use the words of Viscount Simon L.C. in *Duncan v. Cammell, Laird & Co. Ltd.* [1942] UKHL 3; (1942) AC 624, at p 643. Thus to sustain the claim of privilege it must appear that the public interest will be prejudiced because (1) the contents of the document are such that disclosure will have this effect, as for example, information the publication of which would injure national defence or diplomatic relations with other countries, e.g. information of the kind involved in the Asiatic Petroleum Case (1916) 1 KB 822; or (2) the document is of a class that should be kept secret in the public interest, as for example, Cabinet minutes, communications passing between departmental heads or a departmental head and his minister, notwithstanding that the contents are not such that their publication would injure the public interest (see *Conway v. Rimmer* [1968] UKHL 2; (1968) AC 910; *Rogers v. Home Secretary* (1973) AC 388). (at p591”).

69 [2019] WASC 316.

70 At para 149.

the notion of administration of justice is pronounced. The Canadian position, for better or worse, also takes into account the type of litigation involved – paying regard to the public good or utility served by class actions. The Australian jurisprudence, although resonating similar tendencies, focuses on the public perception of the fair administration of justice to justify informational transparency.

Another relevant observation is how all these common law courts, despite any tendencies toward a more principle-based decision-making process, take pains to stress that they are in fact interpreting the legislative texts and not making new legal principles or rules. This is not the occasion to discourse the ideologies of judicial law making but it suffices to state that as these domestic regulations are based on international laws, reference to the international policy perspectives is important. And, that has not always been the case as we saw in a number of these decisions. Of course, it might be argued that the international policy on the matter is ambiguous and open to interpretations or if it is clear about the presumption of privilege, that presumption is antithetical to how the legal values in the jurisdictions under study have evolved. The question is thus whether the IMO and ICAO might wish to revisit the empirical link between documentary privilege and impediments to investigative processes, and agree to a clearer policy position.

3.3 *The International Policy Dimension*

In closing it is worthwhile to return to the considerations of the position in international law. Both the IMO and ICAO, as we have seen, anticipate judicial bodies to take into account the *potential adverse effects* on investigations that might result from any access to records or reports which they might decide to allow. It is questionable whether this new trend in judicial thinking in the three jurisdictions we have considered sufficiently takes this matter into account in their pursuit of the “fair administration of justice” – especially as regards the cooperation and involvement of foreign witnesses in any cross border investigations. Naturally without empirical evidence either way it is impossible to say whether a trend to allow access (as against the trend to refuse access without compelling reasons) would lead to deterring witnesses, especially foreign nationals, in cooperating constructively in the investigation. It is argued that in all the cases pushing for greater admissibility of the investigation records and reports there is no proper rumination of this angle of the effect on the investigation which is often cross national by nature.

Indeed, the EU Directive goes even further by stating in its Preamble:

Member States, acting in the framework of their legal systems, should protect witness statements following an accident and prevent them from being used for purposes other than safety investigations, with the objective of avoiding any discriminatory or retaliatory measures being taken against witnesses because of their participation in the investigations.⁷¹

There is a positive duty to “protect” the witness statements. That said, in art 4 of the directive merely states that the marine accident investigation should be “independent of criminal or other parallel investigations held to determine liability or apportion blame”. That allows each Member State to provide for what they consider to be an effective enough legal framework to support the objectives of EU (and IMO) sanctioned marine casualty investigations.

As regards the Chicago Convention, like any international treaty, its provisions might be opted out of by States. Some countries, such as the US,⁷² have exercised their right to make exceptions or differences to Annex 13 of the Convention and have enacted domestic law that does not expressly follow Annex 13. However, for states which have not exercised that opt out, it is submitted that their national legislation should thus take into account the criteria⁷³ for disclosure provided in the Convention.

The international criteria are also important given the perceived need for international cooperation between States. For example, Annex 13 provides that the State of Occurrence may delegate all or part of the investigation to another State or a regional accident and incident investigation organization,

71 Recital 10.

72 In the United States, take the example of cockpit voice recording. The disclosure of the CVR is regulated by the United States Code, Title 49, “Transportation”, Ch. 11, National Transportation Safety Board, sections 1114 and 1154. Section 1114 provides that the recording itself and the transcript of the recording are not to be produced in their entirety, but that the National Transportation Safety Board shall make public any part of a transcript of a CVR recording that the board decides is relevant to the accident or incident. Further, section 1154 provides that a court may allow discovery by a party of a CVR recording if, after an *in camera* review of the recording, the court decides that the parts of the transcript previously made public under section 114 do not provide the party with sufficient information to receive a fair trial. The test as to whether disclosure should be ordered vests principally on whether a fair trial would be adversely impacted. Hence, the test to be applied in the US is not mandated to take into account the potential adverse domestic or international effects on investigations that might result from such access. The practice in the US is that extracts from CVR transcripts are regularly disclosed in the NTSB’s reports.

73 Notably that the disclosure order must consider the potential adverse domestic or international effects on investigations and the purpose of the investigation which is not to apportion blame or liability.

and may call on the best technical expertise available from any source to assist with the investigation. States of Registry, Operator, Design and Manufacture who participate in an investigation are entitled to appoint an accredited representative (with or without associated advisers) to take part in the investigation. A State which has a special interest in an accident, by virtue of fatalities or serious injuries to its citizens for instance, is entitled to appoint an expert entitled to: visit the scene of the accident; have access to the relevant factual information which is approved for public release by the State conducting the investigation, and information on the progress of the investigation; receive a copy of the accident investigation Final Report. Similarly, the IMO Casualty Investigation Code⁷⁴ anticipates that investigations could involve the flag state as well as other substantially interested States.⁷⁵

This level of cooperation needs to be bolstered by the same principle of evidence protection or privilege. It is quite conceivable that in the conduct of different strands of the investigation of the same casualty, a particular witness statement is given privilege in one jurisdiction but not another.

3.4 *National Regulatory Structures*

As to legislative rights and constraints, it is important to note that different countries adopt different regulatory frameworks despite the general mandate from the IMO and ICAO. The three selected for our analysis (Australia, Canada and the UK) are no different in this regard. How the regulatory system is set up could have important implications for the use and production of accident records and data in court and arbitrations.

First, some jurisdictions like the UK have a separate regulatory system for air transport accident investigations and marine accident investigations. Others have a conjoined transport accident investigation system but with transport mode specific provisions in the general regulatory system.

74 Supra (n 19).

75 Defined in Chapter 2.20 of the Code as: “2 which is the coastal State involved in a marine casualty or marine incident; or .3 whose environment was severely or significantly damaged by a marine casualty (including the environment of its waters and territories recognised under international law); or .4 where the consequences of a marine casualty or marine incident caused, or threatened, serious harm to that State or to artificial islands, installations, or structures over which it is entitled to exercise jurisdiction; or .5 where, as a result of a marine casualty, nationals of that State lost their lives or received serious injuries; or .6 that has important information at its disposal that the marine safety investigating State(s) consider useful to the investigation; or .7 that for some other reason establishes an interest that is considered significant by the marine safety investigating State(s)”.

Jurisdictions like Canada and Australia have a system for accident investigations which is more unified although providing for functional differences between marine and air. In Canada, Transportation Accident Investigation and Safety Board Act 1989 provides for the establishment of the Safety Board.⁷⁶ The Board is empowered to investigate any transportation occurrence⁷⁷ (within Canadian territorial jurisdiction) whilst s. 2 defines “transportation occurrence” as an aviation occurrence, a railway occurrence, a marine occurrence or a pipeline occurrence. Section 10(1) consequently puts in place a Director of Investigations (Air), a Director of Investigations (Marine) and a Director of Investigations (Rail and Pipelines). In Australia, the Transport Safety Bureau is set up under the Transport Safety Investigation Act 2003⁷⁸ which provides for conjoined power to investigate and make safety recommendations in respect of air, marine and rail transportation. Section 4(1) defines “transport vehicle” as “an aircraft, ship or rail vehicle” and s. 11 places certain constitutional restrictions on the ATSB’s territorial powers.

In contrast, the UK has two distinct regimes – one in the Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996 for air transport and the other in the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 which governs marine accidents and incidents.

The disadvantage having a dual system is the potential for legislation misalignment as we see in *Ocean Prefect Shipping v. Dampskibsselskabet Norden AS* [2019] EWHC 3368 (Comm). It was quite clear that the regulations providing for use of records are different. It might be recalled that in *Ocean Prefect*, the regulation in question, reg 14(14), states that if any part of any document produced as a result of a safety investigation is based on information obtained in accordance with an inspector’s powers as above, that part is inadmissible in any judicial proceedings whose purpose is to attribute or apportion liability, unless a court determines otherwise. However, there is no comparable equivalent provision in the *Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996* or indeed, EU Directive 94/56/EC⁷⁹ to which the Regulations relate. It surely is not satisfactory for a civilian transportation occurrence investigation not be aligned to the same extent.

76 S. 4.

77 Ss 7(1), 14(1).

78 S. 12.

79 Council Directive establishing the fundamental principles governing the investigation of civil aviation accidents and incidents (21 November 1994).

4 Conclusion

This chapter had set forth the international position on disclosure or privilege of evidence gathered in the course of an international transportation casualty investigation. It demonstrates that for reasons of values and, occasionally, pragmatism and cost, courts in the adversarial systems have been moving further away from a general presumption against disclosure. In some jurisdictions, such as the UK, there is also the misalignment of legislation and institutions concerning air and marine casualty investigations which has led to further confusion. These disparate treatments of a very important aspect of accident investigations could have an even more adverse impact where cross country cooperation is needed. The nub of the chapter is to argue for an international position which is grounded on empirical evidence – the tension between the pro and anti privilege camps is largely driven by an unproved opinion or belief as to the impact of the loss of privilege on the efficacy of investigations. Last but certainly not least, the *modus operandi* of the common law courts, as is natural, is to rely on the statutory provisions but, the author hopes, it is equally important to pay heed to the international policy dimension.

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When Economic Sanctions Lead to Conflict of Laws and Real Risks for Businesses

Carolina Dackö

1 Introduction

Nation states have used international trade and economic sanctions (herein-after “economic sanctions” or simply “sanctions”) as a foreign policy tool in international relations for many decades. After the Second World War, the use of sanctions was explicitly included in the Charter of the United Nations (UN) as a legitimate method available for the UN Security Council (UNSC) to combat the threat to peace or acts of aggression.¹

In recent years, countries have however departed from the multilateral framework of the UNSC and instead acted either in a coordinated approach, as in the case of United States (US) and European Union (EU) sanctions against Russia, or unilaterally, as in the case of EU’s autonomous sanctions against, for example, Belarus² and Turkey.³ This departure from the multilateral framework is due in part to the tension in the membership of the UNSC, in which Russia and China each have a permanent seat. It is therefore inconceivable for example that the UNSC would adopt sanctions against Russia for the annexation of Crimea or more recently, for its invasion and war against Ukraine. Instead, as the recent example of the coordinated sanctions against Russia show, the EU and the US are able to coordinate the scope of their sanctions regimes, which also paves the way for alignment by other Western countries. The example also illustrates another feature, namely, that the US is able and also willing to impose broader sanctions targeting many more companies and individuals. In fact, it is fair to say that the departure from multilateral coordination, towards a unilateralism, and the uncoordinated and somewhat unpredictable imposition of sanctions has become a signum for the US administration.

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- 1 See the United Nations, Charter of the United Nations (adopted 26 June 1945, entered into force 24 October 1945) 1 UNTS XVI, arts 39 and 41 (UN Charter).
 - 2 Council Regulation (EC) No 765/2006 of 18 May 2006 concerning restrictive measures against President Lukashenko and certain officials of Belarus [2006] OJ L34.
 - 3 Council Regulation (EU) 2019/1890 of 11 November 2019 concerning restrictive measures in view of Turkey’s unauthorised drilling activities in the Eastern Mediterranean [2019] OJ L291/3.

Another particular characteristic of US sanctions is the approach of extending the scope of application of some of its sanctions regimes. In those cases, the sanctions regimes target not only legal and natural persons subject to US law, but also anyone in the world outside US jurisdiction, who acts in breach of the purpose of US sanctions thus giving the regime an “extraterritorial” effect. The most prominent example of this is US sanctions against Iran. This extraterritorial effect of US sanctions has led to counterreactions and the imposition of legislation to limit these effects, making it illegal to comply with such US sanctions, as is the case with the EU’s Council Regulation (EC) No. 2271/96 (Blocking Statute).⁴ These actions and counteractions, has in turn led to an internationally complex set of conflicting laws, and businesses trying to act in this context are genuinely caught between a rock and a hard place, having to choose what laws to comply with and what laws to effectively turn a blind eye to.

In addition, the international banking system is heavily dependent on complying with US sanctions, which effectively leads to an extension of US sanctions even further than their intended scope. This in turn leads to a hampering effect on sanctioned individual’s ability to get their cases tried in arbitral proceedings. Ultimately, sanctions can thus also have the effect of denial of access to justice.

This chapter analyses the UN, EU and US sanction regimes by describing their jurisdictional scope, their similarities and differences, as well as the severe implications and uncertainty for companies due to sanction regime’s overreaching jurisdiction. It also provides two specific examples to illustrate how these conflicting laws result in risks for companies.

2 Jurisdictional Scope of Sanctions Regimes

2.1 *UN Sanctions*

The adoption of UN sanctions is determined by the UNSC. Sanctions measures, under Article 41 of the Charter of the United Nations,⁵ encompass a broad range of enforcement options that do not involve the use of armed force.

4 Council Regulation (EC) 2271/96 of 22 November 1996 protecting against the effects of the extra-territorial application of legislation adopted by a third country, and actions based thereon or resulting therefrom [1996] OJ L309/1.

5 United Nations, The Charter of the United Nations (adopted 26 June 1945, entered into force 24 October 1945) 1 UNTS XVI, Art 41.

However, as the permanent members, such as Russia and China, have veto right, sanctions are often not adopted in relation to conflicts where there are conflicting interests between these permanent members. The UN General Assembly also has powers to establish sanctions programs, but does not do so in practice.⁶

Since 1966, the UNSC has established in total 30 sanctions regimes, covering: Southern Rhodesia, South Africa, the former Yugoslavia (two), Haiti, Iraq (two), Angola, Rwanda, Sierra Leone, Somalia and Eritrea, Eritrea and Ethiopia, Liberia (three), DRC, Côte d'Ivoire, Sudan, Lebanon, DPRK, Iran, Libya (two), Guinea-Bissau, Central African Republic, Yemen, South Sudan and Mali, as well as against ISIL/ISIS (Da'esh) and Al-Qaida, and the Taliban. Today, 14 of these regimes are still active.⁷

Since the late 1990s, the use of sanctions by the UN has shifted from embargos (also known as comprehensive sanctions) targeting whole states and regions, to so-called targeted sanctions, targeting only listed individuals and entities. The aim of such targeted sanctions is to coerce the elites and responsible individuals and entities of a certain regime or group to change their and the regime's conduct while limiting the negative effects on the civil population in the country or region in question. The effect of being targeted by sanctions usually means that the individual's or entity's assets are frozen and that trade with such persons or entities are prohibited – a form of trade ban against them.⁸

UN sanctions are not directly binding upon individual actors as they require incorporation by national and regional lawmakers to become binding and effective. In other words, the UN does not have jurisdiction over any individual actors, only over its UN member states. Some countries, such as Sweden, will however have national laws, through which UN sanctions become directly applicable at the time they are adopted in the UN.⁹

In the EU, the adoption of sanctions, including new UN sanctions, is done through a legislative procedure at the European Council. However, this

6 Guy Martin and others, 'UN Sanctions', in Rachel Barnes and others (eds), *The Guide to Sanctions*, (Global Investigations Review 2020), 6 <<https://globalinvestigationsreview.com/guide/the-guide-sanctions/first-edition/form>> accessed 16 October 2021.

7 See UNSC webpage <www.un.org/securitycouncil/sanctions/information> accessed 16 October 2021.

8 See further on UN sanction programs on the UN's webpage, available at: <www.un.org/securitycouncil/sites/www.un.org.securitycouncil/files/subsidiary_organ_factsheets.pdf> accessed 16 October 2021.

9 Act (1996:95) on Certain International Sanctions (*lag (1996:95) om vissa internationella sanktioner*) (SWE).

incorporation into EU law requires unanimity amongst the EU member states, which has on occasion led to a delay due to political tension and negotiations.¹⁰

2.2 *EU Sanctions Regimes*

2.2.1 Evolution and Decision-Making in EU Sanctions Regimes

EU sanctions are based on the Common Foreign and Security Policy,¹¹ and are adopted through Council decisions.¹² All EU member states are thus involved and agree through the unanimous adoption of new sanctions. The sanctions regimes are usually imposed through a Council decision and a parallel Council regulation. The latter is needed to introduce a legally binding EU act which is applicable and binding on all persons and entities in the EU.

There are two typical EU sanctions regimes; country-based regimes and global thematic regimes.

The EU currently has a number of country-based sanctions regimes, targeting *e.g.* Russia, Venezuela, Sudan, Lebanon, Afghanistan, etc.¹³ The most recent examples of EU country-based sanctions are the very extensive sanctions regimes imposed against Russia and Belarus due to Russia's invasion of Ukraine.¹⁴

The EU's country-based sanctions will most often impose strict restrictions on engaging in economic activity with a targeted individual or entity. Such individuals and entities are subject to an asset freeze, meaning that banks will freeze their account, and a prohibition to provide such individuals and entities directly or indirectly with any economic resources. The latter in effect means a trade ban against such individuals and entities.

10 Commission 'Communication from the Commission to the European Council, the European Parliament and the Council, A stronger global actor: a more efficient decision-making for EU Common Foreign and Security Policy' COM(2018)647 Final <<https://ec.europa.eu/transparency/regdoc/rep/1/2018/EN/COM-2018-647-F1-EN-MAIN-PART-1.PDF>> accessed 16 October 2021.

11 Consolidated Version of Treaty on the European Union [2008], OJ C115/13 (Treaty on the European Union), Arts 21–46, establishing the "General Provisions on the Union's External Action and Specific Provisions on the Common Foreign and Security Policy (CFSP)".

12 Treaty on the European Union, art 31.

13 See <www.sanctionsmap.eu/#/main> accessed 16 October 2021.

14 Council Regulation (EU) No 833/2014 of 31 July 2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine [2014] OJ L229/1, Council Regulation (EU) No 269/2014 of 17 March 2014 concerning restrictive measures in respect of actions undermining or threatening the territorial integrity, sovereignty and independence of Ukraine [2014] OJ L078/6 and Council Regulation (EC) No 765/2006 of 18 May 2006 concerning restrictive measures against President Lukashenko and certain officials of Belarus [2006] OJ L134/1.

In addition to targeting individuals and entities, such sanctions are often coupled with export restrictions on specific products to specific industries or for specific purposes. For example in the new sanctions against Russia, the EU and US coordinated a broad list of equipment subject to an export and sales ban, which encompassed equipment and software deemed useful for Russia's defence and security industry.¹⁵ The EU also sometimes escalates its sanctions regimes, in cases where the situation in the targeted country deteriorates, and adds new persons to the lists of sanctioned individuals and entities, or adds new sectors or products with which it is prohibited to engage in any business. The sanctions against Iran (before the Joint Comprehensive Plan of Action (JCPOA), (discussed below) and Syria are historic examples of the most extensive sanctions regimes imposed by the EU.¹⁶ The new sanctions against Russia and Belarus are equally comprehensive, but because of the EU's dependency on oil and gas from Russia, the sanctions have not (yet) covered Russian exports and have not (yet) banned financial transactions with Russian banks involved in payment for oil and gas.

Following the trend in the US, the EU has lately increased its adoption of thematic regimes. These include sanctions against the proliferation and use of chemical weapons which was introduced in 2018,¹⁷ and sanctions against cyber-attacks threatening the EU or its member states, which was introduced in 2019.¹⁸ So far very few individuals or entities have been added to these sanctions lists.¹⁹

15 Annex VII of Council Regulation (EU) No 833/2014 of 31 July 2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine [2014] OJ L229.

16 As regards Iran, there are two sanctions regimes, Council Regulation (EU) No 267/2012 of 23 March 2012 concerning restrictive measures against Iran and repealing Regulation (EU) No 961/2010 [2012] OJ L88/1 (see in particular the version before April 2016), and Council Regulation (EU) 359/2011 of 12 April 2011 concerning restrictive measures directed against certain persons, entities and bodies in view of the situation in Iran [2011] OJ L100/1. For Syria, see Council Regulation (EU) 36/2012 of 18 January 2012 concerning restrictive measures in view of the situation in Syria and repealing Regulation (EU) No 442/2011 [2012] OJ L16/1.

17 Council Regulation (EU) 2018/1542 of 15 October 2018 concerning restrictive measures against the proliferation and use of chemical weapons [2018] OJ L259/12.

18 Council Regulation (EU) 2019/796 of 17 May 2019 concerning restrictive measures against cyber-attacks threatening the Union or its Member States [2019] OJ L129 I/1.

19 See Annexes I in Council Regulation (EU) 2018/1542 of 15 October 2018 concerning restrictive measures against the proliferation and use of chemical weapons [2018] L259/12 and Council Regulation (EU) 2019/796 of 17 May 2019 concerning restrictive measures against cyber-attacks threatening the Union or its Member States [2019] OJ L129 I/1.

One reason for the difference between the US and the EU in scope and approach, can be found in the political negotiations often involved between different member states in the EU. In 2017, the US introduced a new thematic sanctions regime called the Global Magnitsky Program (“Magnitsky sanction”), to target individuals and entities involved in serious corruption and human rights violations. At present, the program has listed 243 individuals and entities in 28 different countries.²⁰

In December 2020, after a long period of political discussion regarding the poisoning of the Russian opposition leader Alexei Navalny, the EU introduced a new sanctions regime against serious human rights violations and abuses.²¹ Both the European Parliament and the European Commission had publicly called the member states to agree on the adoption of this sanctions regime and also to change the adoption process to move to qualified majority instead of unanimity, in order to limited the risk of political negotiations blocking the adoption of new sanctions.²² Contrary to the US Magnitsky sanctions, the EU’s sanctions regime focuses on human rights abuses only and cannot be used to target foreign individuals or entities involved in corruption.

A comparison with the US Magnitsky sanctions and the EU human rights sanctions regime provides an illustrative example of the difference in law-making ability. The US is able to impose new sanctions more swiftly, whereas the EU, due to political negotiations between member states, struggled for an awkwardly long time to reach the required unanimity. This exposes the weakness of the EU, that is the delay caused by political bargaining on a topic (human rights) which is after all a fundamental value for the EU.²³ In view of the contentiousness and slowness in imposing human rights sanctions, when Russia invaded Ukraine, the swift and coordinated imposition of sanctions by the US and the EU almost came as a surprise. However, Russia’s long military build-up at the Ukrainian boarder and the newly strengthened ties between Brussels and the Biden administration, provided timely and like-minded

20 US Department of State, infographic on the Global Magnitsky Program <www.state.gov/wp-content/uploads/2020/12/Infographic_v1.8-508.pdf> accessed 16 October 2021.

21 Council Regulation (EU) 2020/1998 of 7 December 2020 concerning restrictive measures against serious human rights violations and abuse [2020] OJ L 410I/1.

22 European Parliament resolution of 14 March 2019 on a European human rights violations sanctions regime (2019/2580(RSP)) [2019] OJ C23/108.

23 Arts 24(1) and 31(1) of the Treaty on the European Union sets out the general rule of unanimity when the Council adopts Common Foreign and Security Policy decisions; See also Consolidated Version of the Treaty on the Functioning of the European Union [2012] OJ C326/47, art 238(4).

platforms for the EU and US to coordinate and tailor extensive sanctions packages in a very effective manner.

Turning to the question of jurisdiction, compared to US sanction regimes, the EU has a very straight forward and consistent approach.

2.2.2 Jurisdiction of EU Sanctions

EU sanctions usually apply a standard clause, which sets out the jurisdictional scope of the economic sanctions in question. The clause is in principle identical in all sanctions regimes and has the following wording.

This Regulation shall apply:

- (a) within the territory of the Union, including its airspace;
- (b) on board any aircraft or any vessel under the jurisdiction of a Member State;
- (c) to any person inside or outside the territory of the Union who is a national of a Member State;
- (d) to any legal person, entity or body, inside or outside the territory of the Union, which is incorporated or constituted under the law of a Member State;
- (e) to any legal person, entity or body in respect of any business done in whole or in part within the Union.²⁴

The above wording is considered by the EU to be compliant with the principles on jurisdiction in international law, in short meaning that there is enough of a link or connection with the EU for the prohibitions and restrictions in a sanctions regulation to be applicable. Thus, a person with Swedish nationality, is thus by law (the sanctions regulation at hand) required to comply with the regulation, even when that person travels abroad. Further, companies established in Sweden are required to follow the sanctions, as well as any affiliates abroad. However, subsidiaries which are their own legal entities established outside of the EU, are not covered by the scope of the regulation.

The last point above, “any legal person, entity or body, in respect of any business done in whole or in part within the Union” could potentially be said to have some form of extraterritorial reach. For example, this provision could

24 Council of the European Union, *Guidelines on implementation and evaluation of restrictive measures (sanctions) in the framework of the EU Common Foreign and Security Policy*, update of 4 May 2018, item 88, <<https://data.consilium.europa.eu/doc/document/ST-5664-2018-INIT/en/pdf>> accessed 16 October 2021.

catch non-EU nationals that do part of their business through the EU, *e.g.* through brokering on an EU website.

The EU is keen however to claim that it applies sanctions in accordance with international law, and that it refrains from extraterritorial application. The EU's Guidelines on sanctions, explain the EU's standpoint and refers to the so-called Blocking Statute (discussed below), as the way in which it condemns other countries' extraterritorial sanctions:

The EU will refrain from adopting legislative instruments having extra-territorial application in breach of international law. The EU has condemned the extra-territorial application of third country's legislation imposing restrictive measures which purports to regulate the activities of natural and legal persons under the jurisdiction of the Member States of the European Union, as being in violation of international law.²⁵

EU sanctions regulations are directly applicable to any individuals and entities under their scope. However, as regards enforcement, it is up to each EU member State to lay down the rules on penalties applicable to infringements of the provisions of such regulations. The penalties provided for under such national law shall be effective, proportionate and dissuasive, but evidently vary to a great extent between the different member states.²⁶

Although the EU's sanctions regimes do not have extraterritorial application, a certain departure from this principle can be detected in the recent sanctions against Russia and Belarus. Even if the legal provisions have not changed, the European Commission has been active and published numerous guidance documents to explain how sanctions provisions should be interpreted and these documents recurrently refer to the prohibition on circumventing sanctions. Thus, for example, an EU parent company cannot, at least actively, allow its subsidiary in Russia to engage in the type of activities that the EU parent company would be prohibited, under EU sanctions, to engage in. These new and numerous sanctions guidelines have been produced at a very quick rate, and sometimes provide extensive interpretations of provisions that are already quite broad in scope. Enforcement and subsequent court actions might be expected on these provisions, which in turn will determine how far the sanctions provisions should actually be applied.

25 *ibid* item 52.

26 *ibid* item 89.

2.3 *US Sanctions Regimes*

Sanctions have for a long time been a part of US foreign policy as a way to create economic pressure on specific governments, companies or individuals if they are acting against US foreign policy or national security objectives.²⁷ Today, the US maintains a very broad range of different types of sanctions, both thematic and country-based.

The different types of US sanctions can be categorized as comprehensive, sectoral and list-based. The comprehensive embargos applies to specific regions or countries and prohibits US persons from engaging in the specific jurisdiction, including measures such as facilitating exports, imports and financial transactions.²⁸ The sectoral sanctions are usually those that target certain sectors within a country's economy, which generate income to the government. These sanctions have been used to prohibit US persons and persons within the US from engaging in certain transactions with targeted individuals and entities in, for example, Russian industries such as the energy, mining, engineering or defence sectors.²⁹ The third category of sanctions is, as in the case of UN and EU, list-based sanctions, which refers to a number of governmental sanctions lists of specific individuals, companies, governments etc. There are several different lists, including the most known, *i.e.* the Blocked Persons List and the Specially Designated Nationals (the SDN List).³⁰ As with EU sanctions, US persons are prohibited from facilitating transactions with these persons and their property. Furthermore, all assets or property owned by such listed persons or entities and which are under US jurisdiction are frozen.³¹ Thus, in short, as in the case of the EU sanctions, the list-based sanctions result in a trade ban against the persons or entities on those lists.

The question of jurisdiction and to whom US sanctions shall apply, is perhaps one of the most complex issues when trying to understand US sanctions. Contrary to the EU's uniform approach, the language of each sanctions regime

27 John D Buretta and Megan Y Lew, 'US Sanctions' in Rachel Barnes and others (eds), *The Guide to Sanctions* (Global Investigations Review 2020) 98–100.

28 *ibid* 100.

29 US Department of the Treasury's Office of Foreign Assets Control (OFAC) Ukraine/Russia-Related Sanction Program, <https://home.treasury.gov/system/files/126/ukraine_overview_of_sanctions.pdf> accessed 16 October 2021, See also, Buretta and Megan Y Lew (n 26) 100–101.

30 *ibid* Buretta and Megan Y Lew (n 26) 100–101.

31 *Ibid*; See also US Department of the Treasury's Office of Foreign Assets Control (OFAC) information on Specially Designated Nationals And Blocked Persons List <<https://home.treasury.gov/policy-issues/financial-sanctions/specially-designated-nationals-and-blocked-persons-list-sdn-human-readable-lists>> accessed 16 October 2021.

determines its scope. Thus, different sanctions regimes may target differently. Also, the US has developed certain theories of jurisdiction, which extends jurisdictions through different means of nexus to the US. In addition, and most severely, some sanctions regimes allow for the imposition of US sanctions against non-US persons and entities simply because they act in a way which is contrary to US sanctions. To facilitate the narrative around this complex structure, US sanctions are usually categorised as either “primary sanctions” or those with more extended applicability, *i.e.* “secondary sanctions”.

2.3.1 Primary Sanctions

2.3.1.1 *Concept of US Person and US Nexus*

A primary sanction regime applies to individuals and entities falling within the US legal jurisdiction.³² This is usually defined in the regulation as applying to “US persons” or in situations when there is a “US nexus”, and there is a clear connection to the US jurisdiction. The term US person includes:

/.../all U.S. citizens and permanent resident aliens regardless of where they are located, all persons and entities within the United States, all U.S. incorporated entities and their foreign branches.³³

The concept of a “US nexus” refers to situations when an activity involves a US person or touches US jurisdiction. A US nexus can therefore exist when a transaction involves a US-person at a company, includes US-origin services or goods, is facilitated through a payment in US dollars or takes place on US territory.³⁴ Therefore, a non-US person may violate a US primary sanction if it is involved in a transaction that has a US nexus, for example, simply by engaging in a payment of goods in US dollars.

32 European Parliament, Policy Department for External Relations, ‘Extraterritorial sanctions on trade and investments and European responses’ [2020], p. 18 <[www.europarl.europa.eu/RegData/etudes/STUD/2020/653618/EXPO_STU\(2020\)653618_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2020/653618/EXPO_STU(2020)653618_EN.pdf)> accessed 16 October 2021.

33 OFAC Frequently Asked Questions, General Questions, Basic Information on OFAC and Sanctions, No. 11 (last update 15 January 2015) <home.treasury.gov/policy-issues/financial-sanctions/faqs/11> accessed 16 October 2021.

34 Claire A DeLelle and Nicole Erb, *Key Sanctions Issues in Civil Litigation and Arbitration* in Rachel Barnes and others (eds) *The Guide to Sanctions*, (Global Investigations Review 2020) 155.

2.3.1.2 *Applicability to Non-US Person Because of US Nexus*

The scope of primary sanctions may sometimes expand to non-US companies established outside of US jurisdiction if they are owned or controlled by US companies, *i.e.* a foreign subsidiary of a US entity (Iran and Cuba).³⁵

Furthermore, both US and non-US persons may be caught through an action that “causes” a violation of sanctions. This has resulted in an extraterritorial effect of US sanctions when only a very limited US nexus is at hand. The situation arise when, for example, a non-US person (A), engage in a transaction with either a sanctioned person (*e.g.* an SDN-listed person) or country (B) *causing* a US-person (C) to violate a primary sanction. This theory of “causing” has been used primarily in situations when a non-US person (A) uses US dollars as payment in transactions with the sanctioned party (B) causing the US bank (C) to violate a sanction, *e.g.* making (C) process US dollars to Iran.³⁶ A non-US person conducting transactions using US dollars must therefore be aware of the risk of becoming subject to US sanctions even if there is no other US nexus then the choice of currency.³⁷

2.3.2 Secondary Sanctions

2.3.2.1 *Non-US Persons without US Nexus*

The US imposition of secondary sanctions is not a completely new feature. During the 1990s, secondary sanctions were imposed against the petroleum sectors in Iran and Libya. Two of the most important sanctions programs with secondary provisions are those against Russia and Iran.³⁸ The US sanctions programs which contain “secondary sanctions” provisions go beyond the reach of primary sanctions. The expanded scope is the result of secondary sanctions

35 Congressional Research Service, *Iran Sanctions*, [2020] (updated 6 April 2021), p. 10, regarding Iran sanctions applicability to foreign US subsidiaries; See also, Buretta and Megan Y Lew (n 26) 104.

36 Read more, Buretta and Megan Y Lew (n 26) 104–105.

37 See for example the civil settlement agreement between OFAC and CSE TransTel Pte. Ltd. and CSE Global Limited through which these non-US companies were held responsible for causing several US financial institutions to engage in prohibited transactions with Iran, meaning US dollars were processed through these institutions during the companies’ transactions with Iran. The companies agreed to pay \$12,027,066 for potential civil liability. See further information on the US Department of the Treasury’s Office of Foreign Assets Control (OFAC) webpage <https://home.treasury.gov/system/files/126/transtel_settlement.pdf> accessed 16 October 2021.

38 Find out more about US secondary sanctions through the Congressional Research Reviews, *U.S. Sanctions on Russia*, [2020] (updated 18 January 2022) <<https://fas.org/sgp/crs/row/R45415.pdf>> accessed 16 October 2021; US Congressional Research Reviews, *Iran Sanctions* [2020] <<https://fas.org/sgp/crs/mideast/RS20871.pdf>> accessed 16 October 2021.

not requiring any US nexus at all.³⁹ These provisions aim at influencing the behaviour of non-US persons acting outside of US jurisdiction who are conducting, what is viewed as, acts contrary to US foreign policy and national security objectives. Usually, the secondary sanctions provisions will, by definition, apply to “any person” instead of a “US person”.

As an example, the US sanctions against Russia include certain provisions under which the US administration can target foreign individuals that engage in “significant trade” (discussed below) with a person or entity already listed in US sanctions against Russia. As explained by the US Treasury, these rules feature:

a mandatory sanctions provision on foreign persons that Treasury determines, inter alia, knowingly *facilitate significant transactions*, including deceptive or structured transactions, for or on behalf of *any person subject to U.S. sanctions with respect to the Russian Federation*, or their child, spouse, parent, or sibling.⁴⁰ (emphasis added)

A key criteria in the above provision is that the trade should constitute a significant transaction. However, instead of delimiting the scope of the secondary sanction, this wording in practice actually adds to more uncertainty. The reason is that the definition of what constitutes a significant transaction is determined on a case-by-case basis with respect to several different broadly defined factors:

- (1) the size, number, and frequency of the transaction(s); (2) the nature of the transaction(s); (3) the level of awareness of management and whether the transaction(s) are part of a pattern of conduct; (4) the nexus between the transaction(s) and a person subject to sanctions imposed by the United States with respect to the Russian Federation; (5) the impact of the transaction(s) on statutory objectives; (6) whether the transaction(s) involve deceptive practices; and (7) *such other factors that the Secretary of the Treasury deems relevant on a case-by-case basis*.⁴¹ (emphasis added)

These factors, in particular the uncertain nature of the seventh factor, complicates any assessment for a non-US person of whether a specific transaction would be deemed significant. Thus, one effect of this vague definition, is that

³⁹ Buretta and Megan Y Lew (n 26) 105.

⁴⁰ OFAC, Frequently Asked Questions, no. 574, <<https://home.treasury.gov/policy-issues/financial-sanctions/faqs/topic/1576>> accessed 16 October 2021.

⁴¹ OFAC, Frequently Asked Questions No. 545 <<https://home.treasury.gov/policy-issues/financial-sanctions/faqs/545>> accessed 16 October 2021.

it is interpreted very cautiously, and thereby effectively deters business that might be seen as lawful by the US authorities.

If a company breaches a secondary sanction, several severe effects may occur. For example, if an EU-based company engages in significant trade with a Russian SDN-listed entity, the EU company may itself become a designated entity (an SDN) and thus subject to US primary list-based sanctions.⁴² This applies despite a lack of any US nexus in the transaction. Such a designation would effectively mean that no US person would be allowed to interact with the EU company, and the company's accounts would be frozen by US banks.

Such a designation would thus exclude the company from the US markets and the US financial system, including access to trade in US dollars. Most banks in the western hemisphere are reliant on access to the US financial system and thus also clearing functions with US banks. EU banks are therefore very cautious of the draconian effects of being designated under US sanctions, as well as the commercial risk of US banks no longer being able to interact with them. A further factor to consider in this context is that the US enforcement authorities, during the last decade, have charged a large number of EU-based banks for violating US sanctions. This has led to comprehensive settlements agreements and historically high fines for the banks involved.⁴³ Some banks have made very strict compliance commitments and others simply apply a more cautious approach and do not allow their customers (bank account holders or loan takers) to receive or make payments to an SDN-listed entity, even when there is no US nexus or US secondary sanctions provisions in the sanctions program at hand. Many financial agreements have very strict compliance requirements on the loan taker, which further extends the compliance requirements onto the business community.

In sum, the effectiveness of, and the adherence to US sanctions is, to a major extent, attributed to the international banking sector's cautious approach, due to the experiences with enforcement of US sanctions. As the banking sector extends the perceived compliance requirement onto its customers, US sanctions are in practice very extensively implemented in global business transactions. This effectively also extends US sanctions, and often gives them an even wider extraterritorial effect than what is actually meant in US

42 Cheire Spinks and others, '*Navigating Conflicting Sanctions Regimes*' in Rachel Barnes and others (eds) *The Guide to Sanctions* (Global Investigations Review 2020) 127.

43 See, for example, the settlement agreement in 2014 between the US Department of the Treasury's Office of Foreign Assets Control and the French Bank, BNP Paribas SA of 963 million US dollars, <<https://home.treasury.gov/policy-issues/financial-sanctions/recent-actions/20140630>> accessed 16 October 2021.

jurisdiction.⁴⁴ To illustrate this point, when the EU and US coordinated sanctions against Russia, they chose which Russian banks would be sanctioned and how, in order to not prevent the EU from being able to pay for oil and gas (e.g. by, at least initially, not listing Sberbank and Gazprombank as SDNs).

3 The Blocking Statute

The Blocking Statute is one of several measures taken in attempts to counter the jurisdictional overreach caused by secondary sanction programs implemented by different regimes. The basic principle of the Blocking Statute is that the EU recognises laws adopted by third countries with extraterritorial effect as unlawful under international law. EU operators⁴⁵ are therefore prohibited from complying with such legislation and have certain notification requirements when they encounter a listed extraterritorial legislation.⁴⁶

At present, the regulation addresses the US extraterritorial sanctions legislation against Iran and Cuba.⁴⁷ Nonetheless, the Blocking Statute purports to offer three different types of protection to EU operators: (I) nullification of the effect in the EU of foreign decisions taken by a third country authority based on the legislation listed in the Annex of the Blocking Statute,⁴⁸ (II) allowing an EU operator to seek compensation for any loss it has suffered arising from the application of the listed extraterritorial legislation,⁴⁹ and (III) enabling EU operators, in specific circumstances, to request an authorization to comply with the listed extraterritorial legislation.⁵⁰

EU operators have found themselves in the difficult or even impossible position to comply with the US sanctions regulations in the Annex of the Blocking Statute, and the Blocking Statute at the same time. Only very few court proceedings concerning the Blocking Statute have been handed down.

44 Policy Department for External Relations, European Parliament, *Extraterritorial sanctions on trade and investments and European responses*, (2020), p. 18.

45 A natural or legal person specified in Art 11 of the Blocking Statute.

46 Art 5(2) of the Blocking Statute.

47 Annex of the Blocking Statute.

48 Art 4 of the Blocking Statute. This means that such decisions will not be recognised nor will any penalties be executed within the EU.

49 Art 6 of the Blocking Statute.

50 Art 5(2) of the Blocking Statute. It is the European Commission that may provide such authorization if specific circumstances are at hand and if the transaction does not cause serious harm to the interests of either the EU operator or the EU.

The ultimate interpreter of the Blocking Statute and how it should apply would be the European Court of Justice. At present, there two cases related to the Blocking Statute have reached the Court of Justice, but as of yet, only one has been tried.⁵¹ In Case C-124/20 *Bank Melli*, the Court confirmed that the Blocking Statute does not prevent an EU operators from terminating a commercial relationship with an Iranian party (in this case a bank) subject to US sanctions but it will, if challenged in court, has a burden of proof to show that the termination was not done to comply with US sanctions. This and the pending court rulings could thus change the dynamics of how to comply with US sanctions and make it more difficult for EU operators and EU-based banks to object to business with Iran and Cuba, but this remains to be seen.⁵²

However, notably, as the Blocking Statute does not (yet) encompass US secondary sanctions against Russia, there is no prohibition for EU operators to comply with US sanctions against Russia and there is therefore less risk of refraining from business with for example, Russian SDNs. Still, the US and EU sanctions against Russia have the effect of hampering or complicating existing trade. The following section will therefore address the Russian counteractions to the Western countries' introduction of sanctions, and thereafter exemplify the difficult situation for businesses operating in this internationally complex set of conflicting laws through two cases studies.

4 Russian Countermeasures against EU and US Sanctions

The following section first provides insight in how Russia has acted to try to counter the effects of initial US and EU sanctions (including US secondary sanctions). It thereafter explains the more drastic reactions in response to the very comprehensive and swift sanctions imposed following Russia's invasion of Ukraine. In short, these measures have all served to mitigate the sanctions' effect on the state economy. Measures taken included (1) restrictions of disclosure of ownership information from the Unified State Register of Legal Entities

51 See cases C-124/20, *Bank Melli Iran*, reference for a preliminary ruling, [2021] EU:C:2021:386 (judgement rendered) and T-8/21 *IFIC Holding v. the Commission*, (2021/C 62/61) (pending).

52 The unwillingness of EU-based banks to accept payment from entities or persons in Russia that are on the US SDN list exist even if US secondary sanctions against Russia are not (yet) on the Blocking Statute, which therefore does not make such a refusal a breach of law.

in relation to Russian companies owned or controlled by sanctioned persons; (II) increased import customs duties; and (III) the imposition of import bans.

At the moment of these measures, Russia did not have a clear legal background for taking them. Thus, the range of measures was rather limited in its content and/or duration. To tackle this problem, in 2020, Federal Law No. 127-FZ “On measures (countermeasures) in response to the hostile acts of the USA and other foreign countries” was adopted. This law laid down a legal framework for new countermeasures. For example, Russian authorities may now terminate or suspend international cooperation of the Russian Federation or Russian organisations with so-called unfriendly foreign states. This could include restricting foreign or Russian-based companies with *e.g.* US shareholders from taking part in public procurement.

To counter denied access to justice, in June 2020, the Russian Parliament also amended the Commercial Procedure Code (the CPC). The amendment creates a right for persons and legal entities that suffer from restrictive measures imposed by “unfriendly foreign states” to refer their contractual disputes to state courts in the Russian Federation. This applies even if the contract in question would state that all disputes are to be settled by arbitration in a particular jurisdiction (for example Sweden).⁵³ In the course of parliamentary readings, the draft law’s original text was substantially revised in favour of a more abstract regulation.⁵⁴ Although Russian law provides no definition of “restrictive measures”, for the sake of convenience, such measures are herein referred to as sanctions. The CPC was supplemented with two articles:

- (a) Article 248.1, which establishes the “exclusive jurisdiction” of Russian State courts over disputes involving persons subject to sanctions; and,
- (b) Article 248.2, which entitles such persons to seek to prevent legal proceedings from being initiated or continued in a foreign court or in international arbitration seated outside Russia, at a Russian state court.

4.1 *Article 248.1 of the CPC*

The new law expanded the list of disputes that fall under the “exclusive jurisdiction” of Russian State courts, provided that certain conditions are met.⁵⁵

53 The Federal Law N 171-FZ of 8 June 2020 (Russia).

54 For example, the wording on “unfriendly foreign states” was excluded, the clarification of the term “restrictive measure” was ruled out, and a wider proposal to give Russian companies a right to unilaterally amend jurisdiction agreements was rejected.

55 The list of disputes include: (I) disputes between a national / foreign party and another national / foreign party if the sanctions imposed on a Russian party constitute the ground for such disputes (thus far there are no examples to illustrate such a situation), and, (II) disputes involving Russian persons subject to sanctions.

Additionally, a person (natural or legal) is considered to be subject to sanctions in two cases: (I) when a Russian person is sanctioned directly (*e.g.* named in the US SDN list); and (II) when a legal entity is indirectly sanctioned on the basis of it being owned or controlled by one or more sanctioned Russian persons (a Sanctioned Party). Further, a Sanctioned Party may refer a contractual dispute to a State court if:

- The legal proceedings in a foreign court or international arbitration seated outside Russia (the Foreign Forum) are not provided for by an international treaty of the Russian Federation or by jurisdiction agreement of the parties; or
- There is a jurisdiction agreement/contractual clause specifying the Foreign Forum, but this is unenforceable due to the sanctions imposed on one of the parties, thus depriving this party of its access to justice. It is up to the court to determine how such unenforceability may be manifested.

As a general rule, already present before the new law, a violation of the exclusive jurisdiction of Russian courts constitutes a ground for refusal of recognition and enforcement of a foreign arbitral award or a court decision.⁵⁶

4.2 *Threat of Nationalization*

Western governments and companies' reaction to the Russian invasion of Ukraine in February 2022 was very strong and swift. Comprehensive sanctions were imposed, and a majority of large EU and US companies publicly announced their withdrawal or suspension of operation on the Russian market. Many companies decided to close stores and stop production in factories. In response to these measures, the Russian government announced at least two different legislative proposals with the same effect, namely, to nationalize such suspended operations. In short, the legislative proposal would allow for a decision by Russian authorities to take over and continue operations, through an appointed Russian administrator. According to the proposals, there would also be an option for such an administrator to after a time period sell the company on the Russian market. These legislative proposals have, at the time of writing, not yet been adopted, but the mere discussion and threat of such a law has left many companies caught between the need to comply with EU and US sanctions, and facing the risk of large investments being seized.

⁵⁶ See Commercial Procedure Code of the Russian Federation [2002] art 244. To be noted, the new law states that this ground for refusal shall not be relied upon in the event the Sanctioned Party had not objected to the consideration of the dispute by the Foreign Forum, including situations when it had not applied for an anti-suit injunction under Art 248.2 CPC.

4.3 *Russian Criminalization of Compliance with Unfriendly States Sanctions*

Another very prominent countermeasure is the Russian proposal to criminalize the adherence to EU and US sanctions. Similar to the EU Blocking Statute, which also allows for criminal sanctions for complying with US extraterritorial export control and sanctions regimes, the Russian proposal targets compliance with sanction regimes of unfriendly states. This proposal has also caused concern as many Russian subsidiaries of EU companies are managed locally by Russian managers. These managers would then potentially face personal criminal liability simply by following through on instructions from an EU parent company if such instructions have the purpose of applying EU sanctions in Russia.

4.4 *Conclusions of the Backlash*

The Russian counterreaction and countermeasures are evidently having some effect in countering EU and US sanction, at least when it comes to operations in Russia. The situation for Russian managers and employees in Russia has dramatically changed in a very a short time span of two months, i.e. from the invasion of Ukraine, and the proposal to criminalize compliance with EU and US sanctions. EU companies have had to face not only the legal difficulties of complying with EU and US sanctions, but also the difficulties of not putting local managers and employees at risk when they set such policies for their Russian subsidiaries.

Furthermore, the situation has led to a large number of terminated contracts and suspended deliveries due both to voluntary suspensions and sanctions compliance. Numerous lawsuits and claims will likely be presented in various fora, both Russian domestic courts as well as international arbitration. Whereas EU sanctions prohibit EU courts from granting a claim if such a claim is due to compliance with EU sanctions provision e.g. on a failure to deliver due to a sanctions prohibition, there is little protection from Russian courts granting claims in Russian courts.

5 Case Study – Risks

5.1 *Case Study 1: EU Company Entering the Iranian Market – Risks of Market Restrictions, Becoming an SDN or Criminal Penalties Due to Compliance*

Consider a large EU company that has global sales, including the EU and US markets. It enters the Iranian market following the opening up of business

as a result of the JCPOA. The EU company enters into a large contract with an Iranian company and commits to delivering products made in the EU to Iran. There are no US connections to the EU-made products or the EU company's intended business activities, no US dollar transactions or US persons involved. Technically, US law does not have jurisdiction over the transaction.

In 2018, the US re-introduced its secondary sanctions regime, including listing the Iranian customer as an SDN. The US also reinstates the possibility of listing foreign persons and companies that deal in significant transactions with such SDNs.

By continuing trade with its customer, the EU company risks violating US secondary sanctions and faces the possible consequences including becoming listed as an SDN. Becoming a listed SDN would mean that no banks would be willing to serve the EU company, and it would be banned from the US market as US companies are in principle prohibited from trading with an SDN.

By interrupting the business relationship, the EU entity faces the risk of violating the contractual terms of the contract with the Iranian customer. Further, the EU company and its representatives face the risk of violating the prohibition to comply with US sanctions. In some EU countries the penalty for violating that prohibition is statutory criminal penalties.

At the same time, EU banks would in any event usually not accept any payments from Iran. (Thus, in practice, even if the Iranian customer were not listed, the banks would refuse.)

DW 20 August 2018

French energy giant Total officially pulls out of Iran

Total, France's largest energy company, announced on Monday it was pulling out of a \$4.8 billion (€4.1 billion) Iranian gas field project, after admitting it was extremely vulnerable to the threat of US penalties against those doing business with Iran.

The French group was one of three major energy companies set to help supply the state-of-the-art technology needed to tap into South Pars, the world's largest natural gas field shared by Iran and Qatar.

However, after abandoning the 2015 Iran nuclear accord in May this year, the United States has said it will reimpose sanctions on Iran in two phases, in August and November. The second round of sanctions will target the country's vital oil and gas sector. Any firm found doing business with Iran could risk facing serious US penalties.

Source: <www.dw.com/en/french-energy-giant-total-officially-pulls-out-of-iran/a-45150849> accessed 16 October 2021

Thus, the EU company finds itself in between two conflicting laws, and would in any event, find it impossible to find a payment mechanism for receiving payment. It is understandable that the Blocking Statute has been criticised for causing more difficulties in an already difficult situation.

5.2 *Case Study 2: EU Company Entering the Russian Market – Risk of Loss of Business and Denied Access to Justice*

Consider an EU company that has entered the Russian market through a long-term ten year framework agreement with a Russian customer in 2012 (i.e. several years before sanctions were introduced against Russia). The EU customer sells products to the Russian company in US dollar transactions. The agreement includes an ordinary arbitration clause setting out conditions for potential arbitration in Stockholm. The agreement also contains a regular force majeure clause, but no trade sanctions clause which would allow the parties to depart from the agreement in case sanctions are introduced.

The Russian customer is owned and controlled by a specific individual. At one point, in 2016 the US decides to list this individual as an SDN. Because the Russian company is 100 per cent owned by a US listed SDN, the Russian company is effectively also subject to the same sanctions.

The EU company faces several risks.

First, continued trade in US dollars with the Russian customer causes a US nexus. There is therefore a risk that the EU company would breach US primary sanctions. Violating primary sanctions could lead to both criminal penalties (including imprisonment and fines) and civil monetary penalties for the EU company.⁵⁷

The company could consider changing the currency of payment to EUR. However, even if the EU company removes all US nexus, including ceasing to use US dollars, the company still faces the risk of breaching US secondary sanctions if it engages in significant transactions with the Russian customer.

Even if no US nexus exist and the transactions are not significant, the EU company still faces a risks of breaching sanctions clauses in its loan and financial agreements. Such clauses often sets out obligations beyond applicable laws. The EU company may in fact have committed to not doing any business with any company or entity on an SDN list. The EU company thus risks

57 OFAC, 'Ukraine/Russia-relatedsanctionsprogram' (Washington, DC16June2016), 7 <https://home.treasury.gov/system/files/126/ukraine_overview_of_sanctions.pdf> accessed 16 October 2021.

defaulting its loan agreements, unless it refrains from doing business with the Russian customer.

Thus, in view of these risks, the EU company may in turn choose to try to mitigate its risks by suspending or terminating the contract. However, the EU company then faces the risk that the Russian company claims a breach of contract and invokes the arbitration clause.

If the Russian company invokes the arbitration clause, it has to transfer a payment of a registration fee through a bank to the arbitration institute. However, it is very unlikely that any EU-based banks will accept payment from an SDN. It is therefore likely that the Russian company will not be able to pay the registration fee for initiating an arbitration proceeding and thus faces a form of denied access to justice. That might seem as a good thing for the EU company, but that in turn would likely back-fire.

Due to the Russian legislation to counter the risk of denied access to justice, the Russian customer may be able to refer the contractual dispute to a state courts in the Russian Federation, despite the arbitration clause. The EU company thus faces additional risks to litigate only in Russian State courts if it terminates or suspends the contract because of US sanctions, as the Russian party could claim that only Russian courts are competent to try the case.

6 Conclusions and Outlook

Because of geopolitical differences and nation states' different foreign policy objectives, we see a departure from the multilateral framework for imposing economic sanctions in the United Nations and a clear movement towards unilateral autonomous sanctions. Especially some US sanctions cause severe implications and a great amount of uncertainty for businesses around the globe, due to their extraterritorial effects, both in law and in practice. However, the recent EU and US sanctions (as well as those from other Western countries), have also shown that we may be entering a new age of coordinated and effective sanctions.

As the cases of the Blocking Statute and Russian countermeasures illustrate, US extraterritorial sanctions also lead to a backlash and more risks for global businesses. International trade is by its nature more exposed to risk, such as currency fluctuation, cultural and political differences, and legal developments. More conflict of laws means less predictability and less deal certainty. Adding a layer of swift and unpredictable, often conflicting sanctions regimes, will really harm global trade. As in the case of the recent sanctions against Russia and Belarus shows, most large EU and US companies will simply refrain

from doing business with Russia even if it would be possible under certain provisions of the sanctions regimes. In this sense, sanctions in combination with public reactions to the invasion of Ukraine, have not only reduced trade with Russia, they have close to effectively isolated Russia from trading all together with the EU and US.

Looking ahead, the global trend is heading in a direction of exasperation. More countries are acting unilaterally and introducing similar regimes. In particular, China recently enacted its own form of trade sanctions and export control laws (Unreliable Entity List), Blocking Statute and now also Anti-Foreign Sanctions Law, which appear to mirror the different schemes maintained by the US and the EU (although they contain some important fundamental differences).

Ultimately, companies may need to “regionalize” their operations in order to mitigate risks of being caught in the midst of new sanctions regimes or between conflicting laws. The increasing use of unilateral and autonomous sanctions, and in particular those with secondary sanctions effects, can evidently rip up the tightly woven fabric that makes up global trade and supply chains, and provide a catalyst to the “decoupling” trend. The sanctions against Russia shows how quickly this may happen. In itself, decoupling is simply a term, and its effects will likely include less rational economic choices (local sourcing instead of competitive imports). However, more worrying is if it also rips up the political and cultural fabric between nation states, which leaves nothing left to protect; we are then in for a gloomy ride reversing the positive safety net of the Bretton Woods System that once was created to prevent future world wars.

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OFAC Frequently Asked Questions, General Questions, Basic Information on OFAC and Sanctions, No. 11 (last update 15 January 2015) <<https://home.treasury.gov/policy-issues/financial-sanctions/faqs/11>> accessed 16 October 2021.

OFAC's Frequently Asked Questions No. 545, <<https://home.treasury.gov/policy-issues/financial-sanctions/faqs/545>> accessed 16 October 2021.

OFAC, Ukraine/Russia-related sanctions program, 2016, p. 7. <https://home.treasury.gov/system/files/126/ukraine_overview_of_sanctions.pdf> accessed 16 October 2021.

The settlement agreement between OFAC and CSE TransTel Pte. Ltd <https://home.treasury.gov/system/files/126/transtel_settlement.pdf> accessed 16 October 2021.

The settlement agreement in 2014 between the US Department of the Treasury's Office of Foreign Assets Control and the French Bank, BNP Paribas SA of 963 million US dollars <<https://home.treasury.gov/policy-issues/financial-sanctions/recent-actions/20140630>> accessed 16 October 2021.

The Specially Designated Nationals and Blocked Persons List <<https://home.treasury.gov/policy-issues/financial-sanctions/specially-designated-nationals-and-blocked-persons-list-sdn-human-readable-lists>> accessed.

The US Department of the Treasury's Office of Foreign Assets Control (OFAC) Ukraine/Russia-Related Sanction Program <https://home.treasury.gov/system/files/126/ukraine_overview_of_sanctions.pdf> accessed 18 January 2021.

UN Sanction Fact Sheet <www.un.org/securitycouncil/sanctions/information> accessed 18 January 2021. UN sanction programs, <www.un.org/securitycouncil/sites/www.un.org.securitycouncil/files/subsidiary_organ_factsheets.pdf> accessed 18 January 2021.

US Department of State, infographic on the Global Magnitsky Program <www.state.gov/wp-content/uploads/2020/12/Infographic_v1.8-508.pdf> accessed 18 January 2021.

Risks Posed by the COVID-19 Pandemic regarding the Carriage of Goods and Passengers by Sea: Considerations on Seafarers' Rights and Health Protection

Jonatan Echebarria Fernández

1 Introduction

Governments and international organisations were slow to implement travel restrictions or declare COVID-19 as a health emergency. As a result, COVID-19 has evolved into a pandemic that has impacted global trade, supply chains, and the shipping and maritime industry. The pandemic has hindered global trade, with the World Trade Organization (WTO) expecting global trade to fall between 13% and 32%.¹ Factory shutdowns, port and border closures, as well as the inability for seafarers to disembark from vessels have resulted in delays for non-essential and essential goods. As governments enacted travel restrictions, goods carried by sea and their relative seafarers were stranded, unable to repatriate to their home countries or change crews. The International Maritime Organization (IMO) estimated the reduction of “freight transport volumes [...] by up to a half by the end of 2020 in [...] Asia” and the contraction of the “value of regional exports and import [...] by 23 and 25 per cent” respectively “in Latin America and the Caribbean”.² However, a paradigm shift has been observed

1 WTO Press Release, ‘Trade Set To Plunge As COVID-19 Pandemic Upends Global Economy’ (8 April 2020). <www.wto.org/english/news_e/pres20_e/pr855_e.htm> accessed 15 September 2020.

2 IMO, United Nations Conference on Trade and Development (UNCTAD), International Civil Aviation Organization (ICAO), United Nations Economic Commission for Africa (UNECA), United Nations Economic Commission for Europe (UNECE), United Nations Economic Commission for Latin America and Caribbean (UNECLAC), United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), United Nations Economic and Social Commission for Western Asia (UNESCWA), ‘Coronavirus (COVID-19) – Joint Statement on the contribution of international trade and supply chains to a sustainable socio-economic recovery in COVID-19 times’ (17 September 2020) Circular Letter No 4204/Add.31.

since June 2021, translating into a boost of 11% in calls at European Union (EU) ports, accounting for 86,865 compared to 78,559 in August 2019.³

In March 2020, the International Maritime Organization (IMO) addressed government travel restrictions affecting trade and goods transport by the pandemic. The Secretary-General stressed the urgency of commencing the carriage of goods by sea to ensure the maintenance of the global trade, while maintaining safety at sea and marine protection a priority as well.⁴ As of 23 April 2020, eighty countries enacted export restrictions, but only thirteen adapted their restrictions to WTO rules.⁵

The EU enacted non-essential travel restrictions to its external borders on 17 March 2020 for 30 days.⁶ Later, it extended the 30-day restriction from 8 May 2020 to 15 June 2020.⁷ In China, factories limited the number of workers or closed altogether in January, causing a decline in port calls at Shanghai and Yangshan by as much as 17%.⁸ Seaborne trade has fallen by an estimated 10.6% by May 2020 and is expected to decline by 5.6% overall by the end of 2020.⁹

3 European Maritime Safety Agency (EMSA), 'COVID-19 – impact on shipping Date' (10 September 2021) <<http://ems.europa.eu/newsroom/covid19-impact/download/6786/4525/23.html>> accessed 1 October 2021.

4 IMO Press Release, 'Tackling COVID-19 – a voyage together' (19 March 2020) <www.imo.org/en/MediaCentre/PressBriefings/Pages/08-IMO-SG-message.aspx> accessed 13 July 2020.

5 WTO, 'WTO Report Finds Growing Number Of Export Restrictions In Response To COVID-19 Crisis' (WTO, 23 April 2020) <www.wto.org/english/news_e/news20_e/rese_23/apr20_e.htm> accessed 15 September 2020.

6 'Coronavirus: Europe Plans Full Border Closure In Virus Battle' *BBC News* (2020) <www.bbc.co.uk/news/world-europe-51918596> accessed 11 September 2020.

7 European Commission Press Release, 'Coronavirus: Commission Invites Member States To Extend Restriction On Non-Essential Travel To The EU Until 15 June' (8 May 2020) <https://ec.europa.eu/commission/presscorner/detail/en/ip_20_823> accessed 11 September 2020.

8 Robert Armstrong and others, 'Ports Feel Coronavirus Impact On Global Trade', *Financial Times* (17 March 2020) <www.ft.com/content/1071ae50-6394-11ea-b3f3-fe4680ea68b5> accessed 11 September 2020; see also 'Coronavirus Outbreak: Measures And Preventive Actions By Ports' *Ship Technology* (26 March 2020) <www.ship-technology.com/features/coronavirus-outbreak-measures-and-preventive-actions-by-ports/> accessed 11 September 2020; see also Jonatan Echebarria Fernández, 'The maritime impact of Coronavirus', *Marine & Océans* (1 April 2020), 37; from the same author, 'Dr Jonatan Echebarria Fernández says trade to EU and UK affected by coronavirus outbreak in China' (News from City, University of London, 13 February 2020) <www.city.ac.uk/news/2020/february/dr-jonatan-echebarria-fernandez-says-trade-to-eu-and-uk-affected-by-coronavirus-outbreak-in-china> accessed 1 September 2020.

9 International Union of Marine Insurance (IUMI), 'Clarksons Research: COVID-19 Shipping Market Impact Assessment (No 6)' (IUMI, 7 July 2020) <<https://iumi.com/news/covid-19-news/update-covid-19-shipping-market-impact-assessment-no-6>> accessed 16 September 2020; "important shipping companies such as A.P. Møller – Mærsk A/S, CMA CGM SA or Evergreen Marine Corp reduced or cancelled sailings", especially during the second quarter

The EU territorial GDP was down by 12%.¹⁰ With China as the world's leading shipping exporter,¹¹ global trade and those transporting it are experiencing harsh effects of the COVID-19 pandemic, the United States (US)-China trade agreement may be postponed due to COVID-19. Currently, Phase 1 of the trade agreement has been postponed to discuss ending US-China tariffs.¹² However, travel and crew change restrictions may have had added further delay to the commencement of the trade agreement. As the US has minor restrictions on crew changes and has maintained the functioning of its ports, China has strict crew change restrictions which only applies to Chinese nationals.¹³ Until China loosens their port restrictions, the US-China trade agreement will encounter on-set and heavy delays.

Seafarers were also affected by travel restrictions and port congestions. Travel restrictions jeopardised crews and their health and safety as some were unable to disembark for medical attention, including non-COVID-19 related medical attention. Travel restrictions and governments did not recognise seafarers as key workers, preventing seafarers from repatriating to their home countries and crew changes. To provide relief to seafarers, the IMO released a statement to its Member States to recognise seafarers as key workers.¹⁴ However, hundreds of thousands of seafarers are still in need of repatriation and are stranded at ports.¹⁵

The impact created by travel restrictions, port closures, and the virus itself has caused legal and administrative problems in the shipping industry. As charterparties are contract-driven, accounting for every possible event that could arise while carrying goods by sea, some events did not explicitly account

of 2020, and "the effects of coronavirus on EU-China trade flows" were "acute in containerised, dry bulk and tanker trades", according to both outputs of Echebarria Fernández (n 8).

10 Eurostat Press Release, 'Preliminary flash estimate for the second quarter of 2020' (31 July 2020) 121/2020.

11 WTO, *World Trade Statistical Review 2019* (WTO, 2019) <www.wto.org/english/res_e/statistics_e/wts2019_e/wts2019_e.pdf> accessed 11 September 2020.

12 Joe McDonald, 'China, US Hold Delayed Trade Meeting to Discuss 'Phase 1' Deal', *The Diplomat* (25 August 2020) <www.itfseafarers.org/en/embed/covid-19-country-information-seafarers> accessed 16 September 2020.

13 International Transport Workers Federation (ITF), 'COVID-19: Country Information For Seafarers' *ITF Seafarers* (2020) <www.itfseafarers.org/en/embed/covid-19-country-information-seafarers> accessed 11 September 2020.

14 IMO, 'Coronavirus' (IMO, 2020) <www.imo.org/en/MediaCentre/HotTopics/Pages/Coronavirus.aspx> accessed 14 July 2020.

15 IMO, 'FAQ On Crew Changes And Repatriation Of Seafarers' (IMO, 16 June 2020) <www.imo.org/en/MediaCentre/HotTopics/Pages/FAQ-on-crew-changes-and-repatriation-of-seafarers.aspx> accessed 14 July 2020.

for COVID-19, while others impliedly accounted for it. The interpretation or inclusion of COVID-19 in the contracts could either void or continue the contract, as well as divide the liability for COVID-19 related incidents. The IMO along with other United Nations (UN) agencies has urged its Member States “to maximise the contribution of international trade and supply chains to a sustainable socio-economic recovery in post-COVID-19 times through greater use of international legal instruments and standards, as well as strengthened regional and sectoral cooperation” and to implement UN “legal instruments on transport, in particular, those relating to transport facilitation and paperless trade”.¹⁶

This chapter will focus on the COVID-19 pandemic’s effect on the shipping and maritime industry, including its effect on contracts, seafarers and crew members, as well as its overall effect on global trade. Legal effects of these responses are varied, ranging from contract law, soft law and hard law. The actors involved in such responses are also varied, international organisations, trade organizations and States. Their interaction, legitimacy and effectiveness vary between them as their powers and binding effect of their decisions. There are different levels of compliance by the shipping industry from the international or State regulations as well as the level of voluntary compliance with industry’s self-regulations stemming from the maritime *Lex Mercatoria*.

An analysis of the effectiveness of the documents and guidelines from both the IMO and the EU used to combat the COVID-19 effect on the trade industry and its workers will be provided.

2 The Effect of COVID-19 on Contracts for the Carriage of Goods by Sea

The shipping and maritime industry are subject to public regulations and private law via shipping contracts that range from charterparties (whether these are bareboat, for a period of time or a voyage)¹⁷ that proportions the rights and liabilities of shipowners and charterers.¹⁸

16 IMO and others (n 2).

17 Simon Baughen, *Shipping Law* (7th edn, Routledge 2019).

18 Robert Bright and Howard Bennett, *Carver On Charterparties* (1st edn, Sweet & Maxwell 2017).

2.1 *Brief Introduction to Contracts of Affreightment*

The carriage of goods by sea is represented by a contract of affreightment and detailed in the bill of lading (B/L), which acknowledges the receipt of cargo to be shipped upon signature.¹⁹ This is signed by the carrier or an agent of the carrier, then delivered to the shipper in exchange for the mate's receipt of the cargo.²⁰ Any erroneous information contained in the B/L (e.g., an incorrect shipping date) after its issuance by the master within a reasonable time²¹ may be corrected by the shipowner, provided that the shipper keeps the B/L.²²

The B/L is a separate legal document that does not form part of the charterparty contract.²³ The B/L is not a contract, but it is an excellent representation of the terms of the contract.²⁴ Charterer's contractual obligations in a voyage charterparty can be extended to the B/L by incorporating contractual terms or a 'cesser' clause (which relieves the charterer of liability once the cargo is unloaded from the vessel) into the B/L.²⁵

Charterparties are not governed by international rules, unlike the B/L.²⁶ In international contracts, it is essential to include protection clauses to divide risks amongst the parties.²⁷ Although the B/L is not legally regarded as a contract, the transfer of the B/L between different parties assumes liability for the goods to the party accepting and relieves liability from the party transferring.

Prima facie, the regulation and conventions surrounding contract law for shipping and maritime contracts seem cut and dry. COVID-19 has tested these conventions. Clauses are now being implemented or changed in order to conform to the issues caused by the pandemic, have remained constant and unchanged, or have returned to its pre-COVID-19 state, especially after

19 *ibid*; David Foxton, David Walsh, Howard Bennett, Steven Berry, Christopher Smith, and Thomas Edward Scrutton, *Scrutton on Charterparties and Bills of Lading* (24th edn, Sweet & Maxwell 2020).

20 Foxton and others (n 19).

21 The master is obliged to sign the B/L within a reasonable time and must not purposefully delay the signing until the cargo has shipped as stated in *Halcyon SS Co v. Continental Grain Co*, [1943] KB 355.

22 Foxton and others (n 19).

23 Baughen (n 17).

24 As per Lord Bramwell in *Sewell v. Burdick (The Zoe)*, (1884) 10 App. Cas. 74 [105] (HL); For instance, the terms of bailment are detailed in the B/L, which can enforce the doctrine of bailment on terms against a third party; Foxton and others (n 18).

25 Baughen (n 17).

26 The B/L may be subject to international regulation under the Hague-Visby Rules which regulate the legal relation of carriers and shippers; Bright and Bennett (n 18).

27 Carlo Corcione, *Third Party Protection In Shipping* (Informa Law from Routledge 2020).

mid-2021. However, COVID-19 may change contract drafting forever in the modernised world.²⁸

2.2 *Lack of Frustration of the Charterparty Due to the Outbreak*

The delays caused by COVID-19 travel restrictions can cause a contract to become frustrated and create health and safety dangers for the vessel's crew. A contract is frustrated when unforeseen events happen which render the performance of the contract illegal, impossible, or something radically different from the original agreement. Frustration only takes place if the unforeseen events occur after the contract has been formed and are not the results of either parties' actions. If a contract becomes frustrated, it is voided and future obligations for both parties are therefore released. What will not be void are any and all performances and payments already executed before frustration occurs.²⁹

Many maritime legal issues arising from the COVID-19 pandemic were centred around delays at port, resulting in higher costs. However, parties cannot rely on frustration to void the higher costs because a contract is not legally frustrated due to the high costs of performing a contract.³⁰ While it does make it more difficult, higher costs do not make a contract impossible or illegal to perform. Likewise, continuing to perform a contract after costs have risen does not create a radically different outcome from the original agreement.

2.3 *The Applicable Charterparty Clauses in Case of an Outbreak on Board a Vessel*

Traditionally, some charterparty clauses have provided different solutions when any infectious disease has affected crew or passengers sailing in a ship. However, the following subsections provide an outlook of the applicability of different specific charterparty clauses in case of detecting any COVID-19 case on board a vessel.

2.3.1 *The Application of the Force Majeure Cause on Charterparties in the Light of the Pandemic*

Conventionally, frustration of the contract may be prevented by a force majeure event. The force majeure clause is a solution included in the contract, which accounts for unexpected events that could frustrate the contract and

28 Sally-Ann Underhill and Nick Austin, 'Steering through the COVID-19 pandemic', *Maritime Risk International* (May 2020).

29 Ewan McKendrick, *Contract Law* (13th edn, Red Globe Press 2019) 270–274.

30 Underhill and Austin (n 28).

removes liability from the party delivering the performance affected by the frustration.³¹ Force majeure excuses a party from continuing to perform a contract in exceptional and unforeseeable circumstances.

According to the Baltic and International Maritime Council (BIMCO) provisions, a force majeure will not disrupt a laytime or demurrage unless expressly stated in the contract.³² The performance may be unable to be completed in full or part, or the performance encounters a significant delay, which may result in a right to terminate the contract.³³ In the early stages of the pandemic, parties could rely on frustration and force majeure due to port closures and quarantines enacted while the vessel was at sea or waiting to come into port.

As previously stated, regulatory responses can be divided into both soft and hard according to the political, social, and economic values. Some questions could be posed: Is economy better safeguarded than health? Does the public discourse reflect the actual regulatory response? The answer is that the shipping industry has provided balanced responses to these questions.

For instance, the International Association of Independent Tanker Owners (INTERTANKO) has issued a Coronavirus Clause on 21 February 2020 aimed at introducing protection for both time and voyage charterparties during the uncertainty of the pandemic. A previous example is found in BIMCO's Infectious or Contagious Diseases Clause for Time Charter Parties 2015 as a response to the Ebola virus outbreak, following the Severe Acute Respiratory Syndrome (SARS) cases reported in 2005.

31 McKendrick (n 29) 282.

32 Grant Hunter, 'Novel Coronavirus – The Importance of Contractual Clarity' (*BIMCO*, 7 February 2020) <www.bimco.org/contracts-and-clauses/chartering-help-and-advice/novel-coronavirus/20200207-novel-coronavirus-the-importance-of-contractual-clarity> accessed 16 September 2020; if free pratique is not provided once the vessel arrives to the port of destination under a voyage charterparty's terms due to the outbreak following the tendering of a notice of readiness by the master, notice must be tendered again once free pratique is provided; quarantine days do not halt the running of laytime or demurrage under the Shellvoy 4 voyage charter form for tanker vessels but it would account as an exception under the 1994 Gencon voyage charterparty form for bulk carriers or the Asbatankvoy voyage charterparty form for tanker ships only if a "stoppage or restraint of labour" is applicable or if the charterparty date has already commenced under the Shellvoy 5 and 6 voyage charterparty forms, according to Watson Farley & Williams, 'COVID-19: issues under shipping contracts' (*Watson Farley & Williams*, 2 April 2020) <www.wfw.com/articles/covid-19-issues-under-shipping-contracts/> accessed 24 September 2020.

33 Faye Moore, 'Will Covid-19 Trigger A Force Majeure Clause?' (*Pinsent Masons*, 26 March 2020) <www.pinsentmasons.com/out-law/guides/covid-19-force-majeure-clause> accessed 14 September 2020.

In order for parties to achieve common ground and avoid liability, negotiations and contracts should include COVID-19 in the contract and account for any mutated strains; list the vessel's ports of call; and utilisation of proactive thought. It also provides that COVID-19 is not considered a frustrating event or a force majeure.³⁴ Charterers have opposed shipowners attempting to implement INTERTANKO's Coronavirus Clause.³⁵ Force majeure is reserved for unforeseeable circumstances, such as acts of God, war, terrorism, acts of government, or plagues, which are out of the control of either party.³⁶ Travel restrictions during the pandemic are acts of government that prevent the contract from being fulfilled, which would be allowed to continue with a force majeure at the cost of a delay. However, INTERTANKO has detailed in its standard clause that parties may no longer rely on a force majeure for COVID-19 restrictions.

In order to rely on a force majeure, the performance must have been utterly prevented, hindered, or affected by delays that are making it substantially more difficult to perform the contract, in addition to proving that the pandemic was at fault and that no reasonable steps could have been taken to avoid it.³⁷ Furthermore, English courts and other jurisdictions would presume, COVID-19 pandemic is now a reasonably foreseeable issue and, therefore, a force majeure will not apply as easily as it did during the early stages of the pandemic.³⁸ If parties wish for a force majeure to apply, INTERTANKO recommends negotiating these provisions in the contract.³⁹

BIMCO's new Force Majeure Clause, defined as a "bolt-on provision", is expected to be formally approved in 2021.⁴⁰ Shipowners normally bear any associated costs of discharge of the goods as bailees, without any "contractual

34 INTERTANKO, 'INTERTANKO Covid-19 ('Coronavirus') Clause – Time Charterparties' (*INTERTANKO*, 21 February 2020) <www.intertanko.com/info-centre/model-clauses-library/templateclausearticle/intertanko-covid-19-coronavirus-clause-time-charterparties> accessed 9 September 2020; see also INTERTANKO, 'INTERTANKO Covid-19 ('Coronavirus') Clause – Time charterparties (Explanatory Notes)' (*INTERTANKO*, 21 February 2020) <www.intertanko.com/info-centre/model-clauses-library/templateclausearticle/intertanko-covid-19-coronavirus-clause-time-charterparties-explanatory-notes> accessed 16 September 2020.

35 Underhill and Austin (n 28).

36 *ibid*; see also Moore (n 33).

37 Moore (n 33).

38 Underhill and Austin (n 28).

39 INTERTANKO (n 34).

40 Anna Wollin, 'Who is responsible for the cargo when force majeure is declared?' (*BIMCO*, 16 February 2021) <www.bimco.org/news/contracts-and-clauses/20210216-who-is-responsible> accessed 15 March 2021.

rights *vis à vis* the charterers” when a contract is terminated.⁴¹ However, a list of liberties will be provided in the clause if “force majeure prevents the completion of loading, or the departure from the load port, or discharge, for more than 21 days from when a/the force majeure notice was declared”.⁴² The underlying contract and its terms will determine how any additional costs are allocated between the parties. The party alleging the force majeure event will need to prove it to terminate a time charterparty, and termination of the contract differs from frustration since the first will be available since the moment the party invokes the force majeure event or a contractually agreed period of time has passed.⁴³

BIMCO may also approve a new Clause 2 for the GENCON 94 standard voyage charterparty form in May 2021, under which shipowners’ responsibilities (“due diligence”) are clarified (a seaworthy and cargo worthy vessel, “properly manned, equipped and supplied for loading [...] “with cargo safely stowed, trimmed and secured, for the intended voyage” must be supplied; moreover, the shipowner must “keep and care for the cargo” since its loading until discharge).⁴⁴ The Clause, informally known as the “Owner’s No-responsibility Clause”, relieves them from “liability for loss, damage, delay or failure in performance” and entitles them to rely on the “rights, defences, immunities and limitations of liability that are available to a “Carrier” under the Hague-Visby Rules”.⁴⁵ The new Clause may play a key role in relieving shipowners’, as bailees of the cargo, from the costs of discharging it once a force majeure event takes place.

2.3.2 COVID-19 and the Off-Hire Clause in Time Charterparties

The shipowner hires the seafaring crew unless the charterparty is a demise charter, which puts the employment responsibility on the charter.⁴⁶ Many time charterparties include off-hire clauses, which exempts charterers from withholding payment from hires if a vessel is unable to perform the charter service. This allows for charterers to refuse to pay their seafaring crew during periods of unprecedented delay and susceptibility to an inadequate crew or

41 *ibid.*

42 *ibid.*

43 *ibid.*

44 ‘Owners’ responsibilities clarified in new GENCON charter’ (*Hellenic Shipping News Worldwide*, 14 December 2020) <www.hellenicshippingnews.com/owners-responsibilities-clarified-in-new-gencon-charter/> accessed 15 March 2021.

45 *ibid.*

46 Baughen (n 17).

a defective ship that results in a delay or loss of time rather than a breach of contract.⁴⁷ However, whether the vessel's full or efficient working has been prevented from fulfilling the next operation must be determined.⁴⁸

Efficient working concerns the vessel's physical condition and the causal link, while full working concerns prevention by physical conditions or sometimes legal means. Off-hire clauses in standard charterparty forms, like Shelltime's Clause 21 and New York Produce Exchange's (NYPE) 1946 and 1993 time charter party form (Clauses 15 and 17, respectively), contains a catch-all phrase that would extend to a deficiency of men by means of a pandemic.⁴⁹

This would constitute an insufficient number of crew members resulting from a COVID-19 outbreak on board a vessel or a quarantine, which prevents the vessel from a full, efficient working. It follows that a deficiency of men causes the ship to be off-hire. Under BIMCO's and NYPE's provisions for off-hire clauses, labelling the vessel as an off-hire is difficult if a crew member exhibits COVID-19 symptoms causing an on-board quarantine, but test negative. However, an amendment to the NYPE accounts for 'any other clause whatsoever', which broadens the off-hire definition, allowing it to apply to general COVID-19 related concerns unrelated to a confirmed COVID-19 case.⁵⁰

Executing an off-hire clause seems to be flexible, but it is likely more rigid than it appears. An off-hire clause can be safely described as 'if crew members cannot work, then the ship cannot work', and 'crew members do not get paid'. Charterparties can be problematised *vis à vis* labour rights: contractual clauses relate to international labour law depending on the ratification of different instruments by the flag State that set minimum standards, being the Maritime Labour Convention 2006 (MLC)⁵¹ the most prominent one. General concerns of COVID-19 may trigger the off-hire clause, but the off-hire clause cannot be triggered unless the concern of COVID-19 on the vessel halts the full performance and working on the vessel. Shipowners making the decision

47 Thomas Miller, 'COVID-19 impacts hire obligations under time charterparties' (*UK Defence Club*, 9 June 2020) <www.ukdefence.com/insights/june-2020-covid-19-impacts-hire-obligations-152494/> accessed 14 September 2020.

48 *ibid.*

49 Ian Short, Angeliki Panera, James MacKay, Filippo Lorenzon and Samuel Jones, 'COVID-19's Implications On Shipping Contracts' *Campbell Johnston Clark* (7 April 2020) <www.cjc-law.com/site/news/covid19s-implications-on-shipping-contracts> accessed 16 July 2020.

50 Miller (n 47).

51 ILO, Consolidated text of the Maritime Labour Convention (MLC) (adopted 26 February 2006, entered into force 20 August 2013) including the Amendments of 2014 and 2016, 2952 UNTS 3.

to trigger the off-hire clause during a contract can prove to be a problematic solution.

2.3.3 Health and Safety Standard Clauses in Charterparty Forms

The shipping and maritime industries are no strangers to illness, pandemics, and plagues on board the vessel. Seafarers were forced to quarantine for 40 days during the Bubonic Plague of the Middle Ages. Due to the uncertainty of diseases, maritime and shipping industries have included disease and illness in their contracts for quite some time.⁵² Although the inclusion of disease and illness clauses have not been a mandatory provision, charterparties have created expressed provisions for epidemics and pandemics, directly and indirectly.

Modern international shipping rules, like article IV of the Hague Visby Rules, exempts the responsibility of a carrier for the delay or deterioration of the cargo due to quarantine restrictions, partial or general labour restraints, stoppage, or lockouts, or other causes outside of the privity or fault of the carrier.⁵³ Relying on article IV of the Hague-Visby Rules may relieve the carrier of liability.⁵⁴ Shipowners may also rely on the Hague Visby Rules in the charterparty and the owner's B/L when disembarking a crew member to receive medical care.⁵⁵

Seafarers are constantly exposed to unsafe and hazardous working conditions during voyages. Therefore, workplace safety is critical for the shipping industry.⁵⁶ Expressed or implied port warranties are usually contained in charterparties to prevent docking at ports determined to be unsafe.⁵⁷ In the UK, the Supreme Court held that an unsafe port is one that is unreachable, unusable, or unreturnable without unavoidable exposure to danger unless there is an "abnormal occurrence".⁵⁸ These dangers generally apply to dangerous currents

52 Vincent JG Power, 'Covid-19 and maritime law – lives, laws and lessons' [2020] 26 JIML.

53 Article IV of the Hague-Visby Rules as Amended by Brussels Protocol 1968; see also Short and others (n 49); see also Rohan Bray, 'Steamship Mutual – COVID-19: Guide For Members On Contractual Issues' *Steamship Mutual* (April 2020) <www.steamshipmutual.com/publications/Articles/covid-19-guide-for-members-on-contractual-issues> accessed 14 September 2020.

54 'Coronavirus (COVID-19) FAQs' *Hellenic Shipping News Worldwide* (31 March 2020) <www.hellenicshippingnews.com/coronavirus-covid-19-faqs/> accessed 14 September 2020.

55 Underhill and Austin (n 28).

56 Vincent JG Power, *EU Shipping Law*, (3rd. edn, vol 1., Routledge 2019).

57 Short and others (n 49).

58 *Gard Marine and Energy Limited (Appellant) v. China National Chartering Company Limited and another*, [2017] UKSC 35.

or extreme weather conditions but can extend to dangers to the seafarers, unreasonable delays which could frustrate the contract or the risk of quarantine or isolation.

The INTERTANKO COVID-19 Clause was originally created for the Ebola pandemic, but INTERTANKO extended it to COVID-19 in February 2020. Clause 1 details that a shipowner using their discretion, may refuse the charter's procedure to port if the shipowner believes the port to be unsafe due to COVID-19. Clause 2 protects this subjective test and allows for the master to request new direction or return to a safe area and issue a Notice of Readiness (NOR) until the port is deemed safe. Despite these provisions of the INTERTANKO COVID-19 Clause, the COVID-19 outbreak is unlikely to render a port unsafe since the COVID-19 outbreak has become a foreseeable event and is no longer regarded as an abnormal occurrence. Deeming a port unsafe due to COVID-19 may breach the charterparty if the parties rely on a force majeure alone.⁵⁹ Clause 3 of the INTERTANKO COVID-19 Clause also provides that charterers will compensate owners for time and direct losses as well as expenses and damages in the event the vessel is refused to port, quarantined, or boycotted.⁶⁰ Shipowners' discretions are protected by this provision and the charterer must support their discretion. Furthermore, the INTERTANKO COVID-19 Clause also protects the health and safety of the crew.

The INTERTANKO COVID-19 Clause may be complemented by the Infectious or Contagious Disease Clause created by BIMCO in 2015 for voyage charters and time charters, which is a solution to provide a pre-set allocation of liabilities and costs between owners and charterers and allowed for shipowners or masters to refuse or leave a port if they reasonably believe there is a serious risk of exposing the vessel and its crew of disease.⁶¹ In case an event constitutes the Infectious or Contagious Disease Clause, all additional costs are apportioned to the charterer while the crew's safety is prioritised.⁶² For it to apply to

59 Short and others (n 49).

60 INTERTANKO (n 34); see also Baris Soyer, 'INTERTANKO Covid-19 Clause- Tailor Made Solution to the Pandemic in Voyage Charters' (*The International Institute of Shipping and Trade Law*, 6 May 2020) <<https://iistl.blog/2020/05/06/intertanko-covid-19-clause-tailor-made-solution-to-the-pandemic-in-voyage-charters/>> accessed 16 September 2020.

61 The North of England Protecting and Indemnity Association, 'Ebola: BIMCO Infectious Or Contagious Disease Clause For Voyage And Time Charter Parties' (Nepia.com, 19 January 2015) <www.nepia.com/industry-news/ebola-bimco-infectious-or-contagious-disease-clause-for-voyage-and-time-charter-parties/> accessed 17 July 2020.

62 Short and others (n 49).

the COVID-19 pandemic, COVID-19 must be determined to be “seriously harmful to humans” and the specific cause of the vessel’s restrictions.⁶³

Requirements for the Infectious or Contagious Disease Clause may, in fact, apply to COVID-19, as it is harmful to humans and it is responsible for government-implemented travel and border restrictions at port. BIMCO must also acknowledge the danger of COVID-19 as a disease for the clause to apply. Typically, under BIMCO’s charterparty form, a disease will be acknowledged as a threat if recognised by a public health authority. Even though the requirements are set high to avoid misuse, the Infections or Contagious Disease requirements respond to ‘extreme outbreaks’.⁶⁴ Furthermore, voyage charterparties are limited to the application of the Infectious or Contagious Disease Clause. Since COVID-19 is a foreseeable circumstance, if measures were already included at the port loading or destination at the time the voyage charterparty was entered into, then the shipowners cannot rely on the Infectious or Contagious Disease Clause.⁶⁵ Shipowners relying on the Infectious or Contagious Disease Clause gives them rights to refuse to port where they deem unsafe, and it may even extend to the termination of the charterparty.⁶⁶

3 Measures Adopted to Alleviate the Restrictions Imposed on Seafarers and Passengers Due to the Pandemic

Seafarers have endured stressful travel restrictions and neglect from governments worldwide. Some have enacted protocols to recognise seafarers as key workers, but others have refused to open ports or recognise seafarers as key workers in order to curb the spread of COVID-19. This has come at a cost of seafarers’ physical and mental health and further hindrances to global trade.

63 Underhill and Austin (n 28).

64 Grant Hunter, ‘BIMCO Contagious Diseases Clauses – Are They Triggered By COVID-19?’ (*BIMCO*, 4 March 2020) <www.bimco.org/contracts-and-clauses/chartering-help-and-advice/novel-coronavirus/20200304-bimco-contagious-diseases-clauses> accessed 14 September 2020.

65 Vanessa Rochester, ‘COVID-19: Global Implications For Charterparties’ (*Norton Rose Fulbright*, March 2020) <www.nortonrosefulbright.com/en-la/knowledge/publications/178f0135/covid-19-global-implications-for-charterparties> accessed 14 September 2020.

66 Claire Waller, ‘COVID-19: Force Majeure, Frustration And Exclusion Clauses’ (*Skuld*, 7 April 2020) <www.skuld.com/topics/people/diseases/coronavirus/covid-19-force-majeure-frustration-and-exclusion-clauses/> accessed 14 September 2020; however, a BIMCO Infectious or Contagious Disease Clause incorporated into a Congenbill 1994 B/L form may protect the shipowner against any claimant B/L holder when exercising “his rights under this charterparty clause”, Watson Farley & Williams (n 32).

3.1 *An International Outlook on the Effects on Passengers and Seafarers*

The UK has made multiple efforts to aid in seafarer repatriation and crew changes. In addition to making exceptions in travel restrictions and border closures, the UK held an international Maritime Summit in July to discuss how to help the thousands of seafarers stranded on ships.⁶⁷ In addition to rescuing stranded seafarers, the Maritime Summit created a joint commitment amongst a multitude of countries, including the USA, Denmark, Greece, UAE, and Saudi Arabia, to finally recognise seafarers as key workers.⁶⁸ It should be noted that the Maritime Summit commitment was made four months after the first IMO circular letter asking governments to recognise seafarers as key workers.⁶⁹

As of 19 July 2020, there were estimated to be around 600,000 seafarers stranded on ships desperate for crew changes.⁷⁰ As of 11 September 2020,

67 Gavin van Marle, 'IMO Uses Seafarer Celebration To Renew Call To Help Stranded Crews' *The Loadstar* (25 June 2020) <<https://theloadstar.com/imo-uses-seafarer-celebration-to-renew-call-to-help-stranded-crews/>> accessed 11 September 2020; see also Calum Ross, 'Coronavirus: UK To Host International Summit To Help Stranded Seafarers' (*Press and Journal*, 2 July 2020) <www.pressandjournal.co.uk/fp/news/politics/scottish-politics/2306339/coronavirus-uk-to-host-international-summit-to-help-stranded-seafarers/> accessed 11 September 2020.

68 United Kingdom Department of Transport Press Release, 'New International Commitment To Improve Seafarers' Rights' (9 July 2020) <www.gov.uk/government/news/new-international-commitment-to-improve-seafarers-rights> accessed 11 September 2020; IMO, 'Coronavirus (COVID-19) – Outcome of the International Maritime Virtual Summit on Crew Changes organised by the United Kingdom' (13 July 2020) Circular Letter No.4204/Add.24.

69 IMO's preceding calls to recognise seafarers as key workers were reflected in the 'Joint Statement IMO-ICAO-ILO on designation of seafarers, marine personnel, fishing vessel personnel, offshore energy sector personnel, aviation personnel, air cargo supply chain personnel and service provider personnel at airports and ports as key workers, and on facilitation of crew changes in ports and airports in the context of the COVID-19 pandemic' (26 May 2020) Circular Letter No.4204/Add.18; see also IMO, International Labour Organization (ILO), the United Nations Conference on Trade and Development (UNCTAD), the International Organization for Migration (IOM), the Food and Agriculture Organization of the United Nations (FAO), the United Nations High Commissioner for Human Rights (OHCHR), the International Civil Aviation Organization (ICAO) and the United Nations Global Compact, 'Coronavirus (COVID-19) – Joint Statement calling on all Governments to immediately recognise seafarers as key workers, and to take swift and effective action to eliminate obstacles to crew changes, so as to address the humanitarian crisis faced by the shipping sector, ensure maritime safety and facilitate economic recovery from the COVID-19 pandemic' (11 September 2020) Circular Letter No 4204/Add.30.

70 Enda Brady, 'Coronavirus: Thousands Of Seafarers 'Suffering Depression' After Being Stranded On Ships' *Sky News* (9 July 2020) <<https://news.sky.com/story/coronavirus-thousands-of-seafarers-suffering-depression-after-being-stranded-on-ships-12031574>> accessed 11 September 2020.

Germany, Gibraltar, Canada, Kenya, Bangladesh, Australia, and the USA (subject to State restrictions) have little to no restrictions for crew changes. Crew change restrictions are subject to travel history in some countries, such as Japan, Saudi Arabia, and Trinidad & Tobago.⁷¹ Conversely, crew changes are still prohibited in China, the Middle East, Vietnam, Central, and South America.⁷²

Currently, seafarers who are stranded on vessels unable to disembark are experiencing mental health issues, such as depression and anxiety, in addition to a shortage of on-board supplies.⁷³ While closing ports and factories are key contributors to the decrease in the global trade and the carriage of goods by sea affected by the COVID-19 pandemic, the inability for seafarers and crew members to disembark, repatriate, and change crews was also a contributing factor. Governments and relevant authorities have been slow to address these maritime and shipping issues and it has come at the cost of seafarer health.

3.2 *Effects of COVID-19 on Cruise Ships*

Cruise ships have been widely affected by the pandemic and a notorious example is provided next. On 25 January 2020, a passenger disembarked in Hong Kong from the British flagged cruise vessel, the *Diamond Princess*, after exhibiting COVID-19 symptoms to receive medical care. A week later, on 3 February 2020, the *Diamond Princess* was quarantined at the port of Yokohama until 27 February 2020.⁷⁴ Between 16 and 23 February, passengers disembarked from the *Diamond Princess* and were repatriated to their home countries. However, crew members completed an additional 14-day quarantine on the *Diamond Princess*.⁷⁵

71 Johan Conrad, 'Coronavirus (COVID-19) – Crew Change Challenges' (BIMCO, posted 13 March 2020, updated 10 September 2020) <www.bimco.org/ships-ports-and-voyage-planning/crew-support/health-and-medical-support/novel-coronavirus---crew-challenges#EU1> accessed 16 September 2020.

72 ITF (n 13).

73 BIMCO has dedicated a page on their website with links to mental health services for seafarers: Ai Cheng Foo-Nielsen, 'COVID-19 Seafarers' Mental Health' (BIMCO, 16 June 2020) <www.bimco.org/ships-ports-and-voyage-planning/crew-support/health-and-medical-support/covid-19-seafarers-mental-health> accessed 16 September 2020; Brady (n 70).

74 Dave Monk, 'One Ship, 705 Coronavirus Cases: How Dream Cruise On Diamond Princess Became A Nightmare' *The Telegraph* (2 March 2020) <www.telegraph.co.uk/travel/cruises/articles/diamond-princess-from-dream-voyage-to-quarantine-story/> accessed 15 September 2020.

75 US Centre for Disease Control (CDC), 'Public Health Responses to COVID-19 Outbreaks on Cruise Ships – Worldwide, February–March 2020' (*Centre for Disease Control*, 17 March 2020) <www.cdc.gov/mmwr/volumes/69/wr/mm6912e3.htm> accessed 15 September 2020.

Unlike cargo vessels, cruise ships have a large number of people living in close quarters, making cruise ships more prone to spreading viral diseases.⁷⁶ However, the repatriation of passengers has not been complementary with the repatriation of seafarers. The UK was swift and supportive in the repatriation of British nationals on the *Diamond Princess*, but the UK government was much slower to respond to seafarers' repatriation and crew changes.⁷⁷ It is questionable up to what extent this is a breach of their international obligations as a flag State. According to Article 94 of UNCLOS, ship registers are not only obliged to maintain a register but also to assume jurisdiction. Despite Princess Cruise Lines being obliged to comply with the minimum requirements in relation to the ship's classification, survey history, construction, equipment and seaworthiness, there is an obligation to comply with the several IMO instruments containing provisions that may be relevant to the impact of COVID-19 on ship travel. These international instruments will be further explained in section 3 (Disruptions caused by the pandemic on seafarers and passengers), subsection 3.4.1 (Health and safety regulations adopted by IMO, ILO and WHO). Moreover, most insurance commercial premiums do not cover epidemic outbreaks and the premiums are very high. The costs will have to be absorbed by the P&I Clubs, the UK P&I Club, and in this case, Steamship Mutual.

It has been argued that the *Diamond Princess* should have enacted its own guidelines for its crew to abide by strict hygiene and cleaning measures before leaving the Yokohama port. This is true to an extent. The first case confirmed outside of Wuhan was recorded on 13 January 2020, and the *Diamond Princess* left port a week later on 20 January 2020.⁷⁸ Safety and hygiene guidelines outside of hand sanitation and quarantine measures were not released from the World Health Organization (WHO), which did not offer effective guidance for

76 Joshua Berlinger, 'Japan Quarantines Cruise Ship After Passenger Diagnosed With Wuhan Coronavirus' *CNN* (5 February 2020) <<https://edition.cnn.com/2020/02/04/asia/coronavirus-japan-cruise-intl-hnk/index.html>> accessed 15 September 2020.

77 Robin McKie, 'Passengers from coronavirus-hit cruise ship Diamond Princess land in UK' *The Guardian* (London, 23 February 2020) <www.theguardian.com/world/2020/feb/23/coronavirus-cruise-ship-diamond-princess-passengers-land-in-uk> accessed 15 September 2020; see also van Marle (n 67).

78 WHO, 'Coronavirus Disease (COVID-19) – Events As They Happen' (WHO, 2020) <www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen> accessed 15 September 2020; more updates on the outbreak are found in WHO, 'Emergencies – Disease outbreaks' (WHO, 2020) <www.who.int/emergencies/diseases/en/> accessed 23 September 2020; see also Centre for Evidence-Based Medicine (CEBM), 'Transmission Of The Novel Coronavirus Onboard The Diamond Princess' (CEBM, 22 June 2020) <www.cebm.net/study/covid-19-transmission-of-the-novel-coronavirus-onboard-the-diamond-princess-cruises-ship/> accessed 15 September 2020.

Princess Cruise Lines to issue their own safety proceedings. Furthermore, the WHO did not declare a public health emergency until 30 January 2020.⁷⁹ While companies do owe a duty of care to customers and patrons, the gravity of the virus did not have weight until the WHO declared the public health emergency.

3.3 *Travel Restrictions, Repatriations, and Crew Changes*

From the early stages of the pandemic and its subsequent restrictions, workers in medicine, road transportation, public transportation, emergency services, and essential goods were recognised globally as key workers. Seafarers and shipping crews, however, were not recognised as key workers and were subjected to travel restrictions enacted at ports and borders worldwide, causing congestion at ports along with seafarers and crew members stranded on ships, unable to return to land.⁸⁰

3.3.1 Measures Adopted by the International Maritime Organization and the International Labour Organization for Repatriation and Crew Changes

The International Labour Organization (ILO) globally promotes the interest of workers and consists of government, worker, and employer representatives.⁸¹ In 2006, the ILO adopted the Maritime Labour Convention 2006 (MLC),⁸² which provides, improves, and ensures safe and decent working conditions for seafarers and vessel crew members.⁸³ The MLC has also set the standard for a seafarer's time working at sea, dictating that eleven months is the maximum time a seafarer shall serve on board a vessel with no leave. Although, this may be extended in situations involving a force majeure under the contract.⁸⁴ Seafarers who were denied repatriation at ports after an eleven-month contract may have had their contract extended under force majeure terms.

79 *ibid.*

80 IMO, 'Testimonies Of Stranded Seafarers' (2020) <www.imo.org/en/MediaCentre/HotTopics/Pages/Testimonies-of-stranded-seafarers.aspx> accessed 11 September 2020.

81 James Parsons and Chad Allen, 'The history of safety management', in Helen A Olstedal and Margareta Lützhöft (eds.), *Managing Maritime Safety* (Routledge 2018), 17.

82 ILO, Consolidated text of the Maritime Labour Convention (MLC) (adopted 26 February 2006, entered into force 20 August 2013) including the Amendments of 2014 and 2016, 2952 UNTS 3.

83 European Commission, 'Employment and Working Conditions' (16 September 2020) <https://ec.europa.eu/transport/modes/maritime/seafarers/employment_en> accessed 8 September 2020.

84 IMO (n 15).

Since ports were closed and governments enacted travel restrictions, seafarers and port workers were legally prevented from allowing anyone to disembark.

In February 2020, the IMO, in conjunction with the ILO, released a circular letter detailing that companies, masters, and authorities should cooperate in embarking and disembarking passengers and vessel crew members, loading and reloading cargo, supplies, and stores, as well as entrance and exit from ports. The purpose of this cooperation is to prevent unnecessary delays or restrictions at ports embodied in the Convention on Facilitation of International Maritime Traffic (FAL Convention)⁸⁵ in addition to maintaining the global supply chain and provide for the safety and wellbeing of seafarers.⁸⁶

The IMO released a circular letter on 30 March 2020, stressing for governments to recognise seafarers as key workers who maintain and contribute to an open and flowing global supply chain.⁸⁷ This recognition was critical for seafarers and shipping crews. For some, their working contract was ending after their eleven months at sea and they were to repatriate to their home countries, while others had to change crews and board other vessels. Moreover, the IMO issued guidelines to ensure “a safe shipboard interface between ship and shore-based personnel” during port calls of 6 May 2020 to implement “practical, risk-based measures” in the light of the pandemic to take the necessary measures and communicate in advance any port call to avoid practical problems pragmatically.⁸⁸

In order to maintain the global supply chain and the wellbeing of seafarers, the IMO issued guidance to ensure safe crew changes during the COVID-19 pandemic, including guidance and recommendations on assessing risks and the utilisation of personal protective equipment (PPE) for seafarers on 5 May 2020.⁸⁹ The IMO estimated that 150,000 seafarers would need to change vessels

85 Convention on the Facilitation of International Maritime Traffic (adopted 9 April 1965, entered into force 5 March 1967) 591 UNTS 265 (FAL Convention), Annex Section 6.1.

86 IMO, ‘COVID-19 – Implementation and enforcement of relevant IMO instruments’ (19 February 2020) Circular Letter No 4204/Add.1.

87 IMO, ‘Coronavirus (COVID-19) – Preliminary list of recommendations for Governments and relevant national authorities on the facilitation of maritime trade during the COVID-19 pandemic’ (27 March 2020) Circular Letter No 4204/Add.6; see also IMO Press Release, ‘IMO urges keyworker exemptions for crew changes and repatriations’ (1 April 2020) <www.imo.org/en/MediaCentre/PressBriefings/Pages/09-seafarers-COVID19.aspx> accessed 10 August 2020.

88 IMO, ‘Coronavirus (COVID-19) – COVID-19 related guidelines for ensuring a safe shipboard interface between ship and shore-based personnel’ (6 May 2020) Circular Letter No.4204/Add.16.

89 IMO, ‘Coronavirus (COVID-19) – Recommended framework of protocols for ensuring safe ship crew changes and travel during the coronavirus (COVID-19) pandemic’ (5 May 2020) Circular Letter No 4204/Add.14.

or repatriate each month and that compliance from maritime and government entities was essential to achieve this objective in a timely manner.⁹⁰

The International Chamber of Shipping (ICS) and the International Transport Workers' Federation (ITF) backed IMO's guidance urging Ministers with Responsibility for Maritime Transport and Commercial Aviation "to help facilitate the movement of seafarers, via aircraft, for the purpose of conducting ship crew changes".⁹¹ The document acknowledges the contribution of seafarers as "key workers that provide an essential service to the world economy" and requests Governments to repatriate seafarers, arrange commercial flights to repatriate them, and facilitate ship crew changes worldwide.⁹²

However, since the IMO's circular letter in March calls for governments to allow crew changes and repatriation of seafarers at ports amongst its member states, many governments have offered little to no action. The IMO made an additional effort to urge governments to recognise seafarers and launched the Day of the Seafarer 2020 campaign on 25 June 2020. The campaign highlighted the essential role of the seafarer and the impact they have on the global supply chain.⁹³ They also held a webinar on 29 June 2020 centred on the disembarking of seafarers.⁹⁴

IMO's joint statement along with other UN agencies of 11 September 2020 urged Member State's "competent health, immigration, border control and maritime authorities, at both national and local levels, as well as all other parties concerned, in particular ports and airports" to "recognise seafarers as key workers, and to take swift and effective action to eliminate obstacles to crew changes".⁹⁵ IMO's Circular Letter of 5 February 2021 has urged its Member States to recognise seafarers as key workers.⁹⁶

90 *ibid.*

91 International Chamber of Shipping (ICS) / International Transport Workers' Federation (ITF) joint letter to Ministers with Responsibility for Maritime Transport and Commercial Aviation, 'Facilitating Safe Ship Crew Changes and Repatriation during the Coronavirus (COVID-19) pandemic' (May 2020) <www.intercargo.org/wp-content/uploads/2020/05/COVID-192068-Crew-change-protocols-Joint-ICS-ITF-template.pdf> accessed 23 September 2020.

92 *ibid.*

93 IMO, 'Day of the Seafarer 2020' (IMO, 2020) <www.imo.org/en/About/Events/dayoftheseafarer/Pages/Day-of-the-Seafarer-2020.aspx> accessed 15 September 2020.

94 IMO Press Release, 'What's New – Governments must act to bring seafarers home' (29 June 2020) <imo.org/en/MediaCentre/WhatsNew/Pages/default.aspx> accessed 15 September 2020.

95 IMO, ILO, UNCTAD, IOM, FAO, OHCHR, ICAO and United Nations Global Compact (n 69).

96 IMO, 'Coronavirus (COVID-19) – Designation of seafarers as key workers' (5 February 2021) Circular Letter No.4204/Add.35/Rev.4; the Secretary-General of the IMO refers to IMO MSC, 'Recommended action to facilitate ship crew change, access to medical care

3.3.2 Travel Restrictions and Repatriations in the European Union
 Disruptions have not only affected cruise ships but the trade and economy within the EU. Travel restrictions due to border closures and quarantine restrictions have prevented vessels from having a full crew which causes labour shortages at shipyards and ports, thus hindering an effective delivery of goods worldwide. Delivery delays may also result in delayed medical screenings at ports; port congestion due to labour shortage; and pilots unwilling to steward or board a vessel.⁹⁷

While COVID-19 restrictions were enacted throughout the EU Member States, the EU aspired to continue and improve the functionality of the internal market. In order to maintain economic activity, COVID-19 restrictions were not to impact, hinder, or bar the free movement of goods, workers or cause disruptions in supply chains or essential services.⁹⁸ Essential workers, goods, and services were streamlined into the EU territory and throughout the internal market while simultaneously upholding the fundamental freedoms of the EU.⁹⁹ The EU issued guidelines following the plea of the IMO for Member States to acknowledge seafarers as key workers and allow them passage for repatriation as of 16 April 2020.¹⁰⁰ These guidelines were an extension of the EU's Green Lanes, which upheld the EU fundamental freedoms and allowed for a consistent circulation of essential goods and key workers in the internal market during the pandemic.¹⁰¹

EU Member States were directed to facilitate transit of EU citizens and third-country nationals with a residence permit or long-stay visa returning to their State of nationality or residence and apply the Communication on Guidelines concerning the exercise of the free movement of workers during

and seafarer travel during the COVID-19 pandemic' (21 September 2020) Resolution MSC.473(ES.2); UN General Assembly, 'International cooperation to address challenges faced by seafarers as a result of the COVID-19 pandemic to support global supply chains' (1 December 2020) Resolution A/75/L.37; and Governing Body of the International Labour Office, 'Resolution concerning maritime labour issues and the COVID-19 pandemic' (8 December 2020) Resolution G.B.340/Resolution(Rev.2).

97 *ibid.*

98 European Commission 'Guidelines on protection of health, repatriation and travel arrangements for seafarers, passengers and other persons on board ships' (Communication) C(2020) 3100 final.

99 European Commission 'The implementation of the Green Lanes under the Guidelines for border management measures to protect health and ensure the availability of goods and essential services' C(2020) 1897 final.

100 European Commission (n 98); see also Conrad (n 71).

101 European Commission (n 99).

COVID-19 outbreak.¹⁰² Under the Green Lanes, seafarers and crew, regardless of nationality, third-country nationals who operate cargo vessels in European waters were permitted to travel to ports to embark on a passage home with minimal interruption.¹⁰³ Thus, EU Member States conducting health screenings for all entering the country are not to cause a significant delay in the seafarer's disembarking, embarking, or repatriation.¹⁰⁴

3.4 *Health and Safety on Board Ships*

Charterparties are subjected to commercial employment and State employment regulations for their seafaring crew, and therefore, they are subjected to the same health and safety regulations of any other workplace.¹⁰⁵

3.4.1 Health and Safety Regulations Adopted by IMO, ILO and WHO
 Since the beginnings of the pandemic in China, the IMO and the ILO advised that maintaining the health and safety of seafarers must remain a priority.¹⁰⁶ It has been stressed prior to the pandemic that seafarers are subjected to the same health and safety standards as that of the country in which the ship is registered. The ILO reiterated this, who added that the health and safety standards for seafarers are the same, if not more, amongst the COVID-19 pandemic.¹⁰⁷

3.4.1.1 *General Requirements including Health and Safety for the Issuance of Ship Certificates*

Flag State and Port State Authorities must comply with health and safety standards of the ship and the administration.¹⁰⁸ The shipowner is responsible for the health of its crew, and its flag State is responsible for the supply of medical equipment and supplies as requested by the master. The IMO issued a

102 European Commission, 'Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak' 2020/C 102 I/03.

103 European Commission (n 99).

104 European Commission (n 98).

105 Bright and Bennett (n 18).

106 IMO (n 86); International Chamber of Shipping (ICS), *Coronavirus (COVID-19) Guidance for Ship Operators for the Protection of the Health of Seafarers* (Marisec Publications 2021).

107 Council Directive 92/29/EEC on the minimum safety and health requirements for improved medical treatment on board vessels [1992] OJ L 1131, as amended by Directive 2007/30/EC of the European Parliament and of the Council of 20 June 2007 amending Council Directive 89/391/EEC, its individual Directives and Council Directives 83/477/EEC, 91/383/EEC, 92/29/EEC and 94/33/EC with a view to simplifying and rationalising the reports on practical implementation [2007] OJ L 165.

108 IMO Resolution A.119(30) (Agenda item 9) Procedures for Port State Control [2017] A 30/Res.119.

circular letter on 6 May 2020 to use PPE for seafarers backed by recommendations by the WHO, urging Member States to relay the information to relevant authorities to supply adequate PPE to vessels registered in their State.¹⁰⁹

General requirements set out by international conventions must be observed. Shipowners, operators, flag States, and port states are required to comply with the regulations of international shipping conventions. The Flag State Administration (or Flag State Control), where the vessel is registered, issues certifications and inspections to ensure a vessel's compliance with the requirements set out by the International Convention on the Safety of Life at Sea (SOLAS),¹¹⁰ the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)¹¹¹ and their associated Codes as well as the International Convention on Load Lines (CLL 66/88),¹¹² the International Convention on the Control and Management of Ship's Ballast Water and Sediment (BWM) (2004),¹¹³ the International Convention on the Standards of Training, Certification and Watchkeeping for Seafarers as amended in 1995 (STCW95)¹¹⁴ and the International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (STCW-F) (1995).¹¹⁵ The Port State (or Port State Control) applies IMO rules to further enforcement of convention regulation compliance.¹¹⁶

109 IMO, 'Coronavirus (COVID-19) – Personal protective equipment' (6 May 2020) Circular Letter No 4204/Add.15.

110 Article 94, International Convention for the Safety of Life at Sea (adopted 1 November 1974, entered into force 25 May 1980) 1184 UNTS 2 (SOLAS Convention).

111 International Convention for the Prevention of Pollution from Ships (adopted 2 November 1973, entered into force 12 October 1983) 1340 UNTS 184 (MARPOL 73/78).

112 International Convention on Load Lines (adopted 5 April 1966, entered into force 21 July 1968) 640 UNTS 133 (CLL 66/88), as amended in 1971, 1975, 1987 and 1989).

113 International Convention for the Control and Management of Ships' Ballast Water and Sediments (adopted 13 February 2004; entered into force 8 September 2017) 30 ILM 1455 (BWM Convention).

114 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (adopted 7 July 1978, entered into force 28 April 1984) (STCW95, as amended in 1994, 1995, 1997, 1998, 2010, 2014, 2015 and 2016) 1361 UNTS 190.

115 International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (adopted 7 July 1995, entered into force 29 September 2012) (STCW-F).

116 Filippo Lorenzon, 'Safety and Compliance' in Yvonne Baatz, *Maritime Law* (Informa Law from Routledge 2018) 352–379; WHO, Interim guidance on 'Promoting public health measures in response to COVID-19 on cargo ships and fishing vessels' (25 August 2020) <https://reliefweb.int/sites/reliefweb.int/files/resources/WHO-2019-nCoV-Non-passenger_ships-2020.1-eng.pdf> accessed 20 September 2020.

The flag State under which the vessel is registered sets the legal jurisdiction of the vessel. Laws pertaining to the vessel's registered State also pertain to the vessel and its crew, according to the United Nations Convention on the Law of the Sea (UNCLOS).¹¹⁷ Ship certificates are issued by a recognised organisation, security organisations or nominated surveyors on behalf of national maritime administrations. The aforementioned conventions set out certain requirements on the period to survey ships. However, that period is normally no longer than three months to allow a vessel to arrive to a port where it can be surveyed and avoid the certificate's expiry.¹¹⁸

Moreover, there are specific obligations in relation to seafarers' medical,¹¹⁹ training and qualifications,¹²⁰ and maritime labour and inspection certificates,¹²¹ as well as vessel sanitation ones.¹²² The IMO, the ILO and the WHO have issued some guidance on the conditions to issue these certificates¹²³ and on periodic examinations on lifting appliances or items of loose gear.¹²⁴

The International Association of Classification Societies (IACS) has provided some guidance on the issuance of short-term certificates or their extension beyond three months in compliance with conventions during the pandemic.¹²⁵ The IMO has urged to justify these extraordinary measures when

117 Power (n 56).

118 The period of validity of certificates and the validity between surveys is subject to IMO, 'Survey Guidelines under the Harmonized System of Survey and Certification (HSSC)' (4 December 2019) Resolution A.1140(31); IMO, 'Guiding principles for the provision of technical and implementation advice to flag States when considering whether to permit statutory certificate extension beyond 3 months' (10 and 22 July 2020) Circular Letters Nos 4204/Add.19/Rev.1 and 4204/Add.19/Rev.2.

119 STCW 1978, reg I/9 and MLC, reg 1.2.

120 STCW 1978 and MLC, reg n 1.3.

121 MLC, Title 5.

122 IHR 2005, articles 20 and 39 and annex 3.

123 See IMO, 'Coronavirus (COVID-19) – Guidance relating to the certification of seafarers and fishing vessel personnel' (2 April 2020) Circular Letter No 4204/Add.5/Rev.1, and 'Joint Statement IMO-WHO-ILO on medical certificates of seafarers, ship sanitation certificates and medical care of seafarers in the context of the COVID-19 pandemic' (22 April 2020) Circular Letter No 4204/Add.10; ILO, 'Information note on maritime labour issues and coronavirus (COVID-19)' (10 July 2020), sections 6–8.

124 ILO, 'Information note on the Occupational Safety and Health (Dock Work) Convention, 1979 (No 152) and coronavirus (COVID-19)' (6 July 2020) <www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/genericdocument/wcms_750255.pdf> accessed 20 September 2020.

125 IACS, 'Coronavirus (COVID-19) – Guidance for flag States regarding surveys and renewals of certificates during the COVID-19 pandemic' is included as an annex to IMO (n 123); in relation to ILO (n 124), an extension for a grace period beyond three months was provided in the light of the COVID-19 pandemic by the Indian MoU Ocean (Memorandum of

alternative arrangements or a survey are not possible by carrying a risk-based survey on a case-by-case basis only in relation to disruptions caused by the pandemic.¹²⁶

3.4.1.2 *Health and Safety Requirements under the Maritime Labour Convention*

The MLC provides an international standard occupational safety and health programme (OSH) for seafarers,¹²⁷ such as the basic requirements for seafarers to work on a ship; working conditions; accommodation; food; facilities; health and medical care; welfare; social security; and enforcement procedures. Title 4 of the MLC details that the health of the seafarers must be protected by satisfactory measures and seafarers must have access to sufficient and prompt medical care aimed to improve medical assistance at sea and determined that a vessel is a workplace that can endure many risks.¹²⁸ State parties offer seafarers support and material assistance for financial recovery caused by injury, illness or death during employment and the health protection and medical care of the seafarers during their employment is the shipowner's responsibility.¹²⁹

Regulation 4.2 of the MLC also imposes liability on the shipowners to pay seafarers full or part wages in the event the seafarer is incapable of work due to illness. Meanwhile, Regulation 4.3 of the MLC dictates that a hygienic environment and occupational health protections must be provided to seafarers

Understanding) on Port State Control Secretariat, 'Amendment to Guidance for dealing with the impact of the outbreak of the COVID-19' (20 March 2020) <www.iomou.org/php/iomoudoc2/Press%20Release%20on%20Amendments%20%20to%20Guidance%20Relating%20to%20Relevant%20IMO%20Conventions.pdf> accessed 23 September 2020; the Tokyo MoU (Ocean Memorandum of Understanding) on Port State control, 'Tokyo MoU revising the guidance for dealing with impact of the pandemic of the COVID-19' (10 April 2020) <www.tokyo-mou.org/doc/Press%20Release%20on%20revision%20of%20Guidance%20relating%20to%20COVID-19.pdf> accessed 23 September 2020; and the Paris MoU (Ocean Memorandum of Understanding) on Port State Control, 'Paris MoU guidance on Covid-19 updated and available for the Industry' (8 May 2020) <www.paris-mou.org/sites/default/files/20200508%20Press%20Release%20updated%20and%20public%20guidance%20COVID-19.pdf> accessed 23 September 2020.

126 IMO (n 123).

127 Margareta Lützhöft and Viet Dung Vu, 'Design for safety', in Helen A Oltedal and Margareta Lützhöft (ed.) *Managing Maritime Safety* (Routledge 2018), 118.

128 MLC, reg 4.1; The EU enacted this MLC requirement with Council Directive 2009/13/EC implementing the Agreement concluded by the European Community Shipowners' Associations (ECSA) and the European Transport Workers' Federation (ETF) on the Maritime Labour Convention, 2006, and amending Directive 1999/63/EC [2009] OJ L 124.

129 MLC, reg 4.2; Directive 2009/13/EC, reg 4.2.

and regulated by the States.¹³⁰ The owners of a ship must prioritise the health of their workers. In order to do so, owners must implement health and hygiene measures on board, monitor crew members' mental health, and limit non-essential interaction.¹³¹

3.4.1.3 *Other Obligations on Health and Safety under IMO Conventions*

The pandemic has had a deep effect on how health and safety regulations must be prioritised in the current scenario.¹³² In addition to the inability for seafarers to disembark for repatriation or crew changes, seafarers have also been unable to receive medical care ashore while awaiting permission for crew changes and repatriation. According to article IV of the MLC, seafarers must have access to adequate medical care comparable to medical care available on land, in addition to swift access to medicine, treatment, and information for any health condition.¹³³ Additionally, article 43 of the WHO's International Health Regulations (IHR) 2005 provides that States cannot refuse to grant ships from entering port and disembarking for medical or public health reasons.¹³⁴ The IHR aims to "prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate

130 Lorenzon (n 116).

131 Underhill and Austin (n 28).

132 The IMO's SOLAS and STCW95 conventions impose safety duties for all shipping vessels. Regulation III/10.4 of SOLAS requires crew members to be certified in safety and security; where Chapters II and III of SOLAS concern the ship's construction, availability of safety equipment, and operating standards, human safety and its qualification are the objectives of the International Safety Management (ISM) Code as well as STCW95; the ISM Code dictates that a ship's crew must be certified, medically fit, and qualified seafarers who conform to national and international standards; likewise, STCW95 dictates that seafarers must be trained, certified, and competent by consistent standards; the international requirements of the ISM Code are detailed in the STCW95, and therefore, a breach or non-conformity of the ISM Code could result from a failure to comply with STCW95 requirements, according to Lorenzon (n 116); IMO, 'Operational considerations for managing COVID-19 cases/outbreak on board ships' (2 March 2020) Circular Letter No 4204/Add.3.

133 The EU implemented the standards of article IV of the MLC in Council Directive 92/29/EEC (n 107).

134 International Health Regulations (IHR) 2005 (adopted 23 May 2005, entered into force 15 June 2007) Resolution WHA58.3 (3rd ed, WHO 2016) <<https://apps.who.int/iris/bitstream/handle/10665/246107/9789241580496-eng.pdf?sequence=1&isAllowed=y>> accessed 18 September 2020. The IHR were preceded by the International Health Regulations (IHR) 1969, Official Records, No 176, 1969, Resolution WHA22.46 and Annex I, amended in 1973 by Resolution WHA26.55 (WHO Official Records, No 209), and 1981 by Resolution WHA34.13 (Document WHA34/1981/REC/1, WHO Official Records, No 217, 1974), document EB67/1981/REC/1, as well as Resolutions WHA27.45 and EB67.R13.

with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade”.¹³⁵ Non-contracting States “shall endeavour to apply the relevant provisions” of IHR “to international shipping” according to the FAL Convention. Public authorities must cooperate with ship-owners “to put ashore sick or injured crew members, passengers, persons rescued at sea or other persons for emergency medical treatment” without any restrictions or delays in case of emergency.¹³⁶

Despite the health and safety regulations provided by the IMO and ILO conventions, SOLAS is the only convention that promotes safety in favour of the passenger.¹³⁷ Although the safety standards detailed in SOLAS, do not extend to health safety of passengers,¹³⁸ the WHO provides guidelines and warning signs of infectious diseases that can be recognised by crew members.¹³⁹ Furthermore, in the event of a public health threat on board ships, the IMO recommends using the WHO Handbook for management of public health events on board ships to ensure safety for all on board.¹⁴⁰ As shown in with the *Diamond Princess*, passengers can also disembark to seek emergency medical care.

The WHO’s interim guidance on promoting “public health measures in response to COVID-19 on cargo ships and fishing vessels” addresses the lack of medical doctors in these ships in contrast to passenger ones.¹⁴¹ Moreover, it focuses on the lack of specific plans to prevent the pandemic on board ships, the lack of access for seafarers to protective measures or PPE, the lack of protocol and guidance for environmental measures that include COVID-19 to clean and disinfect the vessel (an obligation of seafarers) and the lack of uniformity on public health policies on ships and ports worldwide. States are required to designate ports to provide medical assistance and treatment.¹⁴² Flag States

135 IHR, article 2.

136 FAL Convention, Annex Section 7(H) 2.20–2.27; WHO (n 116).

137 IMO, ‘Passenger Ships’ (IMO, 2020) <www.imo.org/en/OurWork/Safety/Regulations/Pages/PassengerShips.aspx> accessed 9 September 2020.

138 IMO, ‘List of contents of the emergency medical kit/bag and medical consideration for its use on ro-ro passenger ships not normally carrying a medical doctor’ (28 May 2002) MSC/Circ. 1042 Ref. T2/6.01.

139 WHO, *International Medical Guide for Ships* (3rd edn, WHO 2007).

140 IMO, ‘Novel Coronavirus (2019-nCoV)’ (12 February 2020) Circular Letter No 4203/Add. 1; see also WHO, Interim guidance on ‘Operational considerations for managing COVID-19 cases and outbreaks on board ships’ (24 February 2020) <https://apps.who.int/iris/bitstream/handle/10665/331164/WHO-2019-nCov-IHR_Ship_outbreak-2020.1-eng.pdf?sequence=1&isAllowed=y> accessed 20 September 2020.

141 WHO (n 116).

142 IHR, Articles 19, 20 and Annex 1B.

must ensure to provide medical facilities onshore to sick seafarers on board their ships without any excuse such as exceptional measures related to the pandemic.¹⁴³

The master should provide assistance to persons in distress at sea¹⁴⁴ while contracting governments have the obligation to make the necessary arrangements in that case under SOLAS and the International Convention on Maritime Search and Rescue (SAR Convention).¹⁴⁵ Moreover, the master must, “so far as he can do so without serious danger to his vessel and persons thereon, to render assistance to any person in danger of being lost at sea”.¹⁴⁶ Moreover, “the master or the skipper must inform the competent health authority at the next port of call about any suspected case of COVID-19” on behalf of the shipowner in compliance with IHR.¹⁴⁷ A Maritime Declaration on Health must be submitted to the competent authority subject to local conditions at the port of call in case of international voyages. At the same time, ship operators should check if the crew develops any symptoms to inform the relevant authority at such port.¹⁴⁸

Inability to receive onshore medical care jeopardises the health of all seafarers, crew, and passengers on board the ship. According to the ICS Secretary-General, reports of seafarers unable to disembark but in urgent medical attention for non-COVID-19 conditions were “alarming”. Seafarers encountered medical emergencies like strokes but were unable to receive medical evacuation or assistance for at least four days.¹⁴⁹ ICS issued COVID-19 Guidelines with consultation and guidance from the WHO, ILO, and the IMO, reiterating article 43 of the IHR as well as providing guidance for the management of suspected cases COVID-19.¹⁵⁰ The IMO issued a circular letter in response to this, asking for government and port authority support in addressing this issue to maintain

143 MLC, reg 4.1(3).

144 Article 98 UNCLOS.

145 International Convention on Maritime Search and Rescue (SAR Convention) (adopted 27 April 1979, entered into force 22 June 1985) 1405 UNTS 97.

146 Article 10(1) of the International Convention on Salvage (1989 Salvage Convention) (adopted 28 April 1989, entered into force 14 July 1996) 1953 UNTS 165; WHO (n 116).

147 WHO (n 116).

148 *ibid.*

149 International Chamber of Shipping (ICS) Press Release, ‘Global Shipping Body Addresses The Health Concerns Of Seafarers During The COVID-19 Pandemic’ (28 May 2020) <www.ics-shipping.org/news/press-releases/2020/05/28/global-shipping-body-addresses-the-health-concerns-of-seafarers-during-the-covid-19-pandemic> accessed 11 September 2020.

150 ICS (n 106); see also ICS (n 149).

the functionality of the global supply chain and continue to protect the health and safety of seafarers.¹⁵¹

3.4.2 Health, Safety, Crew Changes, Repatriations and Access to Medical Care for Seafarers and Crew Members in the European Union

Article 31 of the Charter of Fundamental Rights of the European Union (CFREU) provides that EU citizens have a right to safe and healthy working environments and conditions.¹⁵² Shipping vessels were recognised as a workplace in Article 118(a) TEU.

As with road transportation workers, physical interaction and contact between the vessel crew and port workers were to remain at a minimum in EU Member States according to the Green Lanes guidelines to prevent the spread of COVID-19. If physical contact was necessary, PPE should be worn, and port workers and crew should practice social distancing measures.¹⁵³ While this practice has proven to be a swifter method for the passage of essential goods, electronic B/Ls are being used with the same objective at ports worldwide. It is theorised that the effect of the COVID-19 pandemic will prompt the permanent adoption of the electronic B/L.¹⁵⁴

3.4.2.1 *Health and Safety Regulations in the EU*

The EU implemented the health and safety standards for crew members and seafarers of shipping vessels under Council Directive 92/29. The Directive outlines requirements to equip vessels with adequate medical equipment and medicines at all times in a detailed checklist, with the amount of such supplies dependent on the amount of crew members and seafarers on board the ship. It is the responsibility of the Member State under which the vessel is registered to make the medical supplies available to shipping vessels, in addition to their expiration, correct storage, meet the minimum requirements of the Directive, and provide documentation detailing the medical supplies to comply with the requirements.¹⁵⁵ EU guidelines implemented an increase in the availability of

151 IMO, 'Coronavirus (COVID-19) – Recommendations for port and coastal States on the prompt disembarkation of seafarers for medical care ashore during the COVID-19 pandemic' (1 July 2020) Circular Letter No 4204/Add.23.

152 European Union Charter of Fundamental Rights, art. 31 [2007] OJ C326.

153 European Commission (n 98).

154 Max Schwerdtfeger, 'PTI Webinar: COVID-19 Could Accelerate Adoption Of Electronic Bill Of Lading' (*Port Technology*, 28 May 2020) <www.porttechnology.org/news/pti-webinar-covid-19-could-accelerate-adoption-of-electronic-bill-of-lading/> accessed 10 September 2020.

155 Power (n 56).

PPE equipment on ships for ill crew members, interactions amongst the crew members, or shore leave. Conversely, it is the responsibility of the shipowner and the captain to manage these supplies and timely replenishments.¹⁵⁶ While the Member State provides the supplies and ensures supplies are up to standard, captains and shipowners would likely be liable for negligently managing medical supplies needed during a pandemic.

In order to ensure the health and safety of persons on board a ship in accordance with EU law on health and safety at work, the appropriate preventive and protective measures are put in place following a risk assessment.¹⁵⁷ Specific information on worker safety and health concerning protection from exposure of COVID-19 was provided by the European Agency for Safety and Health at Work as well as the European Commission Guidelines on protection of health, repatriation and travel arrangements for seafarers, passengers and other persons on board ships.¹⁵⁸

3.4.2.2 *Repatriation, Crew Changes and Access to Medical Care of Seafarers and Crew Members on Board Ships Entering EU Ports*

Well-connected ports to operational airports and rail stations have been designated across the EU to allow for fast-track crew changes and repatriations according to the Commission's Guidelines on this matter.¹⁵⁹ Designated ports are close to an accommodation suitable for isolating crew members for a 14 days quarantine prior to embarking and after disembarking if testing is not available, subject to the Member State requirements. This requirement may be waived following the crew member's COVID-19 negative test.¹⁶⁰ A requirement to communicate the vessel's occupants and their destination to Member State authorities,¹⁶¹ which will contact diplomatic representations, assists in arranging repatriations.

Should a seafarer be a suspected case of COVID-19, the owner should disclose the suspected case to the vessel's next port, take immediate steps to isolate the infected person and contact their insurer to ensure coverage. Failure to do so may result in the owner's liability for the crew members who contract

¹⁵⁶ Underhill and Austin (n 28).

¹⁵⁷ Council Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work [1989] OJ L 183.

¹⁵⁸ European Commission (n 98); see also European Agency for Safety and Health at Work (OSHA), 'COVID-19: guidance for the workplace' (6 April 2020) <<https://osha.europa.eu/en/highlights/covid-19-guidance-workplace>> accessed 5 June 2020.

¹⁵⁹ European Commission (n 98).

¹⁶⁰ *ibid* at [31].

¹⁶¹ *ibid* at [16].

COVID-19.¹⁶² The master of any vessel flying an EU or non-EU Member State flag is required to report a Maritime Declaration of Health to EU Member State Authorities at least 24 hours before entering EU ports.¹⁶³ This allowed relevant authorities to limit the spread of the virus with quarantines and provide medical care for suspected COVID-19 cases. Quarantines, on the other hand, are not necessary for crews who endured a two-week port call wait following the concerned port authority's risk assessment. However, if one person is suspected of being infected on board, all crew members should quarantine, on board or land.¹⁶⁴ Disembarking passengers and crew must fill in a Locator Form before leaving the vessel.

Seafarers, maritime transport personnel and fishermen are recognised as “workers in essential functions”.¹⁶⁵ They have the right to be repatriated at no cost, according to Regulation 2.5(1) MLC. Furthermore, cruise ship operators and shipowners should bear the costs of repatriation regardless of the place of disembarkation, including non-EU Member State ports. This obligation is set out in Standard A2.5(1) MLC when: (a) “seafarers’ employment agreement expires while they are abroad”; (b) “seafarers’ employment agreement is terminated [sic] by the shipowner or [sic] by the seafarer for justified reasons; and (c) “seafarers are no longer able to carry out their duties under their employment agreement or cannot be expected to carry them out in the specific circumstances”. In the latter two scenarios, shipowners have to bear the cost of repatriation “in the event of illness or injury or other medical condition which requires their repatriation when found medically fit to travel” according to Guideline B2.5.1(1)(b) MLC.

The freedom of movement has allowed citizen mobility and workers to obtain work in other Member States.¹⁶⁶ To protect the interest and exercise of this freedom, EU Member States must provide and guarantee access to healthcare for all EU citizens and protect human health.¹⁶⁷ The EU guarantees access to healthcare for all EU citizens and workers, including seafarers.

162 Underhill and Austin (n 28).

163 European Commission (n 98) at [44]; this requirement is mandatory since the approval of Directive 2010/65/EU on reporting formalities for ships arriving in and/or departing from ports of the Member States [2010] OJ L 283.

164 European Commission (n 98) at [9].

165 *ibid*, see Summary.

166 Treaty for the Functioning of the European Union, art. 45 [2016] OJ C202.

167 European Committee of Social Rights, ‘Statement of interpretation on the right to protection of health in times of pandemic’ (21 April 2020), <<https://rm.coe.int/statement-of-interpretation-on-the-right-to-protection-of-health-in-ti/16809e3640>> accessed 14 August 2020.

Seafarers are widely protected by international conventions, such as MLC, under which the Contracting Parties should provide assistance for their repatriation¹⁶⁸ and “should have regard to whether proper provision is made [sic] for medical care and maintenance of seafarers employed on a ship that flies the flag of a foreign country who are put ashore in a foreign port in consequence of sickness or injury incurred in the service of the ship and not due to their own wilful misconduct”.¹⁶⁹

EU Member States are required to accommodate vessels flying a third country flag for humanitarian reasons.¹⁷⁰ Moreover, healthcare and accommodation are provided to third-country nationals working in EU ships by the Member State authorities, although the ship’s operator may be required for compensation.¹⁷¹ Furthermore, EU citizens must have access to quality healthcare wherever they roam amongst the EU’s territory,¹⁷² and Member States must guarantee access to healthcare to all EU citizens under Directive 2011/24.¹⁷³

3.4.2.3 *Health and Safety Standards on Cruise Ships*

The European Maritime Safety Agency (EMSA) ensures effective and systematic levels of maritime safety and security as well as the prevention and response to ship-caused pollution. The EMSA has released guidance for cruise ship operations to safely resume cruise ship operations for vessels registered in an EU flag State. Cruise ship companies are required to provide a safe environment for their crew and passengers. In order to maintain this, it is recommended

168 MLC Guideline B2.5.2(1).

169 MLC Guideline B2.5.2(2)(b).

170 *ibid* at [8].

171 European Commission (n 99) at 18; the Commission’s Guidelines (n 98) complete the requirements set out by MLC; however, a parallelism can be brought here as to what Ringbom and Argüello define as “horizontal environmental requirements” regarding the limited applicability of express provisions of environmental law to ships; the authors argue that “the rationale behind the adoption of these ‘horizontal measures’ may not always consider the particular features of maritime transport”; however, this author believes that general EU law on provision of healthcare across the EU is complemented by the Commission’s Guidelines that bridge the gap between International Law provisions, i.e. MLC, concerning medical care and assistance to seafarers and crew members on board ships reaching EU ports; see Gabriela Argüello, ‘Environmentally sound Management of Ship Wastes: challenges and opportunities for European ports’ 5(1) *Journal of Shipping and Trade* (2020) 1–21, at 19; Henrik Ringbom, *The EU Maritime Safety Policy and International Law* (Martinus Nijhoff Publishers 2008).

172 Treaty for the Functioning of the European Union, art. 35 [2016] OJ C202.

173 Directive 2011/24/EU on the application of patients’ rights in cross-border healthcare [2011] OJ L 88/45.

that safeguards are put in place as well as risk assessments.¹⁷⁴ In addition to cruise ship crew members receiving training and certification under SOLAS, STCW95 and the ISM Code, the EMSA recommendations also listed COVID-19 training for cruise ship crews. These implementations should be guided by WHO guidance for COVID-19 management on board ships.¹⁷⁵ These guidelines offer a jumpstart to the travel, tourism, and shipping industry. The effectiveness of these guidelines is unknown, but they are an attempt at tourism and shipping industry revitalisation.

In addition to the guidance issued for cruise ships, the European Agency for Safety and Health at Work (OSHA) has issued guidelines to prepare workplaces for COVID-19 safety. The Occupational Health and Safety (OSH) Directive 89/391/ECC established a framework that guaranteed the improvement of health and safety standards in the EU. It provided that adequate protection must be available for workers in the work environment.¹⁷⁶ The Directive and the COVID-19 workplace guidance would include provisions for the availability of hand sanitiser or soap and water and PPE to decrease the spread of COVID-19 amongst employees.

4 Conclusion

Government-issued travel restrictions and border closures caused significant delays for the shipping industry and global trade. The shipping industry encountered legal issues in the agreements negotiated for the carriage of goods by sea. Countries were not swift enough to implement these border restrictions to prevent or slow the spread of COVID-19. They were also not quick enough to address the issues of the seafarer.

The uncertainty of the pandemic created delays that questioned the fulfilment of the contract and the completion of the performance. Frustration and force majeure threatened the fulfilment of the contract, while off-hire clauses threatened the payment of the vessel crew members. Yet, both of these issues are strict in their application. A force majeure which accounts for unforeseeable events may not include COVID-19 as it is now foreseeable. Relying on the

174 EMSA, 'COVID-19: EU Guidance for cruise ship operations – Guidance on the gradual and safe resumption of operations of cruise ships in the European Union in relation to the COVID-19 pandemic' (27 July 2020) <www.ecdc.europa.eu/sites/default/files/documents/COVID-19-cruise-guidance-27-07-2020.pdf> accessed 15 September 2020.

175 *ibid*; see also WHO (n 139).

176 Council Directive 89/391/EEC (n 157).

basic functions of clauses like a force majeure is not enough to armour the contract from COVID-19 related provisions.

The same can be said for the activation of the off-hire clause, which accounts for preventing the vessel's full-working. Seafarer payment has also been an issue which can be resolved under force majeure if a seafarer's contract has expired. In the event the contract is still in motion, most charterparties contains the off-hire clause, pardoning the charterers from issuing payment to seafarers in the event of a deficiency of men which prevents the full-working of the vessel. However, activating an off-hire clause is difficult and charterers should execute it with caution. This is not a plausible solution since unless there is a full quarantine on the ship, the vessel may still be able to work at a full capacity. However, INTERTANKO and BIMCO have provided clauses to account for COVID-19 in contracts for the carriage of goods by sea.

The INTERTANKO and BIMCO COVID-19 Clauses are provisions that may be incorporated into the contract to prevent frustration, force majeure, and off-hire issues as well as protect crew health and safety in the events of unsafe ports, port closures or travel restrictions. This protects the rights of shipowners and masters making subjective decisions on whether a port is unsafe and relieving them of liability, and at the cost of accumulating compensation owed to the shipowner by the charterer.

A force majeure clause on its own can no longer recognise COVID-19 as an unforeseeable event, but the INTERTANKO COVID-19 Clause allows for this provision when a shipowner or master decides that a port is unsafe to dock. This provision protects the shipowner's discretion, which also protects the health and safety of the crew that the shipowner is responsible for and reallocates liabilities and compensation among the charterer and the owner. Likewise, BIMCO's Infectious or Contagious Disease Clause protects the discretion of the shipowner to dock at a port depending on its safety, but it also accounts for the ability to terminate the charterparty under certain conditions.

Since COVID-19 is a foreseeable issue, contracts should account for the delays and border restrictions that are likely to be imposed by governments to off-set COVID-19. Although some provisions seem to still have some clout, it is unlikely that COVID-19 will affect shipping contracts beyond the pandemic's start. Therefore, shipping parties should also negotiate the INTERTANKO or BIMCO clauses into the contract.

Travel restrictions and border closures have impacted the seafarers' well-being as much as it has affected the fulfilment of shipping industry charterparties. International organisations and regulations that were adopted and in force prior to COVID-19 were unintentionally neglected by governments who prioritised the maintenance and regulation of COVID-19 within its borders,

which came at the cost of seafarer health and safety. Understandably, governments were prompt to issue travel restrictions and border closures to curb the spread of the virus and contain citizens and individuals. However, these measures had devastating effects on key workers at these borders.

With the carriage of goods by sea moving 80% of the world's goods, seafarers fit the description of key workers. Cruise ship passengers' health is not guaranteed by conventions, but it may be prioritised amongst private company policy. Cruise ship passengers were prioritised over the crew members, who had to quarantine for two more weeks after passengers disembarked. However, cargo ships have hardly had authorisation to disembark at most ports. This has disrupted seafarers who are repatriating after fulfilling their working contract and prevented crew changes, further disrupting the global supply chain. The IMO urged governments for the first time in March 2020 to recognise seafarers as key workers, but this recognition took a global summit and over four months to mobilise.

Unfortunately, governments did not recognise them as such until July 2020 – a mere four to five months after travel restrictions were enacted worldwide. This caused delays and congestion at ports but also prevented seafarers from disembarking to repatriate or change crews. Subsequently, these delays strained global trade. Seafarers were also jeopardised in the process. Unable to disembark for employment reasons, seafarers were also unable to disembark for medical reasons or receive off-shore medical care for non-COVID-19 related medical issues or illnesses, which was a breach of article 43 of the IHR.

It seems as though the health and safety of passengers are prioritised on shipping vessels. International conventions provide the safety of passengers but do not include health. Yet, as illustrated in the disembarking of passengers from the *Diamond Princess*, these conventions may impliedly include the health of passengers. On the other hand, companies may prioritise the health of passengers since they owe a duty of care and governments may prioritise passenger repatriation due to the pressure of the media reporting on these instances. As with the *Diamond Princess*, the crew was to undergo an additional 14-day quarantine before disembarking and repatriating.

With non-leisure shipping, seafarers and vessel crews have been stranded for months, unable to disembark at ports, which has inflicted mental unrest at a cost of the 600,000 stranded seafarers' health as of July 2020. It is internationally agreed that seafarers are allowed to disembark at ports in the event of a medical emergency. Many seafarers were even denied this access due to travel and border restrictions, which delayed the emergency medical care by days at a time. Seafarers have also shown signs of depression as they are still stranded on ships months after they were supposed to disembark to repatriate. The

government restrictions which were supposed to slow the spread of COVID-19 were not implemented in a timely manner, which resulted in longer travel and border restrictions. Even with the IMO's plea for seafarer recognition, governments were slow to resolve these issues and it further hindered the supply chain and jeopardised seafarer health and safety.

Despite these issues, control of the pandemic has been underway. Guidelines and training have been released for companies and organisations to keep workplaces safe for employees to return to work, including COVID-19 safety guidelines and training for cruise ship companies to revitalise the tourism industry. Modern medicine is more advanced since the last pandemic in the early 20th century. Vaccine trials were ongoing during several months¹⁷⁷ and successful jabs were developed in a record time. Vaccination campaigns have proved to be monumental in preventing infection and the spread of the virus.¹⁷⁸

Not all Governments have provided a uniform response and solutions to seafarers looking to disembark, change crews and repatriate. However, the pandemic has shown that the laws related to the carriage of goods by sea have adapted to the disruptive pandemic scenario since 2020. The impacts and travel restrictions are almost over since record numbers of calls at ports have been registered worldwide and the global economy has been boosted since mid-2021. Charterers and owners must account for COVID-19 and other pandemics in future contracts since it is a foreseeable issue that causes multiple issues for shipping companies and seafarers. The shipping industry has shown that it was possible to keep the global supply chain running in 2020, assisting the economy to recover the pre-COVID-19 levels in 2021.

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International Shipping: Who Levels the Playing Field?

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1 Introduction

1.1 *The Problem: Who Defines a Level Playing Field in Context of Climate Change Mitigation?*

International shipping is subject to many different rules and regulations, which together frame the market conditions of the industry. Framing a coherent – or level – playing field for an industry that by nature is truly international, is not an easy task. Ships are sailing on international waters; owners might be located in one country while the vessel is registered in another. Contracts are made according to the law in one state, but enforced by arbitrators or courts in another. The fact that the business is international opens for different forms of *forum shopping* – and other manoeuvres aiming at a favourable legal position. Jurisdiction follows to a large degree registration. The ship's flag displays to which jurisdiction it belongs.¹ A *flag of convenience*; that is seeking a country with an open registry, or a nation that allows registration of vessels owned by foreign entities – all with the purpose to cut operating costs or avoid the regulations of the owner's country, might be tempting. In order to avoid, or manage, this kind of *regulatory competition*, states need to collaborate.

International shipping is accordingly subject to governance through international collaboration. The legal framework surrounding the industry mainly stems from a United Nations (UN) specialised agency, the International Maritime Organization (IMO),² which is responsible for regulating the safety of life at sea, maritime security and the protection of the marine environment through prevention of sea pollution caused by ships.³ But also, the UN Conference on Trade and Development (UNCTAD)⁴ is involved in the global

1 The jurisdiction of the flag state is however not exclusive. The flag State has jurisdiction over the vessel at high seas, a coastal state has however certain jurisdiction over foreign ships in its territorial waters. The scope of the coastal state's jurisdiction is expanded when the ship enters coastal waters and ports.

2 Known as the Inter-Governmental Maritime Consultative Organization (IMCO) until 1982.

3 <<https://unsystem.org/content/imo>> accessed 19 March 2020.

4 Below in 2.1.2.2.

governance of international shipping. Furthermore, regional organisations, such as the European Union (EU) has recently activated themselves in regulatory issues related to shipping. The influence of the industry in this context is extensive and accordingly subject to discussion.⁵

The aim and intention of the regulatory efforts are diverse, but to *level the playing field*; to create a situation in which everyone has the same chance of succeeding, whilst at the same time ensure certain policy goals related to security and environmental protection, is essential. This is, however, not an easy task as different players have different interests. Indeed, interests and policies behind regulatory efforts taken by different actors, diverges accordingly.

Whilst utilising law as a regulatory tool to achieve certain policy goals, such as an efficient, sustainable and emission free transport industry is internally integrated in all EU activities,⁶ IMO's main focus has by tradition been related to safety and navigational issues.⁷ To actively use regulation as a tool to achieve policy goals is in other words not part of the IMO tradition. On the contrary, preparing regulation on topics related to commercial and economic issues has been handled by UNCTAD, with diverging success.⁸

Indeed, all organisations are committed to work towards common international policy goals related to security and – lately – sustainable development as defined by the UN development goals and the goal of the Paris Agreement of limiting global warming to below 2 degrees and preferably 1.5 degrees, which requires a drastic reduction in the so called greenhouse gas emissions (GHG) from all sectors.⁹ GHG are gases that trap heat in the atmosphere and hence contributes to global warming. There are several different greenhouse gases. For international shipping the current discussion relates to reduction of carbon dioxide (CO₂) which mainly enters the atmosphere through burning fossil fuels such as coal, natural gas, and oil, the latter is used as bunkers in shipping.¹⁰ As will be outlined below, CO₂ emissions from shipping are not

5 For an overview and discussion related to the work at IMO, see Harilaos N Psaraftis and Christos A Kontovas, 'Influence and transparency at the IMO: the name of the game' [2020] 22 Marit Econ Logist 151.

6 The EU has inter alia competence to regulate shipping, providing that the proposed regulation is within the EU transport policy, see below in 2.2.

7 On the IMO's role and task, see below in 2.1.

8 Below in 2.1.2.2.

9 Below in 1.2.

10 Burning other fossil fuels, solid waste, trees and other biological materials as well as chemical reactions e.g., manufacture of cement also contributes to increasing the CO₂ level. On the other hand, carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Other greenhouse gases are: "Methane (CH₄): Methane is emitted during the production and transport of

decreasing, on the contrary the emissions are predicted to increase.¹¹ The IMO has accordingly frequently been accused of being inefficient and slow in their regulatory efforts to combat this development, particularly the EU has been critical to what is considered inefficiency in IMO's struggle towards a carbon neutral shipping industry.¹²

The EU has as a result of what it considers lack of success on the international regulatory arena, itself tried to solve regulatory gaps by preparing regional solutions to identified regulatory needs. By virtue of the fact that market actors around the world are adjusting to the EU regulations in order to access its market, the European Union has positioned itself a regulatory global leader. To describe the phenomena Columbia Law School Professor Anu Bradford coined the term *The Brussels Effect* in a paper from 2012.¹³ In a recent volume from 2020: *The Brussels Effect – How the European Union rules the world*,¹⁴ Bradford follows up and expands the idea. The Brussels effect is explained in the following way:

The Brussels Effect refers to the EU's unilateral power to regulate global markets. Without the need to resort to international institutions or seek other nations' cooperation, the EU has the unique ability among nations today to promulgate regulations that shape the global business environment, elevating standards worldwide and leading to a notable Europeanization of many important aspects of global commerce. Different from many other forms of global influence, the Brussels Effect

coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. Nitrous oxide (N₂O): Nitrous oxide is emitted during agricultural and industrial activities, combustion of fossil fuels and solid waste, as well as during treatment of wastewater. *Fluorinated gases*: Hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for stratospheric ozone-depleting substances (e.g., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases")." See <www.epa.gov/ghgemissions/overview-greenhouse-gases> accessed 20 November 2020.

11 Below at 1.2.

12 Below at 3.

13 Anu Bradford, 'The Brussels Effect' [2012] 107 Northwest Univ Law Rev 1 <https://scholarship.law.columbia.edu/cgi/viewcontent.cgi?article=1275&context=faculty_scholarship> accessed 15 December 2020.

14 Anu Bradford, *The Brussels effect: How the European Union rules the world* (OUP 2020).

entails that the EU does not need to impose its standards coercively on anyone – market forces alone are often sufficient to convert the EU standard into the global standard as multinational companies voluntarily extend the EU rule to govern their global operations. In this way, the EU wields significant, unique, and highly penetrating power to unilaterally transform global markets, including through its ability to set the standards in diverse areas such as competition regulation, data protection, online hate speech, consumer health and safety, or environmental protection.¹⁵

As regards international governance on GHG emissions from shipping, the interplay between the IMO and the EU has led to a situation where international shipping is currently subject to *two* separate sets of legal rules aiming at emission reduction. Both are based on measuring and reporting; the IMO measuring scheme¹⁶ and the EU Monitoring, Verifying and Reporting (MRV) monitoring scheme.¹⁷ Hardly an optimal situation for an industry that needs to adapt to a new situation where GHG emissions in the future most likely will come with a cost, however currently unknown both as regard size and shape. Whereas the EU is proposing to include GHG emissions from shipping in the EU *Emission Trading System* (ETS), several IMO stakeholders advocate for a *carbon levy* for international shipping. The latter is at the moment discussed both by the IMO and the EU.¹⁸

The purpose of this chapter is to outline and examine the role of the IMO and the EU as regards rules and regulations applicable to international shipping, using the mentioned policy instruments on combating GHG emissions as examples.¹⁹ The chapter starts out by introducing the main regulator in international shipping the IMO as well as the regional contender, the EU (2). Thereafter the interplay between the EU and the IMO in creating a *level playing field* while taking the policy goal of GHG emission reduction into account, is discussed from both organisations point of view (3). Finally, some reflections

15 *ibid.*

16 Below in 3.2.1.

17 Below in 3.1.2.

18 More below in 4.

19 The MVR monitoring scheme is part of a large number of tools utilized by the EU to combat CO₂ emissions, such as the EU Taxonomy regulation (Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 [2020] OJ L 198/13) and accompanying documents. These tools are however not discussed in this Chapter.

on the current regulatory architecture in light of the so called Brussels effect, will be shared (4). First however, the paper continues with an introduction to the UN sustainability goals in context of international shipping.

1.2 *Global Climate Change Regime and International Shipping*

Despite the ongoing pandemic and the potential economic crisis to follow, climate change remains one of the biggest challenges the world is facing today. GHG emission reduction is hence top priority both on global, regional and national level. All sectors of society are – or will be – affected by global emission reducing efforts, international shipping being no exemption. GHG emissions are covered by the 1992 United Nations Framework Convention on Climate Change (UNFCCC)²⁰ and the 2015 Paris Agreement.²¹ Under all agreements the aim has been to stabilize or reduce GHG in the atmosphere. In 1992 all UNFCCC signatory states accepted to stabilise GHG concentrations in the atmosphere at a level that “would prevent dangerous anthropogenic interference with the climate system”.²² Under the Paris agreement, the signatory states agreed on an emission reduction target that would keep “...a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius”.²³

Because of its large dependence on fossil fuels, global shipping is estimated to be responsible for around 2–3 percent of total global greenhouse gas emissions, which is more emissions than any EU state: According to the EU Commission; if the shipping sector were a company, it would rank sixth in emissions in the world.²⁴ The situation is even more dramatic at EU level where shipping accounted for 13% of emissions from transport.²⁵ According to a new study from the International Maritime Organisation (IMO); the Fourth IMO GHG Study 2020, emissions from shipping will continue to increase.²⁶

20 United Nations Framework Convention on Climate Change (UNFCCC) (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107, 31 ILM.

21 <https://unfccc.int/sites/default/files/english_paris_agreement.pdf> accessed 21 December 2020.

22 *ibid* art. 2.

23 <<https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement>> accessed 21 December 2020.

24 EU Commission, Proposal for a Regulation of The European Parliament and of the Council amending Regulation (EU) 2015/757 in order to take appropriate account of the global data collection system for ship fuel oil consumption data COM(2019) 38 final [2019] at 1.

25 *ibid*.

26 Smazzare, *Reduction of GHG Emissions From Ships: Fourth IMO GHG Study 2020* [2020].

Depending on the development in world markets related to the COVID-19 pandemic, emissions are projected to increase from about 90% of 2008 emissions in 2018 to 90–130% of 2008 emissions by 2050.²⁷

Despite these alarming numbers, *international shipping was not included* in the national emission reduction targets set for Annex 1 Parties under the Kyoto Protocol²⁸ (i.e. developed countries) nor are they directly included the Paris agreement.²⁹ The Kyoto Protocol states explicitly that limitations and reductions of GHG emissions from marine bunker fuels shall be pursued by the Annex 1 Parties to the Kyoto Protocol under the IMO.³⁰ This implies that according to the international agreements, the IMO is responsible for establishing an international legal framework to ensure the needed reduction in GHG emissions from international shipping. It has hence been the responsibility of the IMO to decide on the goal, speed and tools for this.

2 Who Levels the Playing Field? – the Organisations and Stakeholders

2.1 *The International Maritime Organization – IMO*

2.1.1 A UN Specialised Agency

The choice of leaving the regulatory initiative to the IMO was predicted as the organisation has established itself as the main regulator of international shipping. The IMO was established through the United Nations Convention on the International Maritime Organization, 6 March 1948 (IMO Convention),³¹ initially titled the Inter-Governmental Maritime Consultative Organization (IMCO). This was, however, changed in 1982 to the International Maritime Organization (IMO), which will be used in the following. IMO's first meeting was organised ten years after it was established; in 1959.³² Headquartered in

²⁷ *ibid* 6.

²⁸ Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 148.

²⁹ The Paris Agreement differs from the Kyoto Protocol in its approach as it is based on Nationally Determined Contributions, but the Paris Agreement does not contain obligations to reduce emissions from international shipping.

³⁰ Kyoto Protocol (n 28) art 2.2.

³¹ The convention was agreed at a UN conference held after the Second World War in Geneva in February 1948. Convention on the International Maritime Organization as amended (IMO Convention) (adopted 6 March 1948, entered into force 17 March 1958) 9 UST 621, 289 UNTS 48.

³² At the time the organisations was named The Intergovernmental Maritime Consultative Organisation (IMCO) which later changed name to IMO which will be used in the

London, United Kingdom, the IMO currently has 174 member states and three associate members. All of the Nordic³³ countries are members of the IMO. Norway became a member in 1958, followed by Denmark, Finland and Sweden in 1959.³⁴ The IMO facilitates cooperation among governments and the goal today is to achieve the highest practicable standards of maritime safety and security, and efficiency in navigation. It deals with legal matters related to international shipping, including liability and compensation regimes, as well as with facilitation of international maritime traffic. It is also responsible for providing technical assistance in maritime matters to developing countries. The IMO is hence responsible for assembling international conferences on shipping matters and for drafting international conventions or agreements on this subject. In addition, IMO produces non-binding legal material such as guidelines and recommendations. The work in IMO relies on collaboration and loyalty among the member states.³⁵ Since IMO is a worldwide organisation, both capacity and political willingness to implement the agreed rules, vary within the organisation. As stated on IMO's home pages: "*IMO has plenty of teeth but some of them don't bite*".³⁶ IMO accordingly constantly allocates time and effort to secure implementation and compliance of the rules. This is e.g. visible in IMO's strategic plan for 2018–2023, in which improving implementation is set out as the first strategic direction.³⁷

Creating a level playing field for its members is crucial for IMO. According to the homepages of the organisation, "...its role is to create a level playing-field so that ship operators cannot address their financial issues by simply cutting corners and compromising on safety, security and environmental performance".³⁸ Although the organisation is an important platform for governing international shipping, collaboration with other bodies in the United Nation System as well as with parties at global, regional and national levels is considered important.³⁹ The legal base for this is the IMO Convention art. 60 and 61. The latter grants IMO a right to co-operate with other intergovernmental

following. Augustin Blanco-Bazán, 'IMO – Historical highlights in the life of a UN Agency' [2004] 6 *Journal of the History of International Law* 259, 259.

33 *ibid.*

34 *ibid* 262.

35 <www.imo.org/en/About/Pages/Default.aspx> accessed 16 December 2020.

36 <www.imo.org/en/OurWork/Safety/Implementation/Pages/FlagStateImplementation.aspx> accessed 27 March 2020.

37 IMO Strategic plan Annex A p.5.

38 <www.imo.org/en/About/strategy/Pages/default.aspx> accessed 07 December 2020.

39 IMO Strategic plan (n 37) at 10, p. 5.

organizations which are not specialized agencies of the United Nations, but whose interests and activities are related to the purposes of the Organization.⁴⁰

As for the Members of most other international organisations, the IMO Members can be divided into developed, developing and least-developed States. The north-south division is also a term used to describe this situation.⁴¹ To monitor the problems related to the diverging interests of the Member States, IMO has established the principle of “*No More Favourable Treatment*”.⁴² This means that all ships in international trade shall be subject to equal and non-discriminatory regulation irrespective of flag or ownership. The principle is however, not indisputable and many Member States advocate that the principle of “*Common but Differentiated Responsibilities*” used for example in the international climate change regime, would be a more appropriate way to handle the common challenges, such as climate change.⁴³ The content of an equal and non-discriminatory regulation is accordingly a source of discussion. Obviously, the diversity between IMO’s member states influences the view on this.

2.1.1.1 *Lack of International Consensus and Democracy*

Indeed, there is no international consensus on what a level playing field really entails. On the contrary, from the very beginning, *lack of international consensus* has been – and continues to be – a problem for the IMO. After all, all members are competitors on the same global markets of international shipping. The collaboration was initially on a modest level, limited to technical questions related to safety or navigation, leaving commercial and economical questions outside the mandate.⁴⁴ The question of the mandate of IMO was linked to the discussion on whether IMO should be granted treaty-making power and whether it should become a UN specialized agency. The latter would give the organisation political responsibilities that might conflict with “pure shipping” interests.⁴⁵ As an example, could be mentioned that all Nordic countries were at the time opposed to a development where IMO would have an extended

40 Art 61: The Organization may, on matters within its scope, co-operate with other intergovernmental organizations which are not specialized agencies of the United Nations, but whose interests and activities are related to the purposes of the Organization.

41 Md Saiful Karim, *Prevention of pollution of the marine environment from vessels: The potential and limits of the International Maritime Organisation* (Springer 2015), 34.

42 *ibid.*

43 The principle was formalized in the United Nations Framework Convention on Climate Change (UNFCCC) (n 20).

44 Blanco-Bazán (n 32), 261.

45 *ibid* 261.

mandate and expressed, when joining, that they would withdraw if the organisation “were to extend its activities to matters of purely commercial or economical nature”.⁴⁶ The discussion on IMO’s mandate revealed a conflict of interest not only among shipowners from different jurisdictions, but also, and mainly, among shipowners on the one hand and shipusers/shippers on the other. Furthermore, it became obvious that the conflict was not only a conflict between contracting parties (shipowners and shippers); the conflict became a confrontation between developed and developing countries.⁴⁷ During the 1960s and 1970s, IMO was described as “a rich man’s club where only the interests of shipowners prevailed”.⁴⁸ The predominance of the shipowners interests was reflected in how the organisations was structured.

2.1.2 How IMO is Structured

2.1.2.1 *The Main Organs*

The foundation of the IMO, the IMO Convention, provided in its first version, for three main organs for the organisation: the Assembly, the Council and the Maritime Safety Committee (MSC). *The Assembly* was the highest organ of the organisation and should accordingly consist of all Member States. It should meet once every two years, with provision for extraordinary sessions if necessary. Its main tasks were to vote on the budget and decide financial arrangements, to determine the general policy of the organization to achieve the purposes the IMO and to adopt resolutions submitted to it by the Council and the MSC. *The Council* on the other hand, was the executive organ of IMO and responsible, under the Assembly, for supervising the work of the organization. It should consist of only 16 Member States and the principles for selecting these were based on the countries interests in international shipping on the one hand and in seaborne trade on the other.⁴⁹ *The Maritime Safety Committee* was responsible for developing regulations on technical and safety issues and hence the most important body of the organisation.⁵⁰ Out of its 14 members,

46 *ibid* 262.

47 *ibid* 263.

48 *ibid* 263.

49 Of the sixteen places in the Council should six be reserved for the six nations with the largest interest in providing international shipping services. Other six seats should be occupied by other nations with the largest interests in seaborne trade, and finally the last four seats were to be elected by the IMCO Assembly in equal numbers of two per each category among nations having a substantial interest in providing international shipping services and those having an interest in international trade, *ibid* 264.

50 According to the IMO Convention (n 31) Art 29, the MSC should consider “aids to navigation, construction and equipment of vessels, manning from a safety standpoint, rules for the prevention of collisions, handling of dangerous cargoes, maritime safety procedures

a substantive majority of 8 were to be elected among the largest ship-owning nations.⁵¹

The structure of IMO today is not very different from the structure designed in 1948. The highest organ of IMO is still the Assembly whereas the executive power lies with the Council. The number of committees have, however increased during the years. Today *five main Committees* operate within the IMO. The Maritime Safety Committee⁵² is accompanied by the Marine Environment Protection Committee;⁵³ the Legal Committee;⁵⁴ the Technical Cooperation Committee⁵⁵ and the Facilitation Committee⁵⁶ as well as a number of Sub-Committees which support the work of the main technical committees. Whereas all Member States are member of the Assembly, the real power lays with the Council and the Committees. During the years the elective process has changed and today the interests between the shipowners and shippers are more balanced.

The functions of *the Council* are governed by art 17 of the IMO Convention. The Council is the executive body of the CMI. It coordinates the activities of all the other organs of the organisation: The Council considers the draft work programme and budget estimates of the IMO and submit them to the Assembly. It also receives reports and proposals of the Committees and other organs and submit them to the Assembly and Member States with comments and proposals as appropriate.⁵⁷ The Council is in other words a central part of IMOs legislative and financial operations.⁵⁸ Currently there are 40 Member States (out of 174 Member States and three Associate Members)⁵⁹ represented in the

and requirements, hydrographic information, log-books and navigational records, marine casualty investigation, salvage and rescue and any other matters directly affecting maritime safety". <www.imo.org/en/About/Conventions/ListOfConventions/Pages/Convention-on-the-International-Maritime-Organization.aspx> accessed 22 July 2020.

51 "so as to ensure adequate representation of other Members, governments of other nations with an important interest in maritime safety, such as nations interested in the supply of large numbers of crews or in the carriage of large numbers of berthed and unberthed passengers, and of major geographical areas".

52 IMO Convention (n 31), Part VII, art 27–31.

53 *ibid* Part IX, art 37–41.

54 *ibid* Part VIII, art 32–36.

55 *ibid* Part X, art 42–46.

56 The Facilitation Committee has its legal base in the Convention on the Facilitation of International Maritime Traffic (adopted 9 April 1965, entered into force: 5 March 1967) 591 UNTS, 265.

57 IMO Convention (n 31) art 17.

58 Karim (n 41).

59 For a list of IMO Council Member States see the IMO's website: <www.imo.org/en/About/Membership/Pages/Default.aspx> accessed 05 August 2020.

Council. The Council Members are elected in certain groups representing specific commercial interests. In category a) 10 members are elected among states with the largest interest in providing international shipping services. In category b) another 10 members are elected among states with the largest interest in seaborne trade, whereas the remaining twenty members are elected among states that are not elected under a or b, and take a special interest in transport or navigation. The main principle for this third category c) is to “...ensure the representation of all major geographic areas of the world”.⁶⁰

At present, in the first category, we find world superpowers such as China, US, UK and Russia but also smaller states like Japan, Italy and Norway. Old shipping nations like Greece, the Netherlands and Spain are represented in category B, together with strong economic players like Canada, France, Germany and the United Arab Emirates. Also “new” economies like Brazil and India are found here. From a Nordic point of view it is interesting to find Denmark in category c) together with Bahamas, Belgium, Chile, Cyprus, Egypt, Indonesia, Jamaica, Kenya, Kuwait, Malaysia, Malta, Mexico, Morocco, Peru, the Philippines, Singapore, South Africa, Thailand and Turkey.⁶¹

Also, the election of members to the different *committees* have changed. The main principle is presently that all committees shall consist of all the Members.⁶²

60 IMO Convention (n 31) art 17 (c).

61 Council members for the 2020–2021 biennium: *Category (a) 10 States with the largest interest in providing international shipping services*: China, Greece, Italy, Japan, Norway, Panama, Republic of Korea, Russian Federation, United Kingdom, United States.

Category (b) 10 States with the largest interest in international seaborne trade: Argentina, Australia, Brazil, Canada, France, Germany, India, the Netherlands, Spain and the United Arab Emirates.

Category (c) 20 States not elected under (a) or (b) above, which have special interests in maritime transport or navigation and whose election to the Council will ensure the representation of all major geographic areas of the world: Bahamas, Belgium, Chile, Cyprus, Denmark, Egypt, Indonesia, Jamaica, Kenya, Kuwait, Malaysia, Malta, Mexico, Morocco, Peru, the Philippines, Singapore, South Africa, Thailand and Turkey.

62 The principle is laid down in art 27 (the Maritime Safety Committee), art 32 (the Legal Committee), art 37 (the Marine Environment Protection Committee) and art 37 and 42 (the Technical Co-operation Committee).

2.1.2.2 *Other UN Organs Governing International Shipping*

For IMO some of the political problems have been outsourced to the UN Conference on Trade and Development (UNCTAD) starting already in 1965.⁶³ UNCTAD was considered better fitted to deal with commercial and political questions as it was part of the United Nations Organization itself, whereas IMO was only a specialised agency within the United Nations System. However, it was not considered in the interest of IMO that UNCTAD had exclusive responsibility in commercial and political matters. As an example, UNCTAD was in charge of drafting the 1980 United Nations Convention on International Multimodal Transport of Goods.⁶⁴ Despite a huge legal gap in international regulation and consensus on the need of an international solution, there was no real political consensus on the convention, which accordingly never became an international success.⁶⁵

To avoid future similar failures the two UN bodies created a *Joint Group* which was in charge of carrying forward preparatory works to international conventions. The collaboration led to the adoption of the 1993 International Convention on Maritime Liens and Mortgages and the 1999 Convention on Arrest of Ships. Both conventions are in force and adopted widely.⁶⁶

2.1.2.3 *The Marine Environment Protection Committee*

With reference to environmental protection in general and the specific problem of GHG emissions from shipping, however, these problems remain with the IMO and are handled by the *Marine Environment Protection Committee*, which was established in the 70s through an amendment of the IMO Convention.⁶⁷ The Marine Environment Protection Committee (where all the Member State are represented, see above) is responsible for "...any matter within the scope of the Organization concerned with the prevention

63 In 1965. Blanco-Bazán (n 32).

64 *ibid* 264.

65 See e.g. Marian Hoeks, *Multimodal transport law: The law applicable to the multimodal contract for the carriage of goods* (Wolters Kluwer Law & Business 2010). See also Ellen Eftestøl-Wilhelmsson, *European sustainable carriage of goods: The role of contract law* (Routledge Taylor & Francis Group 2018).

66 See <https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XI-D-4&chapter=11&clang=_en> and <https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XII-8&chapter=12&clang=_en> accessed 16 December 2020.

67 The Marine Environment Protection Committee was established as a permanent subsidiary organ of the Assembly in 1973 in its 80th session. The ninth session of the IMO Assembly in 1975 institutionalised the Committee as an organ of IMO through an amendment of the IMO Convention (n 31) part IX art. 37–41. This amendment came into effect in 1982.

and control of marine pollution from ships”.⁶⁸ This obviously includes CO₂ emissions. The diverging interests of the IMO Member States along with the diverging underlying principles in the area of international shipping and international climate-change legislative collaboration, have made the work of IMO even more difficult. How to reach consensus on the way forward is not easy and the fact that IMO’s monopoly in governing international shipping is diminishing, or at least threatened by more homogenous and hence more efficient organisations, such as the EU, has not made it easier. Indeed, the mandate of the Marine Environment Protection Committee includes co-operation with “other organisations”, such as the EU.⁶⁹ It is however in the hands of the Council to enter into agreements with such organisations and for the Assembly to approve them.⁷⁰

2.2 *The European Union – Competence*

2.2.1 Shared with the Member States

As regards the EU, it is undisputable that the union has legal competence to govern international transport, including shipping. Following the entry into force of the Treaty of Lisbon in 2009,⁷¹ the competence of the EU is governed by the Treaty on European Union (the TEU) and the Treaty on the Functioning of the European Union (the TFEU), which together with certain fundamental principles of EU Law, represent the foundations of the European Union. In accordance with the *principle of conferral* established in Article 5 TEU, the EU’s competences are conferred on it by its Member States. The Union has no competence as of right, which means that unless the Treaties contain explicit agreement to the contrary, areas of policy remain within the sphere of the Member States’ competence and outside the competence of the EU.⁷² This was also the case earlier, but the rule was stated explicitly for the first time in the failed Treaty establishing a Constitution for Europe⁷³ and was then carried over into its replacement, the Treaty of Lisbon.

68 IMO Convention (n 31) art 38.

69 Ibid art 38 e) provides that the Environment Protection Committee shall “Consider and take appropriate action with respect to any other matters falling within the scope of the Organization which would contribute to the prevention and control of marine pollution from ships including co-operation on environmental matters with other international organizations, having regard to the provisions of art 25”.

70 IMO Convention (n 31) art 25 (a).

71 Consolidated versions of the Treaty on European Union (TEU) as amended by the Treaty of Lisbon, and the Treaty on the Functioning of the European Union (TFEU) [2010] OJ C83/1.

72 Arts 5 (1) and (2) TEU.

73 Treaty Establishing a Constitution for Europe art 1-1 [2004] OJ C310/1.

According to the TFEU art. 2, the competence of the EU can be either *exclusive or shared*.⁷⁴ In the area of transport, including shipping, the EU has been granted shared competence.⁷⁵ Accordingly both the EU and the Member States may *legislate and adopt legally binding acts* in the relevant area.⁷⁶ Obviously such shared competence could lead to conflicts of legally binding norms. For this reason, the mechanism by which competence is shared is governed in the Treaties. With regard to the Member States, their competence to legislate is restricted by the activity of the Union; the Member States shall exercise their competence to the extent that the Union has not exercised its competence or to the extent that the Union has decided to cease exercising its competence.⁷⁷ If the Member States have conferred a competence on the Union, and the Union makes use of its competence, it will be contrary to EU legislation to exercise that competence on a national level.⁷⁸ In the case of combating GHG gases, the EU has competence also through art. 191 TFEU, which gives the Union competence as regards environmental protection. However, even where competence has been conferred in an area, this competence is not unlimited, but is restricted by other principles of EU law.

2.2.2 Subject to Certain Principles of EU Law

Both the Member States and the Union have a *duty of loyal cooperation*. This is set out both in case law from the Court of Justice of the European Union (the CJEU)⁷⁹ and in the Lisbon Treaty. According to Article 4(3) TFEU, the Union and the Member States shall “in full mutual respect, assist each other in carrying

74 Art 2 (1) and (2) TFEU.

75 Art 4 (1) g TFEU.

76 Art 2 (2) TFEU.

77 Art 2 (2) TFEU, third and fourth sentences.

78 This was also stated in the so-called ERTA judgment from the ECJ. Case 22–70 *Commission of the European Communities v. Council of the European Communities, European Agreement on Road Transport (ERTA)* [1971] ECR 263.

79 Case C-25/94 *Commission v. Council*, [1996] ECR I-1469 para 48 “It must be remembered that where it is apparent that the subject-matter of an agreement or convention falls partly within the competence of the Community and partly within that of its Member States, it is essential to ensure close cooperation between the Member States and the Community institutions, both in the process of negotiation and conclusion and in the fulfillment of the commitments entered into. That obligation to cooperate flows from the requirement of unity in the international representation of the Community (Ruling 1/78 [1978] ECR 2151, paragraphs 34 to 36, Opinion 2/91 [1993] ECR I-1061, paragraph 36, and Opinion 1/94 [1994] ECR I-5267, paragraph 108). The Community institutions and the Member States must take all necessary steps to ensure the best possible cooperation in that regard (Opinion 2/91, paragraph 38)”.

out tasks which flow from the Treaties". This duty of cooperation flows from the requirement of unity in the international representation of the Community.⁸⁰ In the area of shared competence, the competences of the Union are in addition limited by the *principles of subsidiarity and proportionality*.⁸¹ According to the principle of subsidiarity the EU shall act

only and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member State, either at central level or at regional and local level, but can rather, by reason of the scale of effects of the proposed action, be better achieved at EU level.⁸²

This principle also accords with previous case law from the CJEU to the effect that the EU has competence to legislate if the objective of the proposed action will be better achieved at Community level,⁸³ and cannot be sufficiently achieved by the Member States individually.⁸⁴ The action should also not go beyond what is necessary to achieve the objective pursued.⁸⁵ The latter rule accords with the principle of proportionality, which states that the content and form of the EU action shall not exceed what is necessary in order to achieve the objectives of the Treaties.⁸⁶ However, according to the CJEU

it should be noted that the Community legislature must be allowed a broad discretion in an area ..., which involves political, economic and social choices on its part, and in which it is called on to undertake complex assessments. Consequently, the legality of a measure adopted in that area can be affected only if the measure is manifestly inappropriate

80 *ibid.*

81 Art 5 (3) and (4) TEU. More generally on the distribution of powers between the EU and the Member States, see Gabriël Moens and John Trone, *Commercial Law of the European Union* (Springer 2010), 26–30.

82 Art 5 (3) TEU.

83 Case C-491/01 *The Queen v. Secretary of State for Health, ex parte British American Tobacco (Investments) Ltd. and Imperial Tobacco Ltd.*, [2001] ECR I-11453, 180.

84 *ibid* 182.

85 *ibid* 184.

86 See Article 5 (4) TEU and Joined Cases C-453/03, C-11/04, C-12/04 and C-194/04 *ABNA Ltd. and Others v. Secretary of State for Health and Others*, [2004] ECR I-10423: "According to settled case-law, the principle of proportionality, which is one of the general principles of Community law, requires that measures implemented through Community provisions be appropriate for attaining the objective pursued and must not go beyond what is necessary to achieve it ..." at 68.

having regard to the objective which the competent institutions are seeking to pursue ...⁸⁷

In other words, the EU has quite a wide authority (*c.f.*, “must be allowed a broad discretion”) to decide when it is necessary to pass legislation in an area and will only exceed its powers if the measure is “manifestly inappropriate” in relation to the objective pursued. Accordingly, the objective being pursued by the relevant legislation, must form part of the European policy in question, which in the area of transport is specified in Title VI, Articles 90–100 TFEU. Initially, under the Treaty of Rome, the Council was obliged to take legislative measures only in the case of inland transport (road, rail and inland waterways). As regards *sea and air* transport, the Council was empowered to legislate when it unanimously thought fit. Due to policy reasons the Member states were not very interested in conferring legislative rights to the EU and hence the measurements adopted were limited and piecemealed until the mid-1980s.⁸⁸ It was not until the CJEU intervened in 1985, ruling in a landmark decision that the Council had failed to act, that the Member States had to accept that the Community had competence to act in the area of transport law.⁸⁹ The competence is, however, limited. Decisions must be taken within the framework of a *Common Transport Policy*,⁹⁰ which can be found in numerous policy documents and papers from the different EU institutions. As regards the specific questions related to emission charge of levy, the competence would probably be based on the taxation provision under article 113 TFEU.⁹¹ Despite the fact that potential measures of an EU ETS or EU carbon levy for international shipping would be based on measures performed beyond EU territory, this does not amount to an extraterritorial effect. The idea is that when a vessel voluntarily enters an EU port, the ship has subjected itself willingly to the requirements for port entry.⁹²

Regardless of a clear EU competence as regards international shipping, the political willingness to utilise this competence has had a slow start. However, from the beginning of the 90s security and climate change challenges drew interest to international shipping also from the European Union.

87 *ibid* 69.

88 Henning Jessen and Michael J Werner, *EU maritime transport law* (1st edn, C. H. BECK 2016).

89 Case 13/83 *European Parliament v. Council of the European Communities*, [1985] ECR 1513.

90 Article 90 TFEU.

91 Aoife O’Leary, David Holyoake and Marta Ballesteros, *Legal implications of EU action on GHG Emissions from the International Maritime Sector* (ClientEarth 2011), 6.

92 *ibid* 20.

Despite numerous statements of the need for global solutions, particularly as regards the UN climate targets and international shipping, as will be outlined below, the IMO is facing a “competitor” on the international (regional) regulatory arena.

IMO is unquestionably the main regulator in international shipping and upholding this position is the main vision of the organisation as expressed in its latest strategy (2018–2023): “IMO will uphold its leadership role as the global regulator of shipping ...”.⁹³ This should however be done; “...while addressing the challenges of continuing developments in technology and world trade and the need to meet the 2030 Agenda for Sustainable Development”.⁹⁴ Despite the fact that safety and security by tradition have been core areas for the IMO,⁹⁵ also *environmental issues* have played an important role. Following the Torrey Canyon disaster of 1967 where 120,000 tonnes of oil was spilled, the IMO became engaged in environmental issues, particularly related to pollution. Several measures were designed to prevent tanker accidents and to minimize consequences. The most important being the International Prevention of Pollution from ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78). Although MARPOL mainly governs accidental and operational oil pollution, the convention also covers pollution by chemical, goods in package form, sewage, garbage and *air pollution*. The IMO has in other words legal competence to tackle the international recognised climate targets and due to the growing international awareness and corresponding pressure, *sustainable shipping* has in recent years become a key issue for IMO. The speed and intensity in this work has not, however, been satisfactory for the EU, which has hence implemented its own legal framework for emission reduction, while all the time recognising the need for global solutions.

93 IMO Strategic plan (n 37) at 2.1.

94 *ibid* 2.2.

95 Henrik Ringbom: Regulating Greenhouse Gases from Ships: Some Light in the End of the Funnel? In Elise Johansen, Signe V Busch and Ingvild U Jakobsen (eds), *The law of the sea and climate change: Solutions and constraints* (CUP, Cambridge United Kingdom, New York NY 2020). Chpt. 6 at 6.3.

3 The Interplay between the EU and the IMO in Light of the Climate Targets

3.1 *The EU Headache: A Global and/or a Regional Solution?*

3.1.1 The Call for a Global Solution and the Response from the IMO Reducing emissions from transport, including shipping and aviation, both by nature global industries and hence first and foremost in need of global regulatory solutions, has been an EU policy goal for at least a decade. In the 2011 Whitepaper: Roadmap to a Single European Transport Area, the Commission called for a cut in emission from maritime transport by 40% (if feasible 50%) by 2050 compared to 2005 levels.⁹⁶ Simultaneously the IMO has recognised the need for reduction in GHG emissions from international shipping. In 2011, the IMO agreed on an amendment of MARPOL, which introduced a set of technical measures for new ships and operational reduction measures for all ships,⁹⁷ both with the aim to reduce emissions from shipping. The amendment introduced an Energy Efficiency Design Index (EEDI) for new ships as well as a Ship Energy Efficiency Plan (SEEMP) that should apply to all ships, new and old. The SEEMP established a mechanism for shipowners to improve the energy efficiency of both new and existing ships using operational measures such as weather routing, trim and draught optimization, speed optimization, just-in-time arrival in ports, etc.⁹⁸ The EEDI required all new ships to comply with minimum mandatory energy efficiency performance levels, increasing over time through different phases.⁹⁹ Both plans should apply to all ships of 400 gross tonnage and above, irrespective of flag and ownership.¹⁰⁰

The above mentioned efforts did, however, not satisfy the European Union, which continued to prepare for ways of including CO₂ emissions from shipping in its overall climate strategies. In 2013 a strategy for integrating maritime

96 EU Commission, Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system: Roadmap to a Single European Transport Area [2011], 29.

97 This was done through an amendment of MARPOL (resolution MEPC.203(62)), introducing a new Chapter 4 Annex VI “Regulations on energy efficiency for ships.” The regulations entered into force on January 2013. This was the first legally binding climate change treaty to be adopted since the Kyoto Protocol. Since this breakthrough MEPC 63 (March 2012) adopted four important guidelines (resolutions MEPC.212(63), MEPC.213(63), MEPC.214(63) and MEPC.215(63)) aimed at assisting the implementation of the mandatory regulations on Energy Efficiency for Ships in MARPOL Annex V.

98 *ibid* Regulation 22.

99 *ibid* Regulation 21.

100 See <www.marpol-annex-vi.com/eedi-seemp/> accessed 14 December 2020.

transport emissions in the EU's GHG reduction policies was published.¹⁰¹ In the strategy the Commission reinforced the commitment to *global action*, stating that the EU "...has a strong preference for a global approach led by the IMO, as the most appropriate international forum to regulate emissions from shipping".¹⁰² The goal for the EU was "across the board" emission reductions while maintaining a global level playing field for the shipping industry.¹⁰³ Neither IMO's EEDI nor its SEEMP satisfied these requirements. On the contrary, the Commission declared that the systems "...will bring improvement in terms of reducing the expected increase in greenhouse gas emissions, but alone cannot lead to the necessary absolute reductions of greenhouse gas emissions from international shipping to keep efforts in line with the global objective of limiting increases in global temperatures to 2 °C".¹⁰⁴

3.1.2 A Three Step Strategy for an Inclusion of Shipping in EU's Climate Policies

According to the Commission, further measures were needed and the EU wanted to push forward a global solution by taking a regional lead. Hence, the Commission introduced a three step strategy to include maritime transport into the European climate targets. The EU would (1) implement a system of Monitoring Reporting and Verifying (MRV) emissions from shipping, (2) introduce a definition of reduction targets for the maritime transport sector and (3) implement market-based measures (MBM).

As a first step and in response to the continuing absence of a global framework, union-wide rules for monitoring, verifying and reporting CO₂ emissions from shipping were adopted in 2015 through the *MRV Shipping Regulation*.¹⁰⁵ The main objective of the regulation was to provide reliable data on GHG

101 EU Commission, Integrating maritime transport emissions in the EU's greenhouse gas reduction policies, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2013) 479 final.

102 *ibid* 4.

103 *ibid* 4–5.

104 MRV Shipping Regulation, Regulation (EU) 2015/757 of the European Parliament and of the Council of 29 April 2015 on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport, and amending Directive 2009/16/EC [2015] OJL 123/55 as amended by Commission Delegated Regulation (EU) 2016/2071 of 22 September 2016 amending Regulation (EU) 2015/757 of the European Parliament and of the Council as regards the methods for monitoring carbon dioxide emissions and the rules for monitoring other relevant information [2016] OJ L320/1 (MRV Shipping Regulation). Preamble at (8).

105 *ibid*.

emissions from maritime transport. As CO₂ emissions from shipping relates to amount and type of fuel consumed, the task seemed easy. Fuel consumption was already measured and available for almost all ships over 400,000 gross tonnage operating in international transport. Under Regulation 18 of MARPOL Annex VI the *bunker delivery note* shall include the name and IMO number of the ship receiving the fuel, the port of bunkering, the marine bunker supplier contact information, fuel quantity and density.¹⁰⁶ The bunker delivery note contains in other words information on the purchased volume of bunkers as well as of its quality (density). The reliability and the accessibility of the information were considered key to ensure adequate information all over the supply chain about the carbon performance of the shipping sector.¹⁰⁷

In addition to this information, a *reporting and verification process* needed to be established. Since the key goal of the EU was (and is) to reduce GHG emissions, the Commission did not want to interfere with the IMO discussion on whether this should be achieved through energy efficiency improvement or fuel switch. Accordingly, the proposed MRV system did not impose a specific methodology for monitoring the CO₂ emissions. It was sufficient that the selected methodology and its uncertainties were reported.¹⁰⁸ This approach would allow ship-owners and ship-managers to build on existing practises. The idea was to introduce a fuel consumption based MRV scheme to be started at regional level, and serve as an example for a global solution and by this feed into the ongoing discussions at the IMO.

Under the MRV Shipping Regulation GHG emissions from intra-EU voyages, incoming voyages from a non-Union port to a port within the Union, as well as outgoing voyages from a Union port to a non-Union port are to be monitored, verified and reported, irrespective of which flag the ships sail under.¹⁰⁹ If subject to the MRV Shipping Regulation,¹¹⁰ the company operating the ship must monitor, verify and report annual CO₂ emissions and other relevant information arising from their ships' voyages during a reporting period, which is normally one year.¹¹¹ Both the monitoring and the reporting must be complete and cover CO₂ emissions from the combustion of fuels, while the ships are at sea

106 Regulation 18 of MARPOL Annex VI Regulation for the Prevention of Air Pollution from Ships, Appendix V – Information to be included in the bunker delivery note (Regulation 18(3)).

107 Commission 2013 (n 101), 6.

108 MRV Shipping Regulation, (n 104).

109 Subject to a threshold for small emitters and exemption of certain vessels fish-catching ships.

110 MRV Shipping Regulation, (n 104).

111 MRV Shipping regulation art. 9 and 11.

as well as at berth. The regulation emphasizes that the information must be reliable and accurate.

The obligation to monitor started in 2017 with the preparation of a monitoring plan.¹¹² The monitoring plan should be filled out by the ship owners and explain how they intend to monitor the relevant parameters required by the MRV Shipping Regulation. From 2018 onwards, companies are required to monitor CO₂ emissions from their vessels by applying the “appropriate method” for determining CO₂ emissions. Shipowners can choose between four methods, as explained in Annex 1, Part A, to monitor CO₂ emissions:

- 1) Bunker Fuel Delivery Note (BND) and periodic stocktakes of fuel tanks
- 2) Bunker fuel tank monitoring on board
- 3) Flow meters for applicable combustion processes
- 4) Direct CO₂ emission measurements

For each method, companies have to indicate the corresponding level of uncertainty. According to the 2019 Annual Report on CO₂ Emissions from Maritime Transport¹¹³ all companies relied on the first three monitoring methods during the first reporting period, whilst alternative four, direct CO₂ emission measurements, was not used. As regards the uncertainty associated with fuel monitoring, the companies relied upon default values following the guidance established by the European Sustainable Shipping Forum (ESSF).¹¹⁴ Although the MRV Shipping Regulation does not set targets for emission reduction, it was expected to bring down emissions by 2%.¹¹⁵

After having the monitoring plan assessed by an accredited verifier, the shipowners should monitor and report the different parameters and prepare an *emission report*. This should be done in an electronic inspection database called THETIS.¹¹⁶ THETIS is developed, maintained and hosted by the European Maritime Safety Agency (EMSA). EMSA has developed a new module in THETIS, namely THETIS-MRV, enabling companies responsible for the operation of large ships using EU ports to report their CO₂ emissions under the MRV Shipping Regulation. THETIS-MRV includes a mandatory and a voluntary

¹¹² *ibid* art 6.

¹¹³ EU Commission, SWT(2020) 82 Final Report from the Commission – 2019 Annual Commission Staff Working Document. Full-length report.: Accompanying the document Report on CO₂ Emissions from Maritime Transport C(2020) 3184 final [2020], at 14.

¹¹⁴ European Sustainable Shipping Forum, ‘Guidance/Best practices document on monitoring and reporting of fuel consumption, CO₂ emissions and other relevant parameters pursuant to Regulation 2015/757 on monitoring, reporting and verification emissions from maritime transport’ (2017).

¹¹⁵ MRV Shipping Regulation (n 104). Preamble at 13.

¹¹⁶ The name derives from the Greek goddess of the sea in mythology.

module. Through the mandatory module, companies will generate Emission Reports, which will be assessed by Verifiers who will issue an electronic Document of Compliance in the system. Through the voluntary module, companies may draft their monitoring plans and the system will make them available for verifier' assessment.¹¹⁷ The EU MRV Shipping regulation was intended to function as a model for a global mechanism,¹¹⁸ and it was successful in that the regulation proposal speeded up international efforts.

3.2 *The Parallel IMO Process*

3.2.1 The IMO Data Collection System – IMO DCS

In 2016, the MEPC 70 extended the strategy and adopted amendments to MARPOL which introduced the *IMO Data Collection System for fuel oil consumption of ships* (IMO DCS).¹¹⁹ The IMO DCS entered into force in 2018. Under the framework, ships of 5,000 gross tonnage and above are required to *collect* consumption data for each type of fuel oil they use, as well as other, additional, specified data including proxies for transport work. According to the IMO DCS the collected data should be *reported* to the flag State after the end of each calendar year and the flag State, having determined that the data has been reported in accordance with the requirements, should *issue a Statement of Compliance* to the ship.¹²⁰

Flag States are required to subsequently transfer this data to an *IMO Ship Fuel Oil Consumption Database*¹²¹ and the IMO is required to produce an annual report to the Marine Environment Protection Committee (MEPC). The Ship Energy Efficiency Management Plan (SEEMP) must hence include a description of the methodology that will be used to collect the data and the processes that will be used to report the data to the ship's flag State.¹²²

117 The system has been available from 7 August 2017 and can be reached at <<https://mrv.emsa.europa.eu>> accessed 14 December 2020.

118 MRV Shipping Regulation (n 104) recital 34.

119 Annex 3 Resolution Mepc.278(70)(adopted 28 October 2016) Amendments to the Annex of the Protocol of 1997 to Amend the International Convention for the Prevention of Pollution from Ships, 1973, as Modified by the Protocol of 1978 relating thereto Amendments to Marpol Annex VI.

120 *ibid* Appendix x.

121 IMO Ship Fuel Oil Consumption Database has been launched as a new module within the Global Integrated Shipping Information System (GISIS) platform and that Member States now have access to the Database. <www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Data-Collection-System.aspx> accessed 06 September 2020.

122 Resolution MEPC.278(70) Amendments to Marpol Annex VI Article 22 at 15, introducing a new Article 22A.

As a result of this, the EU MVR Shipping Regulation was amended in 2016 and 2019. The main objective of the latest amendment was to streamline the EU MRV Regulation to the IMO DCS, with the view to reduce administrative effort for companies and administrations.¹²³ Shipowners sailing in EU waters are accordingly subject to two parallel monitoring and reporting systems. However, as they are both based on fuel consumptions, the reports can be harmonised. As an example, can be mentioned that companies that are accepted as accredited verifiers, have developed digital tools to streamline the MRV and DCS reporting and verification process.¹²⁴

3.2.2 Defining a Reduction Target

Monitoring, reporting and verifying or collecting data on GHG emissions from international shipping is, however according to the EU Commission, not sufficient. In order to reach the climate target in the Paris Agreement, a set emission reduction target for transport is considered essential. The EU therefore set in 2011 an emission reduction target for shipping, of 40% (if feasible 50%) compared to 2005 levels.¹²⁵

The IMO was at the beginning not willing to set a fixed target for the reduction of emissions from international shipping. However, having the system for data collecting in place, the 72nd meeting of the MEPC in April 2018 agreed on an IMO *Initial Strategy* on the reduction of greenhouse gas emissions from ships.¹²⁶ The Strategy envisaged a GHG Strategy, which aimed to reduce carbon intensity of international shipping by 40% by 2030, compared to 2008 and to reduce the total annual GHG emissions by *at least 50% by 2050 compared to 2008*.¹²⁷

Opposite to the EU target, which relates to a reduction of all GHG emissions from international shipping, the IMO strategy is mainly related to a reduction of *the carbon intensity of international shipping*. The *carbon intensity reduction* target includes CO₂ emissions per transport work, as an average across international shipping and does not relate to the overall emissions from shipping. The IMO strategy hence relies on technical and operational measures. However, whereas the operational measures in the *Initial Strategy* applies to all ships,

123 EU Commission 2019 (n 24) at 1.

124 See e.g.: DNV GL's system: <www.dnvgl.com/maritime/insights/topics/EU-MRV-and-IMO-DCS/index.html> accessed 15 December 2020.

125 Commission 2011 (n 96) at 29.

126 IMO Strategic plan (n 37).

127 IMO homepage on <www.imo.org/en/MediaCentre/PressBriefings/pages/42-MEPC-short-term-measure.aspx> accessed 16 December 2020.

the technical measures, the EEDI, only applies to existing ships. Indeed, the Strategy envisages a revision of this, with the aim to strengthen the energy efficiency design requirements for ships with *a set percentage improvement target* for each phase to be determined for each ship type, as appropriate.¹²⁸ The Strategy furthermore identifies barriers and supportive measures including capacity building, technical cooperation and research and development (R&D).¹²⁹

The efforts taken by the IMO has, however, not been satisfactory for the EU (in particular not for the European Parliament). Members of the European Parliament (MEP), who participated in the 2018 MECP meeting, accordingly urged the IMO for more ambitious emission reductions, namely 70% to 100% emission reduction by 2050.¹³⁰ As a result of this, the EU continues to include international shipping in its general policies for emission reduction, such as the *Green Deal* from 2019.¹³¹

3.3 *The Way Forward – Market Based Measures and Technology*

3.3.1 The European Green Deal and the 2030 Climate Target Plan

The European Green Deal is an ambitious policy document. The final goal reinforces that of EU's Long Term Strategy of 2050 i.e. to transform the EU into a society with no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use.¹³² The proposed actions include a proposal for a European Climate Law, containing a binding target of climate neutrality in the Union by 2050 as well as a *2030 Climate Target Plan* to increase climate ambition for 2030.¹³³ The 2030 Climate Target Plan 1) presents an increased 2030 intermediary emission reduction target of 55 per cent compared to 1990 levels (including both emission reductions and carbon removals); 11) previews a set of actions across various sectors and launches the

128 IMO Strategic plan (n 37) at 4.

129 *ibid* 5.

130 <www.europarl.europa.eu/legislative-train/theme-resilient-energy-union-with-a-climate-change-policy/file-monitoring-maritime-transport-ghg-emissions> accessed 05 September 2020.

131 EU Commission, Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and The Committee of the Regions, The European Green Deal COM(2019) 640 Final [2019].

132 *ibid*.at 2.

133 EU Commission, Communication from the Commission to the European Parliament, the European Council, the European Economic and Social Committee and the Committee of the Regions, 'Stepping up Europe's 2030 climate ambition Investing in a climate-neutral future for the benefit of our people' COM (2020) 562 final [2020], at 2.

revision of EU's key legislative instruments to achieve the increased target and III) prepares the ground for debate on an increase of EU's contribution under the Paris Agreement.¹³⁴

In addition to MRV of CO₂ emissions from shipping, and defined GHG reduction targets for the maritime transport sectors, the Commission aims at developing further measures, including *market-based measures*, to combat the growing problem of CO₂ emissions from shipping.¹³⁵ This is clearly expressed in the Green Deal, which states that "... the Commission will propose to extend European emissions trading to the maritime sector".¹³⁶ CO₂ emissions from shipping would hence be subject to market-based measures as described in the three step plan presented by the Commission in 2013. The Green Deal is in other words, an integral part of the Commission's strategy to implement the United Nations' 2030 Agenda and the sustainable development goals.¹³⁷

The 2030 Climate Target Plan states that emission reductions are needed from all transport sectors, including the waterborn transport sector in order to achieve the 55 per cent EU-wide emission reduction target and calls for the maritime sector to scale up efforts to *improve efficiency of ships and operations, increase the use of sustainably produced renewable and low-carbon fuels* and for *technology development and arrangement* to occur already by 2030.¹³⁸ A strategy that is in line with the IMO efforts on technological and operational measurements. Development of renewable and low-carbon fuels is recognised as paramount. The Commission is assessing these in its *Fuel EU Maritime initiatives* that aim to increase the production and uptake of sustainable alternative fuels for these sectors.¹³⁹ The 2030 Climate Target Plan furthermore sets out actions to update the current 2030 Energy and Climate Policy Framework to achieve the proposed new target for 2030,¹⁴⁰ among others by reinforcing and increasing the role for emissions trading and energy taxation, i.e. economic incentives for emission reductions.¹⁴¹ The Commission is considering an extension of the EU Emissions Trading System (EU ETS) to all combustion of fossil fuels, also in the transport sector. Shipping is mentioned separately and

134 *ibid.*

135 EU Commission 2019 (n 131), at 10–11.

136 *ibid.*

137 *ibid* at 1.

138 EU Commission 2020 (n 133), at 3.

139 *ibid* 9–10.

140 *ibid* 12–13.

141 *ibid* 13.

recognising the trend with growing emissions, the Commission outlines that at least intra-EU shipping should be included in the EU ETS.¹⁴²

The desirability of international co-operation under IMO in relation to shipping is repeated but simultaneously the Commission states that it “...will give fresh political consideration to the international aspects of the EU ETS, taxation and fuel policies for ... maritime to ensure the gradual decarbonisation of all fuel use from transport relating to the EU with the ambition to include international emissions from ... navigation into the EU ETS”.¹⁴³ Also, other instruments such as updated methodology to promote the use of renewable and low-carbon fuels in the transport sector set out in the Renewable Energy Directive will be considered.¹⁴⁴ A proposal for the revision of the Emissions Trading Directive is expected by June 2021.¹⁴⁵

3.3.2 IMO – Expanding the Technical Requirements to Existing Ships

Also the IMO is scaling up its efforts to reduce CO₂ emissions from international shipping. The latest step in the IMO emission reduction action plan, was taken by the Intersessional Working Group on Reduction of GHG Emissions from Ships (ISWG-GHG 7) in November 2020.¹⁴⁶ The group proposed draft amendments to the energy efficiency measures in MARPOL Annex VI chapter 4, building on the existing EEDI and SSEMP measures. According to the proposal, requirements to assess and measure the energy efficiency should apply to *all ships*, including existing vessels.

Accordingly, two new measures were proposed: 1) Technical requirements to reduce carbon intensity, based on a new Energy Efficiency Existing Ship Index (EEXI); and 2) Operational carbon intensity reduction requirements, based on a new operational carbon intensity indicator (CII). The dual approach aims to address both technical (how the ship is retrofitted and equipped) and operational measures (how the ship operates). The proposed EEXI is required to be calculated for every ship of 5,000 gross tonnage and above (equal to the ships that are subject to the CMI DCS). These ships should also have determined their required annual operational carbon intensity indicator (CII). The CII determines the annual reduction factor needed to ensure continuous

142 *ibid* 16.

143 *ibid*.

144 *ibid* 19.

145 EU Commission 2020 (n 133), at 2.

146 The proposed amendments was made in a ISWG-GHG 7 remote meeting 19–23 October 2020. The draft amendments was the forwarded to the Marine Environment Protection Committee (MEPC 75), remote session 16–20 November 2020.

improvement of the ship's operational carbon intensity within a specific rating level,¹⁴⁷ which should be recorded in the ship's Ship Energy Efficiency Management Plan (SEEMP).

According to the IMO framework, all large vessels (5,000 gross tonnage) new and old, are (or will be) under an obligation to collect and report on their fuel consumption and to apply to certain energy efficiency standards, all in order to comply with the UN development goals for emission reduction.

4 The Brussels Effect on the Levelled Playing Field in Shipping

On the basis of the above, it is fair to conclude that some kind of *Brussels impact* on the governance of emission reductions in international shipping can be recognized. Whether this impact classifies as a Brussels effect in the terms of Professor Anu Bradford's definition, is however not obvious. On the one hand the IMO has – probably as a result of political pressure from the EU – decided on a set target for emission reduction from the sector, on the other hand, the regulatory tools in use do not comply with the EU requirements. On the contrary, international shipping is to today subject to two separate legal frameworks when sailing in waters subject to EU governance.

Furthermore, we have not seen any emission reductions even close to the set targets: According to a new report from the IMO, GHG emissions from shipping have increased from 977 million tonnes in 2012 to 1,076 million tonnes in 2018. In other words, an increase of GHG emission of almost 10%. (9.6% increase).¹⁴⁸ Of the total amount in 2012, 962 million tonnes were CO₂ emissions, while in 2018 this amount grew 9.3% to 1,056 million tonnes of CO₂ emissions. The share of shipping emissions in global anthropogenic emissions has, accordingly increased from 2.76% in 2012 to 2.89% in 2018.¹⁴⁹

The EU has recognised the trend, and frustration with the slow progress under IMO is growing. In February 2017, the European Parliament attempted in the conjunction with the revision of the Emissions Trading Directive to

147 The rating would be given on a scale – operational carbon intensity rating A, B, C, D or E – indicating a major superior, minor superior, moderate, minor inferior, or inferior performance level. A ship rated D for three consecutive years, or E, would have to submit a corrective action plan, to show how the required index (C or above) would be achieved. Administrations, port authorities and other stakeholders as appropriate, are encouraged to provide incentives to ships rated as A or B.

148 Smazzare (n 26). Annex I, p. 1.

149 *ibid* Annex I, p. 3.

introduce an ultimatum by proposing to include shipping in the EU ETS in 2023 should IMO fail to adopt binding emission-reduction targets for the sector by 2021.¹⁵⁰ The ultimatum was not accepted into the final adopted revision of the Emissions Trading Directive adopted in 2018, as the IMO managed to set emission reduction targets.¹⁵¹ The questions were raised again in conjunction with the revision of the MRV Shipping Regulation in 2019.

The question was, however, not originally part of the proposed revision of the MRV Shipping Regulation until the proposal was discussed in the European Parliament. Here the ENVI Committee appointed Jutta Paulus (Greens/EEA, Germany) as rapporteur for the file. Her draft report of 24 January 2020 took a radical proposed to include maritime shipping in the EU ETS. According to Paulus the IMO has promised for more than 20 years that it will tackle shipping emissions and has only introduced its Data Collection System after the EU has implemented the MRV Shipping Regulation. No real progress has been seen, which Paulus finds it necessary that the EU takes action to achieve the Paris objective to limit the temperature increase to 1.5C above pre-industrial levels. The report furthermore expresses that although collecting data on emission is important, now is the momentum to actually use the collected data. Paulus hence proposes that the Emissions Trading Directive should be amended to cover maritime emissions. The Commission should adopt delegated acts for setting the total quantity of allowances for maritime transport in line with other sectors, and the method of allocation of allowances for maritime transport through full auctioning.

Despite this proposal, a door is held open for the IMO: The rapporteur namely emphasises that it is important that the Union and its Member States support measures at international level to reduce the climate impact of maritime transport and advises the Commission to keep under review any progress made towards the adoption of a market-based measure by IMO, and should in the event of adoption of a global market-based measure, consider how to ensure that there is consistency between Union and global measures in a manner that preserves the environmental integrity and effectiveness of Union climate action".¹⁵²

150 Amendments adopted by the European Parliament on 15 February 2017 on the proposal for a directive of the European Parliament and of the Council amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments (COM(2015)0337 — C8-0190/2015 — 2015/0148(COD)) amendments 5 and 36.

151 Above in 3.2.2.

152 Amendment 22. Proposal for a regulation. Recital 13 a (new). See <www.europarl.europa.eu/doceo/document/A-9-2020-0144_EN.html> accessed 16 December 2020.

It is not likely that the IMO will endorse the European Emission Trading System, or any other emission trading system. On the contrary, the organisation – and its stakeholders are discussing other market based measures for emission reduction in shipping such as a carbon levy. In 2019 a group of stakeholders produced a paper on *Carbon Levy Evaluation*, posing the question on whether a *carbon levy* in shipping could be an effective way to help reach the IMO greenhouse gas reduction goals. As explained in the report, both the *EU ETS* and a *Carbon Levy* is based on setting a price on carbon. The *EU ETS* can be referred to as a cap-and-trade system. The idea is that a cap is placed on emissions, and allowances are then traded. The *ETS* establishes the price indirectly by placing a limit on the total quantity of emissions allowed. This limit is enforced with tradable emission permits, typically called “allowances” that any emitter must use to cover its emissions. The market for these tradable allowances leads to a carbon price based on demand and supply. Under an *ETS*, overall emission levels are clear (equal to the cap), but the resulting carbon price is uncertain because it is determined by free market forces through supply and demand.

Under a carbon levy, an explicit price is placed on CO₂, or alternatively imposed through other costs that imply a carbon price. The advantages with a carbon levy is that the cost of controlling emissions would be certain (it would be equal to the levy), but since there is no fixed limit on emissions, the overall volume of emissions will be unknown. However, the levy can be adjusted over time, but as a result of technical criteria or political considerations, rather than by the supply and demand of carbon allowances.

The most important difference between the two systems is that a carbon levy will not set a cap for the emissions from the industry, it will only stimulate a reduction. Which system will prevail in the future remains to be seen. Indeed, the EU is pushing for including emissions from international shipping in its *ETS*. However, also other fuel policies for the industry, “such as taxation ... will be given fresh political consideration ... to ensure the gradual decarbonisation of all fuel use from transport relating to the EU”.¹⁵³

No one can predict the future. In the area of setting a level playing field for international shipping while maintaining international goals of combating climate change, there is no pure Brussels effect, however the impact of Brussels in speeding up the international efforts are obvious.

153 EU Commission 2020 (n 133) 16.

Postscript

The European Climate Law was adopted and entered into force in July of 2021.¹⁵⁴ In July of 2021 the European Commission also presented a comprehensive set of legislative proposals, the so-called fit-for-55-package, intended to deliver the Green Deal and the updated 2030 and 2050 targets.¹⁵⁵ The fit-for-55-package contains several proposed measures to regulate GHG emissions from shipping, including a proposal to include shipping in the EU ETS as a part of the renewal of the system. The Commission recognizes the progress made under the IMO but the measures are deemed insufficient to decarbonise international shipping in line with international climate targets.¹⁵⁶ The Commission hence proposes to extend the EU ETS to emissions from intra EU voyages, half of the emissions from extra-EU voyages and emissions occurring at berth in an EU port. The proposal of the Commission is to keep the Emissions Trading Directive under review in relation to international policy developments, meaning a continued dynamic relationship between the EU climate policy and efforts pursued internationally.

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155 EU Commission <www.consilium.europa.eu/en/policies/eu-plan-for-a-green-transition/> accessed 16 December 2020.

156 EU Commission, Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and Regulation (EU) 2015/757 COM(2021) 551 final [2021].

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Risk in Transporting Dangerous Goods via RoRo and RoPax Shipping

Jonas Flodén and Johan Woxenius

1 Introduction

As the backbone of global and regional trade, the shipping industry processes roughly 75% of the world's transport and adds tremendous value to society. Many of the goods moved at sea are dangerous, however, because they are liable to not only destroy water and coastline habitats but also cause a significant loss of health, life and property. At sea, moving *dangerous goods* (DG), defined as containing substances classified as dangerous in the applicable regulatory framework, is also a hazard for ships and their crews and passengers in particular since vessels are often far from land-based rescue services.

A large share of the DG shipped constitutes petroleum, in either crude or refined form and transported in tankers dedicated to the task, also referred to as *wet bulk shipping*. According to UNCTAD,¹ in 2019 fleets worldwide moved a total of 1.86 billion tonnes of crude oil and 1.31 billion tonnes of refined petroleum products, gas and chemicals. The supply chains that engage those tankers and thus connect wells, refineries and distribution depots in a network of ports are fully specialised in handling DG. Above and beyond that, the tanker shipping industry as a whole observes well-developed processes, including vetting procedures, to conduct the business of tanker shipping with a strict focus on safety.

Whereas moving hazardous fluids is the stuff of everyday life for personnel in wet bulk shipping, dry bulk shipping is far less associated with DG but can nevertheless involve transporting hazardous goods. According to UNCTAD,² 5.25 billion tonnes of dry bulk was shipped at sea in 2019 compared with 3.17 billion tonnes of wet bulk. Of such volumes, it is estimated³ that 100,000 tonnes of dry bulk could harm marine environments and that DG thus represent an overlooked threat in maritime transport. Although the contamination of water is the chief risk considered in both wet and dry bulk shipping,

1 UNCTAD, *Review of Maritime Transport 2020*, (2020).

2 *ibid.*

3 M Grote and others, 'Dry bulk cargo shipping—An overlooked threat to the marine environment?' (2016) 110 *Marine Pollution Bulletin* 511.

the loss of health and even life is also an apparent risk, as exemplified by the catastrophic explosions of large quantities of ammonium nitrate at the ports of Texas City in 1947, Tianjin in 2015 and Beirut in 2020.

DG are also transported in liner shipping—that is, shipping services with a fixed itinerary in the container, roll-on, roll-off (RoRo), roll-on, roll-off-passenger (RoPax) and cruise ferry segments for a broad spectrum of customers. RoRo vessels carry goods, typically loaded into trucks, semi-trailers or other load units, which are rolled on and off board via ramps. On short sea shipping (sss) routes,⁴ RoRo is dominated by semi-trailers and by containers on cassettes carrying various cargo. RoRo traffic also includes pure car and truck carriers (PCTCs), which are primarily used for trans-continental shipping on behalf of the automotive and construction equipment industries. RoPax vessels, often dubbed *car ferries*, are adapted to transporting both freight and passengers. RoPax ferries are generally used on short routes, sometimes as so-called “bridge substitutes” with very high frequencies. When RoPax vessels transport both goods and passengers as well as provide significant leisure activities and shopping on board—they are also known as *cruise ferries*.

In either case, due to its wide variety of cargo, DG is less visible in liner shipping than in bulk shipping, and its risks pertain more to the loss of health, life and property than to water contamination. In 2019, the world’s rapidly growing container fleets transported 152 million Twenty-foot Equivalent Units (TEUs)⁵ of containers,⁶ and from 5% to 10% of them declared DG.⁷ Consignments containing DG can range from, on the one hand, a carton of batteries on a pallet inside a trailer or an intermediate bulk container (IBC) with flammable chemicals consolidated with non-hazardous goods on a truck to, on the other hand, large specialised DG tank containers, semi-trailers, trucks and rail wagons. Any of those units can be consolidated with other cargo units on board liner vessels, some of which also carry passengers. In that light, liner shipping is not primarily designed to accommodate DG, which rarely constitutes more than a small fraction of the goods transported on a given vessel. For that reason, the crew members and other staff on such vessels are generally less experienced

4 sss refers to maritime transport over relatively short distances, for example intra-European shipping.

5 Container shipping is measured in the number of TEUs transported. The different container sizes transported are converted to a standard 20-foot container.

6 UNCTAD (n 1).

7 Alexander Whiteman, ‘Carriers to fine rogue shippers for misdeclared goods in containers’ (The Loadstar, 2019) <<https://theloadstar.com/carriers-to-fine-rogue-shippers-for-misdeclared-goods-in-containers/>> accessed 2021-01-26.

with safely handling DG than their colleagues in tanker shipping. The same goes for consignors, who are sometimes unaware of the myriad risks involved throughout the transport chain or even whether a consignment will be transported by sea after being retrieved by a truck.

Today's society require DG to be transported while keeping such transport's negative consequences at a minimum. For a vessel, the risk of a DG related incident correlates to the vessel's size, because larger ships theoretically contain more DG consignments, each of which could, for example, start a fire. Beyond that, the potential consequence of any accident relates to the amount of cargo carried. Given that reality, the maximum size of tankers peaked already in the 1980s, partly to mitigate the risk of large oil spills. However, dry bulk carriers and liner vessels have since been built in ever-larger dimensions. Far outgrowing tankers at present, the current generation of container vessels, at 400 m long and 60 m wide and carrying 24,000 TEUs, now includes the biggest ships on the sea. Likewise, RoRo and RoPax vessels have also been built to bear considerably larger tonnages. For example, Cobelfret's *MV Celine*, with 8000 lane metres⁸ and a gross tonnage of 74,000 delivered in 2017, can load more than 500 semi-trailers 13.6 m long. In fact, the sheer size of many liner vessels today implies that extinguishing a major fire on board would be extremely difficult, even if close to shore and with access to fireboats.

Because goods stuffed into load units, trucks and rail wagons in liner shipping remain visually invisible to load planners and stevedores, they require correct, timely information, as well as proper labelling if they contain DG,⁹ in order to be loaded safely and to avoid risky combinations of consignments in ports and on board.^{10,11} The necessary information needs to be accurately collected already when the consignment is shipped from the consigner and be conveyed through the transport chain amid consolidation and modal shift. However, such is not always the case.¹² After all, because transporting DG entails surcharges and restrictions, consignors and transport operators can be tempted not to properly declare DG.

8 The capacity of RoRo ships is measured in lane metres, which is the total length of the lanes for cars, trucks, semi-trailers and other load units on board.

9 J Ellis, 'Undeclared dangerous goods—Risk implications for maritime transport' (2010) 9 *WMU Journal of Maritime Affairs* 5.

10 Daniela Ambrosino and Anna Sciomachen, 'A shipping line stowage-planning procedure in the presence of hazardous containers', *Maritime Economics & Logistics* (2021).

11 H Lei and M Ok, *Dangerous goods container allocation in ship stowage planning* (2020).

12 Ellis (n 9).

As part of liner shipping, the container segment attracts most of the attention from not only researchers¹³ but also, news media outlets, most visibly in its routine depictions of foreign trade with images of containers' being lifted onto ships. However, containers primarily move goods between continents, whereas most of the world's trade, despite globalisation, remains regional. Although much of the intra-European trade is realised by trucks and trains, of the 3.35 billion tonnes loaded and discharged in EU ports in 2018, 1.16 billion tonnes, or 35%, was intra-EU trade.¹⁴ Whereas countries housing principal gateway ports, including Belgium and the Netherlands, report smaller shares of intra-EU goods, for ports in some peripheral countries—Denmark, Estonia, Finland, Latvia and Sweden—60% to 70% of goods, measured in tonnes, represent intra-EU trade. Even though much of that cargo comprises wet and dry bulk commodities, the latter countries are also especially extensive users of RoRo and RoPax services.

The empirical context addressed in this chapter is Northern Europe, particularly RoRo and RoPax shipping routes with one end in southern Swedish ports (Figure 9.1). In that setting, RoRo and RoPax shipping are particularly prominent because the trade-intensive region's geographical characteristics make RoRo and RoPax services pivotal for industry and citizens. In a comparison with bulk and container shipping, the RoRo and RoPax services are also far more adapted to particular routes than bulk and container shipping are, as well as more tightly embedded in the region's transport chains. A special focus will be on RoPax services as regulations regarding DG are quite strict, because the presence of passengers on board significantly raises the potential consequences of accidents involving such goods.

In the region, shipping involving DG is regulated by the International Maritime Dangerous Good (IMDG) Code and the "Memorandum of Understanding for the Transport of Packaged Dangerous Goods on Ro-Ro Ships in the Baltic Sea", nicknamed the "Baltic Agreement". Both sets of rules cover the classification, packaging, marking, labelling, documentation, stowage and segregation of DG in packaged form for carriage by sea. In general, the IMDG Code, drafted by the International Maritime Organization (IMO), applies to the carriage of DG in packaged form on all ships.¹⁵ In the Code, "Dangerous

13 J Woxenius, 'Flexibility vs. specialisation in ro-ro shipping in the South Baltic Sea' (2012) 27 *Transport* 250.

14 European Commission, *EU Transport in Figures, Statistical Pocketbook 2020*, (2020).

15 See the IMDG Code for exceptions. The code applies to all types of ships currently used in the RoRo–RoPax industry in Northern Europe.



FIGURE 9.1 Map of RoRo and RoPax shipping lines from Southern Sweden
MAP CREATED BY AUTHORS

goods” is divided into nine classes: 1. Explosives, 2. Gases, 3. Flammable liquids, 4. Flammable solids, 5. Oxidizing substances, 6. Toxic and infectious substances, 7. Radioactive material, 8. Corrosive substances, and 9. Miscellaneous. Containing more than a thousand pages, the IMDG Code is extensive and details specific requirements for each type of substance, organised by class and

UN number.¹⁶ The Swedish Transport Agency has incorporated the IMDG Code into its regulations.

The multilateral Baltic Agreement between Denmark, Germany, Poland, Finland, Estonia, Latvia, Lithuania and Sweden regulates the transport of DG in packaged form. Under certain circumstances when operating in the Baltic Sea and parts of Kattegat on Sweden's western coast, RoRo and RoPax vessels can opt to follow the Baltic Agreement instead of the IMDG Code.¹⁷ That allowance intends to not only facilitate the transport of DG on RoRo ships by departing from the rules that normally apply under the IMDG Code but also better align requirements with regulations for transport via road ("European Agreement Concerning the International Carriage of Dangerous Goods by Road", or ADR) and rail ("Regulations Concerning the International Carriage of Dangerous Goods by Rail", or RID). Similar to the IMDG Code, the ADR and RID are also extensive sets of regulations, each totals approximately 1300 pages. The ADR and RID regulations apply for all of Europe. To a large extent, the ADR and RID regulations can also apply to sea transport under the Baltic Agreement, which reduces the need to modify documentation, labels and markings etc. It moreover simplifies and expedites the transfer of cargo between modes on the fairly short sea voyages in the region. The simplifications are warranted by shorter distances and lower wave heights, where the greatest simplifications are offered to ships operating in low wave heights areas.¹⁸

Against that background, the purpose of this chapter is to examine how regulations for DG applicable to RoRo and RoPax shipping in Northern Europe affect transport chain operations and the overall risk of transport. It also explains the general structure and operations of RoRo and RoPax shipping for readers familiar with law but not necessarily with logistics or shipping.

The chapter is structured as follows. This introductory section has set the scene and scope of the chapter, as well as briefly introduced DG-related regulations for RoRo and RoPax shipping in Northern Europe. Next, Section 2 elaborates upon RoRo and RoPax shipping with a focus on the consolidation of freight and passengers, followed by an overview of DG flows in the region in

16 Each UN number is a four-digit code that identifies a hazardous substance. For example, diesel fuel's UN number is UN1202.

17 The Swedish Transport Agency, *Föreskrifter om ändring i Transportstyrelsens föreskrifter och allmänna råd (TSFS 2009:131) om transport av förpackat farligt gods på rorofartyg i Östersjön (Östersjöavtalet)*, (*Memorandum of Understanding for the Transport of Packaged Dangerous Goods on Ro-Ro Ships in the Baltic Sea*) (Transportstyrelsen 2017).

18 In low wave height areas, significant wave height does not exceed 2.3 m by a probability of more than 10% on a yearly basis.

Section 3, supported by statistics on the amount of DG processed in Swedish ports. After that, Section 4 provides an overview of approaches to handling DG in transport chains, followed by a discussion and conclusions in Section 5 concerning some regulatory issues with implications for logistics.

2 RoRo and RoPax Shipping

When geographical and trade conditions are favourable for sss, a great deal of cargo tends to be rolled onto quays instead of lifted over them. Because the RoRo principle accommodates highly efficient handling at ports, albeit at the expense of less densely loaded ships, it has become widely adopted at ports worldwide. Japan registered 35,000 port calls with RoRo ships in 2019, the United Kingdom registered 16,500, the Netherlands 12,500, Spain 11,500 and Italy 9500, for 191,000 port calls altogether, or 4.4% of all calls that year.¹⁹ RoRo accounted for fewer port calls than container ships (10.9%), tankers (13.6%) and dry bulk carriers (6.4%), and global RoRo statistics represent not only RoRo with sss but also PCTC shipping. Even so, RoRo shipping is widely used in the Nordic countries, in the United Kingdom and Ireland²⁰ and in Sub-Saharan Africa.²¹ Ports in the EU-27—that is, excluding the United Kingdom—handled 377 million tonnes of rolling cargo in 2018, mostly at Calais (18.4 million tonnes), Dublin (13.8), Zeebrugge (13.4), Lübeck (12.8), Rotterdam (11.9), Trelleborg (11.2) and Gothenburg (9.5).²² Because RoRo and RoPax vessels used in sss are typically deployed on direct routes between two ports, dividing those statistics in half reveals that some 188 million tonnes of goods were carried in RoRo units in the EU-27 in 2018. Because several of the largest RoRo flows pertain to the United Kingdom, however, figures for the EU-28 before Brexit were larger than today's.

For various reasons, freight-only RoRo shipping is used more in Europe than in East Asia, which relies far more on containers for intra-Asian trade, complemented with RoPax ferries. These are used on shorter routes as bridge

19 UNCTAD (n 1).

20 Anastasia Christodoulou, Zeeshan Raza and Johan Woxenius, 'The Integration of RoRo Shipping in Sustainable Intermodal Transport Chains: The Case of a North European RoRo Service' (2019) 11 Sustainability 1.

21 Abisai Konstantinus and others, 'Barriers and Enablers for Short Sea Shipping in the Southern African Development Community' (2019) 11 Sustainability 1532.

22 Eurostat, 'Maritime transport statistics—short sea shipping of goods' (2021) <http://ec.europa.eu/eurostat/statistics-explained/index.php/Maritime_transport_statistics_-_short_sea_shipping_of_goods#Short_sea_shipping_by_type_of_cargo> accessed 2021-01-14.

substitutes with high frequency. As a result, passenger ships accounted for as much as 55% of all port calls worldwide in 2019, with Norway leading the pack, followed by the United States and Italy. UNCTAD²³ has also reported intense passenger traffic in the Baltic and East Mediterranean Seas and in South East Asia's extensive archipelagos. All told, of the world's 915 RoRo cargo ships and 2394 passenger and RoPax ships in 2019, 279 (30%) and 691 (29%) vessels, respectively, belonged to the EU-27.²⁴ Measured in deadweight, 52% of the world's RoRo vessels (3.80 of 7.30 million tonnes) and 34% of its passenger or RoPax vessels (2.27 of 6.61 million tonnes) belonged to the EU-27 and those statistics only include vessels with gross tonnage exceeding 1000. Counting all ships exceeding 300 gross tonnes but limited to passenger, cargo and RoPax ships in the EU-27 plus the United Kingdom, the EU-28 accounted for 27% of vessels and 49% of deadweight tonnage in 2018.²⁵

RoRo and RoPax shipping are typically links in intermodal transport chains, which involve using different traffic modes for goods from consignors to consignees. By definition, *intermodal transport* is “the movement of goods in one and the same loading unit or road vehicle, which uses successively two or more traffic modes without handling the goods themselves in changing modes”.²⁶ In such transport, goods are packed into a load unit—for instance, a maritime container or semi-trailer—to facilitate efficient trans-shipment between modes. In RoPax shipping, however, trucks also act as load units. From the perspective of shipping lines, load units constitute consignment for the shipping lines, although each unit also may contain smaller sub-consignments where freight forwarders consolidate numerous shipments from different shippers in the same load unit for transport efficiency.²⁷ From the shipping lines perspective, a consignment is thus largely synonymous with what many shipping lines refers to as an *article of transport*: “any vehicle, train, carriage, container, flat, pallet, trailer, transportable tank and similar items used for the consolidation of Goods as well as timber packages”.²⁸

23 UNCTAD (n 1).

24 European Commission (n 14).

25 *ibid.*

26 UN/ECE, *Terminology on Combined Transport*, (2001).

27 J Woxenius, 'Information Flows Along Integrated Transport Chains' in B Tilanus (ed), *Information Systems in Logistics and Transportation* (Pergamon 1997).

28 *ibid* 3.

2.1 *RoRo*

To gain the inherent benefits of low-cost, high-capacity, energy-efficient shipping, medium-distance SSS routes primarily use RoRo cargo vessels designed to move rolling cargo.²⁹ In Northern Europe, such routes connect industrial regions in the British Isles, Benelux and Scandinavia, where they target large shippers in the forest, steel and automotive industries. Although not as frequent as RoPax services, the transport frequency offered by RoRo vessels generally exceeds what each shipper could achieve by using bulk or specialised shipping. Each route typically has a dominant shipper that offers long-term base volumes and can thus stipulate departure times and frequencies, where the high frequency is supported by other shippers that help fill up the vessels. For example, in a case study, Christodoulou³⁰ found that cost-sharing and high-frequency in commercially “open” services were greatly appreciated by the forest product firm Stora Enso, the chief shipper on the Gothenburg–Zeebrügge route.

In RoRo shipping, the primary units of transport are semi-trailers, which are transported to and from ports by road by semi-trailer trucks. At ports, semi-trailers are disconnected from trucks and loaded onto ships with a small terminal tractor called a *tugmaster*. Because the truck drivers do not travel with the ships, the semi-trailers are *unaccompanied*. RoRo vessels also transport goods packed into maritime containers that are loaded onto rolling platforms called *cassettes* or *roll trailers* (e.g. MAFI trailers) and thus towed aboard ships. Cars, trucks, construction equipment and over-sized cargo that is driven or towed aboard are other commonly transported items. A few RoRo ships are even equipped with a rail track and can thus carry rail wagons. In any case, each transport or terminal service in the transport chain is retailed directly to large shippers and forwarders, one type of which specialises in RoRo shipping and offers full or part load transport in a certain trade lane, for instance between Benelux and Scandinavia. Consignments in RoRo shipping are rather large and dominated by semi-trailers filled with a single commodity and part loads, although some semi-trailers are packed with general cargo and parcels that are consolidated in a terminal. To shipping lines, however, all semi-trailers containing DG,³¹ hence also those with embedded DG sub-consignments, have to be treated as DG consignments. To rescue services and in terms of risk, any vessel carrying DG consignments is regarded as a DG super-consignment.

29 RoRo ships are typically designed to also accommodate a maximum of 12 passengers, as ships with no more than 12 passengers are classified as cargo ships.

30 Christodoulou, Raza and Woxenius (n 20).

31 Exemptions exist for very small quantities under certain conditions.

Figure 9.2 shows a characteristic transport chain involving RoRo shipping. One semi-trailer is fully loaded with DG, while another is loaded with a mix of general cargo and DG, thus with DG transported as a part load together with non-DG. The shipping line's stowage planners thus need information in advance to organise the placement of DG on board and identify what loads need to be separated for safety.

2.2 *RoPax*

RoPax ferries, by contrast, catering to both freight and passengers at once, are often used on short routes with a significant demand for passenger transport. Typically seeking the shortest possible crossings, hence the nickname “bridge substitutes”, RoPax ferries offer their services to a truly wide set of customers and, as Woxenius³² has stated, “virtually anything allowed on the road is accepted, perhaps excluding lorries with hazardous cargo on ships with passengers, and passengers without a vehicle can walk on board” (p. 252). RoPax ports are often located in city centres for passengers' convenience, whereas RoRo ports are generally part of pure freight ports located outside such densely populated areas. As a consequence, the risk of handling DG in port operations is a greater concern for RoPax ports than for their RoRo counterparts.

In RoPax shipping, consignments can be either towed semi-trailers or trucks that are loaded aboard ships by drivers accompanying them on board. Some RoPax ferries accept rail cars and are equipped with tracks. On RoPax vessels, shipping acts a sub-contractor to land-based traffic modes and ferry crossings are bundled with road or rail haulage and wholesaled as a door-to-door transport service to shippers and forwarders. Somewhat longer RoPax services, in line with the all-freight RoRo services, also accept unaccompanied semi-trailers, maritime containers and over-sized cargo.

In general, the number of transport customers are greater in RoPax than in RoRo. As an example, Figure 9.3 shows a transport chain with general cargo being retrieved by drivers with vans or smaller trucks and cross-docked in a consolidation terminal. Another driver uses a larger long-distance truck to transport the goods to the port, drives it onto and subsequently off the RoPax ferry and, in turn, to the receiving consolidation terminal. After another cross-docking operation, a new set of drivers uses vans and small trucks to deliver the sub-consignments to the consignees. Forwarders offer that transport service to a multitude of shippers, although a few large shippers (e.g. retail chains and e-commerce firms) organise it themselves. Although the figure depicts a

32 Woxenius, 'Flexibility vs. specialisation in ro-ro shipping in the South Baltic Sea' (n 13).

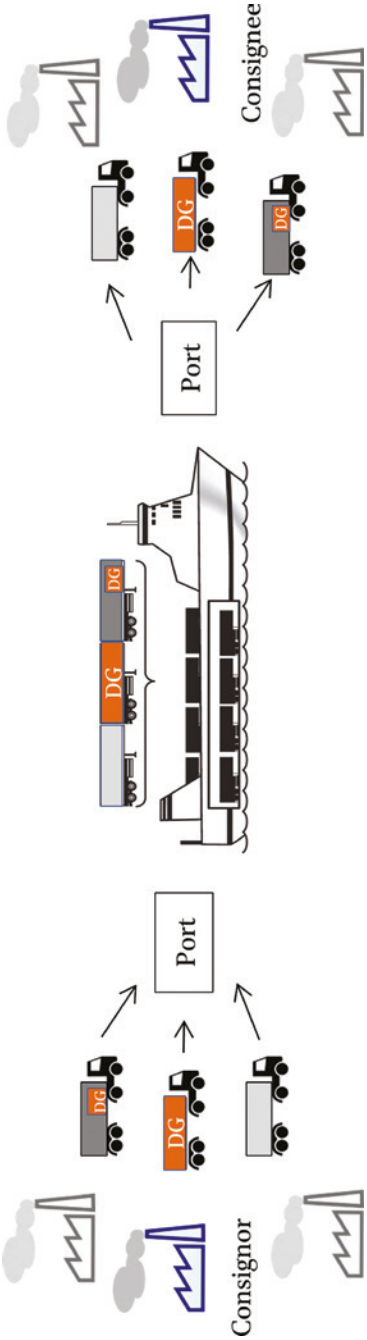


FIGURE 9.2 Transport chains with a semi-trailer full load of DG and one with a part load of DG transported by semi-trailer tractors and a RoRo vessel. Note how DG are mixed with non-DG in semi-trailers and on board.

rather complex way of transporting small sub-consignments, many trucks on board RoPax ferries constitute full and part loads similar to all-freight RoRo.

In both RoRo and RoPax shipping, ports and shipping lines need to assess the risk and require that drivers notify them in advance of hazardous substances and the amount of all DG consignments.³³ From an operational standpoint, DG are placed on the weather deck, if available, and are sometimes restricted to certain departures with fewer or no passengers on board.

3 Dangerous Goods in RoRo and RoPax Shipping

Having described the transport system involving RoRo and RoPax shipping, the chapter now narrows its empirical focus to DG and Northern Europe, with statistics and estimates of shares of DG limited to shipping services using ports in West and South Sweden.

The intensive use of RoRo and RoPax shipping for trade in Northern Europe implies the potentially intensive transport of DG. Zachcial³⁴ has identified DG as particularly suitable to unitisation, implying that RoRo shipping indeed captures flows from DG bulk shipping. At the same time, he found that RoRo shipping could benefit from “growth by constraint” (p. 43); because road transport had become increasingly restrictive and liable to impose particularly stiff constraints on DG, RoRo shipping was likely to benefit as a result. Nevertheless, regulations regarding DG were also identified as hindering the development of sss.

In a study based on interviews with 2500 truck drivers in Sweden’s southern and western ports completed in 2016 and 2017, the Swedish Transport Administration³⁵ found that, on average, some 4.3% of road vehicles displayed DG signage, as required by regulations for vehicles carrying DG. However, this does not show how much of each vehicle load that was DG. Because the interview study in the ports provides a snapshot from 2016–2017 only, it remains difficult to estimate the current share of DG transported by RoRo and

33 DFDS, *Passenger ferries—Booking Terms and Conditions and Conditions of Carriage* (2018); TT-Line, *Terms and Conditions of Carriage of Goods* (2019); Stena Line, *General terms 2021*.

34 Manfred Zachcial, *Short sea shipping and intermodal transport, OECD/ECMT, Short sea shipping in Europe*, (2001).

35 *Kartläggning av lastbilstransporter i brohamnar längs syd- och västkusten—Resultat från intervjuer med 2 500 lastbilschaufförer (Survey of truck transport in gateway ports along the south and west coasts of Sweden—Results from 2500 interviews with truck drivers)*. Authored by Benrick, P and Wells, L (2018).

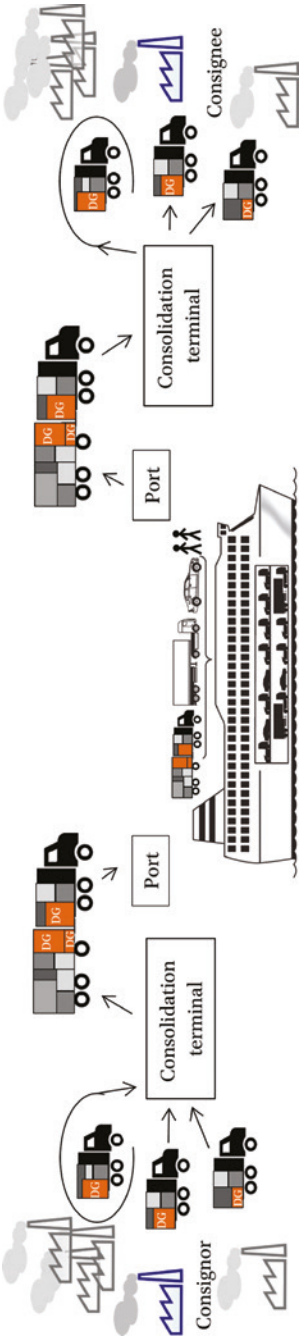


FIGURE 9.3 Transport chains with general cargo handled at consolidation terminals and transported by truck and a RoPax vessel. Note how DG are mixed with non-DG on the trucks and with the passengers on board.

RoPax. As a comparison, for domestic all-road transport in Sweden, Transport Analysis and Statistics Sweden³⁶ reported that 2.0% (i.e. 9 of 449 million tonnes) of all goods moved by heavy trucks (>3.5 tonnes) in 2019 was DG. For Swedish domestic rail transport, 4.9% (i.e. 3.6 of 73 million tonnes) was DG.³⁷ Trafikanalys and Statistics Sweden, also reported that the transport of DG in tonnes from 2014 to 2019 had decreased by 40% for road³⁸ but increased by 10% for rail, even though total tonnekm dropped by 10% for rail.³⁹ Transport Analysis and Statistics Sweden⁴⁰ have not reported the share of DG in maritime traffic exclusively, although a gross share would be largely irrelevant for studying RoRo and RoPax shipping anyway, because most DG are moved by wet bulk shipping. For shipping in general, crude oil and petroleum products accounted for 53 of 170 million tonnes (31%) of turnover in Sweden's ports in 2019.

The Swedish Transport Administration⁴¹ also shows that flows of DG through Sweden's western and southern ports were somewhat unbalanced in 2016–2017, for 4.7% of inbound but only 4.1% of outbound vehicles were marked with DG signage. Significant differences from port to port arose as well, as detailed in Table 9.1. Drivers using ports for RoPax shipping as bridge substitutes reported a smaller share of DG: 3.0% for outbound flows, 3.7% for inbound flows and 3.2% overall. The imbalance between some ports was remarkably large, notably for Stena Line's Gothenburg–Kiel route with 16% of DG reported for outbound flows but none for inbound ones. By comparison, the share of DG was far higher in freight-only RoRo to or from Gothenburg, at 13% in both inbound and outbound flows. As an alternative, using the Øresund Bridge, the fixed connection between Malmö and Copenhagen, attracts more DG than nearby RoPax options: 9% for Danish trucks, 7% for Swedish ones and 7.5% overall.

36 Transport Analysis and Statistics Sweden, *Lastbilstrafik 2019 (Swedish road goods transport 2019)*, (2020b).

37 Transport Analysis and Statistics Sweden, *Bantrafik 2019 (Rail traffic 2019)*, (2020a).

38 Transport Analysis and Statistics Sweden, *Lastbilstrafik 2019 (Swedish road goods transport 2019)*.

39 Transport Analysis and Statistics Sweden, *Bantrafik 2019 (Rail traffic 2019)*.

40 Transport Analysis and Statistics Sweden, *Sjötrafik 2019 (Shipping goods 2019)*, (2020c).

41 The Swedish Transport Administration, *Kartläggning av lastbilstransporter i brohamnar längs syd- och västkusten—Resultat från intervjuer med 2 500 lastbilschaufförer (Survey of truck transport in gateway ports along the south and west coasts of Sweden—Results from 2500 interviews with truck drivers)*. Authored by Benrick, P and Wells, L.

TABLE 9.1 Estimated shares of vehicles with DG signage in bridge substitute ports or RoPax ports, in a freight-only port and over the Øresund Bridge in West and South Sweden

Swedish bridge substitute RoPax ports sorted from northwest to southeast		Semi-trailers and Share of DG, 2016–2017			
		trucks	Inbound	Outbound	Total
	Primary routes	2019 (1000)			
Strömstad	Norway (Sandefjord)	5 ^a	2.0%	1.0%	1.5%
Gothenburg	Germany (Kiel)	60 ^b	0.0%	16.0%	8.0%
Gothenburg	Denmark (Fredrikshavn)	150 ^b	2.0%	5.0%	3.5%
Varberg	Denmark (Grenå)	35	2.0%	4.0%	3.0%
Helsingborg	Denmark (Helsingør)	435	6.0%	2.0%	4.0%
Malmö	Germany (Travemünde)	243	3.0%	2.0%	2.5%
Trelleborg	Germany (Rostock, Sassnitz, Travemünde), Poland (Swinoujście), Lithuania (Klaipėda)	776	5.0%	2.0%	3.0%
Ystad	Denmark (Rønne), Poland (Swinoujście)	267	0.0%	2.0%	1.0%
Karlshamn	Lithuania (Klaipėda)	80	4.0%	1.0%	2.5%
Karlskrona	Poland (Gdynia)	133	2.0%	3.0%	2.5%
<i>All bridge substitute RoPax ports</i>		2184	3.7%	3.1%	3.2%

TABLE 9.1 Estimated shares of vehicles with DG signage (*cont.*)

Swedish bridge substitute RoPax ports sorted from northwest to southeast	Primary routes	Semi-trailers and Share of DG, trucks 2016–2017		
		2019 (1000)	Inbound	Outbound Total
Gothenburg RORO (i.e. freight only)	Belgium (Zeebrugge, Ghent), UK (Immingham)	280 ^c	13.0%	13.0%
<i>All RoRo and RoPax ports</i>		2464	4.7%	4.1%
Øresund Bridge, Malmö	Denmark (Copenhagen)	599 ^d	9.0% ^e	7.0% ^e
<i>Total border-crossing semi-trailers and trucks</i>		3063	5.5%	4.7%

Note. Share of DG compiled and calculated using data from The Swedish Transport Administration (2018) based on interviews in ports in 2016 and 2017 and the number of semi-trailers and trucks in 2019 from Ports of Sweden (2020). ^a Transport Analysis and Statistics Sweden (2020c); ^b Estimate based on Transport Analysis and Statistics Sweden (2020c), Ports of Sweden (2020) and earlier data; ^c Gothenburg RORO Terminal (2021). ^d The Øresund Bridge (2021b); ^e Inbound flow of trucks registered in Denmark and outbound flow of trucks registered in Sweden.

The data supporting the estimates in Table 9.1 represent vehicles with DG signage and thus include trucks only partly transporting DG. Of course, trucks and semi-trailers may carry DG without carrying the correct signage, in violation of regulations.⁴² The various RoPax routes offered at the ports examined in the interview study are also used by a significant number of passengers, with passengers travelling to and from Sweden in 2019 totalling 10.2 million for Denmark, 2.17 million for Germany, 1.61 million for Norway and 0.96 million for Poland.⁴³

4 Approaches to Moving DG in Transport Chains

For further analysis, we used a framework developed by Woxenius and others⁴⁴ for the handling of goods requiring special attention in transport chains. The framework can be applied to not only DG but also theft-prone, oversized, temperature-controlled and/or fragile goods as cargo requiring special attention. Following the framework, transport planners need to determine whether any links of the transport chain restrict the conveyance of DG (e.g. tunnels and ferries) and choose an appropriate approach from the six principally different approaches outlined. Planners should also recognise that the lack of proper handling equipment or authorised personnel can also restrict the transport of DG.

When DG are presented in any transport setting, the first approach—to *deny transport*—implies that the DG are simply not accepted for transport. By contrast, to *apply brute force* means that the forwarder or the transport chain's first link has allowed the DG to enter the chain without regard for potential problems at subsequent links. If a link is only temporally restricted, then the transport planner has the option to *postpone goods* and dispatch them to arrive at the particular link when no physical, capacity-related or regulatory restrictions limit their transport. If the restriction is not only temporal, then the planner can opt to *divert goods* to follow a non-restricted path. Another alternative to divert goods, to *use an alternate link*, involves substituting the problematic link and later allowing the DG to return to their original route. Last, to *transform goods* implies altering the properties of DG to permit their reclassification as non-DG. The framework's six approaches are illustrated in Figure 9.4.

42 Ellis (n 9).

43 Transport Analysis and Statistics Sweden, *Sjötrafik 2019 (Shipping goods 2019)*.

44 J Woxenius, P-O Arnäs and S Ohnell, 'Approach for handling the increased complexity of European intermodal freight flows' (9th World Conference on Transport Research (WCTR)).

4.1 *Deny Transport*

From the perspective of shipping lines, the easiest way to manage the risks associated with DG is to simply prohibit their transport. However, such restrictions would negatively impact the market, because the RoRo–RoPax segment of the shipping industry is typically part of intermodal transport chains. Although the share of DG may be relatively low, the same customers not only often transport both DG and non-DG but also rarely separate them in their planning and operations of their transport system. In short, denying DG risks entirely losing certain customers. Transporting DG is seldom regarded as a particularly profitable segment of RoRo and RoPax shipping but offered as a service to retain customers. In parallel, ferry services that substitute for bridges play an infrastructural role that benefits society and often enjoy subsidies, or at least reduced taxation, and thus cannot discriminate goods based solely on an individual segment's profitability. Nevertheless, to recover additional costs, ports and shipping lines typically impose surcharges for DG and state in their conditions of carriage that the IMDG Code or, if applicable, the Baltic Agreement should be followed. However, restrictions can apply to specific classes of cargo. For instance, a significant difference exists between, on the one hand, RoRo ships that carry highly limited numbers of passengers and, on the other, RoPax and cruiseferries that can carry thousands of them.⁴⁵ RoPax ferries also face stricter regulations that prohibit the transport of several classes of DG, particularly if stored under deck. Whereas many RoPax ferries today are built with limited storage capacity on their weather decks, normally far aft, it is common for older cruiseferries to have under-deck storage only, which restricts the transport of DG. The design and type of ships used on a given route may therefore cause two seemingly similar routes to allow different types of DG.

DG may also be denied transport for practical reasons, including limits on the volume of DG that may be carried on a particular departure without violating regulations, for example, concerning the stowage and separation of DG. In that case, the consignment would not be entirely denied but referred to another departure. The transport of DG therefore typically needs to be booked well in advance to allow the shipping line to prepare stowage plans and thereby guarantee transport. Added to that, transport can be denied due to regulations against certain classes of DG in RoPax ports located in city centres. Conditions of carriage also often stipulate that DG should be removed from the port of

45 The IMDG Code differentiates cargo ships (ie up to 12 passengers) from passenger ships, with a further subdivision of (a) passenger ships into ones carrying no more than 25 passengers or one passenger per 3 m of the ship's length and (b) passenger ships exceeding that number of passengers.

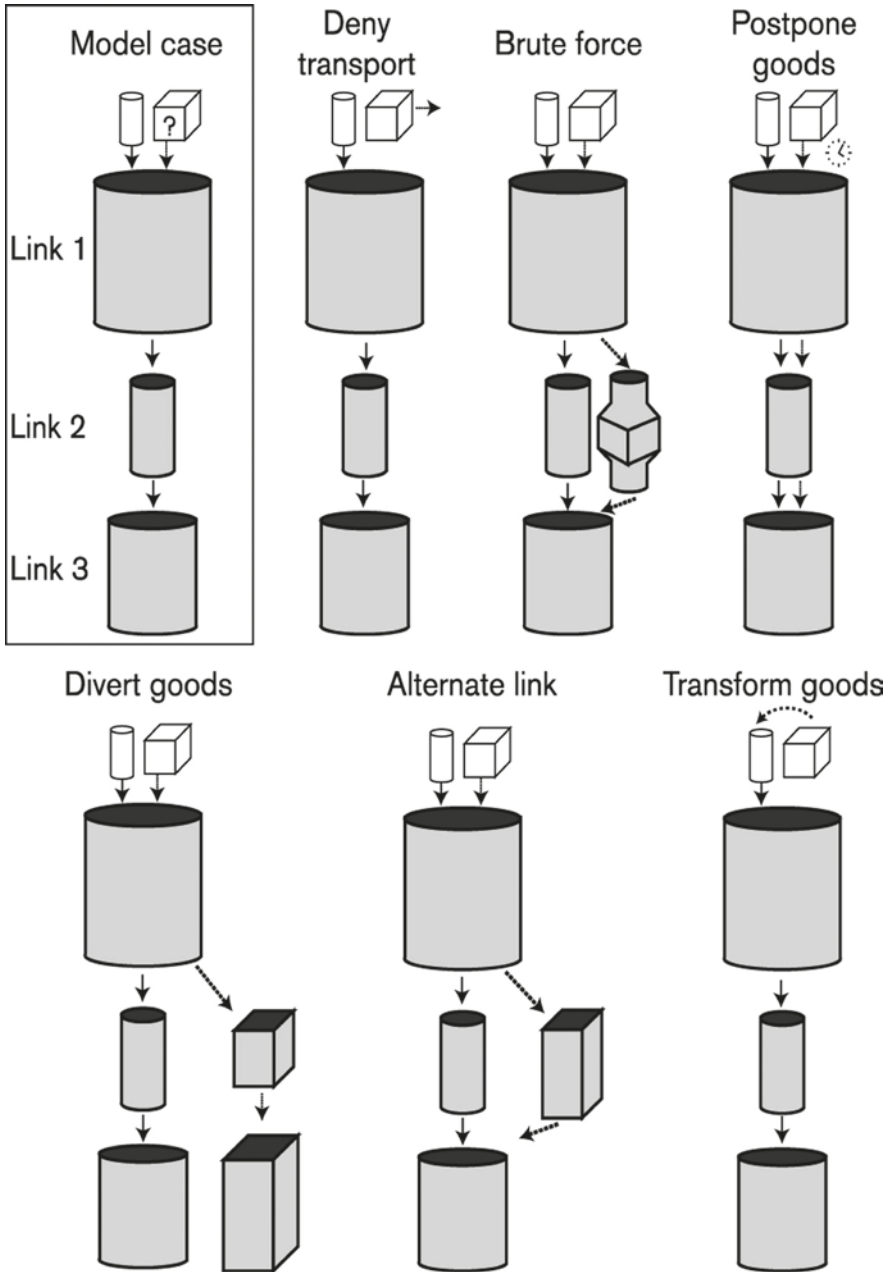


FIGURE 9.4 Six approaches to handling DG in transport chains. In each approach, the white cylinder represents normal goods, whereas the white cube represents DG.

WOXENIUS AND OTHERS, 2001

discharge as soon as practicable, see for instance the General terms of Stena Line.⁴⁶ This practice decreases risk of accumulating DG in the port but may also relate to limited capacity of the port's DG storage area, as space is often limited in city terminals.

Most often, the approach of denying transport does not halt transport in its tracks but redirects it to one of the other five approaches for handling DG in transport chains outlined in Figure 9.4. Although the adaptations required to accommodate another approach usually increase transport costs, the need for such modifications can also in a long-term perspective prompt structural changes, for heightened costs may incentivise transport customers to redesign their supply chains by, for instance, replacing suppliers, stop serving customers, relocating facilities or discontinuing products classified as DG that require complicated transport.

4.2 *Apply Brute Force*

For transport customers, shipping DG via Northern European RoRo or RoPax comes with surcharges of approximately 100 EUR per load unit, as well as added administration and operational restrictions. Beyond that, road and rail transport operators typically add surcharges for transporting DG over land. As a consequence, such disincentives can tempt customers to ship DG in a transport chain without regard for regulations. For customers, misdeclaring the consignment is a simple way of applying brute force. After all, simply not informing the forwarder, road haulier, port and/or shipping line that a consignment contains DG can lower costs and increase the flexibility of transport. However, not declaring DG also presents increased risks in transport,⁴⁷ as evident by several recent fires on container ships, some of which were caused by misdeclared DG.⁴⁸ Most notably, the 2018 fire on the *Maersk Honam* claimed the lives of five crew members and caused damages worth 500 million USD, including 30 million USD for vessel repairs.⁴⁹ Although the accident report⁵⁰ did not conclusively determine the cause of the fire, the accident has since

46 Stena Line (n 33).

47 Ellis (n 9); Marta Gonzalez-Aregall and others, *Reducing undeclared and misdeclared dangerous goods to improve maritime transport safety* (Lighthouse Reports, 2021).

48 Mike Schuler, 'Photos: The Worst Containership Disasters in Recent History' (*gCaptain*, 2018) <<https://gcaptain.com/the-worst-containership-disasters-in-recent-history-in-photos/>> accessed 2021-01-23.

49 Maritime Danmark, 'Maersk Honam reparations cost 30 mio USD' (2018) <<http://maritimedanmark.dk/?Id=19682>> accessed 2021-01-23.

50 Government of Singapore, *Fire on board Maersk Honam at Arabian Sea on 6 March 2018, Final Report*, (2020).

been unofficially attributed to a shipment of sodium dichloroisocyanurate dihydrate.⁵¹ The Maritime Executive⁵² has identified a particular risk in that the IMDG Code relies on chemical manufacturers to self-certify the characteristics of their products and, citing a salvor, has called for “accurate testing, and not just 50 gram samples in a laboratory setting”. Taking action to mitigate casualties and damages in light of recent container fires at sea, shipping lines such as Evergreen have begun levying fines as high as 35,000 USD per misdeclared container.⁵³ Several RoRo/RoPax shipping lines also apply strict terms, including about the compensation of costs related to misdeclared goods, such as rules issued by TT-Line⁵⁴ for the Trelleborg–Travemünde RoPax route and the clarification by DFDS⁵⁵ that passengers are responsible for indemnifying DFDS for costs “whether or not the passenger was aware of the nature of the goods” (p. 8).⁵⁶

Although no major accident related to misdeclared DG has occurred on RoRo or RoPax ferries in Northern Europe, the consequences of a cargo fire on any RoPax ferry with 2000 passengers could be disastrous. Although not caused by DG but by arson, the 1990 fire on the cruise ferry *Scandinavian Star* operating between Norway and Denmark, which killed 158 passengers and crew members—out of 383 and 99 respectively—illustrates the danger related to fire on board RoPax vessels.⁵⁷ In addition to this, the risk of being caught misdeclaring goods is quite low. Goods inside a unit load, (e.g. semi-trailers and containers) cannot be seen from the outside, and the number of inspections by authorities is limited. According to Carlsson,⁵⁸ the manager of

51 The Maritime Executive, ‘Dangerous Goods May Have Caused Maersk Honam Fire’ (2020) <www.maritime-executive.com/article/report-dangerous-chemical-may-have-caused-maersk-honam-fire> accessed 2021-01-30.

52 *ibid.*

53 Whiteman (n 7).

54 TT-Line, *Terms and Conditions of Carriage of Goods* (n 33).

55 DFDS (n 33).

56 “The Shipper shall compensate TT-Line for damages and expenses caused by the inaccuracy or incompleteness of the required information regarding the Cargo, the failure to disclose the Cargo’s dangerous nature, by insufficient packing or marking of the Cargo as well as by lack of, incompleteness or inaccuracy of the documents or information required for official handling in particular for the custom clearance of the Cargo prior to delivery. ... If and so far as TT-Line, the captain or the ship’s agent did not know of the nature of the danger when taking over the Cargo or at least had not been informed thereof, TT-Line is, without thereby becoming liable for damages, allowed at anytime and anywhere to discharge, destroy or otherwise render a Cargo harmless”.

57 Government of Norway, *The Scandinavian Star Disaster of 7 April 1990—main report*, (1991).

58 Pär Carlsson, *Interview about dangerous cargo in Port of Karlshamn, Sweden* (2021) by Johan Woxenius and Marta Gonzalez Aregall.

marketing and sales at the Port of Karlshamn, the port cannot search for un- or misdeclared goods inside semi-trailers, which makes consignors' faithful declarations of cargo a critical component in minimising risks. In most cases, cargo accepted at a port is also accepted on board ships, even if the shipping line's terms and conditions⁵⁹ afford the rights to conduct inspections.

Although the extent of misdeclared goods remains unknown, it continues to be regarded as a significant problem in the shipping industry.⁶⁰ Of course, shipping lines maintain the right to inspect the contents of containers; however, the investigation team in the case of the *Maersk Honam* fire⁶¹ noted that "the current cargo screening process in the industry is not able to ensure declarations by shippers, which are based on trust, match the description of the cargo in the container, as such a process could be too onerous and labour-intensive if carried out manually" (p. 91). Making matters worse, transport companies face commercial constraints in transporting DG and have incentives to "bend the rules" in order to accommodate customers and maintain their businesses.

4.3 *Postpone Goods*

The regulations limiting DG on RoPax ferries have caused some shipping lines to divide their departures into two types—namely, passenger departures and freight departures—the latter of which limit the number of passengers on board to make room for particularly dangerous classes of DG onboard. In that case, the affected DG are often delayed to freight departures occurring late at night when passenger demand is low. Similarly, shipping lines can operate RoRo and RoPax ships in parallel on the same route and simply refer DG to RoRo vessels. The decisions are usually made for commercial reasons to maximise each departure's revenue, and for example TT-Line⁶² reserves the right to reclassify departures between freight and passenger services on short notice and acknowledges that doing so can activate restrictions regarding DG. As a related example, DFDS began diverting truck drivers using the Karlshamn–Klaipeda RoRo departure to the parallel RoPax departure as a means to mitigate a shortage of cabin capacity when the COVID-19 pandemic required limiting the number of drivers allowed to share a cabin on the RoRo vessel from four to two.⁶³

59 TT-Line, *Terms and Conditions of Carriage of Goods* (n 33).

60 Whiteman (n 7).

61 Government of Singapore, *Fire on board Maersk Honam at Arabian Sea on 6 March 2018, Final Report*.

62 TT-Line, *Shipping dangerous goods with TT-Line* (2021).

63 Carlsson (n 58).

The division into freight and passenger departures can also be imposed for the public welfare, as in the case of domestic ferries to the Swedish island of Gotland, whose population of 60,000 has no bridge connecting their communities to the mainland. Traffic for such ferries is publicly procured by the Government of Sweden and receives subsidies to, among other things, offer departures that accept DG.⁶⁴ Last, postponement can also occur when a departing ship has reached its maximum capacity for DG, which can further incentivise consignors to use brute force to avoid waiting for the next DG-friendly departure.

4.4 *Divert Goods*

With different route options affecting driving and resting times, as well as costs and risks, planning long-distance road transport is rather complex.⁶⁵ If a shipping link does not accept DG and postponement is undesirable, then the forwarder, haulier or consignor may choose a different route to the consignee. Often, such a route is by road. RoRo and RoPax shipping in Northern Europe is particularly sensitive to a direct modal competition, because an alternative land route or combination of land and sea routes is often available. For example, from Sweden's western coast to Belgium or from southern Sweden to Germany and Poland, shippers have land-based options via the Øresund Bridge and Denmark, and modal competition is likely to stiffen once the Fehmarn Belt connection is opened.

Diverting goods thus often includes a modal shift from shipping to road or rail that also diverts the risks of transporting DG for shipping lines. However, ranked among sss's strengths, Paixão Casaca and Marlow⁶⁶ identified shipping's high levels of safety in transporting DG and its removal of DG from roads. In that light, diverting DG from shipping to another more dangerous traffic mode may well increase the aggregated risk in the transport chain. On top of that, that sort of modal shift undermines political initiatives of transferring freight from road to sea for environmental reasons and to reduce congestion.

64 Tomas Eneroth, *Upphandling av Gotlandstrafiken—Skriftlig fråga 2019/20:1228 besvarad av Infrastrukturminister Tomas Eneroth (Public procurement of ferry traffic to Gotland—Written question 2019/20:1228 answered by Minister for Infrastructure Tomas Eneroth)* (The Swedish Parliament, 2020).

65 Jonas Flodén, Fredrik Bärthel and Edith Sorkina, 'Transport buyers choice of transport service—A literature review of empirical results' (2017) 23 *Research in Transportation Business & Management* 35.

66 Ana C Paixão Casaca and Peter B Marlow, 'The impact of the trans-European transport networks on the development of short sea shipping' (2007) 9 *Maritime Economics and Logistics* 302.

Diversion to other shipping routes with fewer constraints can also occur—for example, across the Baltic Sea—if land-based options for transport are limited. Another reason for diverting DG consignments is to better utilise the allowed driving times under the driving time regulations for road transport. It might be preferable to continue driving to another RoPax port with a suitable departure allowing DG instead of waiting at the current port for such a departure. In that scenario, regulations concerning driving times for truck drivers are significant factors, for certain routes or departures may better accommodate required periods for rest. Road transport driving times are regulated where drivers are required to take breaks and overnight rest after driving a certain time. It is desirable that a ferry departure match with when the driver is required to take a break.

4.5 *Use an Alternate Link*

Similar to diverting goods, using an alternative link allows bypassing a restrictive shipping link, after which the transport can return to the original route. A notable example of such a link is the Øresund Bridge between Sweden and Denmark, which offers both road and rail connections alongside several RoPax services running more or less in parallel. When it comes to DG, The Øresund Bridge⁶⁷ imposes no additional charge and, in following ADR regulations, imposes only some DG restrictions due to the fixed link's tunnel.⁶⁸ The Swedish Transport Administration⁶⁹ has asserted that the high proportion of DG (i.e. 7–9%) via that fixed connection stems from more DG-restricted departures for RoPax shipping.

Another alternate link could be a shipping service operating with other types of ships—for instance, using a RoRo vessel instead of its more heavily restricted RoPax counterpart. It might be due to larger overall demand for DG transport on the particular trade lane rather than rerouting from RoPax routes, but the Swedish Transport Administration⁷⁰ also found a much higher proportion of DG—13% in both directions—for the terminal Gothenburg RORO

67 The Øresund Bridge, 'Hazardous goods' (2021a) www.oresundsbron.com/en/info/hazardous-goods?q=dangerous accessed 2021-01-26.

68 Although called the Øresund Bridge, the link in fact consists of a 7.8-km bridge followed by a 4.1-km underwater tunnel.

69 The Swedish Transport Administration, *Kartläggning av lastbilstransporter i brohamnar längs syd- och västkusten—Resultat från intervjuer med 2 500 lastbilschaufförer (Survey of truck transport in gateway ports along the south and west coasts of Sweden—Results from 2500 interviews with truck drivers)*. Authored by Benrick, P and Wells, L.

70 *ibid.*

handling unaccompanied RoRo between Sweden, UK and Belgium. In a notable example of redesigning a link, in 1993 a RoPax route between Turkey and Italy was replaced with a RoRo route along with a dedicated flight for truck drivers operating between airports close to the ports. The reasons for the switch included not only lower operational costs and convenience for drivers but also relaxed regulations regarding DG.⁷¹

4.6 *Transform Goods*

Regulations stipulating in detail how DG should be transported impact which classes of DG can be loaded and transported together. However, regulations are less stringent for limited and excepted quantities of DG. By adapting to these and other regulations, transport customers can transform their consignments to enjoy less restrictive regulations, including by sending cargo in small quantities (i.e. dividing each consignment into several sub-consignments) or by not packing two conflicting classes of DG in the same consignment. Such strategies reduce risk but require greater competence and planning by transport customers or their forwarders. At the same time, part of the planning also falls to the shipping line, which in their stowage planning and allocation of cargo between various departures and vessels can help to “transform” the goods, so to speak, and thereby allow more DG to be transported. That type of planning, although typically already part of most shipping lines’ operations as a way to maximise revenue, requires striking a balance between meeting customers’ needs (e.g. preferred departures) and optimising operations and revenue. A further challenge for the approach is that data about consignments are not known in advance. Deadlines for booking transport of DG are set relatively early, ranging from a few hours but more often 24 hours prior to departure, to allow time for stowage planning.⁷² Even then, customers cannot know what DG other customers plan to transport on the same vessel, while shipping lines cannot know what additional bookings to expect.

All six approaches compared, applying brute force option exerts the most negative impact on safety as well as directly violates regulations. As for the other five approaches, all of which observe regulations, denying transport is largely chosen on legal grounds as it for commercial reasons is less attractive to turn away customers, particularly considering that most customers transport more than simply DG. Beyond that, when regulations prohibit the

71 VA Torbianelli, ‘When the road controls the sea: A case study of Ro-Ro transport in the Mediterranean’ (2000) 27 *Maritime Policy & Management* 375.

72 DFDS (n 33); TT-Line, *Terms and Conditions of Carriage of Goods* (n 33); Stena Line (n 33).

transport of DG in its current form, transport operators can turn to the four other approaches, all geared towards completing transport with as little disturbance and additional cost as possible. From a short-term perspective, that decision is largely an operational one. However, across a longer time frame, such trends may prompt structural changes to supply chains in order to avoid disruptive links.

5 Dangerous Goods Transport Is Part of a Complex Transport System

Regulations about transporting DG on RoRo and RoPax vessels can impact supply chain operations by forcing transport customers to postpone or reroute consignments. In general, the six approaches described in the previous section, except for applying brute force, help to raise safety as the rerouting is caused by shipping's inability to meet the required safety standard for that specific transport. Nevertheless, shipping is generally regarded as a safer traffic mode than road.⁷³ As a consequence, however, the modal shift towards road due to some rerouting options can be negative. Reducing rerouting towards road by improving shipping's ability to meet the needs of transport customers thus stands to increase the safety of transport overall.

From a societal perspective, the aim should be to minimise the risk of significant accidents involving DG. There are many definitions of risk, as elaborated on by Mullai⁷⁴ and Ellis and others⁷⁵ most centre around three factors: What can happen? How likely is it to happen? If it does happen, then what are the consequences? From a logistics perspective, the likelihood is the factor that can be most influenced. What can happen and the consequences are mainly tackled by the regulations by setting requirements on packaging, stowage and separation. However, the likelihood is influenced by the actors' behaviour, most notably how well they comply with the regulations, as long as they are adequately designed, but also by how the supply chain is designed.

Although the regulations discussed in this chapter have been established to improve safety in shipping, overly strict, complicated regulations also raise the risk that consignors, whether knowingly or not, choose to apply brute force. In

73 Paixão Casaca and Marlow (n 66).

74 A Mullai, 'A Risk Analysis Framework for Maritime Transport of Packaged Dangerous Goods—A Validating Demonstration (Volumes I and II)', Lund Institute of Technology 2007).

75 Joanne Ellis, Björn Forsman and Kay Dausendschön, *Formal Safety Assessment—Dangerous goods transport with open-top containerships*, (2009).

response, more accommodating rules, including the Baltic Agreement's allowing RoRo and RoPax shipping under certain conditions to follow ADR regulations instead of the more demanding IMDG Code, contribute to reducing such "hidden" DG. In turn, simplified rules can boost safety by increasing shipping's attractiveness and making DG more visible to shipping lines, assuming that the simplifications are appropriately designed. As the ADR and IMDG Code, though rather similar, contain different requirements, the Baltic Agreement reduces or sometimes eliminates the need for consignments to follow different regulations in each link of the transport chain. In the Baltic Agreement, the simplifications take their starting point in the lower wave heights in the area, which allow more lenient requirements than in transoceanic shipping performed under potentially far more adverse conditions. They also partly target administrative procedures, including about labelling load units. In intermodal supply chains, where efficient shipment between traffic modes is critical, the reduced administrative burden consequently has a positive effect on RoRo and RoPax competitiveness.

In Northern Europe, as this chapter has shown, RoRo and RoPax shipping lines often form only a minor part of the transport chain, one not only embedded in a road transport service but also subject to competition from land-based transport options. A good example is the 4-km Helsingborg–Helsingør route, which takes only 20 minutes on RoPax vessels that depart frequently throughout the day. Such circumstances separate those modes from other parts of the shipping sector—for example tanker, dry bulk and intercontinental container shipping—that form a far larger, central part of the supply chain and both require and can support tougher regulations. In a more extreme example, services via smaller domestic road ferries in Sweden,⁷⁶ always operating close to shore, are allowed to follow ADR regulations instead of the IMDG Code or the Baltic Agreement, albeit with a few added requirements regarding vessel operation and the master mariner's qualifications. From the standpoint of logistics, those simplifications are positive because they ease operations. Even so, all RoRo and RoPax shipping lines in the region did not choose to follow the Baltic Agreement, which is most popular on routes in low wave heights areas that enjoy the greatest simplifications.⁷⁷

76 Regulated by the Swedish Transport Agency (TSFS 2019:39), *road ferries* are small, open-air car ferries that, often only operating across rivers and lakes and in archipelagos, as substitutes for bridges in the road network.

77 Simon Österberg, 'Practical Information Regarding ADR-transport' (BSc Thesis, Novia University of Applied Science 2019).

In any case, compliance with regulations requires knowledge and understanding among all parties in the transport chain. For one, consignors need to know that consignments should be transported by sea and what regulations should be followed to ensure safe transport. At the same time, personnel who prepare consignments for transport are not necessarily aware that sea transport will be involved, which may be decided later in the transport chain or not even communicated to the consignor.⁷⁸ That lack of coordination poses a special challenge for intermodal chains involving only a small share of sea transport, particularly when consignments are diverted or postponed or when alternative links are used, which can require following somewhat different regulations.

Any logistics system can also be viewed from a short-term operational perspective, a midterm tactical perspective and long-term strategic perspective. Typically, designing a supply chain's overall structure is a long-term decision considering factors such as where factories and warehouses are located, which suppliers to use and which customers to serve. In turn, those high-level, strategic decisions determine overall transport flows and are often maintained for years. In the midterm, the transport system is a consequence of that framework and determines how transport is conducted, for instance which transport operators and traffic modes to use. Although transport systems can be periodically reviewed, because the workload involved in redesigning systems—for instance, finding new transport operators and negotiating contracts—they tend to be rather stable for a few years. From a short-term perspective, operational decisions address how to perform day-to-day transport, including about what to do when a ferry is fully booked, during a labour market conflict in a port or during congestion on a road section. Those low-level decisions are often made by drivers or transport planners.

Even though regulations target operations, they are also considered by corporate decision makers from a tactical and strategic level but then from a more general perspective, for example if extra transport costs are incurred. Whether or not corporate decision makers are familiar with regulations about transporting DG in any detail, their strategic decisions typically have far-reaching,

78 Therese Bäckman, Thomas Erhag, Jonas Flodén, Lars-Göran Malmberg, Pär Meiling, Urban Nuldén, Kalevi Pessi, Ann-Sophie Sallander, Johan Woxenius (2021) *Säkrare transporter av farligt gods genom transparent informationshantering och samverkan. Slutrapport från ett forskningsprojekt.* (Safer transport of dangerous goods by information management and collaboration. Final report from a research project). Swedish Civil Contingencies Agency (MSB), MSB1851, Karlstad. <<https://rib.msb.se/Filer/pdf/29792.pdf>> accessed 13 March 2022.

long-term impacts for large flows of goods. It is noteworthy that a large share of the decisions impacting transport safety has already been made long before each specific instance of transport and often with limited consideration for the impact of regulations. It is therefore important that risk associated with transport of DG is given sufficient consideration also at the strategic and tactical level.⁷⁹

A long-term perspective should also be taken in designing ships for transport, because RoRo and RoPax vessels typically operate for 30 to 40 years. They can be lengthened by adding sections, and if transferred to new routes, then RoPax vessels in particular are often rebalanced regarding space for cabins, restaurants, shops and entertainment,⁸⁰ even if possibilities for major reconstruction are limited. Thus, ship designers need to estimate the long-term demand for transport on routes and balance that demand against current and expected regulations to determine the best designs. A design that, for example, limits the possibility to store DG on deck will impact the transport system for decades. Indeed, RoPax ferries cater to both freight and passenger transport at the same time, which are different target markets with starkly different requirements.

In the Baltic Sea, RoPax shipping previously targeted passenger transport fuelled by tax-free shopping that was permitted as the ships crossed international borders. The dominant ship design was the cruise ferry, built to offer passengers on-board leisure opportunities with restaurants, bars, spas, cinemas and tax-free shopping. Some passengers did not even disembark upon reaching the destination but simply returned on the same ship. However, when most countries in the region joined the European Union in the late 1990s and early 2000s, the possibility of tax-free shopping disappeared, which changed the focus towards freight transport that began generating the bulk of the income. That shift can be seen in ship designs, namely from the closed cruise ferry to the more open-air RoPax design with less space for passengers and more for freight, including more on-deck storage for DG. A noteworthy exception is the Stockholm–Helsinki ferry route that exploits an exception to EU tax-free regulations by briefly stopping at the island of Åland to permit tax-free sales. The shipping lines on that route also differ by continuing to use cruise ferries.

From the perspective of logistics, stricter regulations do not necessarily boost safety, because they also raise the risk of misdeclared or undeclared DG as well as steer the transport chain away from shipping and towards potentially

79 Jonas Flodén and Johan Woxenius, 'A stakeholder analysis of actors and networks for land transport of dangerous goods' (2021) *Research in Transportation Business & Management* 12.

80 Woxenius, 'Flexibility vs. specialisation in ro-ro shipping in the South Baltic Sea' (n 13).

more dangerous traffic modes. Research on risk has long recognised that overly rigid regulations prompt actors to disrespect regulations, to take shortcuts and to ignore rules.⁸¹ Rasmussen⁸² has also highlighted that dynamic by discussing how the boundaries of economic failure and unacceptable workload encourage systems to adopt unsafe behaviour, as shown in Figure 9.5.

There is an economic pressure to avoid costly safety measures, at the same time as employees are trying to avoid having an unacceptable workload due to the safety measures which pushes the boundary of acceptable behaviour into unsafe domains. That effect highlights the dynamic by which human behaviour constantly adapts to current situations such that formal rules become replaced by personal experience, know-how and local company culture. Rasmussen⁸³ has also identified the dispersed process by which regulations are set as challenges from the perspective of risk. Rules and instructions are often designed separately for each task, whereas the tasks are in fact performed in parallel or subject to several set of rules.

In the transport of DG, those situations can be observed in the partly different IMDG, ADR and RID regulations that should be applied in the same transport chain as well as in their intersections with related considerations, including regulations about workplace safety and ship design. That interaction risks situations in which rules are not followed to the letter but instead gives room to more rational, practical processes with good intentions but nevertheless increasing risk. Regulators attempt to combat such developments by setting performance-based regulations that remain applicable even during rapid technological change and do not hamper innovation. Those endeavours imply regulating what standards or goals should be met, not how they should be met. One example is the regulation of sulphur emission control areas (SECA) for shipping that stipulates using bunker fuel with no more than 0.1% sulphur but nevertheless tolerates the installation of cleaning devices with an equivalent result in the plume instead of simply using low-sulphur fuel.

However, regulations about DG continue to largely follow a prescriptive, highly detailed approach. That approach's strengths include a reduced need for expert technical knowledge among the vast number of actors and individuals, because regulations can largely be translated into checklists to follow. Similarly, compliance can be measured by verifying formal adherence, not necessarily goal achievement. As observed at police and coast guard inspections,

81 Ellis (n 9).

82 Jens Rasmussen, 'Risk management in a dynamic society: a modelling problem' (1997) 27 *Safety Science* 183.

83 *ibid.*

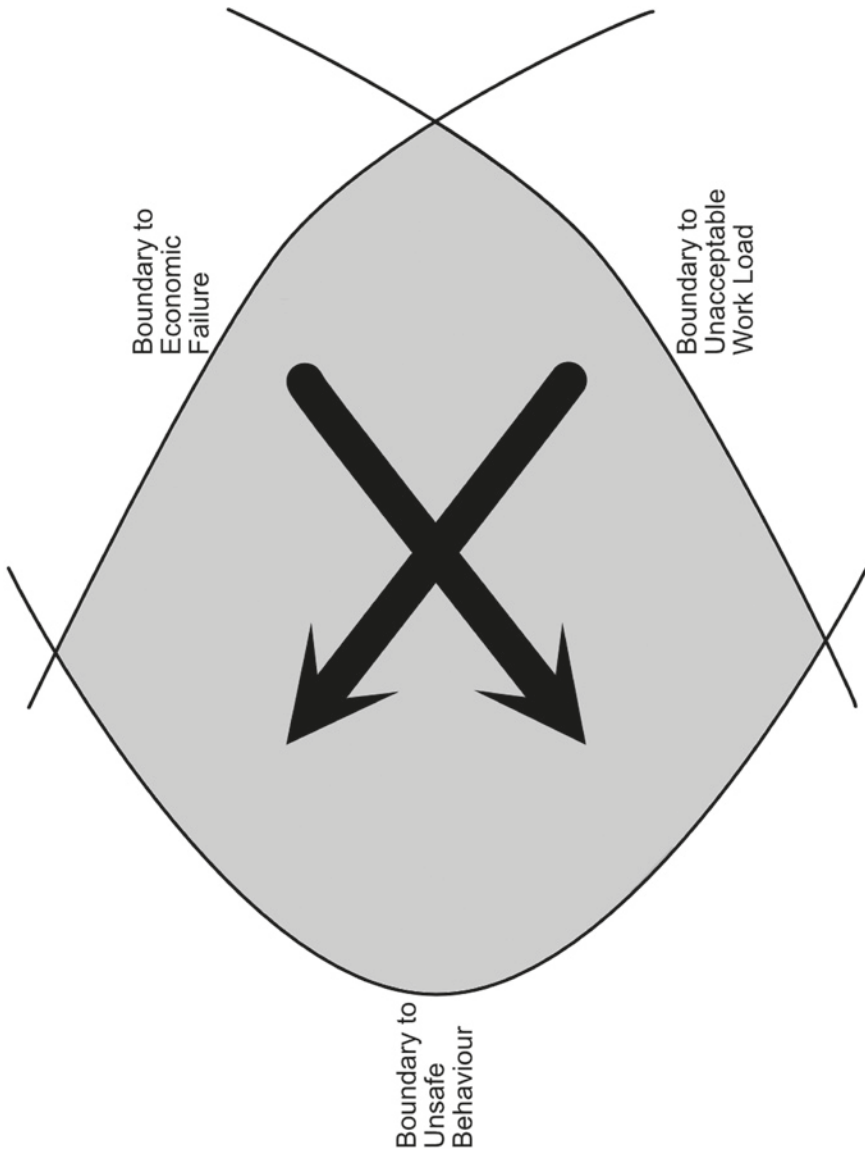


FIGURE 9.5 Behaviour drifting towards becoming unsafe.

ADAPTED FROM RASMUSSEN, 1997

for instance, the focus is ensuring that measurable characteristics (e.g. expiration dates on fire extinguishers, required safety equipment, documentation and classification of packaging) are correct.

Obviously, developing that complex legal framework has taken countless experts extremely long time and remains a highly complicated task. The

process of changing the regulations is also tedious, as is the case for all international regulations, because numerous actors need to agree for each change. Providing particular inertia to changing legislation in shipping is the longevity of ships and the reluctance to new rules that would force economically or technically premature scrapping. In relation to DG, the slow progress of regulations has become evident during the recent drastic increase in the transport of lithium batteries and subsequent increase in cargo fires were regulations were not adapted to new flows of DG. Societies and their values, norms and regulations are also subject to cultural lag,⁸⁴ which implies that that society tend to lag behind the technical development and change only after technology does. When new technology is introduced, it takes society some time to adapt to this new reality. Such lag is a prominent drawback of prescriptive regulations, however, a transport chain handling DG involves an array of individuals, many of whom are likely to have limited experience with DG and handle DG only on occasion. Prescriptive regulations allow those individuals to perform the safe handling of DG. The time lag between regulations and technical development can also be filled by industry standards and conditions of carriage, as for example seen by the steep fees introduced by container shipping lines for misdeclared cargo. Industry associations such as the Cargo Incident Notification System (CINS), an industry safety organisation formed by five of the largest container shipping lines in the world, has also issued guidelines to help operators prevent further incidents.⁸⁵ Other parts of the shipping industry, such as the bulk and tanker segments, have elaborated industry standards as manifested by the prevalent vetting system⁸⁶ for oil tankers.

Risk management often builds upon a defence-in-depth strategy in which several safety measures have already been breached before an accident occurs, as depicted in the so-called “Swiss cheese model” in Figure 9.6. Similar to holes in cheese, breaches in safety need to align before an accident occurs. In transporting DG, behaviour such as applying brute force erodes layers in the defence, trusting the other layers to stay intact and assuming that no other actors are also eroding layers with their behaviour. However, transporting DG

84 William F. Ogburn, *Social change with respect to culture and original nature* (B.W. Huebsch, Inc. 1922).

85 Cargo Incident Notification System, *Safety Considerations for Ship Operators Related to Risk-Based Stowage of Dangerous Goods on Containerships—Part One, Version 1.00* (2019).

86 Sabine Knapp and Philip Hans Franses, ‘Comprehensive Review of the Maritime Safety Regimes: Present Status and Recommendations for Improvements’ (2010) 30 *Transport Reviews* 241.

involves many individuals, some of whom tend to maximise their own outcomes and following the drifting behaviour towards failure (Figure 9.5).

6 Conclusions

The greatest threat to safely transporting DG is the individual's expectation that another layer of safety always exists ready to absorb the risk, because that expectation condones ignoring regulations. Prescriptive regulations enforce that assumption because their complexity makes taking shortcuts attractive and because the ways in which detailed compliance ensures safety is not directly apparent to the individual. It is quite easy to assume, for example, that it does not matter whether a fire extinguisher's expiration date has passed because it will most likely function anyway. However, each similar act erodes a layer of safety. For example, as stated by the marketing manager at the Port of Karlshamn,⁸⁷ if a port is not notified that goods are dangerous, then the goods is likely to slip through the net and do not receive special consideration at port or on board.

When accidents occur, because they are normally caused by multiple errors, it is a mistake to only put the blame on the final stage in the chain of events. For example, if a container stowed in the wrong position is causing a major fire, then a long list of previous events allowed the container to be stowed incorrectly. Rasmussen⁸⁸ has explained that in a six-level framework consisting of government, legislators, corporations, company management, staff and technical base. The overall intention set by governments of having safe DG transport are formalised by regulators, applied by corporations and contextualised in the particular company to form processes that management imposes on personnel who perform them in the physical context. All levels are linked together to form the events leading up to the accident. Rasmussen⁸⁹ uses shipping as an example wherein rapid technological change hampers policymakers' and legislators' role to safeguard the public interest as classification societies and shipowners move forward, albeit too quickly for ship designers and shipyards to communicate properly and keep safety in focus. As a consequence, the gaps may result in failures to instruct on-board staff about the conditions and limits of operating vessels safely.

87 Carlsson (n 58).

88 Rasmussen (n 82).

89 *ibid.*

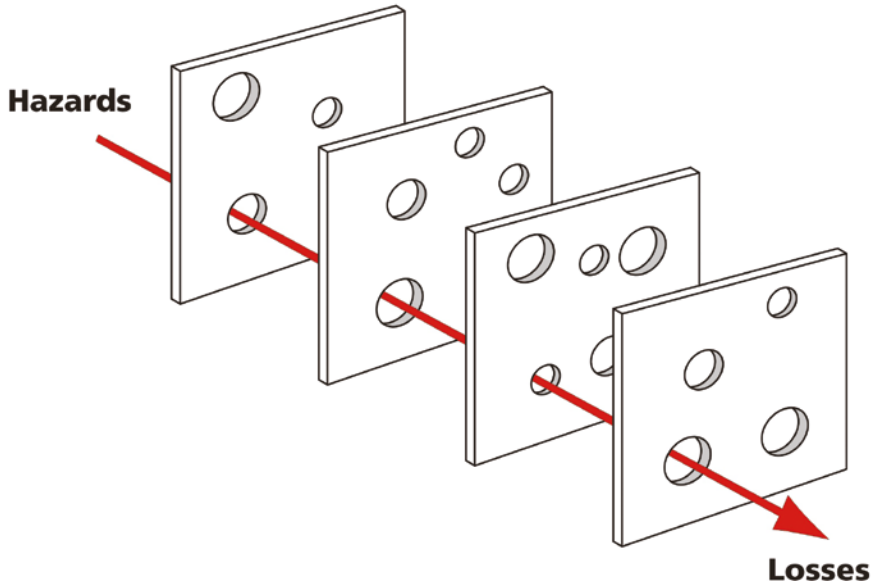


FIGURE 9.6 The Swiss cheese model of accident prevention
WIKIMEDIA COMMONS, 2014

At all levels, actors active in transport of DG are exposed to conflicting interests, from working conditions to maintaining a profitable business to safeguarding the public interest. As made evident by our discussion on the six approaches to handling DG, the actual transport performed depends upon a complex range of factors of which safety is only one. Important aspects of risk management are a consensus on what objectives need to be fulfilled and feedback about compliance to be able to launch appropriate actions when required. Such feedback and consensus are also important between the levels, because legislators need to understand the behaviour and reasoning among corporate actors and staff to become able to design and implement appropriate, effective legislation.

All told, this chapter marks an attempt to expand understandings in the legal community about how regulations concerning DG are interpreted and implemented in practice, largely in the hope that members of the community can help to increase the safety of transporting DG. On the whole, those regulations have proven successful in contributing to the safe transport of DG, although the logistics industry would further benefit from a reduction in their complexity and administrative burden.

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Scrubber Technology: Bad News for the Marine Environment

Ida-Maja Hassellöv

1 Introduction

In the late 1990s Corbett and Fischbeck concluded that international shipping is an important source of emissions of sulphur (and nitrogen) oxides, at local to global scale.¹ These findings supported the sense of urgency regarding the adoption by the International Maritime Organization (IMO) of a new Annex VI to MARPOL on Prevention of Air Pollution from Ships.² When entering into force in 2005, Annex VI was the first step towards implementation of gradually stricter limits on the maximum allowed sulphur content in marine fuels to reduce emissions of acidifying sulphur oxides to the atmosphere. In addition, the Baltic Sea became the first designated Sulphur Emission Control Area (SECA), to facilitate more progressive restrictions on maximum allowed sulphur content in marine fuels for ships operating in this sensitive sea area, starting at 1.5 percent sulphur content compared to the initial global cap of 4.5 percent. At that time, ships exclusively used heavy fuel oil (HFO), which is a residual product from the oil refinery process. During distillation, the sulphur content is enriched in the residual fractions and varies depending on the origin of crude oil from different geographic regions. The shipping industry plays a vital role as a market for the oil industry's residual products.

During the early discussions within the IMO on the necessity to limit the emissions of sulphur oxides from ships, the anticipated solution was that ships would switch to distilled fuels such as Marine Gas Oil (MGO) and there were concerns that the global fuel availability would be insufficient. However, at the 70th meeting of IMO's Marine Environment Protection Committee (MEPC) it was concluded, based on a report assessing fuel availability that there were no major barriers to implementing the planned global sulphur cap of 0.5 percent

1 James J Corbett and Paul Fischbeck, 'Emissions from ships' (1997) 278 *Science* 823.

2 IMO, *Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the protocol of 1978 relating thereto (MARPOL PROT 1997)*. Article 2. *Addition of Annex VI, entitled Regulations for the prevention of Air Pollution from Ships, to the Convention*. (1997).

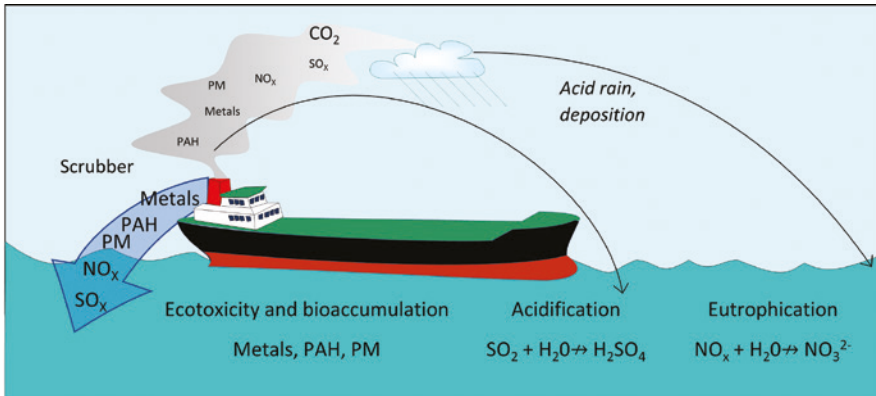


FIGURE 10.1 Redistribution of pollutants in ship exhausts through the use of scrubber technology. While the emissions to air and subsequent indirect deposition on the sea surface is reduced, the direct discharge to the sea is increased. The three major types of effects in the marine environment are ecotoxicity and bioaccumulation, acidification, and eutrophication.

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sulphur in marine fuels from January 1st, 2020.³ Yet, as MGO is more expensive than HFO, the cap may imply up to doubled fuel costs for some ship types. At the same time, there is a strong incentive to maintain the shipping industry's role as market for the oil industry's residual products. In the light of this situation, there has been a growing interest from shipowners to install an Exhaust Gas Cleaning System, also known as a scrubber, to comply with the stricter sulphur emission regulations instead of switching fuels (Figure 10.1).

Shipowners that have installed scrubbers, and the Exhaust Gas Cleaning Systems Association (EGCSA), choose to focus on the great capability of scrubbers to reduce atmospheric emissions of sulphur oxides. They also stress that the resulting end product will be sulphate, which is a natural component of seawater and although the scrubber discharge water is very acidic, seawater has a natural strong buffering capacity through its alkalinity.

So far, so good. However, the problem is that scrubbers, beside sulphur oxides, wash out many other types of pollutants and imply an increased load on an already stressed marine environment.⁴ This ought to be in conflict with

3 MEPC, *MEPC 70/INF.6. Assessment of fuel oil availability – final report. Submitted by Secretariat.* (2016).

4 Ida-Maja Hassellöv and others, *ICES Viewpoint background document: Impact from exhaust gas cleaning systems (scrubbers) on the marine environment (Ad hoc)* (2020); Benjamin S Halpern and others, 'Recent pace of change in human impact on the world's ocean' (2019) 9 *Scientific Reports* 11609.

the United Nations Convention on the Law of the Sea (UNCLOS),⁵ PART XII on protection and preservation of the marine environment, in particular Article 195 on the duty not to transfer damage or hazards or transform one type of pollution into another. According to this article, “[i]n taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another”. Analogously, considering the UN Sustainable Development Goal 14 – Life below water and the motivation of the UN designation of 2021–2030 as the Decade of Ocean Science for Sustainable Development, aiming at improving the environmental status and ensure sustainable use of our seas and oceans, wide-scale use of scrubbers is a step in the wrong direction. The following section will describe in some more detail how different kinds of scrubbers function, and how they cause harmful discharges to the marine environment. (For a further discussion on risks connected to sustainable shipping, see the chapter by Rebelos in this volume).

2 Exhaust Gas Cleaning Systems (Scrubbers)

The general principle of a scrubber is that the exhausts are led through a fine spray of water, which provides efficient uptake capacity of sulphur oxides in the water (Figure 10.2).

According to DNV-GL Alternative Fuel Insight, the number of scrubbers currently in operation or in order is 4681,⁶ which can be compared to 312 in 2016, and 10 in 2011. Apparently many shipowners waited as long as possible before taking the decision to install a scrubber and according to SEB Macro Research: IMO2020 Report, the reasons not to install a scrubber are many: “*For shipowners a scrubber means capital expenditure, less free space on a ship, more maintenance, greater crew competence, higher fuel consumption and uncertain sludge disposal costs.*”⁷ In the end it is the price difference between residual HFO and low-sulphur fuels that determines whether a scrubber installation is beneficial for the shipowner, and prior to the COVID-19 pandemic, the

5 United Nations Convention on the Law of the Sea (Montego Bay, adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 397 (UNCLOS).

6 DNVGL, ‘Alternative Fuel Insight’. Scrubber Statistics. (2021) <<https://afi.dnvgl.com/Statistics>> accessed 10 March 2021.

7 Bjarne Schieldrop, *IMO 2020 Report New 2020 sulphur regulations for global shipping*. Macro & FICC Research, SEB (2018).

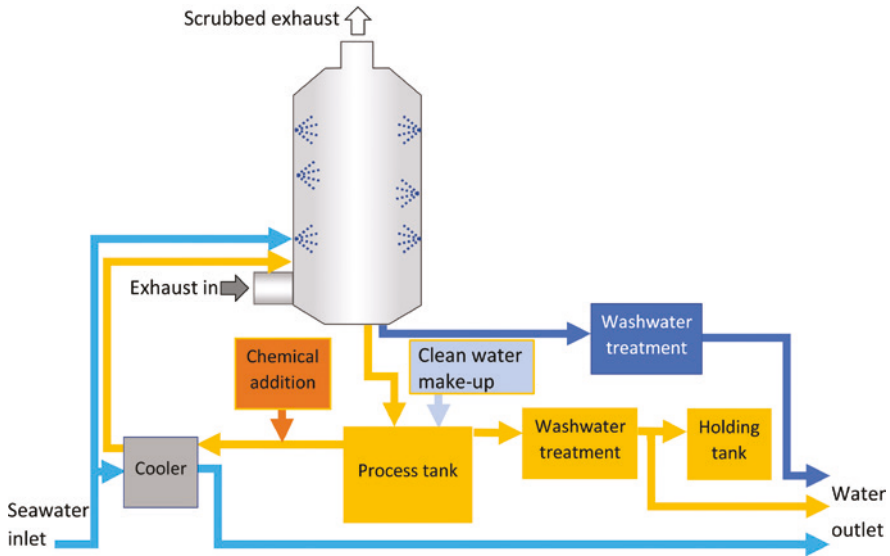


FIGURE 10.2 Simplified overview of a scrubber system in hybrid setup that can be run in open loop mode (light and dark blue lines) and closed loop mode (yellow lines). MODIFIED FROM EGCSA, 2012, WWW.EGCSA.COM/RESOURCES/TECHNICAL_GALLERY/

expected return of investment of a scrubber was 18 months.⁸ Yet, the external costs for the added environmental pressure on the marine environment is not considered in this trade-off. Nor is the working environment for the crew, who to a larger extent will be exposed to hazardous substances when operating a ship with a scrubber. Today more than 81 percent of the installed scrubbers are of open loop type, 1.5 percent are of closed loop and close to 17 percent are of hybrid type that can be operated either in closed loop or open loop mode.⁹

2.1 Open Loop Scrubbers

The simplest, and most common type of scrubber is the open loop, where large volumes of seawater (typically 500 cubic meters per hour for a medium sized ship of 12MW) are pumped onboard and then continuously discharged back to the sea after passing the scrubber. The open loop scrubber discharge water is very acidic (typically pH3, compared to natural pH8) and contains high concentrations of other pollutants, such as heavy metals and organic compounds

⁸ Personal communication, JB Fisher, Goldman Sachs Commodities Research, e-mail to author March 7, 2019.

⁹ DNVGL, 'Alternative Fuel Insight'.

like polycyclic aromatic hydrocarbons (PAHs).¹⁰ There are also reports on eutrophying effects from laboratory studies on phytoplankton,¹¹ indicating significant wash out of nitrogen species.

2.2 *Closed Loop Scrubbers*

Despite their name, closed loop scrubbers are rarely entirely closed systems; most often there is a bleed off, i.e. a small volume of washwater being discharged to the marine environment to allow for addition of base (typically sodium hydroxide) that is essential to maintain the sulfur oxide removal capacity in the scrubber process. World-wide there is only a handful of closed loop scrubbers where the ships leave all the produced sludge and scrubber water ashore for destruction instead of discharging the bleed off to the marine environment. Although the bleed off volumes are smaller (typically a few cubic meters per hour) compared to the discharge volumes from open loop scrubbers, the concentrations of pollutants, especially metals, are often much higher in the bleed off. This is due to recirculation of water in the closed loop system, which means the pollutants are enriched over time. The recirculation enables possibility to separate parts of the pollutants, especially PAHs that are often to large extent associated with particulate matter. To maintain the removal capacity of sulphur oxides, strong base (often sodium hydroxide) is added continuously to the water in the closed loop scrubber process. Thereby the local acidification of the marine environment is not as pronounced as following discharge of open loop scrubber water, but the load of other pollutants may still be significant.¹²

2.3 *Pollutant Load from Scrubbers*

To assess the pollutant load from scrubbers on the marine environment, the emission factors of the substances in scrubber discharge water can be calculated from the concentration of pollutants in the scrubber water, the produced discharge volumes during ship operations at different speed and engine load.¹³ This in turn can be combined with vessel activity data (AIS, Automatic Identification System) to produce a georeferenced dataset on the load of

10 Hassellöv and others (n 4).

11 Erik Ytreberg and others, 'Effects of scrubber washwater discharge on microplankton in the Baltic Sea' (2019) 145 *Marine Pollution Bulletin* 316.

12 Hassellöv and others (n 4).

13 J-P Jalkanen and others, 'Modeling of discharges from Baltic Sea shipping' (2021) *Ocean Science Discussions* 1,54.

pollutants from scrubbers entering the marine environment.¹⁴ Although these methods are well established, it is important to understand that the sampling and chemical analyses of scrubber discharge water is not trivial. Within the EU Horizon 2020-project EMERGE,¹⁵ Ytreberg and others have reviewed all publicly available chemical data on scrubber discharge water.¹⁶ Their conclusion, also supported by e.g. Teuchies and others,¹⁷ and Comer and others,¹⁸ is that the concentrations of pollutants in scrubber water are often very high, but also highly variable. The concentrations of metals, e.g. copper, zinc, chromium, and nickel, do not seem to originate from the fuel, but rather from lubricants, cathodic marine growth protection systems and leakage from the piping. Metal leaching from the piping can be expected to be accelerated due to the lowered pH of the scrubber water, implying that the use of scrubbers adds a new source of metal pollution from ships to the marine environment.

To put the load of pollutants from scrubbers in perspective, Hassellöv and others compared the emissions and discharge of metals and PAHs in the Baltic Sea from the ships operating with scrubbers, with other types of onboard-generated liquid waste streams containing these pollutants, i.e. bilge water from the engine room, black water (sewage) and grey water from sinks, laundry and galleys.¹⁹ In 2018 there were 99 ships operating with scrubbers in the Baltic Sea out of a total number of more than 8000 ships during the entire year. The load of metals and PAHs from the 99 scrubbers exceeded by factors in the range 10–100, the total load of these pollutants from the other liquid waste streams from the total fleet combined(!). The IMO has established guidelines regarding PAH content in scrubber discharge water, but these limits are so generous that in practice they can hardly be regarded as a restriction. Linders and others made a scoping calculation regarding the maximum allowed emissions

14 U Raudsepp and others, 'Shipborne nutrient dynamics and impact on the eutrophication in the Baltic Sea' (2019) 671 *Science of the Total Environment* 189.

15 EMERGE, *Evaluation, control and Mitigation of the Environmental impacts of shipping Emissions* (EU Horizon 2020 research and innovation programme under grant agreement No 874990. 2020).

16 Erik Ytreberg, Anna Lunde Hermansson and Ida-Maja Hassellöv, *Deliverable 2.1 – Database and analysis on waste stream pollutant concentrations, and emission factors. EMERGE: Evaluation, control and Mitigation of the Environmental impacts of shipping Emissions, funded by European Union's Horizon 2020 research and innovation programme under grant agreement No 874990* (2020).

17 Johannes Teuchies and others, 'The impact of scrubber discharge on the water quality in estuaries and ports' (2020) 32 *Environmental Sciences Europe* 103.

18 Bryan Comer, Elise Georgeff and Liudmila Osipova, *Air emissions and water pollution discharges from ships with scrubbers*, ICCT Consulting Report, (2020).

19 Hassellöv and others (n 4).

of PAHs and concluded that if all ships emitted up to the allowed maximum concentration, the emissions of PAHs from shipping would by far exceed the emissions of PAHs from all other sources globally.²⁰ Restrictions of metal concentrations are not yet included in the guidelines. (On the regulation of ship source pollution on a regional scale, see further the chapter by Langlet in this volume).

3 Concerns for the Marine Environment and Policy Implications

Exhausts from ships without a scrubber will give rise to indirect input of pollutants to the marine environment through deposition on the sea surface (Figure 10.1). In comparison with the indirect deposition that is spread over a larger area depending on the current meteorological conditions, the use of a scrubber implies a more focused transfer of pollutants to the marine environment. Therefore it is important to use adequate spatiotemporal scales when modeling the effects in the marine environment. If annual averages are used to calculate the concentration of pollutants originating from scrubber water, the result can be misleading. Due to the natural seasonal stratification, especially in coastal areas during late summer months, discharges from intense ship traffic could induce temporarily higher pollutant concentrations locally. If living organisms are exposed to this temporary event of higher concentrations, it could potentially induce ecotoxicological effects that would not be expected if only assuming an average concentration based on the annual pollutant input to the annually mixed water volume.²¹

Besides the more efficient transfer of pollutants from a scrubber compared to indirect deposition, it is also important to understand that compared to use of a compliant distilled fuel, like MGO, Liquefied Natural Gas (LNG) or biofuels, the use of scrubbers implies an increased total load of pollutants to the marine environment. This is mainly due to the concentration of pollutants in the residual fuels, but also the new sources of e.g. metals leaching from piping due to the corrosive scrubber water that would otherwise not have reached the environment.

20 Jan Linders and others, *Exhaust Gas Cleaning Systems – A roadmap to risk assessment. Report of the GESAMP Task Team on exhaust gas cleaning systems. Submitted to PPR 7 as document PPR 7/INF.23* (2019).

21 Ida-Maja Hassellöv and others, 'Shipping contributes to ocean acidification' (2013) 40 *Geophysical Research Letters* 2731,2736.

3.1 *Ecotoxicological Effects of Scrubber Discharge Water*

Analogously with the challenges in chemical characterization of scrubber discharge water, the ecotoxicological testing of the water is also not straight forward.²² The difficulty of toxicity testing, and risk assessment of chemical mixtures is recognized at national and EU-level,²³ and scrubber discharge water is an excellent example of a chemical cocktail of acidifying and eutrophying substances, metals, and organic contaminants. There are still few scientific studies published in peer reviewed journals on the ecotoxicological effects of scrubber discharge water. However, the most well described effects are on marine copepods, small planktonic crustaceans that form an important base of the marine ecosystem. Exposure of copepods to 80–100 percent vol of scrubber discharge water induced mortality within minutes of exposure. Diverse chronic sub-lethal effects, such as reduced survival and feeding rates, delayed development, and molting, occurred at 1 percent vol of scrubber discharge water within days or weeks of exposure.²⁴ Interestingly, Koski and others did not find any correlation between individual substances in the scrubber discharge water and the severity of the response, implying that there were synergetic responses triggered by the mixture.²⁵

Studies on phytoplankton communities by Ytreberg and others showed a primary response in terms of increased growth following 13 days exposure to 10 percent vol scrubber discharge water that overshadowed any measurable response to the toxic substances.²⁶ Potential long-term effects of the toxic substances in the scrubber water cannot be ruled out but is challenging to assess as there will be enclosure effects of the experimental set up itself if running experiments for a period longer than roughly two weeks.

3.2 *Bans of Scrubber Water Discharge*

In accordance with Article 211 (3) UNCLOS, port States have full sovereignty over their ports.²⁷ Ports are thereby free to define and adopt more stringent

22 Hassellöv and others (n 4).

23 Christina Rudén, *Future chemical risk management. Accounting for combination effects and assessing chemicals in groups*, SOU 2019:45. (2019).

24 Marja Koski, Colin Stedmon and Stefan Trapp, 'Ecological effects of scrubber water discharge on coastal plankton: Potential synergistic effects of contaminants reduce survival and feeding of the copepod *Acartia tonsa*' (2017) 129 *Marine Environmental Research* 374.

25 *ibid.*

26 Ytreberg and others (n 11).

27 UNCLOS art 211 (3).

regulations, or even ban scrubber water discharge.²⁸ Beside the increasing number of ports taking action, e.g. Antwerp and Trelleborg, also regions, e.g. California and States, e.g. Germany and China, choose to ban discharge of open loop scrubber water.²⁹ In 2016 the European Commission (EC) replied to the members of the European Sustainable Shipping Forum's (ESSF) request on the views of the EC on the application provisions of the Sulphur Directive (SD)³⁰ and the Water Framework Directive (WFD),³¹ i.e. the EC's view on the use of scrubbers in European waters. In the reply it was stated that "*the use of scrubbers in EU waters, including the discharge of wash water, must not hamper any EU coastal State from complying with the binding obligations set in the WFD*".³² However, it was also noted that the rather local (river-basin specific) implementation of the WFD leaves it to national authorities to determine whether WFD obligations can be met also during discharge of scrubber water into the water bodies. Based on this reasoning, Germany has banned discharge of scrubber water not to jeopardize its obligations according to the WFD.

In the Baltic Sea there is consensus among the HELCOM countries that, with respect to eutrophication and hazardous substances, good environmental status is not met.³³ The brackish and shallow inland Baltic Sea has a large catchment area in relation to its volume and a long residence time due to limited water exchange through the narrow Danish straits. This, together with its northerly geographic location, implies that contaminants are slowly degraded and enriched in the bottom waters.³⁴ The Baltic Sea is also

28 Sonja Endres and others, 'A New Perspective at the Ship-Air-Sea-Interface: The Environmental Impacts of Exhaust Gas Scrubber Discharge' (2018) 5 *Frontiers in Marine Science*. 139.

29 DNVGL (n 10); Comer, Georgeff and Osipova (n 19).

30 EC, *Directive 2005/33/EC, the European Sulphur Content of Marine Fuels Directive (SCMFD)* (2005).

31 EC, *The EU Water Framework Directive – integrated river basin management for Europe. Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. Off. J. Eur. Union L 327*. (2000).

32 EC, *Note to the attention of the members of the European Sustainable Shipping Forum. Commission's views on the discharge of scrubber wash water and the updated table summarising the position of Member States on the acceptability of discharges of scrubber wash water – Agenda item 6.C ESSF of 26/1/2016. Directorate-General Environment. Directorate C – Quality of Life, Water & Air. Unit C.1 – Water and Unit C.3 – Air. Ref. Ares(2016)254855 – 18/01/2016*. (2016).

33 HELCOM, *State of the Baltic Sea – Second HELCOM holistic assessment 2011–2016. Baltic Sea Environment Proceedings 155*. (2018).

34 Claes Bernes and Martin Naylor, *Change beneath the surface: an in-depth look at Sweden's marine environment* (Swedish Environmental Protection Agency 2005).

prone to eutrophication. Based on this knowledge, there is also consensus in HELCOM that the pressure on the marine environment of the Baltic Sea needs to be reduced. In this marine environment perspective, the use of scrubbers in the Baltic Sea counteracts the strive for reduced environmental pressure, especially from shipping, in the region. Considering the development where an increasing number of States, regions and ports ban discharge of scrubber water, there is also a risk that an increased share of the global fleet of ships equipped with scrubbers are put in use in the regions where there is still no specific regulation of such discharges, which seems to be the case in the global modeling of scrubber washwater discharges by Osipova and others.³⁵

The increasing evidence of negative impacts on the marine environment,³⁶ and the modelling of global scrubber washwater discharge, where Sweden is on the top-ten list of States receiving the largest volumes of scrubber water in its economic zone,³⁷ could possibly encourage more Baltic ports to prohibit discharge of open-loop scrubber water. However, given the hydrographic characteristics of the Baltic Sea, described above, a continued wide scale use of scrubbers outside port areas will still pose a severe risk to this sensitive brackish environment. Use of closed-loop scrubbers with bleed-off implies less emissions of PAHs and metals to the sea compared to open-loop, yet the contaminant loads are significantly higher compared to the corresponding loads from ships using distilled fuels.³⁸ The only situation where scrubbers could be claimed to not deteriorate the marine environment is when closed-loop systems are truly closed, i.e. leaving all scrubber generated waste in port reception facilities for destruction. As mentioned above, there is a handful of such arrangements world-wide, and it is only feasible for ships in regular service on shorted distances, e.g. RoPax ferries between Trelleborg and Gedser-Rostock. To develop the port reception facilities of the ports in the Baltic Sea to enable ships to leave all their closed-loop waste in port would be an enormous project that would require extensive economic and environmental cost-benefit analysis to ensure that such investments can be justified.

35 Liudmila Osipova, Elise Georgeff and Bryan Comer, *Global scrubber washwater discharges under IMO's 2020 fuel sulfur limit* ICCT Consulting Report, (2021).

36 Hassellöv and others (n 4).

37 Osipova, Georgeff and Comer, (n 35).

38 Anna Lunde Hermansson and others, 'Comparing emissions of polyaromatic hydrocarbons and metals from marine fuels and scrubbers' (2021) Transportation Research Part D: Transport and Environment 97 102912: <https://doi.org/10.1016/j.trd.2021.102912>.

4 Conflicting Perspectives

Current regulations to reduce emissions of acidifying sulphur oxides from shipping according to Annex VI of MARPOL, in the EU implemented through the Sulphur Directive, allow for alternative compliant technologies, instead of specifying individual types of compliant fuels. This results in optimization of compliance towards only one pollution aspect of marine fuels (sulphur oxides) but creates a loophole for increased pollution of the marine environment, e.g. through the use of scrubbers. If applying a more holistic perspective including potential effects on the marine environment, it can be argued that there is a conflict with UNCLOS Article 195 on the duty not to transfer damage or hazards or transform one type of pollution into another, and the EU member States' obligations under the EU WFD, and possibly the EU Marine Strategy Framework Directive,³⁹ especially Descriptors 8 (Contaminants), 5 (Eutrophication) and 7 (Alternations to hydrography).

These conflicting perspectives are further reinforced if also considering the transport policy objective of increasing the share of goods transported by ships, e.g. according to the EU White Paper on Transport.⁴⁰ An increased number of ships, or increased distances travelled by the existing fleet, will per se cause an increased pressure on the marine environment, which is especially pronounced for ships using scrubbers.⁴¹ Considering that the state of the marine environment is not satisfactory, there is an urgent need to include valuation of the impact on the marine environment following shipping activities. In Sweden this has recently been suggested by the Swedish Cross-Party Committee on Environmental Objectives to be developed and used in the continuous future assessments of the environmental impact of shipping carried out by the government agency Transport Analysis.⁴²

39 Directive 2008/56/EC establishing a framework for community action in the field of marine environmental policy, *Off. J. Eur. Union* L164. (2008).

40 EC, *White Paper. Roadmap to a single European transport area – Towards a competitive and resource-efficient transport system*. Brussels, 28.3.2011 COM(2011) 144 final (2011).

41 Ida-Maja Hassellöv, Kjell Larsson and Eva-Lotta Sundblad, *Effekter på havsmiljön av att flytta över transporter från vägtrafik till sjöfart*. Havsmiljöinstitutets rapport nr 2019:5 (2019).

42 Miljömålsberedningen, *Havet och människan*, SOU 2020:83. (Elanders Sverige AB 2020).

5 Conclusion and Future Outlook

According to the international regulatory framework, scrubbers are allowed as a way to comply with the sulfur limitations in marine fuels. The narrow primary focus on reduction of emissions of sulphur oxides to the atmosphere implies overlooked potentially devastating consequences for the marine environment as the relative load of pollutants from scrubbers is enormous compared to other onboard generated liquid waste streams. As shown above, in 2018 99 ships in the Baltic Sea equipped with scrubbers caused a pollutant load one to two orders of magnitude higher than the load from all other liquid waste streams from all the more than 8000 ships operating in the area. To conclude, scrubber discharge water is a complex mixture of a variety of pollutants known to be harmful to the marine environment and wide-scale use of scrubbers includes all elements to qualify for inclusion in the next update of 'Late lessons from early warnings';⁴³ well-known environmental impact of the different components, high probability of synergetic effects, and a sudden shift to wide-scale use result in an imminent risk that the pressure of shipping on the marine environment is exacerbated. Not taking action implies a long-term risk with severe consequences in the marine ecosystem. For example, the pelagic second trophic, i.e. zooplankton, are very sensitive to scrubber water already at low concentrations.⁴⁴ Increased wide-scale use of scrubbers in the Baltic Sea could thereby cause perturbations in the ecosystem dynamics, similar to cascade effects following overfishing.⁴⁵

In a wider context, there is an immediate need for improved valuation of the environmental degradation following shipping activities, especially with respect to the marine environment. These figures then need to be included in assessments and comparisons of the environmental footprint from different modes of transport, especially in the light of transport strategies promoting a modal shift towards increased maritime shipping.

Finally, there is an urgent lack of information of the environmental impact of the new generation of residual fuel blends, Very Low Sulphur Fuel Oil and Ultra Low Sulphur Fuel Oil, often referred to as hybrid fuels.⁴⁶ These fuels

43 European Environment Agency, *Late lessons from early warnings: the precautionary principle 1896–2000. Environmental issue report No 22* (2001).

44 Koski, Stedmon and Trapp, (n 24).

45 Christian Möllmann and others, 'Effects of climate and overfishing on zooplankton dynamics and ecosystem structure: regime shifts, trophic cascade, and feedback loops in a simple ecosystem' (2008) 65 *ICES Journal of Marine Science* 302.

46 Lunde Hermansson and others, (n 38).

appeared on the market a few years prior to the 2020 regulations entered into force. Similar to the optimization of scrubber technology with respect to sulphur content, the hybrid fuels are blended to meet the sulphur limits, but the content of metals and organic pollutants that are likely present in the residual components is not regulated at all from an environment protection perspective. To reduce the risk of deterioration of the marine environment due to shipping, holistic approaches are needed to assess impacts of emissions to air and water, and human health at the same time. Fuel standards are today based on operational aspects, i.e. only physical or chemical properties that may impact the operation of the engine are specified. One concrete step towards improved understanding and motivating implementation of risk reduction strategies would be to also include risk assessment with respect to human health and the environment in future standards of marine fuels.

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Autonomous Wrecks

Jhonnie Mikael Kern

1 Introduction

One of the emerging and evolving fields in transport law is autonomous transport. Autonomous vessels, used in such transportation, are likely to play an important role in future shipping and already today development is underway to introduce autonomous transport solutions for both cargo and passengers.¹ This development raises a number of questions as to how this form of transportation relates to the established regulatory frameworks in maritime law.² One such issue concerns what happens should such vessels be subject to maritime casualties.³ In order to, hopefully, shine some light on this topic, this text discusses autonomous transport and, more specifically, the vessels involved from a wreck law perspective with a focus on how such vessels can be handled under the main international convention on the area, the Nairobi International Convention on the Removal of Wrecks (WRC). The general outline of the convention is discussed along with its potential application on autonomous vessels. Furthermore, some problems that can arise when the legal framework is applied in relation to autonomous vessels are discussed along with some observations that can be made when assessing such an application. Finally, some conclusions are drawn in relation to the findings in the text. First of all, however, some general remarks are made on the nature of autonomous vessels.

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- 1 Eric Van Hooydonk, 'The law of unmanned merchant shipping – an exploration' (2014) 20(3) *The Journal of International Maritime Law* 403, 403; Robert Veal and Michael Tsimplis, 'The integration of unmanned ships into the lex maritima' (2017) 2017 *Lloyd's Maritime & Commercial Law Quarterly* 303, 304; Måns Jacobsson, 'What Challenges Lie Ahead for Maritime Law?' in *Maritime Law in Motion* (Springer 2020) <https://doi.org/10.1007/978-3-030-31749-2_13> 275; Natalie Klein and others, 'Maritime Autonomous Vehicles: New Frontiers in the Law of the Sea' (2020) 69(3) *International & Comparative Law Quarterly* 719, 719. The use of such vessels can also be beneficial from an environmental perspective, since it may be possible for the vessels to operate in more sustainable ways when compared to traditional vessels; Jacobsson (n 1) 275.
 - 2 For a further discussion about the future regulatory framework for autonomous vessels, see the chapter by Huiru Liu in this volume.
 - 3 The title 'Autonomous Wrecks' should be read in this light, ie wrecks from autonomous vessels. The wrecks in themselves are thus not presumed autonomous. Instead, they will, most likely, have lost their autonomy as a consequence of being turned into wrecks.

2 Autonomous Vessels

Different variations of autonomous vessels can be envisaged depending on their respective functions and attributes. They can also be referred to by different names. One denotation is unmanned maritime vehicles.⁴ These can be defined as ‘vehicles that are capable of controlled, self-propelled movement in water without any personnel on board’ operating on or below the water surface.⁵ Another possible denotation is unmanned maritime systems of different kinds.⁶ Furthermore, such property can also be referred to as autonomous ships or vessels.⁷ The key function and characteristic in all these denotations is that the vehicle, system, ship or vessel is in some sense unmanned.⁸ Another way of expressing this is that the property, as a result of the above, is in some sense autonomous when compared to traditional vessels. Unless there is a need for further distinction, all of these vehicles and vessels will be referred to as autonomous vessels or autonomous wrecks in this text for the sake of clarity.

Further distinctions can be made in order to differentiate between different autonomous vessels. One central aspect is the degree of autonomy that can vary between vessels of this kind.⁹ Some vessels may be remotely controlled and operated by someone at another location, eg from on board another vessel or from the shore, while others can be more or less entirely autonomous in the sense that they are programmed to navigate on their own and eg utilize artificial intelligence in such a way as to avoid collisions while fulfilling the

4 See eg Robert Veal, Michael Tsimplis, and Andrew Serdy, ‘The legal status and operation of unmanned maritime vehicles’ (2019) 50(1) *Ocean Development & International Law* 23 (<https://doi.org/10.1080/00908320.2018.1502500>), 23ff; Klein and others (n 1) 719; Yen-Chiang Chang, Chao Zhang, and Nannan Wang, ‘The international legal status of the unmanned maritime vehicles’ (2020) 113 *Marine Policy* 103830, 1ff.

5 Veal and Tsimplis (n 1) 305; Veal, Tsimplis, and Serdy (n 4) 23; cf Klein and others (n 1) 720.

6 Cf Michael N Schmitt and David S Goddard, ‘International law and the military use of unmanned maritime systems’ (2016) 98(902) *International Review of the Red Cross* 567, 567ff.

7 See eg Van Hooydonk (n 1) 403ff; Luci Carey, ‘All Hands off Deck? The Legal Barriers to Autonomous Ships’ (2017) 23(2) *Journal of International Maritime Law* 202, 202ff; Veal and Tsimplis (n 1) 303; Henrik Ringbom, ‘Regulating Autonomous Ships – Concepts, Challenges and Precedents’ (2019) 50(2–3) *Ocean Development & International Law* 141, 141ff; Jacobsson (n 1) 274ff.

8 There may, however, be vessels that are partially unmanned, ie where there is some manning either permanently or temporarily. These could also be classified as autonomous, to various degrees, depending on the chosen definition; cf Ringbom (n 7) 144f. One example could be an autonomous vessel used for transporting passengers. It would seem plausible that such a vessel has some sort of manning, eg in order to provide services to the passengers or maintaining order on board the vessel; cf Van Hooydonk (n 1) 416.

9 See further discussion in Ringbom (n 7) 142ff.

purpose that they serve.¹⁰ Even though the latter category can be described as more autonomous, when compared to the former, there may also be remote monitoring in relation to such vessels, eg triggered by certain events that the autonomous vessel identifies that require additional supervision.¹¹ Further distinctions can, of course, be made and the different categories can also be combined in different ways.¹²

Another common denominator between these different vessels is that they are often relatively small in size.¹³ Even today's larger autonomous vessels seldom have a length of more than 10 meters.¹⁴ It is, however, possible that future autonomous vessels will be substantially larger and such vessels are also developed, eg ferry-like vessels designed for carrying passengers.¹⁵ The discussion above clearly shows that autonomous vessels are multifaceted and that the concept includes many variations and vessels with different characteristics. They may share some common denominators in the sense that they, to various degrees, are unmanned and relatively small in size, but there can also be major differences between vessels of this kind. The fact that they are relatively small in size may, furthermore, be subject to change in the future with advanced technology and innovation. Such an evolution will make the need to establish clarity as to how such vessels relate to maritime law even more acute. Having thus established an overview of this kind of property, the text now turns to discuss the issue of what happens should such vessels turn into wrecks and whether the main convention on this area, the WRC, can be applicable in relation to autonomous vessels.

3 Wreck Removal Convention

Before a potential application on autonomous vessels is discussed, a brief outline is given of the WRC in order to illustrate its main structure. The convention was adopted in Nairobi, Kenya, in 2007. Its creation had, however, been ongoing since long before that and the need for a convention on this area was

10 Van Hooydonk (n 1) 404; Veal and Tsimplis (n 1) 305f; Veal, Tsimplis, and Serdy (n 4) 24; Jacobsson (n 1) 274. See also Van Hooydonk (n 1) 403f; Jacobsson (n 1) 277 for further distinctions of this kind.

11 Veal and Tsimplis (n 1) 306; Jacobsson (n 1) 274.

12 Cf Veal and Tsimplis (n 1) 306.

13 Veal, Tsimplis, and Serdy (n 4) 24; Jacobsson (n 1) 275.

14 Veal and Tsimplis (n 1) 306.

15 Veal and Tsimplis (n 1) 304, 306f; Jacobsson (n 1) 275; Klein and others (n 1) 719.

recognized already during the 1970s.¹⁶ The convention entered into force in 2015 and has in the years since then gathered large international support. At the time of writing there are 57 State parties to the convention and among them the United Kingdom, Liberia, Panama and the Marshall Islands.¹⁷ These are important State parties since they are also large flag States.¹⁸ Furthermore, the States within the EU have endorsed ratification processes of the convention and it seems plausible that all of the major shipping nations in Europe will become parties to the convention.¹⁹ The ratification process has thus been a success.

3.1 *General Structure of the Convention*

There is no room to discuss the convention at length in this context.²⁰ Instead, its general structure and major components are discussed in order to illustrate how the system works as well as the underlying reasons behind why the convention was developed in the first place.

The purpose of the convention is to provide mechanisms to deal with wrecks that pose hazards to the navigation of other vessels or to the marine environment and, furthermore, to provide a system for their removal while also establishing liability for costs associated with these actions. An underlying purpose is also to harmonize the regulations on this area of law between State parties.²¹ The aim of these purposes is to fill two identified legal gaps

16 Charles D Michel, 'Introductory Note to the Nairobi International Convention on the Removal of Wrecks' (2007) 46(4) *International Legal Materials* 694, 694; Richard Shaw, 'The Nairobi International Removal Convention' in *CMI Yearbook 2009* (Comité Maritime International 2009) <https://comitemaritime.org/wp-content/uploads/2018/06/YBK_2009.pdf> accessed 18 September 2020, 402. See also *ibid* 405ff; Nicholas Gaskell and Craig Forrest, 'The Wreck Removal Convention 2007' [2016] *Lloyd's Maritime & Commercial Law Quarterly* 49, 52ff; Nicholas Gaskell and Craig Forrest, *The Law of Wreck* (CRC Press 2019) 361ff for a detailed description of the development of the convention.

17 IMO, *Status of multilateral Conventions and instruments in respect of which the International Maritime Organization or the Secretary-General performs depository or other functions* (Comprehensive information on the status of IMO treaties including signatories, contracting States, declarations, reservations, statements and amendments, 2022) <<https://wwwcdn.imo.org/localresources/en/About/Conventions/StatusOfConventions/Status%20of%20IMO%20Treaties.pdf>> accessed 11 March 2022, 537f.

18 Gaskell and Forrest, *The Law of Wreck* (n 16) 388f.

19 Council Document No15859/08 ADD 1 of 19/17/2008, Statement by the Member States on Maritime Safety; Yvonne Baatz (ed), *Maritime Law* (Taylor and Francis 2014) 267; Ds 2015:16, *Avlägsnande av vrak, (Removal of Wrecks)*, 71.

20 For a more thorough discussion, see Shaw (n 16); Gaskell and Forrest, 'The Wreck Removal Convention 2007' (n 16); Gaskell and Forrest, *The Law of Wreck* (n 16).

21 In this way, the preamble of the convention states that the State parties are '[convinced] of the need to adopt uniform international rules and procedures to ensure the prompt

in relation to wrecks and wreck removal. The first is an uncertainty as to a State's power to intervene outside of its territorial waters. The second concerns the problem with enforcing claims for wreck removal costs as well as enabling insurance cover for arising liabilities as a consequence of wrecks and wreck removal.²² Claiming wreck removal costs can be problematic even if there are regulations in place that make the shipowner liable for such costs. Shipping companies can be constructed in such a way that a ship is owned by a limited company, whose only main asset is the ship in question. Upon a wreckage, the ship is likely to have no positive net value and the company then becomes insolvent. Even if existing provisions make the shipowner liable in such a case, there will be no success in actually enforcing this responsibility since the company has no remaining assets and cannot pay.²³ In order to deal with this risk, the convention establishes compulsory insurance for arising liabilities under the convention along with a possibility to claim the insurer directly.

There is, however, a limit in place that exempts smaller ships from this obligation. Thus, the registered owner of a ship of 300 gross tonnage and above is required to maintain insurance or other financial security to cover arising liabilities under the convention.²⁴ This compulsory insurance shall cover an amount up to the relevant limitation amount, but not exceeding the amount that follows from the Convention on Limitation of Liability for Maritime Claims (LLMC).²⁵ The fact that the convention relates the insurance amount to the LLMC in this way, means that it places a cap on possible claims against the insurer.²⁶ As stated earlier, claims can be made directly against the insurer of the compulsory insurance.²⁷ This is an important part of the framework, since it secures the possibility to claim compensation from an additional party should no such claim be possible to enforce against the shipowner on the grounds discussed above.

and effective removal of wrecks and payment of compensation for the costs therein involved' and that they recognize 'the benefits to be gained through uniformity in legal regimes governing responsibility and liability for removal of hazardous wrecks'.

22 Gaskell and Forrest, 'The Wreck Removal Convention 2007' (n 16) 51f; Gaskell and Forrest, *The Law of Wreck* (n 16) 361.

23 Shaw (n 16) 402.

24 art 12(1) WRC.

25 art 12(1) WRC.

26 This can be significant, since it actually may reduce the possible amount that a State can claim in the wake of a wreckage. This can be the result since it means that claims against insurers will not be unlimited even if eg the State in question has opted-out of the possibility to limit liability for wreck removal costs under the LLMC; see Gaskell and Forrest, 'The Wreck Removal Convention 2007' (n 16) 104f.

27 art 12(10) WRC.

The convention does not target all wrecks.²⁸ Instead, it focuses on certain hazards that wrecks can pose. The identified hazards in the convention are wrecks that pose hazards to navigation or the marine environment.²⁹ More specifically, wrecks that pose a danger or impediment to navigation or that may reasonably be expected to result in major harmful consequences to the marine environment, or damage to the coastline or related interests of one or more States are covered.³⁰ If a wreck constitutes a hazard in this way, the convention states that the registered owner has a duty to remove it.³¹ The registered owner is also liable for costs associated with locating, marking and removing the wreck as discussed in the following.³² A removal, in line with the convention, is not directly concerned with actually removing the wreck, even if this may be the end result. Instead, the removal is linked to the hazard that the wreck poses. This follows from the definition of removal in the convention, where it is stated that a removal is to be seen as ‘any form of prevention, mitigation or elimination of the hazard created by a wreck’.³³ This means that it may, as an example, be sufficient to only remove certain property from the wreck in order to remove a hazard to the marine environment.³⁴ Likewise, a navigational hazard may be removed by removing certain parts of the wreck in order to secure sufficient depth in a shipping lane. In some cases, however, it may also be necessary, and perhaps easier, to remove the whole wreck in question.³⁵

There is also a definition of wreck in the convention. It states that the concept of wreck means:

28 In fact, most wrecks fall outside of the convention if already existing wrecks, historical wrecks and so on are taken into account. The convention is instead focused on ships that suffer maritime casualties today and that turn into wrecks. There are also time limits in place that, in effect, preclude any application on existing wrecks. Even if the time limits could be met, it would not be possible to create liabilities in relation to shipowners for costs incurred before the convention entered into force in the State in question; Gaskell and Forrest, *The Law of Wreck* (n 16) 410. See also art 13 WRC but cf Sarah Dromgoole and Craig Forrest, ‘The Nairobi Wreck Removal Convention 2007 and hazardous historic shipwrecks’ [2011] *Lloyd’s Maritime & Commercial Law Quarterly* 92 for a potential, although uncertain, application in relation to older wrecks under special circumstances.

29 The preamble notes that the State parties are ‘[conscious] of the fact that wrecks, if not removed, may pose a hazard to navigation or the marine environment’.

30 art 1(5) WRC. See also art 1(6) WRC for an enumeration of identified related interests.

31 art 9(2) WRC.

32 art 10(1) WRC.

33 art 1(7) WRC.

34 Cf Dromgoole and Forrest (n 28) 102.

35 Gaskell and Forrest, *The Law of Wreck* (n 16) 406.

- (a) a sunken or stranded ship; or
- (b) any part of a sunken or stranded ship, including any object that is or has been on board such a ship; or
- (c) any object that is lost at sea from a ship and that is stranded, sunken or adrift at sea; or
- (d) a ship that is about, or may reasonably be expected, to sink or to strand, where effective measures to assist the ship or any property in danger are not already being taken.³⁶

The definition of wreck is thus broad and covers a range of ships and objects depending on the circumstances in the case. The inclusion of any object that has been on board a ship means that eg floating containers, that have been washed overboard, are included and regarded as wrecks under the convention.³⁷ The same is true for a ship that is still unharmed and afloat, provided that it may reasonably be expected to sink or strand if left adrift and no salvage or other effective measures are taken in relation to the ship. In this sense, the wide definition also allows for preventive actions in these situations. It, however, also means that the term wreck is given a wide meaning that may differ quite substantially from the understanding of the word in normal parlance.³⁸ The inclusion of effective measures in the definition, when it comes to ships that are about or may reasonably be expected to sink or strand, also entails that a ship that at one stage would fall within the definition of wreck, subsequently may fall outside of it if, as an example, a salvor approaches and renders effective salvage services in relation to the ship.³⁹

The concept of wreck is, furthermore, tied to the occurrence of a maritime casualty, in the sense that a wreck is seen as the end result of a ship or some other object on board or from a ship, that has turned into a wreck following such a casualty. It is only if these conditions are met that the liability regime and the other parts of the WRC become applicable. A maritime casualty is defined as ‘a collision of ships, stranding or other incident of navigation, or

³⁶ art 1(4) WRC.

³⁷ This is an important inclusion, since floating containers can constitute navigational hazards; Gaskell and Forrest, *The Law of Wreck* (n 16) 396. See also Gaskell and Forrest, ‘The Wreck Removal Convention 2007’ (n 16) 78 on how this relates to the duty to report a wreck under the convention.

³⁸ Cf *Avlägsnande av vrak, (Removal of Wrecks)* (n 19) 70; Prop 2016/17:178, *Skärpt ansvar för fartygsvrak, (Increased Responsibility for Wrecks)*, 26.

³⁹ In this sense, the WRC is designed not to conflict with salvage law and the International Convention on Salvage 1989; Shaw (n 16) 409; Gaskell and Forrest, *The Law of Wreck* (n 16) 396f. See also art 11(2) WRC.

other occurrence on board a ship or external to it, resulting in material damage or imminent threat of material damage to a ship or its cargo'. This is also a wide definition and it has been argued that it is hard to envisage situations involving wrecks that are unconnected with a maritime casualty when defined in this way.⁴⁰ One such potential case, however, is a ship that is dumped or sunk for operational reasons as well as ships that have been abandoned where no other event has taken place that can be linked to the definition of a maritime casualty.⁴¹

A wreck is, as discussed, seen in the convention as the end result of a ship that has suffered a maritime casualty. If such a wreck poses a hazard to navigation or the marine environment, the full liability regime and the other provisions in the WRC will be applicable on the wreck. The central concepts in the convention thus work like a chain. First, there needs to be a ship in light of the convention. This ship is then to be subject to a maritime casualty, after which the ship or some object from the ship or on board it is to fall under the definition of wreck in the convention. The different duties and obligations that follow from the convention then continue this chain of events. Thus, when a ship has suffered a maritime casualty with a wreck as an end result, the master and operator shall report to the State, in whose convention area the ship is located, that this has taken place.⁴² Various information shall be included in this report, with the purpose of enabling the affected State to make an assessment as to whether the wreck poses a hazard to navigation or the marine environment in light of the convention.⁴³ Upon receiving the report, the affected State shall then make this assessment.⁴⁴ Another step in this process is for the affected State to locate the wreck and to mark it should it constitute a hazard.⁴⁵

If the State determines that the wreck is hazardous in line with the convention, this assessment is to be communicated to relevant parties.⁴⁶ Importantly, this also triggers the responsibility of the registered owner to remove the wreck.⁴⁷ The registered owner has the possibility to remove it, eg by contracting a wreck removal operation with a relevant party, but there are also

40 Shaw (n 16) 409.

41 Cf Gaskell and Forrest, 'The Wreck Removal Convention 2007' (n 16) 69.

42 This State is referred to as the affected State in the convention, see art 1(10) WRC; art 1(1) WRC for a definition of the convention area which is also discussed further below.

43 See more in art 5(1) WRC.

44 For the criteria that should be taken into account, see art 6 WRC and Gaskell and Forrest, *The Law of Wreck* (n 16) 423f.

45 For further details, see art 7–8 WRC.

46 See art 9(1) WRC.

47 art 9(2) WRC.

mechanisms for the State to take action if this is not executed as prescribed in the convention or if immediate action is necessary.⁴⁸ The registered owner is liable for the costs involved in all these stages of the process, ie the costs of locating, marking and removing the wreck.⁴⁹ As already discussed, this liability is also, for ships of 300 gross tonnage and above, combined with compulsory insurance, up to the relevant limitation amount under the LLMC, as well as the possibility to claim the insurer directly for arising costs under the convention.⁵⁰

3.2 *Is the Convention Applicable on Autonomous Vessels?*

Having discussed the general outline of the convention, the text now turns to discuss its potential application on autonomous vessels. The applicability of the convention is linked to the defined concepts of ship and wreck as discussed above. In order for the system to operate in relation to autonomous vessels, the vessel in question thus needs to fall within the definitions used in the convention. Since the convention deals with ships that are subject to maritime casualties resulting in that the ship or some object on board or from the ship is to be considered a wreck, it becomes necessary to discuss whether autonomous vessels are to be regarded as ships or not in light of the convention.

The general question of whether autonomous vessels are to be regarded as ships, has previously been discussed in relation to the United Nations Convention on the Law of the Sea (UNCLOS) and other regulations such as the general regulatory framework within the International Maritime Organization (IMO).⁵¹ The question of whether autonomous vessels are to be regarded as ships is complicated by the fact that the term ship in itself is nebulous. There is no general definition of the concept and there have been various discussions in the past as to what this concept actually means.⁵² The concept can mean different things in different contexts and the chosen definitions vary in

48 See further art 9(4)–(8) WRC.

49 art 10(1) WRC.

50 art 12(1) & 12(10) WRC.

51 Van Hooydonk (n 1); Veal and Tsimplis (n 1); Veal, Tsimplis, and Serdy (n 4); Klein and others (n 1). There is also, at the time of writing, an ongoing regulatory scoping exercise organized by the IMO, that investigates how autonomous vessels can be addressed in IMO instruments including the WRC; see Ringbom (n 7) 141f; IMO, 'Autonomous shipping' (2020) <<https://www.imo.org/en/MediaCentre/HotTopics/Pages/Autonomous-shipping.aspx>> accessed 18 September 2020.

52 See eg Simon Rainey, 'What is a 'ship' under the 1952 Arrest Convention' [2013] Lloyd's Maritime & Commercial Law Quarterly 50.

international conventions.⁵³ Some common denominators from different regulations and legal systems, however, are that a ship is to have buoyancy, be able to steer and navigate in water and to transport cargo or people.⁵⁴

Whether to treat autonomous vessels as ships or not is not a binary question and the answer is likely to vary depending on the nature of the vessel at hand. As already discussed, there are many variations of autonomous vessels with various degrees of autonomy. Some commentators have suggested that autonomous vessels, or at least a number of them, are to be regarded as ships under UNCLOS.⁵⁵ Moreover, when it comes to autonomous vessels that would operate like traditional commercial vessels, in the sense that they would carry cargo or passengers, it is difficult to see why the fact that the vessel is unmanned or autonomous should in any way differentiate its obligations to follow the rules and standards that follow from established legal frameworks.⁵⁶ This would suggest that autonomous vessels should be regarded as ships at least when they are comparable to other traditional ships. There may, however, be cases where the functionality of the vessel in question is so different, that it would not be reasonable to classify it as a ship. As an example, if an autonomous vessel is closely linked to a mother ship, from which it is controlled and operated, it may be more reasonable to view it as a part of that ship instead of as a separate ship.⁵⁷

Another way of solving the question of whether autonomous vessels are to be regarded as ships, would be to link the answer to the assessment of the flag State. In that sense, an autonomous vessel is to be regarded as a ship if the flag State defines it as such provided that it follows the established rules on manning, safety and so on in the regulatory system.⁵⁸ The above discussion suggests that even if there are various opinions and views as to how autonomous

53 See further Van Hooydonk (n 1) 406ff, examining the use of the concept in relevant conventions.

54 See Veal and Tsimplis (n 1) 308 with further references. This is closely in line with the construction of ship in Swedish law, that also lacks a definition of the concept but where some prerequisites can be inferred indirectly from the legislation. In light of this, a ship in Swedish law has been described as 'a means of transport equipped to be steered and having a hull supported in the water by enclosed air', Hugo Tiberger, 'Wrecks and Wreckage in Swedish Waters' (2004) 46 *Scandinavian Studies in Law* 201, 3. See also Van Hooydonk (n 1) 408 for some other, more or less, similar definitions in Dutch, Spanish and Belgian law.

55 *ibid* 406.

56 Cf the argument in Jacobsson (n 1) 278.

57 Cf Van Hooydonk (n 1) 404; Gaskell and Forrest, *The Law of Wreck* (n 16) 450.

58 Veal and Tsimplis (n 1) 309; Chang, Zhang, and Wang (n 4) 2f.

vessels are to be classified, it is clear that there are arguments that point in favour of recognising at least some of these vessels as ships.

The fact that autonomous vessels in some cases can be classified as ships does not, however, necessarily mean that they also will fall under the WRC. Since there is no general definition of the concept, it is necessary to discuss how autonomous vessels fit within the system of the WRC. The main question thus becomes if these vessels fall under the definition of ship in the convention. A ship is defined as 'a seagoing vessel of any type whatsoever and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and floating platforms, except when such platforms are on location engaged in the exploration, exploitation or production of seabed mineral resources'.⁵⁹ This is an extensive definition that covers various different kinds of property.

Shaw has described the definition of ship in the WRC as 'exceptionally wide'.⁶⁰ In a similar way, Gaskell and Forrest, have referred to it as a 'broad definition' that is 'much wider than that in some other maritime conventions' and that this should be taken into account when the convention is interpreted.⁶¹ This suggests that an inclusive stance is to be taken when evaluating whether autonomous vessels fit within the definition. The fact that the definition, furthermore, refers to a 'vessel of any type whatsoever' can also be viewed as an extensive phrasing that invites new categories of vessels, like autonomous vessels, to fall within its scope. It is also notable that the definition includes submersibles, which is a common form of autonomous vessel. There is also no size requirement, meaning that also smaller vessels fall under the definition. In this way, the fact that autonomous vessels often are small in size is not a problem either. These observations combined suggest that autonomous vessels, or at least some of them, in line with the discussion above, will fall under the definition of ship in the WRC.⁶² Another notable inclusion in the definition, however, is that it refers to a 'seagoing vessel'. This choice of wording suggests a distinction in the definition between ships that are seagoing and those that are not. When it comes to autonomous vessels that are to be considered as ships, this would mean that only the ones that are seagoing would be encompassed in the convention. It is, however, not clear what the term seagoing means in

59 Art 1(2) WRC.

60 Shaw (n 16) 408.

61 Gaskell and Forrest, 'The Wreck Removal Convention 2007' (n 16) 70; Gaskell and Forrest, *The Law of Wreck* (n 16) 448.

62 Cf also *ibid* 450, that touches upon the subject and states that the mere fact that a ship is autonomous should not prevent it from falling under the convention.

this context.⁶³ Since it is used, it would suggest the above demarcation in relation to ships that are not seagoing. One construction of this is that the definition does not encompass ships that only navigate on rivers.⁶⁴ The same may be true in relation to other parts of a State's internal waters that are not to be classified as sea. It is, however, unclear what the term means and how far the sea stretches in this case. Given the possibility to extend to convention's scope of application also to a State's internal waters and territorial sea, this creates some incongruity since a State is likely to wish the framework to be applicable in areas where ships can pose a hazard, eg in a harbour.⁶⁵ It is thus uncertain what effect the inclusion of the word seagoing has on the applicability of the convention, but the construction of the concept may pose problems for the applicability of the WRC on certain autonomous vessels that are eg designed to operate in areas close to shore or in internal waters.⁶⁶

However, also more extensive constructions of the word seagoing may be possible in some cases. The term could be understood as a vessel being able to float on the sea or water. Such a view would extend the definition's scope and may be arguable especially in legal systems not directly connected with English law and the similar constructions and case law in that system.⁶⁷ The same may be true for States that have not traditionally made any division or distinction between seagoing ships or transportation and ships used for river-going or inland waterway transportation.⁶⁸ As an example, the narrower construction of seagoing, as described above, is not found in the Swedish implementation of the WRC. The term seagoing is not implemented in the legislation in connection with the term ship.⁶⁹ On the contrary, the preparatory works suggest

63 Gaskell and Forrest have called the inclusion of the term seagoing as unfortunate since 'it is inherently unclear what it means', Gaskell and Forrest, *The Law of Wreck* (n 16) 449.

64 See Gotthard Gauci, 'The International Convention on the Removal of Wrecks 2007 – a flawed instrument?' [2009] *Journal of Business Law* 203, 206; Gaskell and Forrest, 'The Wreck Removal Convention 2007' (n 16) 70, where this is argued.

65 Cf Gaskell and Forrest, *The Law of Wreck* (n 16) 449.

66 As an example, it has been suggested that early variations of autonomous vessels, because of their relatively small size, are likely to be used in inland waters; cf Jacobsson (n 1) 275.

67 Cf Gaskell and Forrest, *The Law of Wreck* (n 16) 449 for the position in English law.

68 Cf *Avlägsnande av vrak*, (*Removal of Wrecks*) (n 19) 56.

69 Instead, the implementation avoids giving a definition of a ship. The relevant provision only states that apart from ships, without any provided definition, the regulation is also applicable in relation to other craft used at sea along with floating platforms except when such platforms are on location engaged in the exploration, exploitation or production of seabed mineral resources; see Chapter 11 a § 1 Swedish Maritime Code. The phrasing in Swedish does not suggest that a requirement of being seagoing is to be inferred also on ships.

a broader construction also encompassing ships that are not able to navigate on the sea.⁷⁰ The implementation also extends the framework to apply in all of Sweden as well as its exclusive economic zone, meaning that it is applicable in eg rivers and inland lakes.⁷¹ This more extensive construction will also mean that the regulation potentially will be applicable on more autonomous vessels.

Apart from the instances already discussed, the convention may also become relevant in relation to autonomous vessels even if they are not to be regarded as ships under the convention. This is a consequence of the wide definition of wreck in the convention and is relevant should an autonomous vessel be on board another ship.⁷² If the ship is subject to a maritime casualty that results in the autonomous vessel being eg washed overboard, the vessel would in fact fit within the definition of wreck despite of the fact that the autonomous vessel in itself would not be classified as a ship under the convention. The autonomous vessel would in that case be treated as an object that has been on board a ship.⁷³ This situation is similar to a container that has been washed overboard. Consequently, in some cases, autonomous vessels that are not to be classified as ships may still be covered under the convention if they were on board another vessel that is to be considered a ship and that suffers a maritime casualty, as defined in the convention, causing the autonomous vessel to become a wreck.⁷⁴ In these cases, the liable party under the convention will, of course, be the registered owner of the ship in question and not the owner of

70 Cf Skärpt ansvar för fartygsvrak, (*Increased Responsibility for Wrecks*) (n 38) 25ff.

71 It is argued, in the preparatory works, that the convention primarily was developed for ocean-going transport, but that it poses no problem to apply the framework, including the compulsory insurance, also on ships operating in other areas, eg in inland lakes; *ibid* 28f. Arguably, there may, however, be problems with this wide scope of application that seems to go beyond the intended scope of the convention; cf art 10(3) WRC stating that no claims for the costs regulated in the convention can be made against a registered ship-owner otherwise than in accordance with the provisions of the convention and that this is relevant also to States that have extended the convention's scope of application when it comes to costs associated with locating, marking and removing wrecks in accordance with the convention. There may also be good reason to pay attention to the international nature of the convention when implementing, interpreting and applying its provisions, cf Gaskell and Forrest, *The Law of Wreck* (n 16) 449f. One of the purposes of the convention, stated in the preamble, is, after all, to harmonize this field of law between State parties. To avoid the concept seagoing in the convention altogether, as in the Swedish implementation, and to extend the convention in the described way, may sit uneasily with this position. This issue will, however, not be elaborated further in this context.

72 As discussed earlier, this is one of the possible uses of autonomous vessels; cf Veal and Tsimplis (n 1) 305.

73 art 1(4)(b)–(c) WRC.

74 Cf Gaskell and Forrest, *The Law of Wreck* (n 16) 450.

the autonomous vessel should they differ.⁷⁵ The discussion above shows that autonomous vessels may be subject to the WRC in various situations, but that there also may be instances where an autonomous vessel will not fall within the definitions used in the convention. Given that at least some autonomous vessels are likely to be subject to the WRC, the discussion in the next section turns to some problems that can arise as a consequence of this as well as some observations that can be made when assessing such an application.

4 Problems and Observations

Even for autonomous vessels that are to be regarded as ships under the convention, there may be some problems that can arise as a consequence of such an application as well as things to take into account given the special characteristics of autonomous vessels and the practical context in which they are likely to operate. These concern the convention's geographical scope of application, its provision on reporting wrecks and its way of providing financial security for arising liabilities by compulsory insurance as well as the convention's relation to State vessels.

4.1 *Geographical Scope of Application*

An interesting inclusion in the convention is its flexibility when it comes to its geographical scope of application.⁷⁶ The default position is that the convention is applicable in the exclusive economic zone of a State.⁷⁷ This will, of course, have a fundamental effect on which autonomous vessels and wrecks that may be subject to the convention in a given situation. As already discussed, autonomous vessels may be designed to primarily navigate close to shore or in inland waters.⁷⁸ In regards to a State that has implemented the convention with the default position, this will, consequently, result in that such autonomous vessels will not fall within the scope of the convention even if they would fall under the definitions of ship and wreck. It can also be noted, in

75 art 1(4); art 10(1) WRC.

76 This was the result of a compromise at a late stage in the development of the convention. There had been different suggestions on the convention's scope of application, where some States wanted a broad scope of application, while others were in favour of a more restricted scope. The compromise enables States to affect the geographical scope of application by allowing them to opt-in to an extended application. See Gaskell and Forrest, 'The Wreck Removal Convention 2007' (n 16) 108ff on this development.

77 art 1(1); art 3(1) WRC.

78 Jacobsson (n 1) 275.

this context, that most maritime casualties that result in hazardous shipwrecks are likely to occur close to shore or in the territorial sea.⁷⁹ The convention, however, also includes an opt-in possibility for State parties that wish to extend the geographical scope of application. Thus, a State party can choose to extend the convention 'to wrecks located within its territory, including the territorial sea'.⁸⁰ In the same way as above, but the other way around, extending the geographical scope of application in this way, will entail that potentially more autonomous vessels will fall under the convention. This will be the case for the autonomous vessels referred to above that are designed to navigate and carry out operations in close vicinity to the shore and in the territorial sea.

A consequence of the above is, furthermore, that the flexible geographical scope of application will result in that the convention's applicability on autonomous vessels will vary between State parties. In a given situation, it is thus necessary to assess whether an autonomous vessel falls under the convention depending on whether the State has chosen to extend its scope of application or not via the opt-in-clause. It may also, in this context, be relevant to point out that the construction of the convention also means that autonomous vessels that navigate solely on the high seas will not fall under the scope of the convention, since the convention is not applicable there.⁸¹

4.2 *Reporting an Autonomous Wreck*

Another relevant aspect of the convention to discuss in this context, concerns how a maritime casualty that has resulted in a wreck is to be reported. According to the convention, the master and operator has a duty to report to an affected State if their ship has suffered a maritime casualty that has resulted in a wreck.⁸² This could potentially cause problems in relation to autonomous vessels, since there will be no master on board the vessel if it is unmanned. An

79 Gauci (n 64) 211; Gaskell and Forrest, 'The Wreck Removal Convention 2007' (n 16) 107.

80 art 3(2) WRC.

81 Cf art 1(1); art 2(4); art 3(1) WRC. One potential exception to this, however, would be a State that has not declared or established an exclusive economic zone. In such a case, the convention area, as defined in art 1(1) of the convention, is still 'an area beyond and adjacent to the territorial sea of that State determined by that State in accordance with international law and extending not more than 200 nautical miles from the baselines from which the breadth of its territorial sea is measured'. In this way, the convention would in fact be applicable on the high seas and thus on potential autonomous vessels that operate there. See also Dromgoole and Forrest (n 28) 99; Gaskell and Forrest, *The Law of Wreck* (n 16) 409.

82 art 5 WRC.

autonomous vessel would thus seem hard to reconcile with this part of the convention.

As noted, however, the obligation to report also falls on the operator of the ship. The operator is defined as 'the owner of the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the owner of the ship and who, on assuming such responsibility, has agreed to take over all duties and responsibilities established under the International Safety Management Code, as amended'. This subject will still be present even if the autonomous vessel is unmanned, since it will, reasonably, have an owner or some other relevant party in line with the definition. It, furthermore, suffices that one of either the master or the operator makes the report.⁸³ In this way, the provision on reporting still seems to work on autonomous vessels, although to a lesser extent when compared to traditional vessels that have masters on board. Potentially, it could, moreover, also be possible to construe the term master in an extensive way as to encompass someone remotely controlling the ship in question. In that case there would be no problems with the article on reporting, since the obligation to report would extend also to this person when it comes to ships like these.⁸⁴

4.3 *Compulsory Insurance*

The WRC is applicable on wrecks in general without any size requirement. Thus, the registered owner of a wreck that falls under the scope of the convention has a duty to act in accordance with its provisions and is liable for arising costs regardless of the size of the ship. This will also be true in relation to wrecks from autonomous vessels to which the convention is applicable. One crucial aspect of the convention that is, however, not extended to all wrecks is, as discussed, the compulsory insurance. The compulsory insurance is only applicable in relation to a ship of 300 gross tonnage and above.⁸⁵ This, of course, also affects the possibility to claim an insurer directly for arising costs under the convention.⁸⁶ As noted before, a common denominator between autonomous vessels is their relatively small size. This means that they are not likely to be subject to compulsory insurance and the possibility of claiming the insurer directly in line with the WRC. This can be of major significance for the actual possibility of enforcing an arising liability under the convention when it

83 art 1(9); art 5(1) WRC.

84 Cf Van Hooydonk (n 1) 414.

85 art 12(1) WRC.

86 art 12(10) WRC.

comes to autonomous vessels. With advancing technology and development, it is, however, possible that autonomous vessels will increase in size in such a way that some of them also become subject to the insurance requirement.

The compulsory insurance is important since it is not uncommon that the registered owner of a vessel is unable to pay arising liabilities. As mentioned above, this can be an effect of the ship being owned by a limited company whose only main asset is the ship in question. Upon a wreckage, the company becomes insolvent and any arising liabilities, eg for wreck removal costs under the convention, will not be paid since the company has no remaining assets. In the case with autonomous vessels that are not subject to the compulsory insurance and owned in this way, this will mean that it can become difficult to enforce claims under the convention. This is important to keep in mind, since one of the main objectives of the convention is to provide a framework that offers financial securities for arising liabilities.⁸⁷ It is, of course, possible that the company structures may differ in relation to autonomous vessels, but there is no reason not to expect one-ship company structures emerging also for this kind of enterprise and especially if they are to fall under the legal frameworks that can result in liabilities. This potential problem with enforcing arising liability claims under the convention in relation to smaller autonomous vessels is thus another thing to keep in mind in this context.

Another possible issue with autonomous vessels, should they be large enough to be subject to the compulsory insurance, is that it would perhaps seem strange for the certificate, attesting compliance with the demand for compulsory insurance, to be carried on board the vessel if it is unmanned.⁸⁸ Even though this, of course, could be done, there would be no one on board to actually manage the certificate. A future development could be to introduce digital solutions and registers in order to avoid this problem.⁸⁹ Already today, it follows from the convention that a copy of the certificate is to be 'deposited with the authorities who keep the record of the ship's registry or, if the ship is not in a State Party, with the authorities issuing or certifying the certificate'.⁹⁰ This could be expanded in such a way as to enable a central registry where certificates from eg autonomous vessels are collected. This would, however, require additional regulation on this issue. In order for an autonomous vessel, that is subject to the compulsory insurance, to act in accordance with the

87 Cf Gaskell and Forrest, 'The Wreck Removal Convention 2007' (n 16) 50.

88 art 12(5) WRC.

89 Cf Van Hooydonk (n 1) 415.

90 art 12(5) WRC.

convention, it would thus seem necessary to have the certificate present on board the vessel despite the fact that it is unmanned.

4.4 *Autonomous State Vessels*

Another potential issue that can be raised in relation to autonomous vessels and the WRC, is that such vessels can be tightly linked to States and State interests in different ways. It may be that a State has developed autonomous vessels in order to carry out certain tasks or operations for the State. A close linkage to a State may lead to the autonomous vessel being regarded as a State vessel. The WRC excludes from its application any 'ship owned or operated by a State and used, for the time being, only on Government non-commercial service'.⁹¹ If an autonomous vessel, in this way, is owned or operated by the State in question and is used in this non-commercial way, it would thus mean that the vessel is not subject to the WRC even if the vessel as such would fall under its definitions of ship and wreck. This is thus another issue to keep in mind when it comes to autonomous vessels and the WRC.

Another use for autonomous vessels is within the defence sector and the military.⁹² In these cases, it may be relevant to view the autonomous vessel as a warship.⁹³ As an example, in the US two 'large unmanned surface vessels' have been approved for purchase by the US Congress in order to develop 'an external missile magazine that can autonomously find its way to the fleet, expend missiles and work its way back to reload'.⁹⁴ Autonomous vessels can also be used in this setting for surveillance or reconnaissance missions as well as to handle mines.⁹⁵ Autonomous vessels like these are likely to be viewed as either warships or vessels owned or operated by a State and used solely on a Government non-commercial service and are thus excluded from the convention.⁹⁶

There is, however, a possibility for State parties to extend the convention's scope of application also to its own State vessels.⁹⁷ This would mean that the convention is to be applied in relation to the State vessels of that State in line

91 art 4(2) WRC.

92 Van Hooydonk (n 1) 404; Jacobsson (n 1) 274f.

93 See further Klein and others (n 1) 723f on the relation between autonomous vessels and the definition of warships in UNCLOS, suggesting that the demands for such a vessel to be 'under the command of an officer' as well as 'manned by a crew' can be fulfilled in relation to autonomous vessels as well.

94 *ibid* 719.

95 See Van Hooydonk (n 1) 404; Veal, Tsimplis, and Serdy (n 4) 24. See also Schmitt and Goddard (n 6).

96 art 4(2) WRC.

97 art 4(2)-(3) WRC.

with the specific terms and conditions set by the State for this application. It is, however, important to note that this will have no effect in relation to State vessels from other States. It is, thus, not possible for a State to extend the scope of application to other State vessels and these will still fall outside the convention unless these States, in turn, have extended the convention's scope of application in this way as well.

Autonomous vessels may thus be excluded from the convention as a consequence of the fact that they are developed, owned and operated by States on a Government non-commercial service or as warships, but there may also be exceptions to this should a State have chosen to extend the convention to apply to its State vessels as well. In order to find out whether a certain autonomous vessel is excluded or not in a given situation, it would thus be necessary first to establish if the vessel is to be viewed as a State vessel, i.e. owned or operated by a State and used only on Governmental non-commercial service or should be regarded as a warship in line with the convention. If that is the case, the default position is that the vessel is excluded from the convention should that State, to which the vessel belongs, not have chosen to extend the applicability of the convention to its own State vessels.

5 Conclusions

The discussion above has shown that there are a lot of variations when it comes to autonomous vessels and that this variation will have an effect on which vessels that may be subject to the WRC. There are, however, a number of factors that point in favour of applying the convention on a number of such vessels. This is especially the case when an autonomous vessel, more or less, resembles a traditional ship, eg in the sense that it operates commercially transporting cargo and passengers. In these cases, it is hard to see why the mere fact that the vessel is autonomous should prevent it from falling under the definition of ship in the WRC. The definition is also wide and should, arguably, be interpreted in an inclusive way. It thus seems reasonable to assume that there are good prospects for autonomous vessels falling under the definition of ship in the convention.

One aspect that may, however, limit a potential application, is the inclusion of the term seagoing in the definition. This may impact and restrict the possible scope of application in relation to autonomous vessels that are not deemed as seagoing. As the discussion has illustrated, however, there is uncertainty as to what this term actually means and the Swedish implementation of the convention, as an example, does not restrict the definition in this way. Potentially

more extensive constructions can thus be envisaged that would allow for more autonomous vessels to fall within the definition in some cases and this would mean that implementations may differ as to which autonomous vessels that fall under them in this respect. There is, however, reason to be cautious when it comes to construing the definition too extensive, given the fact that the WRC is an international convention with an underlying purpose to provide uniformity and harmonize this area of law.

For those autonomous vessels that do fall within the concept of ship in the WRC, there are, furthermore, some problems that may arise and some aspects to observe when assessing the question of applicability. The convention's flexible geographical scope of application, will mean that the number of autonomous vessels that will fall under the convention will vary, depending on whether the State in question has extended the geographical scope of the convention via the opt-in clause or not. Since most accidents are likely to occur close to shore or in the territorial sea, this will have a big impact on the number of autonomous vessels that will actually fall under the scope of the convention in a State party.

There may, furthermore, be problems with the obligation to report wrecks under the convention when it comes to autonomous vessels. The obligation refers to the master or operator of a ship and an autonomous vessel that is unmanned will lack a master on board, which would seem to impact on the possibility to comply with this part of the convention. Since an autonomous vessel will, reasonably, have an operator, as defined in the convention, and the obligation falls on either the master or the operator, this is, however, arguably not that much of a problem. It could, potentially, also be possible to view a person that remotely controls the autonomous vessel as the master, enabling a full application of the provision on reporting in that case.

Another observation that can be made, in respect of autonomous vessels that fall under the convention, is that many of these vessels are likely to be under the size limit for the compulsory insurance that the convention calls for. This may have a large impact on the possibility of a State party to enforce liability claims against the owner of such vessels, since it results in that there may be no insurance cover and no possibility to claim the insurer directly for such costs. For autonomous vessels that will be owned in one-ship company structures, this may pose problems when it comes to claiming arising liabilities under the convention.

Furthermore, another potential issue regards the certificate that, according to the convention, is to be kept on board the ship evidencing compliance with the call for compulsory insurance. This order may seem strange in relation to an autonomous vessel that is unmanned and where there will be no person on board that can handle the certificate. One way of solving this could be to create

a central register that includes all such certificates, but this would require regulatory changes. In order to comply with the convention, it would thus seem that autonomous vessels, that are subject to compulsory insurance, need to have these certificates on board even though the vessels are unmanned.

An additional circumstance that may exclude autonomous vessels that would otherwise fall under the definition of ship in the convention, is that they could be regarded as State vessels. This will be the case for autonomous vessels that are owned or operated by a State and that are used only on Government non-commercial service. As discussed, there are several variations of autonomous vessels that may be of this kind. The same is true in relation to warships, which certain autonomous vessels could, arguably, also be classified as. These autonomous vessels would thus not be subject to the convention, even though they may fall under its definition of ship, unless the State in question has chosen to extend the convention's scope of application to its own State vessels.

As a final general observation, it is clear that there are a lot of variables that need to be taken into account and that may affect whether an autonomous vessel will fall under the WRC or not. This question will, consequently, need to be evaluated on a case-to-case basis, taking all of the above factors into account. This also, finally, serves as an illustrative example that the design and construction of the WRC can sometimes be difficult to reconcile with one of its main objectives, ie providing uniformity and harmonizing the procedures in regards to handling and removing hazardous wrecks.

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High Seas Marine Protected Areas: Impact on Shipping and the IMO

Niels Krabbe

1 Introduction

Shipping is the backbone of international trade in goods, carrying over 11 billion tonnes in shipped traded volume, representing over 80 per cent of the volume of world trade in goods and 70 per cent by value.¹ International shipping bridges continents across vast sea areas at a cheaper price and with a smaller carbon footprint relative to other means of transport.² Navigational safety is ensured by the broad selection of routing measures provided by the International Maritime Organizations (IMO), which effectively represents an infrastructure of the seas. Passage planning in international shipping is determined based on a complex interaction of factors, where expediency appears to be particularly determinant.³ Consumption and costs of bunker-fuel is also an important consideration, calling for fuel-efficiency.⁴ In recent years the interest of decreasing emissions has also become underlined by objectives to reduce the climate impact of marine transport.⁵ The Initial IMO strategy on the reduction of greenhouse gas emissions from ships calls for a reduction of total greenhouse gas emissions of shipping by at least 50% by 2050.⁶

1 UNCTAD, *Review of Maritime Transport 2019*, United Nations, Geneva.

2 Ralph Sims, Roberto Schaeffer, *Transport*, Chapter 8 in IPCC, *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (CUP, 2014); Jacques Leonardi, Michael Browne, *A method for assessing the carbon footprint of maritime freight transport: European case study and results*, *International Journal of Logistics Research and Applications* 13(5) (2010), 349–358.

3 Traditionally, passage decisions have been made on the basis of speed-optimization theory, Harilaos N Psarافتis, Christos A Kontovas, *Ship speed optimization: Concepts, models and combined speed-routing scenarios*, *Transportation Research*, Volume 44, July 2014, Pages 52–69.

4 Roar Adland, Kristoffer Thomassen, Erland Østensen, *Environmental management in shipping Theory and practice of energy-efficient ship operation* in Photis M Panayides, *The Routledge Handbook of Maritime Management* (Routledge 2019).

5 Patrizia Serra and Gianfranco Fancello, *Towards the IMO's GHG Goals: A Critical Overview of the Perspectives and Challenges of the Main Options for Decarbonizing International Shipping*, *Sustainability*, 12/8 (2020), 3220.

6 IMO MEPC Resolution 304(72), *Initial IMO Strategy on Reduction of GHG Emissions from Ships* (adopted on 13 April 2018).

The interests of expedient transports and minimising emissions both call for taking the shortest route. While reefs, islands, installations and other features may require less direct routes in coastal waters, ships sailing the high seas can regularly navigate straight courses, based on the shortest distance.⁷ Since the high seas regularly lie at least 200 nm away from shores, there are few navigational hazards and features to consider.⁸

In the planning and management of shipping, like other maritime activities in the high seas, little regard has generally been taken to differences in ecological and biological sensitivity across different high seas areas.⁹ This is not surprising since these vast sea areas, which represent two-thirds of the surface of the world's oceans, were long thought to be biological deserts.¹⁰ As a consequence, these sea areas have hitherto been subject to only limited area-based protection measures. In lack of such regulation, it has been self-evident to strive for the shortest and most direct shipping routes, irrespective of ecological variations across sea areas.

2 Increasing Support for Protecting Sensitive High Seas Areas

In recent decades it has however become recognized that the high seas conceal some of the planet's most unique ecosystems.¹¹ Marine biodiversity in the high seas is richly patterned, with a high variety of species richness across different areas. Whereas biodiversity is abundant in some parts of the oceans,

7 Georgios Papatzanakis, Apostolos Papanikolaou, and Shukui Liu, *Optimization of Routing Considering Uncertainties*, Journal of Marine Science and Application, 11/1 (2012), 10–17. Martin Stopford (ed.), *Maritime Economics*, Corporation Ebooks (3rd ed. Taylor & Francis, 2009), 347–384.

8 Under the law of the sea, the high seas are negatively defined, i. e. as the marine areas which are not internal waters or territorial seas of coastal States, or declared as exclusive economic zones (EEZ). In most cases, the high seas thus lie beyond the maximum 200 nautical mile limit of the exclusive economic zones. However, in places where States have refrained from declaring EEZ, the marine waters beyond the 12 nautical mile zone of the territorial sea is considered as high seas.

9 Natalie C Ban and others, 'Systematic Conservation Planning: A Better Recipe for Managing the High Seas for Biodiversity Conservation and Sustainable Use', *Conservation Letters*, 7/1 (2014), 41–54.

10 Jesse H Ausubel, Darlene T Crist, and Paul E Waggoner, *First Census of Marine Life 2010: Highlights of a Decade of Discovery* (2010).

11 Roberto Danovaro, Paul VR Snelgrove, and Paul Tyler, *Challenging the Paradigms of Deep-Sea Ecology*, *Trends in Ecology & Evolution*, 29/8 (2014), 465–75; Eva Ramirez-Llodra and others, *Deep, Diverse and Definitely Different: Unique Attributes of the World's Largest Ecosystem*, *Biogeosciences*, 7/9 (2010), 2851.

other areas do not conceal the same richness.¹² Moreover, it has been shown that these ecosystems are sensitive to the detrimental impacts of different human activities, including shipping.¹³ The impacts of human activities have also increased significantly in recent years.¹⁴ Among high seas maritime activities shipping has in several studies been considered to have the second-highest environmental impact after fisheries.¹⁵ The importance of cumulative effects on marine fauna of factors such as ship strikes, ship noise, gas emissions, chemical spill and introduced pests have been highlighted in different studies.¹⁶

To prevent the degradation of the high seas biodiversity hotspots and increase resilience to the effects of climate change, several reports have suggested reducing the pressures represented by shipping and other human activities.¹⁷ Proposals on measures to reduce shipping in the most sensitive areas include adjusting shipping lanes and routing measures, as well as prohibiting types of vessels in certain areas.¹⁸ Commonly, such measures are proposed as part of a broader package of restrictions, encompassing different maritime activities, by establishing networks of marine protected areas (MPAs).¹⁹ There are a range of formal definitions of MPAs, but the most widely used is from the World Conservation Union, which defines an MPA as *parts of intertidal or subtidal environments, together with their overlying waters, flora and fauna and other features, that have been reserved and protected by law or other*

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- 12 William Cheung and others, *Patterns of species richness in the high seas*. Secretariat of the Convention on Biological Diversity, Montreal, Technical Series no. 20 (2005).
- 13 Bethan O'Leary and others, *Options for managing human threats to high seas biodiversity*. Ocean & Coastal Management, 187 (2020), 105110.
- 14 Benjamin Halpern and others, *Recent pace of change in human impact on the world's ocean*. Sci. Rep. 9 (2019), 11609; Andrew Merrie and others, *An ocean of surprises – trends in human use, unexpected dynamics and governance challenges in areas beyond national jurisdiction* (2014). Glob. Environ. Chang. 27, 19–31.
- 15 Bethan O'Leary and others. (n 13); Benjamin Halpern and others, *Recent Pace of Change in Human Impact on the World's Ocean*, Scientific reports, 9/1 (2019), 11609; UNEP, *Ecosystems and Biodiversity in Deep Waters and High Seas*. UNEP Regional Seas Reports and Studies, No. 178. UNEP/ IUCN, (Switzerland 2006).
- 16 Christine Erbe and others, *Editorial: Impacts of Shipping on Marine Fauna*, *Frontiers in Marine Science*, 7 (2020).
- 17 Bethan O'Leary and others. (no 13), 105110.
- 18 See, for instance Ameer Abdulla, Olof Linden, *Maritime traffic effects on biodiversity in the Mediterranean Sea: Review of impacts, priority areas and mitigation measures* (Malaga, Spain: 2008); Ban (n 8).
- 19 Kelleher, G (1999). *Guidelines for Marine Protected Areas*. IUCN, Gland, Switzerland and Cambridge, UK. XXIV, 107.

effective means.²⁰ Some marine waters, including high seas areas, are already encompassed by MPA rules. With few exceptions, such measures have been limited to singular sectors, lacking coordination with other uses of the seas.²¹ In some regional contexts, notably in the North East Atlantic, ambitious efforts to establish cross-sectoral MPA have been undertaken.²² However, in lack of global recognition of such measures the practical effect has been limited.²³ This has led many observers to conclude that it is necessary to adopt new rules in international law, to provide a solid legal basis for globally recognised MPAs in the high seas.²⁴

These calls have in recent years met increasing political support. At global level, new objectives have been agreed to protect biodiversity in life below water, most importantly in Goal 14 of the United Nations Sustainable Development Goals (SDGs).²⁵ Its indicators (target 14.5) explicitly call for the setting up of marine protected areas and protect marine ecosystem from adverse impacts, declaring that by 2020, at least 10 per cent of coastal and marine areas should be conserved, consistent with national and international law and based on the best available scientific information.²⁶ The objectives under SDG 14 are closely connected to and creates an impetus for developments in international

20 IUCN World Commission on Protected Areas (IUCN-WCPA) (2008). *Establishing Marine Protected Area Networks – Making It Happen*. Washington, D.C.: IUCN-WCPA, National Oceanic and Atmospheric Administration and The Nature Conservancy.

21 Petra Drankier, *Marine Protected Areas in Areas beyond National Jurisdiction*. The International Journal of Marine and Coastal Law, 27(2) (2012), 291–350.

22 Erik Molenaar, & Alex Oude Elferink, *Marine protected areas in areas beyond national jurisdiction The pioneering efforts under the OSPAR Convention*. Utrecht Law Review, 5(1) (2009), 5–20.

23 Bethan O’Leary and others (n 13) 598–605; Karen Scott, Integrated Oceans Management. In Donald Rothwell and others (eds). *The Oxford Handbook of the Law of the Sea*, (UOP, 2015).

24 David Freestone, *The limits of sectoral and regional efforts to designate high seas marine protected areas*. Am. J. Int. Law 112 (2018), 129–133; Karen Scott, *Conservation on the High Seas: Developing the Concept of the High Seas Marine Protected Areas*. The International Journal of Marine and Coastal Law, 27(4) (2012), 849–857.

25 SDG 14: *Conserve and sustainably use the oceans, seas and marine resources for sustainable development*.

26 See primarily indicator 14.5 “By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.” Indicator 14.2 is also relevant in this context “By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.”, *Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development*, adopted by the General Assembly on 6 July (2017A/RES/71/313).

environmental law and the law of the sea which have been underway for a long time but so far not fully materialised.

The Convention on Biological Diversity²⁷ (CBD) already by its entry into force in 1993 imposed an obligation on States to establish systems of protected areas or areas where special measures need to be taken to conserve biological diversity.²⁸ This objective was further specified in the so-called Aichi targets of 2010,²⁹ which declared in its objective 11 that at least 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, by 2020 should be conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

Whereas the 1982 UN Convention on the Law of the Sea (UNCLOS)³⁰ establishes a general obligation to protect the marine environment and cooperate to that end, it contains no specific obligation to establish MPAs.³¹ Other law of the sea instruments provide rules for applying sectoral restrictions in specific areas based on environmental considerations. But due to the fragmented nature of the legal framework, establishing integrated MPAs, which involve restrictions on different uses of the seas for the same area is challenging. In spite of calls for holistic approaches in the preamble of UNCLOS and the increasing recognition of the importance to consider cumulative impacts on the marine environment, different uses of the seas remain regulated and managed in isolation, under individual rules, procedures and institutions, with limited regard

27 *Convention on Biological Diversity*, done in Rio de Janeiro, 5 June 1992, in force 29 December 1993, 1760 UNTS 79. (CBD).

28 See Art 7 on identification and monitoring and Art 8 on in-situ conservation for the protection of biological diversity of the CBD.

29 *Convention on Biological Diversity, Convention on Biological Diversity's Strategic Plan for 2020* (Montreal 2010). Available at: <www.cbd.int/sp> accessed 26 August 2020.

30 *The United Nations Convention on the Law of the Sea*, (adopted December 10, 1982 entered into force November 16, 1994) 1833 UNTS 397 (UNCLOS).

31 Part XII of UNCLOS establishes, inter alia, general obligations for the protection and preservation of the marine environment. Art 192 provides that '*States have the obligation to protect and preserve the marine environment.*' Art 194(5) prescribes that '*The measures taken in accordance with this Part shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.*' Art 197 provides that '*States shall cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with this Convention, for the protection and preservation of the marine environment, taking into account characteristic regional features.*'

for the need to coordinate measures across sectors and areas.³² Moreover, the complex jurisdictional framework of UNCLOS raises difficulties to integrated approaches. The convention divides the seas into maritime zones with exclusive and sovereign rights for coastal States while maintaining flag state jurisdiction and the right of innocent passage for ships. Beyond the territorial seas of coastal States, the principles of high seas freedoms, including *inter alia* the freedom of navigation apply and may be exercised equally by all States. If a State or group of States were to declare a high seas MPA within the framework of UNCLOS, this could only be legally binding on those nations setting up the MPA in line with the *pacta tertiis* principle. As observed by Drankier ‘*The point of departure for regulating, or restricting, high seas freedoms would thus logically seem to be that they require the involvement of the international community as a whole*’.³³

As a result of this perceived gap in UNCLOS regarding, i.a. rules on high seas MPAs, negotiation of new law of the sea rules have been initiated and ongoing in different forms for over a decade. The expected new implementing agreement under the United Nations Convention on the Law of the Sea for biological diversity beyond national jurisdiction (BBNJ) includes, as a central component, the ambition to establish rules for establishing globally recognized MPAs in the high seas.³⁴ The negotiation is set to have its fourth and final intergovernmental conference meeting early in 2022.³⁵

32 Although the convention sets out in its preamble that ‘*the problems of ocean space are closely inter-related and need to be considered as a whole*’, the convention provides little support for adopting integrated approaches across different maritime sectors. Richard Barnes, *The Law of the Sea Convention and the Integrated Regulation of the Oceans*. *The International Journal of Marine and Coastal Law*, 27(4) (2012), 859–866. See also Alex Oude Elferink, *Governance Principles for Areas beyond National Jurisdiction*. *The International Journal of Marine and Coastal Law*, 27(2) (2012), 205–259.

33 Drankier (n 21) 291–350.

34 UNGA Res. A/75/L.96 of 19 January 2018, International legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. The draft but not yet agreed negotiation text sets out as an objective in Art 14(d) to ‘*Establish a system of ecologically representative marine protected areas that are connected (and effectively and equitably managed)*’, ‘*Revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*’, (A/CONF.232/2020/3, 18 November 2019), available at: <<https://undocs.org/en/a/conf.232/2020/3>> accessed 26 August 2020).

35 UNGA Res. A/75/L.96 of 9 June 2021, *Intergovernmental conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*.

There is thus both a political momentum and ongoing regulatory developments for high seas MPAs. This calls for examining how such measures, especially the draft rules under the expected BBNJ treaty, are likely to affect shipping. It appears clear that the IMO and its instruments have a central role in this development, but it remains unclear how it will unfold.

3 High Seas Marine Protected Areas under the New BBNJ Treaty

How then, will the rules for high seas MPAs under the new BBNJ agreement be modelled? It is likely that the agreement will not merely establish new multilateral procedures for establishing MPAs in the high seas and the Area. Rather, it is expected to attempt to integrate and build on the mandate of pre-existing structures regulating activities carried out in these areas. The draft negotiation text sets as an objective for the treaty to promote a holistic and cross-sectoral approach to ocean management by enhancing cooperation and coordination in the use of area-based management tools, including MPAs, among States, relevant legal instruments and frameworks as well as relevant global, regional, sub-regional and sectoral organizations.³⁶ The new treaty thus aims to function as a vehicle for setting up new MPAs, but not primarily by establishing new forms for protection, but rather by coordinating and integrating tools under pre-existing structures. This implies a call upon all relevant organizations to make contributions to the MPA objective of the new treaty, by applying rules under their respective mandates relevant for areal protection. In the fragmented system of management under the law of the sea, a broad range of organizations have developed measures which are relevant in this context. For instance, in regional fisheries management organizations, member States have the mandate to make decisions on areas closed for fisheries, including in the high seas.³⁷ In the International Whaling Commission, States can make

36 Art 14(a) of the proposed treaty text sets out as an objective to “*Enhance cooperation and coordination in the use of area-based management tools, including marine protected areas, among States, relevant legal instruments and frameworks and relevant global, regional, sub-regional and sectoral bodies, which will also promote a holistic and cross-sectoral approach to (ocean management) (conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction)*”.

37 See, for instance Art 5 of the Convention on Future Multilateral Cooperation in North-East Atlantic Fisheries, adopted in London 18 November 1980 (NEAFC Convention), which enables the organization to make recommendations by qualified majority concerning fisheries conducted beyond the areas under jurisdiction of Contracting Parties.

decisions on whale sanctuaries.³⁸ As regards shipping, the IMO is expected to become a central player in this work by virtue of its function as the global agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships.

Based on its regulatory mandate the IMO has the ability to enact global rules for the prevention of marine pollution by ships, including far-reaching measures to prevent the detrimental impact of shipping on sensitive marine areas.³⁹ This role of the IMO is not self-imposed, but builds on UNCLOS, which bestows the organization and its instruments with unique possibilities to make exceptions from one of the most central principles of the law of the sea, the freedom of navigation. Of central relevance to the objective of the new BBNJ treaty to create integrated and cross-sectoral MPAs is that the IMO may adopt regulatory measures limiting shipping in certain areas based on environmental considerations.

4 The Freedom of Navigation and the IMO

The ability of the IMO to restrict shipping in certain areas is based on its unique mandate to impose restrictions on navigational freedoms. In all sea areas save for the territorial sea where the right of innocent passage applies, shipping is legally conducted based on the freedom of navigation. This fundamental principle of the law of the sea, which dates back to Grotius' *Mare Liberum* dictum of the early modern period, was reiterated in UNCLOS. It follows from the Convention's central Article 87 that the freedoms of the high seas comprise, *inter alia*, freedom of navigation both for coastal and land-locked States.⁴⁰ The

38 See Arts III and V of the International Convention for the Regulation of Whaling, adopted in Washington, 2 December 1946, UNTS Volume Number 161 (p.72), which similarly enables the decision of whale sanctuaries by qualified majority.

39 The purposes of the IMO, as stated in Art 1(a) of the IMO Convention, are "to provide machinery for cooperation among Governments in the field of governmental regulation and practices relating to technical matters of all kinds affecting shipping engaged in international trade; to encourage and facilitate the general adoption of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and prevention and control of marine pollution from ships", Convention on the International Maritime Organization Geneva, 6 March 1948, United Nations, Treaty Series, vol. 289, p. 3, and vol. 1520, p. 297.

40 According to Art 58 this freedom applies not only in the international waters of the High Seas, but also *mutatis mutandis* in the Exclusive Economic Zones (EEZ) of coastal States. UNCLOS provides a regime of duality in the EEZ, where exclusive coastal State rights to economic resources are balanced with high seas freedoms.

freedom of navigation is however not without limitations. Under the law of the sea, the nationality of ships is decided based on the flag they are entitled to fly.⁴¹ The flag state has the duty to effectively exercise jurisdiction over ships under its flag, including ensuring safety regarding construction, equipment and seaworthiness.⁴² These obligations include requirements for States, acting through the competent international organization or general diplomatic conference, to establish international rules and standards to prevent, reduce and control pollution of the marine environment from vessels and promote the adoption, in the same manner, wherever appropriate, of routing systems designed to minimize the threat of accidents which might cause pollution of the marine environment as well as ensure conformity with generally accepted international regulations, procedures and practices and to take any steps which may be necessary to secure their observance.⁴³ These provisions are widely interpreted as an implicit delegation to the IMO and its shipping rules and standards. By virtue of these references to international rules and standards, UNCLOS makes it mandatory for the flag state to ensure that ships under its flag observes the *lex specialis* rules of the International Convention for the Prevention of Pollution from Ships (MARPOL),⁴⁴ the International Convention for the Safety of Life At Sea (SOLAS)⁴⁵ and other IMO instruments, which effectively function as global rules.

The detailed technical requirements on environmental standards and performance for ships which are provided by MARPOL thereby effectively have binding effect on all flag States, and can be considered as global standards. In addition to the generally applicable rules and standards, IMO has developed two concepts based on the rules in MARPOL and SOLAS which enable the setting of stricter environmental standards or even suspend shipping in certain sea areas based on environmental concerns.

5 Area-Based Measures under the IMO

Firstly, *Special Areas* based on MARPOL Annexes I, II and V as well as SOx Emission Control Areas (SECAS) under MARPOL Annex VI enable the

41 Art 91.

42 Art 94.

43 Arts 94 and 211.

44 International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 34 U.S.T. 3407, 1340 UNTS. 61.

45 International Convention for the Safety of Life At Sea, 1 November 1974, 1184 UNTS 3.

introduction of more stringent rules by “*the adoption of special mandatory methods for the prevention of sea pollution by oil, noxious liquid substances, or garbage*”.⁴⁶ Guidelines for the designation of special areas were first included in chapter 2 of Annex to Resolution A.720(17), adopted by the IMO Assembly in November 1991, and subsequently superseded by the new 2001 Guidelines, included in Annex I to Resolution A.927(22).⁴⁷ There is nothing indicating that Special Areas may not encompass high seas areas.⁴⁸ Yet most of the Special Areas adopted so far lie within marine areas under national jurisdiction. There are however also examples of Special Areas that include areas of the high seas, such as the Mediterranean Sea (Annex I and v) and the Antarctic Special Area (Annex I, II and v).⁴⁹ Compared to most other area-based measures, Special Areas have a far-reaching scope of application. Applied measures are binding in relation to all States, including those that are not parties to MARPOL. This is because they are considered as reflecting generally accepted international rules and standards, as provided in UNCLOS Article 211(5).⁵⁰

In spite of the global scope of application, the practical importance of Special Areas has come to decrease over the years, at least in relative terms. Whereas the discharge standards outside Special Areas gradually have been strengthened, no corresponding strengthening of the standards within the Special Areas has occurred. This has led several observers to conclude that the legal significance of the concept has declined.⁵¹ If Special Areas arguably

46 Annex I: Prevention of pollution by oil; Annex II: Control of pollution by noxious liquid substances; Annex v: Prevention of pollution by garbage from ships; Annex VI: Regulations for the prevention of air pollution from ships. See also Paragraph 2.1 of Resolution A.927(22).

47 IMO, *Guidelines for the Designation of Special Areas and the Identification of Particularly Sensitive Sea Areas*, Resolution A.720(17), Adopted 6 November 1991. Available at: <[www.imo.org/blast/blastDataHelper.asp?data_id=22581&filename=A720\(17\).pdf](http://www.imo.org/blast/blastDataHelper.asp?data_id=22581&filename=A720(17).pdf)>; Drankier (n 21), 291–350.

48 IMO, *Guidelines for the Designation of Special Areas and the Identification of Particularly Sensitive Sea Areas*, para. 2.2.

49 Ingvild Ulrikke Jakobsen, *Marine protected areas in international law: an Arctic perspective*, Brill Nijhoff (2016), 388; Robin Churchill, *The growing establishment of high seas marine protected areas: implications for shipping* in Richard Caddell and Rhidian Thomas, *Shipping, Law and the Marine Environment in the 21st Century: Emerging Challenges for the Law of the Sea – Legal Implications and Liabilities* (United Kingdom: Lawtext Publishing (2013).); An overview of the designated Special Areas is provided by IMO, “Special Areas under MARPOL”, Available at: <www.imo.org/en/OurWork/Environment/SpecialAreasUnderMARPOL/Pages/Default.aspx> accessed September 9, 2020.

50 Jakobsen (n 49) 388.

51 Erik Molenaar, *Coastal State Jurisdiction over Vessel-Source Pollution* (The Hague: Kluwer Law International, 1998) 632, 431; Churchill (n 36) 81.

are becoming outdated, a second concept for areal protection under IMO, *Particularly Sensitive Sea Area* (PSSA), has a larger and more diverse number of measures available to protect vulnerable sea areas in relation to potential damage caused by shipping activities.⁵² The PSSA concept was gradually developed in a series of IMO Resolutions from 1978 to 2005.⁵³

PSSAs are procedurally less complicated to declare compared to Special Areas.⁵⁴ Whereas a Special Area requires amending MARPOL 73/78, it suffices with a decision by the IMO Marine Environment Protection Committee (MEPC) to declare a PSSA. PSSAs must have a legal basis, but not necessarily in an IMO instrument.⁵⁵ Similarly, the criteria for declaring a PSSA are less complicated compared to special areas. A PSSA should fulfil *either* ecological,

52 Drankier (n 21); Helene Lefebvre-Chalain, *Fifteen Years of Particularly Sensitive Sea Areas: A Concept in Development*, *Ocean and Coastal Law Journal*, 13/1 (2007), 59; Markus J Kachel, *Particularly Sensitive Sea Areas: The IMO's Role in Protecting Vulnerable Marine Areas* (13; Berlin, Heidelberg: Springer, 2008). 97.

53 See IMO Resolution A.720(17), *Guidelines for the Designation of Special Areas and the Identification of Particularly Sensitive Sea Areas*, Resolution A.720(17), Adopted 6 November 1991. Available at: <[www.imo.org/blast/blastDataHelper.asp?data_id=22581&filename=A720\(17\).pdf](http://www.imo.org/blast/blastDataHelper.asp?data_id=22581&filename=A720(17).pdf)> accessed 10 September 2020. These Guidelines were subsequently revised in 1999 by IMO Resolution A.885(21), *Procedures for the Identification of Particularly Sensitive Sea Areas and the Adoption of Associated Protective Measures and Amendments to the Guidelines Contained in Resolution A.720(17)*, adopted 25 November 1999, available at: <[www.imo.org/blast/blastDataHelper.asp?data_id=24275&filename=885\(21\).PDF](http://www.imo.org/blast/blastDataHelper.asp?data_id=24275&filename=885(21).PDF)> accessed 10 September 2020.

Further revisions were decided in 2001 by IMO Resolution A.927(22). *Guidelines for the Designation of Special Areas under MARPOL 73/78 and Guidelines for the Identification and Designation of Particularly Sensitive Areas*, adopted 29 November 2001, available at: <[www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Assembly/Documents/A.927\(22\).pdf](http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Assembly/Documents/A.927(22).pdf)> accessed 10 September 2020 and in 2005 by IMO Resolution A.982(24), *Revised Guidelines for the Identification and Designation of Particularly Sensitive Areas*, adopted 1 December 2005, available at: <www.imo.org/en/OurWork/Environment/PSSAs/Documents/A24-Res.982.pdf> accessed 10 September 2020.

54 As observed by Drankier, a considerable legal difference between a PSSA and a MARPOL 73/78 special area is that whereas a PSSA may be designated or amended by the IMO Assembly, on recommendation of the The Marine Environment Protection Committee (MEPC), the designation or amendment of a special area is in effect an amendment to MARPOL 73/78 itself and its respective annex., Drankier (n 21).

55 If the proposed APMs "are not already available in an IMO instrument, information must be provided with regard to its legal basis and/or steps that the proposing Member Government has taken or will take to establish the legal basis", see Paragraph 7.5.2.2 of Resolution IMO Resolution A.982(24), *Revised Guidelines for the Identification and Designation of Particularly Sensitive Areas*.

socio-cultural-economic or scientific-educational criteria. For Special Areas, three *cumulative* criteria must be fulfilled.⁵⁶

Moreover, also from a spatial standpoint PSSAs are flexible. Although applications for PSSAs only may be submitted by one or several States having an “interest” in a particular area, there is no geographic limitation such as proximity requirements on what sea areas States can include in a proposal. In order to protect a sensitive area from shipping, specific measures in a PSSA may also apply in a connecting buffer zone.⁵⁷ Since the IMO Convention as well as the Revised PSSA Guidelines and the MARPOL Convention with its relevant annexes apply to all maritime zones, there is nothing preventing the IMO from declaring PSSAs in the high seas.⁵⁸ Out of the current PSSAs designated by the IMO, none however so far incorporates high seas areas.

The specific regulations of a PSSA, referred to as Associated Protective Measures (APMs) must be identified and submitted within two years of the decision to declare a PSSA.⁵⁹ Once a proposal for a PSSA has been approved, the associated protective measures are recorded on charts under the procedures of the International Hydrographic Organization. IMO member States are thereafter under obligation to “take all appropriate steps to ensure that vessels flying their flag comply with the associated protective measures adopted to protect the designated PSSA.”⁶⁰ As with any restriction in the high seas,

56 The cumulative criteria are oceanographic, ecological, and vessel traffic characteristics. Within these criteria, there are however alternative sub-criteria. The ecological conditions of an area are: Conditions indicating that protection of the area from harmful substances is needed to preserve: (1) depleted, threatened or endangered marine species; (2) areas of high natural productivity (such as fronts, upwelling areas, gyres); (3) spawning, breeding and nursery areas for important marine species and areas representing migratory routes for sea-birds and marine mammals; (4) rare and fragile ecosystems such as coral reefs, mangroves, seagrass beds and wetlands; and (5) critical habitats for marine resources including fish stocks and/or areas of critical importance for the support of large marine ecosystems.

57 *ibid* para. 6.3.

58 *ibid* para. 4.3, Siân Prior, Aldo Chircop, and Julian Roberts, *Area-Based Management on the High Seas: Possible Application of the IMO's Particularly Sensitive Sea Area Concept*, *The International Journal of Marine and Coastal Law*, 25/4 (2010), 483–522. See also Veronica Frank, *The European Community and Marine Environmental Protection in the International Law of the Sea: Implementing Global Obligations at the Regional Level* (Boston: Martinus Nijhoff Publishers, 2007), 370–371, 370–371; Kristina M Gjerde and Anna Rulska-Domino, *Marine Protected Areas Beyond National Jurisdiction: Some Practical Perspectives for Moving Ahead*, *The International Journal of Marine and Coastal Law*, 27/2 (2012), 351–73.

59 See Para. 4.3.4 of Resolution A.885(21); Para. 7.1 of Resolution A.927(22); Para. 1.2 and 7.1 of Resolution A.982(24).

60 Resolution IMO Resolution A.982(24), *Revised Guidelines for the Identification and Designation of Particularly Sensitive Areas*, 4–5.

implementation of PSSA measures would rely heavily on flag state monitoring and enforcement.

APMs may, inter alia, include ships' routing measures, discharge restrictions and prohibited activities, "*and should be specifically tailored to meet the need of the area to prevent, reduce, or eliminate the identified vulnerability of the area from international shipping activities*".⁶¹ There is thus no direct limitation on what restrictions APMs may involve. In spite of the extensive range of possible measures, the ambition to balance environmental protection with shipping interests has resulted in rather modest protection for the PSSAs which have been adopted.⁶² Evaluations of IMO practice also suggests that the designation of an area as PSSA so far has not had any particular effect on routing measures compared to such measures adopted directly under SOLAS.⁶³ Overall, the list of mandatory routing measures so far adopted under PSSAs is also quite limited.⁶⁴ Important components of the PSSA concept also make clear that environmental interests are not unconditional. States with ships in PSSA areas may bring concerns with associated measures to the IMO "*so that necessary adjustments can be made*".⁶⁵

In conclusion, only minor parts of the full scale of possible PSSA measures so far have been applied. Use of the concept also lacks precedence in the high seas. But based on its potential, PSSA appears to be a considerably more flexible and suitable tool than Special Areas for regulating shipping in high seas MPAs.

6 Role of Sectoral Organisations under the BBNJ Treaty

It has thus been concluded that rather than establishing competing structures, the BBNJ treaty will attempt to establish high seas MPAs by integrating and coordinating area-based measures of different sectoral instruments. Moreover, the IMO has the possibility to declare such measures. In particular, by representing the most dynamic and flexible tool for imposing restrictions on shipping in sensitive areas, declarations of PSSAs would make a central component

61 Para. 7.5.2.4 of Resolution A.982(24).

62 Lefebvre-Chalain (n 52) 55.

63 Jakobsen (n 49) 398; Tore Henriksen, *Conservation of marine biodiversity and the International Maritime Organization*, in Christina Voigt (ed.), *Rule of Law for Nature: New Dimensions and Ideas in Environmental Law* (2013), 341–342.

64 Kachel (n 52) 195.

65 See paragraph 8.4 of IMO Resolution A.982(24), *Revised Guidelines for the Identification and Designation of Particularly Sensitive Areas*.

of high seas MPAs. How then is the new BBNJ treaty likely to involve and cooperate with other organisations?

The draft negotiation text of the BBNJ treaty indicates that MPA proposals should be submitted by state parties to a secretariat set up under the treaty. The secretariat should then facilitate consultation with States as well as relevant organisations. The draft text does neither suggest that the BBNJ conference of parties nor its secretariat should be able to instruct other organisations to use tools or measures at their disposal to promote MPA proposals.⁶⁶ Rather, according to the draft Article 18(b) on *Consultation on and assessments of proposals*, relevant organisations should be invited to submit their views regarding “*the merits of the proposal*” (I) and “*information regarding existing measures for the relevant area*” (III) (v) as well as “*any aspects of the conservation and management measures identified in the proposal that fall within the competence of that body*” (IV); and “*any relevant additional measures that fall within the competence of that instrument, framework or body*”. According to this language, there is nothing indicating an ambition to overlap with the mandate of existing organisations, such as the IMO. Rather, it appears that the BBNJ treaty will leave to IMO members to decide on whether or not to contribute to MPA proposals under the new treaty by applying measures under their rules, such as declaring relevant areas as PSSAs. Similarly, according to the draft Article 19 on *Decision-making*, the BBNJ treaty conference of parties should take decisions on MPAs “*while respecting [existing] relevant legal instruments and frameworks and relevant global, regional and sectoral bodies*”. Interestingly, however, States have expressed different positions in the negotiations on how to reach out to existing organisations with relevant legal instruments once a MPA has been decided under the BBNJ treaty. A first proposal suggests that the BBNJ COP should decide whether to recommend to its parties to “*promote the adoption of relevant measures through such instruments, frameworks and bodies, in accordance with their respective mandates (and) “Whether to adopt measures complementary to those adopted under such instruments, frameworks and bodies;”*”. (Article 19 Alt 1 (c) (I–II)). This suggests that an element of leverage could be exercised in relation to organisations such as the IMO based on BBNJ conference decisions, and that there even may

66 *Revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*, (18 November 2019, A/CONF.232/2020/3). Available at: <<https://un docs.org/en/a/conf.232/2020/3>> accessed 10 September 2020.

be possibilities for deciding on measures which go further than what would be possible under the PSSA concept.

A second proposal appears to be more cautious not to conflict with the mandate of other organisations, suggesting that the BBNJ conference shall take decisions with respect to “*Recommendations relating to the implementation of related management measures, while recognizing the primary authority for the adoption of such measures within the respective mandates of [existing] relevant legal instruments and frameworks and relevant global, regional and sectoral bodies;*” (Article 19 Alt 2 (c)).

Furthermore, under the draft Article 20 on *Implementation*, which underlines the flag state principle for ensuring compliance and enforcement of treaty measures in line with UNCLOS, State parties are also instructed to promote the adoption of measures within relevant instruments and organizations to support the implementation of MPA measures.

Taken together, setting up networks of MPAs is one of the primary objectives of the new BBNJ treaty. However, this objective cannot be achieved based on this treaty alone. Rather, it requires cooperation with other organisations which are able to make decisions on necessary area-based measures. Based on the draft text of the BBNJ treaty, the relationship to other organisations appears likely to be complex. The exclusive mandate of other instruments is more or less respected. Sectoral organisations are also able to get involved in consultation procedures on new proposals. However, once a proposal to establish a MPA has been approved under the new BBNJ treaty, an element of pressure seems to be introduced in relation to other organisations to make contributions to the implementation of the decision by applying measures under their mandate, at least according to one of the text proposals. Considering that shipping is considered a significant stressor on the high seas environment and traffic could be prevented in sensitive areas by declaring PSSAs, it is likely that calls for cooperation would be particularly forceful in relation to the IMO.

How then is the relation and cooperation between the BBNJ treaty and the IMO likely to unfold? Can we expect a proliferation of restrictions of high seas shipping as the result of the new treaty? In order to assess how the IMO would position itself in relation to such requests, it is relevant to study what role the organisation has taken in the BBNJ negotiations. It similarly calls for evaluating how previous proposals of PSSAs have been received, as well as the success of other cases of cooperation between organisations in establishing cross-sectoral MPAs in the high seas.

7 Involvement of the IMO in Establishing High Seas MPAs

The Secretariat of the IMO has participated throughout BBNJ negotiations, informing on relevant measures including PSSAs, while underlining that the BBNJ treaty ought not to inflict on the IMO mandate.⁶⁷ There also appears to be widespread agreement among States involved that the new treaty should not override the mandate of other organisations. It thus appears that the risk of direct conflict between obligations under the new treaty and the IMO mandate should not be exaggerated. In an analysis of the draft treaty text for its member States, the IMO secretariat has nevertheless voiced concerns in relation to some of the proposals. The secretariat has also asked IMO Member States to ensure that positions at the BBNJ Conference are in line with their interests at the IMO.⁶⁸ There is thus no doubt that the IMO is cautious to ensure that the BBNJ treaty leaves its autonomy to make decisions on PSSAs intact.

An analysis of previous proposals for PSSAs indicate that States generally have been reluctant to accept far-reaching and mandatory measures. As previously discussed, the list of decided routing measures under PSSAs is so far modest. When ambitious proposals have been made, they have been met with reluctance. The proposal for the Baltic PSSA included mandatory areas to be avoided.⁶⁹ In spite of an advanced motivation for the proposal relating to this ecosystem, described as “*globally unique and sensitive*”, the Sub-Committee on Safety of Navigation concluded that it did not justify the establishment of mandatory areas to be avoided.⁷⁰ Instead, only a recommendation was approved.⁷¹ This decision has been interpreted as the result of insufficient information and argument for the proposal.⁷² The opposition could however also reflect a general objection to measures infringing on the freedom of navigation. Similarly,

67 *Update on the UN conference on marine biodiversity of areas beyond national jurisdiction (BBNJ), Information session for IMO Member States, 21 June 2019*. Available at: <www.imo.org/en/OurWork/Legal/Documents/Presentation%20-%20information%20session%20BBNJ%20-%2021-06-19.pptx> accessed 10 September 2020.

68 *Update on the legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ)*. Available at: <www.imo.org/en/OurWork/Legal/Documents/Presentation%20at%20A%2031%20December%202019.pptx> accessed 10 September 2020.

69 IMO MEPC Resolution 136(53), *Designation of the Baltic Sea Area as a Particularly Sensitive Sea Area*, Adopted 22 July 2005. Available at: <www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Marine-Environment-Protection-Committee-%28MEPC%29/Documents/MEPC.136%2853%29.pdf> accessed 10 September 2020.

70 IMO Sub-Committee on Safety of Navigation nav 51/19, para. 3.50.

71 *ibid*, para. 3.51., Jakobsen (n 49) 399.

72 Prior and others (n 58) 514.

a proposal for mandatory use of pilot in the Torres Strait was rejected. As a result, only a recommendation was adopted.⁷³ A proposal for banning single hull vessels carrying dangerous cargo in the Western European PSSA was also met with considerable opposition and was altogether withdrawn.⁷⁴

There is also legal support for opposing proposals for mandatory measures. It follows from the General Provisions on Ships' Routeing that IMO will not adopt a proposed routing measure, unless it is clear that the measure will not impose "unnecessary constraints on shipping".⁷⁵ Based on IMO practice, it appears that the threshold for not being disqualified as "unnecessary" is set high. Based on the lukewarm reception such proposals so far have been met with, it appears unlikely that IMO members would approve proposals for mandatory PSSA measures in high seas MPAs under the new BBNJ treaty. Recommendatory measures may have a better outlook. More indication on the likely role of IMO in relation to the new BBNJ treaty can be deduced from already existing high seas MPAs approved within regional contexts. OSPAR, the regional seas convention cooperation for the North East Atlantic, established in 2010 a network of MPAs amounting to a total of 285,000 km² which encompasses High seas areas.⁷⁶ This has been referred to as a pioneering cooperation between States and organisations in protecting vulnerable marine ecosystems beyond national jurisdiction.⁷⁷ Since much of the preparatory work expected to be required under the new BBNJ treaty has already been performed for these OSPAR MPAs, it is likely that these areas will be among the first to be proposed under the BBNJ treaty.

The MPA measures established by OSPAR are based on the mandate in the OSPAR Convention to decrease different sources of pollution within its

73 Robert C Beckman, *PSSAs and Transit Passage-Australia's Pilotage System in the Torres Strait Challenges the IMO and UNCLOS*, *Ocean Development & International Law*, 38/4 (2007), 325-57.

74 Jakobsen (n 49) 399.

75 See paras. 3.5.1., 3.5.6-7., IMO, Resolution A.572(14), *General Provisions on Ships' Routeing*, adopted on 20 November 1985. Available at: <[www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Assembly/Documents/A.572\(14\).pdf](http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Assembly/Documents/A.572(14).pdf)> accessed 10 September 2020.

76 These are the southern Charlie-Gibbs Fracture Zone, the Milne Seamount Complex, the Altair, Anitaltair and Josephine Seamounts as well as the Mid-Atlantic Ridge north of the Azores, see OSPAR recommendation 2003/3 of 27th June 2003. Available at: <www.ospar.org/documents/dbase/decrecs/recommendations/oro3-03e.doc> accessed 10 September 2020; Bethan C O'Leary and others (n 13) 598-605.

77 See OSPAR press notice of 26 June 2008 OSPAR pioneers the protection of the high seas, OSPAR on track to meet the new EU marine directive. Available at: <www.ospar.org/news/ospar-pioneers-the-protection-of-the-high-seas-ospar-on-track-to-meet-the-new-eu-marine-directive> accessed 10 September 2020; Molenaar & Oude Elferink (n 22), 5-515x.

mandate area, which to 40 per cent is represented by High seas.⁷⁸ This mandate in turn, connects to Article 197 of UNCLOS, which calls for cooperation on a regional basis, in formulating and elaborating international rules, standards and recommendations. It has however been controversial whether this legal basis provides sufficient support for declaring MPAs.⁷⁹ As a result, only a limited set of maritime activities are encompassed by the MPA restrictions.⁸⁰ The implementation of specific conservation measures is left to the Contracting Parties and they only apply insofar OSPAR parties can assert jurisdiction in line with the flag state principle provided by UNCLOS.⁸¹ As a consequence, some observers consider them merely as “paper MPAs” that should rather be regarded as recommendations than as legally binding measures. OSPAR has however declared in guideline documents that management plans should be established for the areas, including measures relating to e.g. shipping and navigation.⁸²

78 The definition of the term “maritime area” in Art. 1 (a) OSPAR expressly comprises not only areas under national jurisdiction but also those on the high seas. Contrary to this approach, most other regional treaties on marine environmental protection are confined to the territorial seas and the eezs of their States Parties. Beyond some specific obligations to reduce land-based pollution of the sea and pollution by dumping, incineration and from offshore sources in Arts. 3–5 ospar, Art. 2 (1) of the ospar Convention generally requires parties to preserve and restore the “maritime area”, Convention for the Protection of the Marine Environment of the North-East Atlantic (the ‘ospar Convention’) unts. 2354, Available at: <www.ospar.org/convention/text> accessed 10 September 2020.

79 Nele Matz-Lück and Johannes Fuchs, *The Impact of Ospar on Protected Area Management Beyond National Jurisdiction: Effective Regional Cooperation or a Network of Paper Parks?*, Marine policy, 49 (2014), 155–66, *ibid*.

80 The OSPAR document whereby it discusses its mandate lists in para. 2.23 “scientific research, cable laying, dumping (and) construction of installations and artificial islands, and deep-sea tourism as the only examples”, see OSPAR Commission. OSPAR’s regulatory regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ) of the OSPAR maritime area. In: meeting of the OSPAR Commission Brussels: 22–26 June 2009. Summary record 2009 OSPAR 09/22/1-E, Annex 6. (Ref. §6.13c). Available at: <www.ospar.org/site/assets/files/33747/annexo6_jl_advice_on_abnj.doc> accessed 10 September 2020.

81 In principle nothing under general international law prevents States from restricting the activities of their vessels or natural and legal persons in certain ABNJ or the maritime zones of other States. This follows from the general principle *pacta tertiis nec nocent nec prosunt* (a treaty binds the parties and only the parties; it does not create obligations for a third State).

82 OSPAR Agreement 2003–18, *Guidelines for the Management of Marine Protected Areas in the OSPAR Maritime Area*. Available at: <www.ospar.org/documents?d=32690> accessed 10 September 2020.

The OSPAR Commission also has explicit legal basis for cooperating and consulting with both fisheries organisations and the IMO.⁸³ Based on this mandate, a Memorandum of Understanding has been agreed with the North-East Atlantic Fisheries Commission (NEAFC) as well as an Agreement of Cooperation with the IMO.⁸⁴ Whereas the language of the understanding with NEAFC is relatively far-reaching, the agreement with IMO is more general. It broadly mentions future cooperation and consultation, as well as mutual assistance.⁸⁵ Accordingly, the cooperation with NEAFC has resulted in decisions on closed areas for fisheries which correspond with the OSPAR MPAs. The IMO, on the other hand, has so far not taken any steps to declare the relevant areas as PSSAs. Nor do they fall within existing Special Areas.

In recent years, the cooperation between OSPAR and NEAFC, referred to as collective arrangements, has developed. The collective arrangement is not a legally binding instrument but aims to foster cooperation and coordination in the development of appropriate measures for conservation and management of areas selected by different organisations.⁸⁶ The arrangement was thus modelled to include all relevant organisations, not dissimilar to the BBNJ treaty. IMO has accordingly been invited to participate but has so far not actively participated in the arrangement.⁸⁷

The MPA work of OSPAR, and the outreach to NEAFC and IMO has apparent similarities with the function of the BBNJ treaty, as it is modelled in the draft texts. It may thus provide an indication of how cooperation will be carried out under the new BBNJ treaty. Based on the experience of the limited IMO involvement in this regional project, it appears far from certain that proposals to apply PSSA measures for high seas MPAs under the BBNJ treaty will gain acceptance by IMO members.

83 See Arts 4(1–2) of Annex V of the OSPAR Convention.

84 Available at: <www.ospar.org/about/international-cooperation/memoranda-of-understanding> accessed 10 September 2020.

85 OSPAR Agreement 2008–04, *Memorandum of understanding between the OSPAR Commission and NEAFC*, Adopted 5 September, 2008. Available at: <www.ospar.org/html_documents/ospar/html/mou_neafc_ospar.pdf> accessed 10 September 2020.

86 Danielle Smith and Julia Jabour, *MPAs in ABNJ: Lessons from Two High Seas Regimes*, ICES Journal of Marine Science, 75/1 (2018), 417–25.

87 Julien Rochette and others, *The Regional Approach to the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction*, Marine policy, 49/C (2014), 109–17.

8 Possible Ways to Foster Cooperation

The BBNJ treaty is expected to provide a legal basis for establishing high seas MPAs, which already is called for under SDG 14 as well as the CBD Aichi targets. It is difficult to foresee if the adoption of the treaty will influence the IMO to adopt a more positive stance on applying PSSA measures as contribution to high seas MPAs than what has been shown in previous cases. One way to promote a more inclusive approach and foster cooperation could be to complement the approach whereby proposals for MPAs hitherto have been brought.

In previous and existing MPA proposals, focus in preparatory material has been limited to assessments of biological aspects. Analysis and reflection on broader implications of suggested measures have with limited exceptions been lacking. Considerations of important elements for shipping, such as how proposed MPA-related routing measures would influence voyage times, are not called for in relevant guidelines and have so far been missing in descriptions of proposals. This is evident in the Guidelines for MPAs under OSPAR, which set out detailed criteria which may appear comprehensive, but lack calls for assessing the impact on affected sectors.⁸⁸ It is even more noteworthy that PSSA proposals in the IMO context have not included analysis on consequences for the shipping sector of suggested restrictions.⁸⁹

Both routing measures such as deep-water routes and areas to be avoided, as well as general restrictions for certain sea areas typically result in longer shipping routes. Evaluating what general economic impact such measures would have, in particular on fuel-consumption and voyage times, would not

88 In the OSPAR guidelines for MPAs which outlines the steps to be followed in identifying potential new sites and the criteria which should be met. This includes an elaborate list of ecological and practical criteria to be considered. Whereas “*potential damage to the area by human activities*” is a central criterion, there appears to be no need to conversely consider the impact of proposed measures on human activities. See OSPAR, *Guidance for the development and management of the OSPAR network* available at: <www.ospar.org/work-areas/bdc/marine-protected-areas/guidance-for-the-development-and-management-of-the-ospar-network> accessed 10 September 2020.

89 See, for the Baltic Sea PSSA, IMO, MEPC Resolution 136(53), *Designation of the Baltic Sea as a Particularly Sensitive Sea Area*, Adopted on 22 July 2005. Available at: <www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Marine-Environment-Protection-Committee-%28MEPC%29/Documents/MEPC.136%2853%29.pdf> accessed 10 September 2020. For the Torres Strait, see MEPC Resolution 133(53) *Designation of the Torres Strait as an extension of the Great Barrier Reef Particularly Sensitive Sea Area*, Adopted on 22 July 2005. Available at: <www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Marine-Environment-Protection-Committee-%28MEPC%29/Documents/MEPC.133%2853%29.pdf> accessed 10 September 2020.

be complicated to carry out. Previous studies have developed methodologies which could be applied in different cases.⁹⁰

Complementing preparatory material of high seas marine protected area proposals with such information would have several advantages. For the shipping sector it would provide reassurances on potential costs involved and enable a less speculative discussion on the implications. In many of the previous proposals discussed, suggested PSSA measures would have involved only limited increases in distances. Nevertheless, they have been considered controversial by some States. It is possible that accurate cost-estimates could alleviate such fears.

Moreover, economic assessment of proposed measures would provide valuable information also in other contexts. It could cast light on potential conflicts between goals relating on the one hand to the protection of ecologically sensitive marine areas and, on the other hand, to reducing the climate impact of shipping as called for by the Initial IMO strategy on the reduction of greenhouse gas emissions from ships. So far, emission increases resulting from obligations for shipping to circumvent protected areas have been little considered and ought similarly to be better explored in order to facilitate more nuanced and efficient approaches.

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Shipping and the Ecosystem Approach

David Langlet

1 Introduction

Shipping is often described as the backbone of international trade.¹ Compared to land-based modes of transport, shipping has many advantages, not least its ability to move huge volumes of goods between distant locations at a fair speed and with a limited use of energy. By using the sea rather than land, practical as well as legal challenges associated with crossing international borders can also be avoided. And even without considering the environmental aspect, air transport is just not practically or economically feasible for much of the goods that is being moved between distant locations on global markets.

Notwithstanding its obvious benefits, it has become increasingly recognised that shipping is also associated with significant pressures on many aspects of the natural environment as well as on human health.² These pressures go beyond issues like oil spills and toxic antifouling, which have been discussed in relation to shipping for a long time. The dramatic expansion of shipping in recent decades has brought its contribution to problems like underwater noise pollution and climate change to the fore. In these and other areas shipping adds to the cumulative anthropogenic pressures on the marine environment as well as on many terrestrial ecosystems and human health,³ entailing risks for environmental harm, degradation of ecosystem services and human suffering.

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- 1 See Zheng Wan and others, 'Decarbonizing the international shipping industry: Solutions and policy recommendations' (2018) 126 *Marine Pollution Bulletin* 428; Mengqiao Xu and others, 'Estimating international trade status of countries from global liner shipping networks' (2020) 7 *Royal Society Open Science* 200386. Although the share of international trade in goods that involves shipping can be measured in different ways, in terms of volume shipping is clearly the unrivalled backbone of international trade. Alan Simcock (Lead member) and Osman Keh Kamara (Co-Lead Member), 'Shipping' in L Inness, A Simcock, AY Ajawin and others, *The first global integrated marine assessment: world ocean assessment* (United Nations 2016).
 - 2 See, inter alia, Annika K Jägerbrand and others, 'A review on the environmental impacts of shipping on aquatic and nearshore ecosystems' (2019) 695 *Science of the Total Environment* 133 637; Tony R Walker and others, 'Environmental Effects of Marine Transportation' in Charles Sheppard (ed), *World Seas: an Environmental Evaluation (Second Edition) Volume III: Ecological Issues and Environmental Impacts* (Academic Press 2nd ed 2018) 505.
 - 3 Simcock and Kamara, (n 1) 38.

The environmental effects of shipping are quite diverse and while some – typically those that reach the headlines – are the result of disasters, others are more chronic in nature. The intensity of these pressures is often very unevenly distributed. While a few pressures are global and some regional in character, many are predominantly concentrated to the vicinity of straits, bays, canals or other areas with intense shipping activities.⁴ The vulnerability of species and ecosystems to the different pressures varies considerably. Factors such as water depth, temperature and turnover time in a specific body of water also contribute to making the effects of pressures place specific. The UN Convention on the Law of the Sea (UNCLOS)⁵ recognizes the need for measures taken to protect and preserve the marine environment to ‘include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life’.⁶ Doing this often requires that the combined anthropogenic pressures of shipping and other human activities in each area be considered, and that measures can be tailored to the specific features and vulnerabilities of such areas and ecosystems.

Despite this, environmental management of ocean-based activities, including shipping, has developed within a system characterised by zonal and sectoral approaches with little capacity for handling cumulative impacts or tailoring responses to local ecological conditions. This has hampered effective measures to deal with the degradation of the marine environment.⁷ In response to this insight – and in tandem with a similar development in environmental management in general – the last few decades have seen a shift in marine management approaches towards management models focused on the interconnected logic of ecosystems.⁸ This is reflected, inter alia, in the emergence of maritime spatial planning (MSP) as a major instrument for the comprehensive management of marine activities.⁹

4 *ibid.*

5 UN Convention on the Law of the Sea, (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 397 [UNCLOS].

6 UNCLOS art 194 (5).

7 Karen Scott, ‘Integrated Oceans Management: A New Frontier In Marine Environmental Protection’ in Donald Rothwell and others (eds), *The Oxford Handbook of the Law of the Sea* (OUP 2015) 464.

8 Jonathan P Atkins and others, ‘Management of the marine environment: Integrating ecosystem services and societal benefits with the DPSIR framework in a systems approach’ (2011) 62 *Marine Pollution Bulletin* 215.

9 On marine or maritime spatial planning as an instrument for area based marine management, see eg Stelios Katsanevakis and others, ‘Ecosystem-based marine spatial

The shift towards integrative and place specific management approaches is strongly linked to the emergence of the ecosystem approach as a general framework for the management of human use of and impacts on ecosystems and is also reflected in the increasing calls for and political endorsement of integrated ocean management. While remaining a bit elusive in its details, the concept of integrated ocean management comprises mechanisms that support the simultaneous consideration and control of all or most relevant pressures affecting a certain area or ecosystem, enabling informed trade-offs between different objectives. Such mechanisms or components include ecosystem-based management, environmental impact assessment and spatial planning.¹⁰ Impact assessments and spatial-based planning are also essentially inherent to the concept of ecosystem approach. In fact, marine spatial planning is often seen as a tool for implementing the ecosystem approach.¹¹ This makes it appropriate to use the ecosystem approach as an analytical framework for this analysis.

Since shipping is a strongly international activity and one that has, as will be seen in the following, been granted a privileged status compared to most other ocean uses and interests, the inclusion of shipping in adaptive planning and regulation at a local or regional level conducive to ecosystem specific considerations is challenging. The calls for more inclusive and adaptive forms of governance pose a risk to the values protected by internationally harmonized regulation of shipping, i.e. the expediency and efficiency of shipping as a global mode of transport. On the other hand, the harmonized nature of marine environmental regulation risks undermining the pursuit of effective protection and management of vital environmental and health objectives at a local scale.

Against this backdrop, the present text inquires to what extent the regulation of the environmental effects of shipping allows for regional and local conditions to be considered and enables relevant management responses to be put in place to address local needs. It is also asked what potential there is for improving this ability, thereby making the management of international shipping more consistent with core tenets of the ecosystem approach, while also recognizing the importance of international shipping for the pursuit of other societal objectives.

management: Review of concepts, policies, tools, and critical issues' (2011) 54 *Ocean & Coastal Management* 807.

10 Scott (n 7) 466–7. On different conceptions of integrated ocean management, see also Lena Schøning, 'More or Less Integrated Ocean Management: Multiple Integrated Approaches and Two Norms' (2020) 51:2 *Ocean Development & International Law* 95–115, 106.

11 See, inter alia, Frank Maes, 'The international legal framework for marine spatial planning' (2008) 32 *Marine Policy* 797.

By way of delimitation, the analysis does not deal with the specific conditions and processes that pertain to the high seas, i.e. areas beyond the jurisdiction of any coastal state.¹² Instead, it focuses on areas within 200 nautical miles from the nearest coast that are subject to coastal state jurisdiction. Also, despite being an integral part of the concept of ecosystem approach, the preconditions for participation in different forms of ocean governance and the inclusion of diverse forms of knowledge in such governance are not addressed.¹³ Instead, the analysis focuses on the spatial elements of the ecosystem approach, emphasising the need for managing environmental pressures in an integrated fashion and at ecologically meaningful scales. As will be seen in the following, this is also an area where the regulation of shipping stands out from that of most other maritime activities.

After this brief introduction, the chapter continues with an introduction to the notion of ecosystem approach or ecosystem-based management, with a particular focus on its spatial dimensions. That is followed by a brief overview, or rather exemplification of environmental pressures associated with shipping. Once more the focus is on the spatial dimensions of such pressures. After that, the room for regulatory measures that consider the specific needs and characteristics of particular areas or ecosystems is assessed. The analysis starts by looking at the ability of individual coastal States to take such measures. Coastal States are vested with sovereignty or functional jurisdiction over large sea areas adjacent to their coasts and also have corresponding obligations both to generally protect and preserve the marine environment,¹⁴ and to take 'all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment'.¹⁵ As already mentioned, there is also an obligation on all States to take measures necessary to protect and preserve rare or fragile ecosystems

12 See instead, inter alia, Siân Prior, Aldo Chircop, and Julian Roberts, 'Area-based Management on the High Seas: Possible Application of the IMO's Particularly Sensitive Sea Area Concept' (2010) 25 *The International Journal of Marine and Coastal Law* 483; Vito De Lucia, 'The Ecosystem Approach and the negotiations towards a new Agreement on Marine Biodiversity in Areas beyond National Jurisdiction' (2019) *Nordic Environmental Law Journal* 7.

13 See instead, inter alia, Antonia Zervaki, 'The Ecosystem Approach and Public Engagement in Ocean Governance: The Case of Maritime Spatial Planning', in David Langlet and Rosemary Rayfuse (eds), *The Ecosystem Approach in Ocean Planning and Governance* (Brill 2018) 223; Jason S Link and others, 'Keeping Humans in the Ecosystem' (2017) 74 *ICES Journal of Marine Science* 1947 with further references.

14 UNCLOS art 192.

15 UNCLOS art 194 (2).

and habitats of endangered species and other forms of marine life.¹⁶ It must also be assumed that coastal States, typically, have the best knowledge of local conditions, ecological as well as social, that could prompt specific protective measures and also have a strong interest in the design of any such measures. This is followed by a look at what measures or instruments are available at the international level, typically in the form of decisions by the International Maritime Organization (IMO) based on international agreements such as the International Convention for the Prevention of Pollution from Ships (MARPOL)¹⁷ or the International Convention for the Safety of Life at Sea (SOLAS)¹⁸ to extend extra protection to specific areas or otherwise adjust the environmental regulation of shipping to the conditions and needs of specific geographic areas.

2 Ecosystem Based Management

Over the past few decades, natural science as well as policy-making has gradually shifted from, or at least expressed the intent to shift, from focusing on specific activities and associated environmental problems to more comprehensive approaches that try to capture the complexity of the natural environment and how it is affected by cumulative human impacts.¹⁹ This is reflected in the emergence of the ecosystem approach as a fundamental concept for integrated environmental management. In the scientific literature, 'ecosystem approach' has been used since the mid-20th century but its use has increased rapidly since the 1980s.²⁰ Related concepts such as 'ecosystem-based management' and 'ecosystem management' have also become very frequent in recent

16 UNCLOS art 194 (5).

17 International Convention for the Prevention of Pollution from Ships (2 November 1973) 1340 UNTS 184, as amended by the Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships (London, 17 February 1978, in force 2 October 1983) 1340 UNTS 61 [MARPOL].

18 International Convention for the Safety of Life at Sea (London, 1 November 1974, in force 25 May 1980) 1184 UNTS 2 [SOLAS].

19 An important expression of this is the development of the DPSIR (*Drivers–Pressures–State Change–Impact–Response*) framework as an attempt to capture key relationships between society and the environment and enabling assessment of the causes, consequences and responses to change in socio-ecological systems in a holistic way. Atkins and others (n 8).

20 In Google scholar the search string 'ecosystem approach' AND 'environmental management' generate around 17 600 hits, of which 15 900 are from 1990 or later.

decades. These concepts are sometimes used interchangeably, while at other times they are intentionally invoked as having distinct connotations.²¹

As discussed in the introduction, the present analysis is primarily concerned with the spatial dimension of these concepts, for which reason a closer look at that dimension is more fruitful than attempting to pinpoint any specific differences between the general concepts. While all the concepts are also themselves subject to varying definitions there are core features common to pretty much all formulations of the ecosystem approach or ecosystem-based management. Among these is that it entails management that is place- or area-based, either in as strictly geographic sense or in terms of relating to defined processes that comprise ecosystem functioning. The latter understanding places less emphasis on distinct geographical boundaries but still relates to somehow delineated ecological systems.²² This focus on the importance of place and the features of natural systems has resulted in an increasing emphasis on structuring the regulation of human activities to fit the scale and other features of relevant natural systems.²³ Other features that are generally associated with ecosystem approaches to management include that they are incremental and adaptive to new knowledge or changing circumstances and cognizant of uncertainties and the existence of multiple factors – both internal and external to the ecosystem as such – influencing management outcomes.²⁴ Many influential definitions of the ecosystem approach also more or less explicitly hold that ecosystem-based management should result in human activities that affect ecosystems staying within ecological boundaries.²⁵

The most influential definition of the ecosystem approach in a legal or policy context is found in a ‘common understanding’ adopted by the parties to the Convention on Biological Diversity (CBD). According to this, the approach ‘is

21 KA Waylen, ‘The Need to Disentangle Key Concepts from Ecosystem-Approach Jargon’ (2014) 28 *Conservation biology* 1215–1224, 1216; Trine Skovgaard Kirkfeldt, ‘An ocean of concepts: Why choosing between ecosystem-based management, ecosystem-based approach and ecosystem approach makes a difference’ (2019) 106 *Marine Policy* 103541.

22 Cecilia Engler, ‘Review: Beyond Rhetoric: Navigating the Conceptual Tangle Towards Effective Implementation of the Ecosystem Approach to Oceans Management’ (2015) 23 *Environmental Review* 288, 291.

23 David Langlet, ‘Scale, Space and Delimitation in Marine Legal Governance – Perspectives from the Baltic Sea’ (2018) 98 *Marine Policy* 278.

24 See, inter alia, Steven A Murawski, ‘Ten myths concerning ecosystem approaches to marine resource management’ (2007) 31 *Marine Policy* 681, 682.

25 R Edward Grumbine, ‘What Is Ecosystem Management?’ (1994) 8 *Conservation Biology* 27, 31; Record of the First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions (Bremen, 26 June 2003) (OSPAR/HELCOM statement), Annex 5 (‘Towards an Ecosystem Approach to the Management of Human Activities’).

a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way ...'. It also 'requires adaptive management to deal with the complex and dynamic nature of ecosystems and the absence of complete knowledge or understanding of their functioning'.²⁶

In terms of law, an ecosystem approach was mandated already in 1980 through the adoption of the Convention on the Conservation of Antarctic Marine Living Resources.²⁷ However, it was in 1995 that it gained general recognition as a policy concept when the parties to the CBD agreed that it 'should be the primary framework of action to be taken under the Convention'. The approach features particularly strongly in relation to the marine environment with clear endorsements *inter alia* within the frameworks of the regional Helsinki and OSPAR Conventions,²⁸ as well as the United Nations Fish Stocks Agreement.²⁹

For the purpose of the present analysis, the most important message of the ecosystem approach is the need to get away from single sector approaches to the regulation of human activities or at least make the regulation of sectors cognizant of the sectors' embeddedness in and effects on larger social and not least ecological systems. The approach entails a need for management of human activities that is flexible so that it can effectively deal with local conditions and requirements and adequately respond to change. However, despite having many potential effects on marine and other ecosystems, shipping has only to a very limited extent been discussed in relation to the ecosystem approach.³⁰

26 CBD, COP Decision V/6 Ecosystem Approach (Nairobi, 26 May 2000).

27 Convention on the Conservation of Antarctic Marine Living Resources, Canberra (adopted 20 May 1980, entered into force 7 April 1982) 19 ILM 841.

28 First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions (n 25).

29 Agreement for the Implementation of the Provisions of the UN Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 August 1995, entered into force 11 December 2001) 2167 UNTS 3.

30 According to the multidisciplinary database of scientific publications Scopus, there are >1100 publications with 'ecosystem approach' and 'fisheries' in the title, abstract or key words, but only 17 with 'ecosystem approach' and 'shipping'. Scopus search conducted 3 March 2022.

3 Environmental Pressures Associated with Shipping

Although good progress has been made over the past 40 years in reducing some forms of pollution from ships, the sector is still associated with considerable pressures on many aspects of the environment, as well as human health – pressures that may increase due to the continued growth of shipping.³¹ Before discussing the regulatory framework for international shipping, and its compatibility with core features of the ecosystem approach, this section gives a brief overview of some of the main environmental pressures associated with shipping. The focus is on the spatial characteristics of these pressures, as well as on other features of particular relevance for ecosystem-based management.

Among the pollutants not discussed in the following, but which may still represent a significant environmental pressure partly as a consequence of international shipping are particles, volatile organic compounds (VOCs), marine waste and sewage.³² (On emissions from ships, see also the chapter by Hassellöv in this volume).

3.1 *Oil and Other Hazardous Substances*

Probably the most well-known environmental problem associated with shipping is that of oil being introduced into the marine environment. Most public attention is generated by oil pollution resulting from disastrous maritime accidents, but there is also significant chronic oil pollution caused by the normal operation of ships, as well as smaller intentional discharges. Whereas enormous oil spills from accidents involving oil tankers have decreased, large amounts of oil still enter the ocean, not least in the form of operational spills from the shipping sector.³³

The ecological consequences of oil spills are highly place-dependent. Although ecosystems in many instances can recover fairly swiftly from an oil spill, the local effects can be dramatic with extensive mortality of birds, marine mammals and also benthic biota, particularly when the spill occurs in the vicinity of breeding or nursery areas or important migration routes.³⁴ If a spill occurs in an area with threatened or endemic species they may be severely diminished or even wiped out. Ambient temperature is a circumstance that is

31 Simcock and Kamara (n 1) 38.

32 On these, see inter alia Karin Andersson and others (eds), *Shipping and the Environment – Improving Environmental Performance in Marine Transportation* (Springer 2016).

33 Selma Brynolf and others, 'Improving Environmental Performance in Shipping' in Andersson and others (n 32) 399, 402.

34 Simcock and Kamara (n 1) 24.

very significant for the duration of and recovery from an oil spill.³⁵ Low temperature reduces the rate of natural weathering processes such as evaporation and biodegradation, thereby making the spill more persistent. An additional problem with oil spills in arctic and other ice-covered waters is that the oil gets mixed into or below the ice, making oil remediation much more difficult.³⁶

There are also many other hazardous substances apart from oil that are transported by ships in considerable volumes. However, the large number of such substances and the great variety of environmental risks with which they are associated make it hard to say much in general about their characteristics or the demands they place on the regulatory system. What is clear is that also here the effects of spills depend on a combination of the nature and the volume of the substance in question that enters the environment and the characteristics of the location where the spill occurs.³⁷ It is notable that also non-toxic substances like vegetable oil have been reported to have a very negative impact on marine biota when released in large quantities.³⁸

3.2 *Air Pollution*

Shipping is associated with various forms of air pollution. Emissions of sulphur oxides (SO_x) and nitrogen oxides (NO_x) have a long history of debate and regulation. For at least 30 years it has been known that emissions of NO_x and SO_x from ships constitute a serious element in air pollution in coastal areas with heavy shipping.³⁹ Many air emissions that originate from ships can be transported hundreds of kilometres from the point of emission. The fact that about 70 percent of the emissions from maritime transport are emitted within 400 km of land contributes to making shipping a very significant source of air pollution in many coastal areas.⁴⁰

Emissions of sulphur dioxide cause acid rain and combine with other pollutants, such as sulphur, to generate fine particles. Global emissions of small particles from shipping are linked to thousands of cases of lung cancer and other diseases of the heart and lungs.⁴¹ NO_x released into the atmosphere can have a number of deleterious effects of local, regional or global reach. Among

35 *ibid.*

36 Brynolf and others (n 33) 408.

37 Walker and others (n 2) 513.

38 *ibid.*

39 Alan Simcock, 'Shipping' in Markus Salomon and Till Markus (eds), *Handbook on Marine Environment Protection* (Springer 2018) 115, 123.

40 Kent Salo and others, 'Emissions to the Air' in Andersson and others (n 32) 169, 170.

41 Walker and others (n 2) 507.

them are formation of ground level ozone and secondary particulate matter, eutrophication and acidification.⁴²

Both NO_x and SO_x result from the burning of marine fuels. Essentially, the level of NO_x and SO_x emissions depend on the type of fuel, engine, and engine efficiency.⁴³ Traditionally, marine fuels have contained extremely high levels of sulphur compared to fuels for land transport and marine transportation has been estimated to account for 10–15 percent of the world's anthropogenic SO_x and NO_x emissions.⁴⁴ In port cities, emissions from shipping have in many cases been identified as the major source of urban air pollution.⁴⁵ Some impacts, like the acidification resulting from sulphur depositions are also dependent on local natural conditions like the natural buffering capacity associated with different geological characteristics.⁴⁶

3.3 *Climate Change and Ocean Acidification*

A study by the IMO found that international shipping accounted for approximately 2.2 percent of global emissions of carbon dioxide in 2012.⁴⁷ However, maritime CO₂ emissions are projected to increase significantly and could, depending on future economic and energy developments, increase by 50 to 250 percent in the period to 2050.⁴⁸ Since the atmosphere is an almost perfect mix of its constituent gases, the location of greenhouse gas emission sources is, however, of little or no significance for climate change or ocean acidification, both caused primarily by the increase of carbon dioxide levels in the atmosphere. This makes an ecosystem-based approach to climate change and ocean acidification mitigation superfluous. The consequences of climate change on the other hand can be very different and reach different levels of severity in different regions of the world. The effects of climate change as well as those of ocean acidification also tend to be linked to the prevalence of other pressures in a particular area.⁴⁹ In this sense, climate change and ocean acidification also have a place specific dimension.

42 Salo and others (n 40) 192.

43 Walker and others (n 2) 2.

44 *ibid* 4.

45 Salo and others (n 40) 171.

46 *ibid* 189.

47 IMO, Third IMO GHG Study 2014, Executive Summary and Final Report (International maritime organization 2015) 1.

48 *ibid* 5.

49 See, inter alia, Jonathan N Havenhand and others, 'Ecological & functional consequences of coastal ocean acidification: perspectives from the Baltic-Skagerrak system' (2018) 48:8 *Ambio* 831.

3.4 *Noise*

Anthropogenic noise in the oceans has increased in recent decades with commercial shipping as the main source.⁵⁰ Although there is still a lack of knowledge about the specific effects of marine noise, it is known that the noise generated by ships is often in frequency bands used by marine mammals for communication.⁵¹ Anthropogenic noise has also been linked to a variety of detrimental effects on various forms of marine life.⁵² Sensitivity to noise varies between marine species.⁵³ In general, however, the impacts of underwater noise depend on duration and intensity with long-term low-intensity noise, like that from marine vessels, potentially having greater negative effects than short-term bursts of noise.⁵⁴ In the longer term, technical amendments to hulls and propellers can decrease noise, but the most effective measures to mitigate the effects of underwater noise on marine species tend to be geographic and seasonal shipping restrictions.⁵⁵

3.5 *Antifouling*

Minutes after a clean surface, like a ship's hull is introduced into the marine environment various organisms start attaching to it.⁵⁶ On ships, so-called fouling increase the frictional resistance resulting in, among other things, lower speed, impaired manoeuvrability, and greater fuel consumption. The problem has been known since antiquity, and different materials and substances have been used to limit fouling on ships. Today, antifouling paints are applied to the hulls of ships as well as to many other submerged structures to prevent the growth of fouling organisms. A wide range of chemicals, with different physico-chemical properties and differing environmental effects are used for antifouling purposes. Since the toxic substance tributyltin (TBT) was widely prohibited in the early 2000s, copper has become the primary active ingredient in antifouling paints. The copper is often supplemented by so-called

50 Simcock and Kamara (n 1) 18.

51 *ibid.*

52 For a comprehensive overview, see Arthur N Popper and Anthony Hawkins (eds), *The Effects of Noise on Aquatic Life* (Springer 2012).

53 Walker and others (n 2) 518.

54 *ibid.*

55 *ibid* 519 and Rob Williams and others, 'Approaches to reduce noise from ships operating in important killer whale habitats' (2019) 139 *Marine Pollution Bulletin* 459.

56 J Fredrik Lindgren and others, 'Discharges to the Sea', in Andersson and others (n 32) 125, 145.

booster biocides like Irgarol 1051 and Diuron to make the paints more effective on algae.⁵⁷

Since the antifouling effect is typically due to the slow leaching of biocides from the painted surface, elevated concentrations of antifouling agents are most significant in semi-enclosed marine systems, such as harbours, marinas and estuaries. In addition to leaching, these chemicals can also spread for example in the form of antifouling paint particles generated during boat maintenance and cleaning.⁵⁸ Waters with intense marine traffic and areas used for maintenance of ships and smaller boats are thus particularly affected by the environmental consequences of antifouling.

3.6 *Ship Strikes*

In some areas, collisions between ships and marine animals, so-called ship strikes, is a considerable environmental problem. Species involved in such collisions include sea turtles, manatees, sharks as well as various small and large whales. The effect of lethal collisions with whales has attracted particular attention due to the potentially large effects on the survival of endangered whale species.⁵⁹ The probability of ship strikes is generally linked to vessel speed,⁶⁰ but is also particularly accentuated in certain areas where large marine fauna coexists with maritime routes.⁶¹

4 The General Approach to the Regulation of Shipping

As the brief overview above confirms, the environmental pressures associated with shipping are diverse and the intensity as well as consequences of different pressures are often place specific. This would seem to make shipping an obvious case for place-based management of environmental pressures in an integrated manner, comprising not only the pressures associated with different kinds of shipping but also placing these in a wider context of anthropogenic pressures on relevant ecosystems. In reality, however, the regulation of the environmental effects of international shipping can appear as the antithesis to the ecosystem approach. Rather than being susceptible to local conditions,

57 *ibid* 151.

58 Andrew Turner, 'Marine pollution from antifouling paint particles' (2010) 60 *Marine Pollution Bulletin* 159.

59 Jägerbrand and others (n 2) 8.

60 Walker and others (n 2) 520.

61 Jägerbrand and others (n 2) 7.

the regulatory system is premised on far-reaching international harmonisation and the avoidance of local requirements that may impede the freedom and expediency of maritime transport. In the words of Ringbom, ‘the governance of shipping remains heavily centralised and rigid in both institutional and substantive terms.’⁶² This relative rigidity results from the privileged role granted to shipping in the UNCLOS as well as from the strong position of the IMO in the elaboration of environmental standards for international shipping.⁶³

However, as for any complex legal structure there are exceptions and modifications to this general rule. There may also be ways to deal with at least some of the relevant pressures that do not necessarily require great local variability of the applicable standards. Against this backdrop, a closer look will be had at the extent to which different aspects of the regulatory structure can be reconciled with the logic of the ecosystem approach. The intention is not to provide a detailed account of the ways in which the various environmental pressures resulting from shipping have been regulated.⁶⁴ The focus is instead on assessing to what extent existing regulatory mechanisms in general have been premised on local and regional needs and conditions and whether the regulatory framework enables responses tailored to meet such needs, or when, perhaps, such tailoring is superfluous.

5 Area-Based Measures by Coastal States

As will be well known to most readers, the oceans are divided into zones characterised by different conditions for the exercise of jurisdiction by, primarily, coastal States – both in terms of the right to legislate and to take enforcement measures. In all of these zones, except for internal waters, significant restrictions apply with respect to the ability of the coastal State to set or enforce measures in relation to ships not flying its own flag.

Whereas internal waters, i.e. marine waters on the landward side of the baseline,⁶⁵ are subject to extensive coastal state jurisdiction such waters are

62 Henrik Ringbom, ‘Regulation of ship-source pollution in the Baltic Sea’ (2018) 98 *Marine Policy* 246, 253.

63 On the role of the IMO, see Aldo Chircop, ‘The International Maritime Organization’, in Donald Rothwell and others (n 7) 416, 432; Erik Røsæg, ‘The Role of the International Maritime Organization in Defining and Altering the Jurisdiction of Flag, Coastal, and Port States’ in H Ringbom (ed), *Jurisdiction over ships: post-UNCLOS developments in the law of the sea* (Brill Nijhoff 2015) 363, 371.

64 For more in-depth discussions, see instead Andersson and others (n 32).

65 On the definition of normal and straight baselines, see UNCLOS arts 5 and 7.

typically only found in harbours, smaller bays and archipelagos.⁶⁶ So called archipelagic States⁶⁷ can have more extensive sea areas on the landward side of their straight archipelagic baselines. However, these archipelagic waters are subject to a right of passage by foreign ships that is similar to the regime of innocent passage applicable in the territorial sea (see below), and even more extensive in relation to so-called archipelagic sea lanes.⁶⁸

Starting from the baseline and stretching out to 12 nm seaward from it is the territorial sea. Although the sovereignty of the coastal State extends here,⁶⁹ granting it extensive control over this area, the existence of a right to innocent passage entails a significant restriction on the ability of coastal States to regulate shipping. The right of innocent passage, enjoyed by all foreign ships, means that the coastal State is normally prevented from interfering with the passage of ships through its territorial sea as long as the passage is continuous and expeditious and not prejudicial to the peace, good order or security of the coastal State.⁷⁰ The right of innocent passage can be suspended in specified areas, but only temporarily and only if it is essential for the protection of the security of the coastal State.⁷¹ Coastal States may adopt laws and regulations relating to innocent passage through the territorial sea. Such laws and regulations may concern the conservation of the living resources of the sea and the preservation of the environment of the coastal State and the prevention, reduction and control of pollution thereof. However, the rules and regulations must conform to the UNCLOS and other relevant rules of international law. More importantly, they may not apply to the construction, design, equipment, or manning (CDEM) of foreign ships unless they are giving effect to generally accepted international rules or standards.⁷² They must also not hamper the innocent passage of foreign vessels.⁷³

Of significant importance to the present discussion is, however, the existence of a right for coastal States to require foreign ships engaged in innocent

66 However, where the establishment of a straight baseline results in the enclosing as internal waters of areas which had not previously been considered as such, a right of innocent passage, as described below in the main text, applies in those waters. UNCLOS, art 8.

67 An archipelagic State is a State constituted wholly by one or more archipelagos but may also include other islands. UNCLOS art 46.

68 UNCLOS art 53.

69 UNCLOS art 2.

70 UNCLOS arts 17–19. A list of activities that make passage qualify as prejudicial to the peace, good order or security of the coastal State is found in article 19.

71 UNCLOS art 25(3).

72 UNCLOS art 21.

73 UNCLOS art 211(4).

passage through the territorial sea to use such sea lanes and traffic separation schemes as the coastal State may designate or prescribe for the regulation of the passage of ships.⁷⁴ When designating or prescribing them, the coastal State must have regard to the safety of navigation and is also required to take into account, *inter alia*, any recommendations of the IMO.⁷⁵ However, it still leaves the coastal State some freedom to direct ships away from particularly sensitive areas. It also enables coastal States to establish marine protected areas in their territorial seas, as long as they do not hamper the right of innocent passage. For States bordering so-called straits used for international navigation the competence is more limited since the consent of the IMO is required for the designation of sea lanes in such straits.⁷⁶

Although the above leaves individual coastal States some authority to design specific environmental measures applicable to ships exercising innocent passage, the preferred regulatory model mandated by the UNCLOS is clearly the elaboration within the IMO or in other international fora of general rules and standards or the adoption of routeing systems by the IMO.⁷⁷

If an EEZ has been established – and most coastal States have done that – it stretches from the outer limit of the territorial sea to a maximum of 200 nm from the baseline.⁷⁸ In the EEZ the coastal State enjoys sovereign rights for the purpose of exploring and exploiting, conserving and managing the living as well as non-living natural resources as well as with regard to other activities for the economic exploration and exploitation of the zone.⁷⁹ It also has jurisdiction with regard to the protection and preservation of the marine environment. However, that jurisdiction is only ‘as provided for in the relevant provisions’ of the UNCLOS.⁸⁰ With regard to shipping, no specific rights are granted coastal States in the EEZ corresponding to their (limited) rights in the territorial sea. In the EEZ all States, and indirectly their citizens, enjoy, with some exceptions

74 Any such lanes or schemes must be clearly indicated on official charts. UNCLOS art 22(4).

75 UNCLOS art 22. To be precise, the article refers not to the IMO but to ‘the competent international organization’. That, however, is generally understood as a reference to the IMO. Røsæg (n 63) 365.

76 UNCLOS art 41. On the concept of ‘straits used for international navigation’, or international straits, see UNCLOS arts 34–37. For a further discussion on coastal states’ competence to regulate shipping in such straits, see Nilüfer Oral, ‘Navigating the Oceans: Old and New Challenges for the Law of the Sea for Straits Used for International Navigation’ (2019) 46 *Ecology Law Quarterly* 163.

77 UNCLOS art 211(1).

78 UNCLOS, arts 55 and 57.

79 UNCLOS art 56(1)(a).

80 UNCLOS art 56(1)(b).

and subject to the UNCLOS, the freedom of the high seas including the freedom of navigation.⁸¹ This entails a right to navigate in the EEZ that is not restricted by the coastal State beyond what is necessary for its economic exploration and exploitation of the zone. Overall, the environmental competence of coastal States in the EEZ is restricted to adopting laws and regulations that conform to and give effect to generally accepted international rules and standards for the prevention, reduction, and control of pollution from vessels.⁸²

There is a basis in the UNCLOS for additional measures to be taken by a coastal State in respect of a clearly defined area of its EEZ if international rules and standards are inadequate to meet special circumstances. To do that, the coastal State must have reasonable grounds for believing that the adoption of special mandatory measures for the prevention of pollution from vessels is required in such area for recognized technical reasons in relation to oceanographical and ecological conditions, as well as its utilization or the protection of its resources and the particular character of its traffic.⁸³ This should seemingly make it possible to prescribe the use of additional navigational aids and even to adopt rules relating to construction, design, equipment and manning (CDEM).⁸⁴ However, the particular character of the area must be determined by the IMO based on scientific and technical evidence submitted by the coastal State.⁸⁵ Since approval by the IMO is required, this is not a right for coastal States to take unilateral measures within a defined mandate, but rather a possibility to initiate a multilateral decision process.

There is also a possibility for a coastal State to adopt additional pollution-related laws and regulations for the same area, in addition to those that may have been mandated by the IMO. Such additional rules must also be notified to the IMO. They may relate to discharges or navigational practices but shall not require foreign vessels to observe CDEM standards other than generally accepted international rules and standards.⁸⁶ Unfortunately, the relevant provision, UNCLOS Article 211(6) lit c, is formulated in a way that leaves the exact nature of the coastal State's additional regulatory competence rather ambiguous.⁸⁷ The procedure for adopting additional measures seems never to have

81 UNCLOS art 58(1).

82 UNCLOS art 211(5).

83 UNCLOS art 211(6).

84 Markus J Kachel, *Particularly Sensitive Sea Areas – The IMO's Role in Protecting Vulnerable Marine Areas* (Springer 2008) 83.

85 UNCLOS art 211(6) lit. (a).

86 UNCLOS art 211(6) lit. (c).

87 See further discussion in Kachel (n 84) 84, and Ingvild Ulrikke Jakobsen, *Marine Protected Areas in International Law: An Arctic Perspective* (Brill 2016) 379.

been used. This may indicate that States see a limited need for the additional measures that could be enabled this way. But equally or more likely is that the complexity of the provision and the high demands it places on a coastal State to convince the IMO of authorising measures have made it an impractical instrument for area-based environmental protection.⁸⁸

Finally, it should be noted that the principle of so-called port state jurisdiction, i.e. the right of States to exercise prescriptive and enforcement jurisdiction in relation to ships that voluntarily enter their ports, can be used for adopting additional requirements pertaining to foreign ships and their conduct. However, while it is widely recognized that States may impose conditions for access to their ports,⁸⁹ they can only enforce measures through port state jurisdiction which they are allowed under international law to prescribe in the first place.⁹⁰ A basis for prescriptive jurisdiction may exist, inter alia, if the rule that is to be enforced has a clear link to the port as such – for example to provide certain information regarding the vessel and its activities upon arrival at port – or follows from an international agreement.⁹¹ If a State establishes particular requirements for the prevention, reduction and control of pollution of the marine environment as a condition for the entry of foreign vessels into its ports or internal waters, it must give due publicity to such requirements and communicate them to the IMO.⁹²

Before proceeding to the next section, mention should also be made of the concept of ‘enclosed or semi-enclosed seas’ which the UNCLOS defines as ‘a gulf, basin or sea surrounded by two or more States and connected to another sea or the ocean by a narrow outlet or consisting entirely or primarily of the territorial seas and exclusive economic zones of two or more coastal States.’⁹³ For such areas, like the Black Sea, the Baltic Sea and the Mediterranean, the coastal States are instructed to cooperate with each other in the exercise of their rights and in the performance of their duties under the UNCLOS.⁹⁴

88 Jacobsen (n 87) 379.

89 Sophia Kopela, ‘Port-State Jurisdiction, Extraterritoriality, and the Protection of Global Commons’ (2016) 47 *Ocean Development & International Law* 89, 94; Bevan Marten, ‘Port State Jurisdiction, International Conventions, and Extraterritoriality: An Expansive Interpretation’ in H Ringbom (ed), *Jurisdiction over Ships: Post-UNCLOS Developments in the Law of the Sea* (Brill, Leiden, 2015) 103, 115.

90 Cedric Ryngaert and Henrik Ringbom, ‘Introduction: Port State Jurisdiction: Challenges and Potential’ (2016) 31 *The International Journal of Marine and Coastal Law* 379, 383; Kopela (n 89) 94.

91 Kopela (n 89) 92.

92 UNCLOS art 211(3).

93 UNCLOS art 122.

94 UNCLOS art 123.

However, that this provision would entail a binding obligation of any level of substance is disputed,⁹⁵ and there are no additional jurisdictional rights for coastal States linked to such enhanced cooperation.⁹⁶

6 Multilateral Area-Based Instruments

Having concluded that there is very limited room, particularly beyond the territorial sea, for individual coastal States to take measures that can strengthen the environmental protection for vulnerable areas, it is appropriate to also look for multilateral mechanisms that can be used for adjusting the regulation of shipping to the needs of specific areas. 'Multilateral' is here used to denote any measure that needs to be approved or adopted by an international body, typically the IMO, and cannot be decided unilaterally by an individual State. It should be noted, though, that with this definition some measures already discussed above, notably the procedure for mandating a coastal State to take 'additional measures' in respect of a clearly defined area of the EEZ, would also fall under this category.

6.1 *Special Areas and Emission Control Areas*

In the previous section, much attention was given to the restrictive approach to requirements concerning CDEM, which with few exceptions must adhere to internationally recognized standards. With respect to environmental protection, 'international standards' are primarily understood as a reference to MARPOL, which lays down CDEM standards for vessels, as well as discharge and emission restrictions.⁹⁷ While general rules are found in MARPOL and its protocols, much of the concrete standards are found in the six annexes to that Convention. These deal with prevention of pollution by oil (Annex I), by noxious liquid substances in bulk (Annex II), by harmful substances carried by sea in packaged form (Annex III), by sewage (Annex IV), by garbage from ships (Annex V), and by air pollution from ships (Annex VI). Although each annex has its own regulatory approach, a feature common to most of them is the concept of special areas intended to grant a higher level of protection to specific vulnerable parts of the oceans.⁹⁸

95 Erik Franckx and Marco Benatar, 'The "Duty" to Co-Operate for States Bordering Enclosed or Semi-Enclosed Seas' (2013) 31 *Chinese (Taiwan) Yearbook of International Law and Affairs* 66.

96 Ringbom (62) 247.

97 There are also CDEM standards in, inter alia, the SOLAS Convention.

98 Kachel (n 84) 97.

What may be called traditional special areas are provided for by Annex I, II and V with respect to oil, noxious liquid substances in bulk, and garbage. Guidelines for the designation of such areas have been adopted by the IMO.⁹⁹ With respect to all these annexes, a special area is defined as 'a sea area where for recognised technical reasons in relation to its oceanographical and ecological conditions and to the particular character of its traffic, the adoption of special mandatory methods for the prevention of sea pollution by oil, noxious liquid substances, or garbage, as applicable, is required'.¹⁰⁰

The guidelines set out criteria which must be satisfied for an area to be given Special Area status. They are divided into three different categories: oceanographic conditions; ecological conditions; and vessel traffic characteristics. The criteria concerning vessel traffic characteristics include that the sea area must be 'used by ships to an extent that the discharge of harmful substances by ships when operating in accordance with the requirements of MARPOL 73/78 for areas other than Special Areas would be unacceptable in the light of the existing oceanographic and ecological conditions in the area'.¹⁰¹ The requirements that apply with respect to special areas are binding on all States, even those that are not parties to MARPOL. This is an effect of the requirements being seen to reflect generally accepted international rules and standards according to the UNCLOS Article 211(5).¹⁰²

The designated special areas tend to be quite large, such as the Mediterranean Sea, the Baltic Sea, the Black Sea Area, or the Gulf Area.¹⁰³ Clearly, the extra restrictions that apply in special areas can contribute to the protection of particularly sensitive ecosystems. However, the very large-scale approach and the need for approval by the IMO makes this a rather blunt instrument for achieving the objectives envisioned by the ecosystem approach. But if special area requirements are stringent enough, they can effectively make the addition of more local requirements redundant.

In addition to these special areas, there are 'emission control areas' (ECAs) established under MARPOL Annex VI, which can relate to emission of NOX or SOX, and particulate matter, or all three types of emissions. Compared to the

99 IMO Res. A.927(22), Guidelines for the Designation of Special Areas under MARPOL 73/78 and Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas, adopted 29 November 2001, Annex 1.

100 *ibid.*

101 *ibid.*, para. 2.6.

102 Jakobsen (n 87) 388.

103 For an overview of the special areas, see <<https://www.imo.org/en/OurWork/Environment/Pages/Special-Areas-Marpol.aspx>> accessed 1 April 2022.

special areas, the establishment of an emission control area entails a more holistic approach.¹⁰⁴ When assessing an application for the establishment of such an area the IMO is to consider, *inter alia*, the impacts of the relevant emissions on human health and the environment, such as adverse impacts to terrestrial and aquatic ecosystems, areas of natural productivity, and critical habitats. The focus is thus not only on the marine environment but on all areas that are affected by emissions from international shipping. This reflects the nature of air pollution, which easily crosses the land-sea divide.

The IMO will also assess the control measures taken by the proposing States addressing land-based sources of the relevant emissions that affect the human populations and environmental areas at risk. This requires proposing States to have in place measures that effectively reduce terrestrial emissions.¹⁰⁵ The relative costs of reducing emissions from ships compared with reductions from land-based sources, and the economic impacts on shipping engaged in international trade are also considered by the IMO.¹⁰⁶

Currently there are four large control areas for SO_x where the maximum sulphur content of ships' fuel is 0.1 percent: the Baltic Sea area; the North Sea area; the North American area (covering designated coastal areas off the United States and Canada); and the United States Caribbean Sea area (around Puerto Rico and the United States Virgin Islands).¹⁰⁷ This should be compared to the generally allowed sulphur content that used to be 3.5 percent, but has been lowered to 0.5 percent as from 2020, thus making the difference between the control areas and other areas significantly smaller. Stricter technical requirements relating to NO_x emissions also apply in these ECAs. However, they only apply in relation to ships built after January 1, 2016 in the North American and U.S. Caribbean ECAs, and to ships built after January 1, 2021 in the Baltic and North Sea ECAs.

The 'special area' and 'emission control area' mechanisms can be seen as a way to allow for differentiation between sea areas – on a large scale – without challenging the centralized nature of the regulatory regime for ship source emissions, since they are adopted at the global level and with participation of virtually all affected States.¹⁰⁸ At the same time, this makes them a fairly unspecific instrument and one that is not easily adjusted to changing circumstances.

104 Kachel (n 84) 102.

105 *ibid* 103.

106 MARPOL Annex VI, Appendix III.

107 <www.imo.org/en/MediaCentre/HotTopics/Pages/Sulphur-2020.aspx> last accessed 4 March 2022.

108 Ringbom (n 62) 248.

It should also be noted that for road vehicles, the allowed amount of sulphur is generally much lower than for ships. The 0.1 percent limit in ECAs is still approximately 100 times higher than the sulphur content allowed for car fuel in the European Union.¹⁰⁹

6.2 *Routeing and Areas to Be Avoided*

Whereas there are a number of instruments that can provide the basis for various restrictions on the conduct of ships or even the establishment of compulsory technical standards, the SOLAS Convention stands out as the legal instrument providing the IMO with the authority to adopt and implement ships' routeing measures, thereby directing ships to specific areas (sea lanes) or away from areas, so-called 'areas to be avoided' (ATBA).¹¹⁰ Beyond the territorial sea, mandatory measures of that kind can be implemented only with the approval of the IMO and based on the relevant parts of SOLAS. Among the routeing measures available to the IMO are recommended tracks, ATBA, no-anchoring areas, and deep-water routes. For the present analysis, ATBA are particularly relevant since they can keep vessels away from specific areas even when conditions such as sea ice make vessels leave shipping lanes or where such lanes have not been designated.

According to SOLAS, ships' routeing systems shall contribute to safety of life at sea, safety and efficiency of navigation and/or protection of the marine environment. When adopted by the IMO, such measures can be recommended for use by, and may be made mandatory for, all ships, certain categories of ships or ships carrying certain cargoes.¹¹¹ Guiding vessel traffic at a safe distance from environmentally sensitive areas has been accepted as a legitimate purpose of a routeing system.¹¹² ATBAs are flexible in the sense that they can be tailored to address specific concerns in specific geographic locations and can apply either to all ships or just to ships with certain properties.¹¹³ ATBAs that adapt in real time to environmental or biological changes are conceivable, although they are yet to be adopted by the IMO.¹¹⁴

109 Magda Wilewska-Bien and others, 'Measures to Reduce Discharges and Emissions' in Andersson and others (n 32) 341, 371.

110 Henry P Huntington and others, 'The role of areas to be avoided in the governance of shipping in the greater Bering Strait region' (2019) 110 *Marine Policy* 103564, 3.

111 SOLAS, chapter V, regulation 10.

112 Huntington and others (n 110) 3.

113 *ibid* 5.

114 *ibid* 6.

The adoption of mandatory routeing measures, rather than recommendatory ones, has only been possible since 1997 and has met with significant resistance as a potential threat to the right of innocent passage and freedom of navigation.¹¹⁵ The threshold for adoption of mandatory routeing measures by the IMO remains rather high and to be adopted it must be clear that the measures do not impose unnecessary constraints on shipping. The globally unique ecosystems of the Baltic Sea were not considered sufficient for the adoption of mandatory ATBAs in the area, despite the Baltic Sea's status as a PSSA (see section 6.3 below), when balancing the need for environmental protection against navigational interests.¹¹⁶ Fortunately, there seems to be high compliance also with recommendatory ATBA.¹¹⁷

Although coastal States have the sovereign right to establish routeing measures within their territorial seas as long as they don't impede innocent passage, there are advantages to having such measures adopted by the IMO. Measures adopted by the IMO are likely to be better known and possibly also more complied with.¹¹⁸ Beyond the territorial sea, it is only with IMO approval that such measures can be adopted.

6.3 *Particularly Sensitive Sea Areas*

The most flexible area-based mechanism used by the IMO is the designation of so-called Particularly Sensitive Sea Areas (PSSAs). A PSSA is defined as 'an area that needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities'.¹¹⁹ The designation of PSSAs has been described as a way of overcoming the limitations on coastal State jurisdiction for the protection of the marine environment from vessel source pollution that follow from the right of innocent passage in the territorial sea, and freedom of navigation in the EEZ.¹²⁰ In itself, however, the designation of a PSSA does not entail any increased jurisdictional powers, nor any new obligations on the shipping sector.

115 Julian Roberts, 'Protecting Sensitive Marine Environments: The Role and Application of Ships' Routeing Measures' (2005) 20 *The International Journal of Marine and Coastal Law* 135, 150.

116 Jacobsen (n 87) 399.

117 Huntington (n 110) 3.

118 Roberts (n 115) 151.

119 IMO Res. A.927(22) (n 99), para. 1.2.

120 Edward Goodwin, 'Threatened Species and Vulnerable Marine Ecosystems' in Rothwell and others (n 7) 799, 804.

What particularly sets PSSAs apart from the other mechanism discussed above is that it is not based on a specific legal mandate or provision in any binding instrument. Instead, it is for the relevant committees within the IMO to choose appropriate measures among the ones available in different legal instruments in order to fill any particular PSSA designation with substantive content. Such so-called ‘associated protective measures’ (APMs) can take the form of designation of an area as a special area or emission control area under MARPOL, or application of special discharge restrictions to vessels operating in the PSSA, adoption under SOLAS of ships’ routeing and reporting systems near or in the area, or any other measures aimed at protecting specific sea areas against environmental damage from ships, provided that they have an identified legal basis.¹²¹ To be adopted, any APM must meet the requirements of the appropriate legal instrument establishing such measure.¹²²

Any State that is a member of the IMO,¹²³ or group of such States, can apply to have an area identified as a PSSA. The guidelines for the identification and designation of PSSAs set out 17 criteria, falling into three categories: ecological criteria; social, cultural, and economic criteria; and scientific and educational criteria. At least one of the criteria must be met for identification as a PSSA. The ecological criteria comprise such features as an ecosystem being unique; that it is an outstanding example of specific biodiversity, ecosystems or other natural characteristics; that it has an exceptional variety of species or genetic diversity; or that it has a particularly high rate of natural biological production.¹²⁴ For designation as a PSSA, it must also be shown that the recognized attributes of the area are at risk from international shipping activities.¹²⁵ What may be deemed an ecologically progressive feature is that a PSSA may include a buffer zone, i.e. an area contiguous to the site-specific feature for which specific protection from the impacts of shipping is sought.¹²⁶

As of 2021, there are 17 areas that have been designated as PSSAs. Among these are The Great Barrier Reef (Australia), The Wadden Sea (Denmark, Germany, Netherlands), The Galapagos Archipelago (Ecuador), and The

121 IMO. (2006). Res. A.982(24), Revised guidelines for the identification and designation of particularly sensitive sea areas (Doc. A24/Res.982), Annex, s 6.

122 *ibid*, s 1.2.

123 As of March 2022, the IMO has 174 Member States. <www.imo.org/en/About/MemberShip/Pages/MemberStates.aspx> accessed 4 March 2022.

124 IMO Res. A.982(24) (n 121) Annex, s 4.4.

125 *ibid* s 5.

126 *ibid* s 6.

Jomard Entrance (Papua New Guinea).¹²⁷ In order to understand the regulatory significance of these designations, the APMs applicable to each area must be analysed. PSSAs are predominantly covering waters that have the status of EEZ or archipelagic waters, but some PSSAs overlap at least in part with the territorial seas of the concerned coastal States.¹²⁸

In practise, States have generally been reluctant to accept far-reaching and mandatory measures as APMs and the list of decided routing measures under PSSAs is modest. Among other examples, proposals for mandatory areas to be avoided in the Baltic PSSA as well as for mandatory use of pilot in the Torres Strait have failed to attract sufficient support to be adopted.¹²⁹ The Baltic Sea PSSA also illustrates the problem with an instrument that requires the consent of all effected States. Since Russia did not support the request for designation of the Baltic Sea as a PSSA its part of the sea is excluded from the PSSA status.¹³⁰ Unfortunately, the Russian part is among those with the most intense ship traffic.

Although it can be argued that the designation of a PSSA has a value in its own right by drawing attention to the fact that an area is sensitive and warrants extra caution from anyone engaged in an activity that could harm it,¹³¹ the fact remains that it is the APMs that can establish concrete obligations. And the APMs available to the IMO are associated with the limitations discussed above in relation to the respective measure. In practise, the implementation of many APMs relies to a large extent on flag States, and effective implementation may be thwarted by lax maritime enforcement by certain such States.¹³²

6.4 *The Polar Code*

Last among the 'multilateral area-based instruments', mention must be made of the so-called Polar Code, which is a recently adopted instrument that has been developed to supplement existing IMO instruments in order to increase the safety of ships' operation and mitigate the impact on the people and

127 <<https://www.imo.org/en/OurWork/Environment/Pages/PSSAs.aspx>> last accessed 4 March 2022.

128 John Noyes, 'The Territorial Sea and Contiguous Zone' in Donald Rothwell and others (n 7) 91, 106.

129 Jakobsen (n 87) 399.

130 Alina Prylipko, 'PSSA In The Baltic Sea: Protection On Paper Or Potential Progress?', World Maritime University, 2014, <<https://commons.wmu.se/wwf/1>> last accessed 4 March 2022, 16.

131 Roberts (n 115) 145.

132 Prylipko (130) 13.

environment specifically in polar waters.¹³³ It consists of the Code for Ships Operating in Polar Waters and related amendments to SOLAS and MARPOL. More specifically, the Code consists of a number of decisions adopted within the IMO in 2014 and 2015 which became effective in 2017.

The Code has been described as ‘a unique instrument for regional application under the authority of the key SOLAS and MARPOL conventions’ and as constituting a ‘paradigm shift’ in the protection of Arctic waters.¹³⁴ It applies to both Arctic waters and the Antarctic area, but some rules are specific to Arctic waters.¹³⁵ The Code includes requirements on ships’ design and operation, manning and training. There are also specific rules on, among other things, prevention of pollution by oil and by sewage and garbage from ships. (On the management of Arctic waters and Arctic sea ice, see further the chapter by Argüello and Johansson in this volume).

The Polar Code can thus be seen as an area-specific adjustment of the general regulatory framework to better address the specific needs and conditions of the polar regions. It is, however, still an instrument that applies at a very large scale. In line with this, it has been noted that although it would be preferable for polar shipping regulation to continue to be developed in a harmonised fashion, there may be areas, such as those with especially sensitive marine ecosystems, where the coastal States concerned will need to consider additional, area-based measures to address the environmental impacts of the growth of shipping in such waters.¹³⁶

6.5 *Regional Marine Environmental Agreements*

It should also be noted that there are many regional agreements, applying to a certain geographic area, that aim to provide relevant protection based on local or at least regional considerations. Among these are the Barcelona Convention for the Mediterranean,¹³⁷ the Bucharest Convention for the Black Sea,¹³⁸ the

133 International Code for Ships Operating in Polar Waters (Polar Code), MEPC 68/21/Add.1 Annex 10, 5.

134 Aldo Chircop, ‘The Polar Code and the Arctic Marine Environment: Assessing the Regulation of the Environmental Risks of Shipping’ (2020) 3 *The International Journal of Marine and Coastal Law* 533, 543.

135 On the delineation of the Arctic and Antarctic waters to which the code applies, see the Polar Code (n 133) 8–9.

136 Chircop (n 134) 568–9.

137 Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona, adopted 16 February 1976, entered into force 12 February 1978) 1102 UNTS 27.

138 Convention on the Protection of the Black Sea against Pollution (Bucharest, adopted 21 April 1992, entered into force 15 January 1994) 1764 UNTS 3.

Helsinki Convention for the Baltic Sea,¹³⁹ and the OSPAR Convention for the North Sea.¹⁴⁰

However, these regional agreements cannot impose obligations on international shipping that go beyond the competence of the coastal State parties to the agreement, at least not in relation to ships flying the flag of States not parties to such an agreement. And considering the global nature of shipping, few areas are predominantly used by ships flying the flags of local coastal States. All regional instruments for marine environmental protection have also been found to contain collision clauses confirming the supremacy of freedom of navigation in conflicts between regional environmental protection and shipping interests.¹⁴¹

7 Conclusions and Outlook

The regulation of the environmental effects of shipping has come far since such effects started to gain attention in the 1960s and 70s. However, the shipping sector is still associated with many pressures on the environment, some of which may increase due to the overall growth of international shipping. While the regulatory framework has developed, imposing increased environmental requirements on shipping, it has done so in a way that leaves limited room for tailoring regulatory responses to local conditions. This entails clear risks for depletion of ecosystems, degradation of ecosystem services and harm to human health occurring at local or regional scales without the law being able to provide remedies or even preventing relevant action by individual States. In comparison to almost all other maritime activities, international shipping has been granted a very privileged position in terms of being shielded from much national and local regulatory action. This is not easily reconcilable with the ecosystem approach, premised as it is on the recognition that ecosystems are diverse and complex and require adaptive management able to respond effectively to pressures and changing circumstance also at a local scale. Turning this understanding into a basis for regulatory action in relation to shipping is potentially disruptive for the established order. The conflict is particularly evident beyond the territorial sea, in which coastal States have some, although

139 Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki, adopted 9 April 1992, entered into force 17 January 2000) 2099 UNTS 195.

140 Convention for the Protection of the Marine Environment of the North-East Atlantic (Paris, adopted 22 September 1992, entered into force 25 March 1998) 2354 UNTS 67.

141 Kachel (n 84) 132.

carefully delineated powers, to set and enforce requirements that go beyond international standards.

To some extent the regulatory structure has become more accommodating to the needs of specific areas or regions. The special areas and emission control areas adopted under MARPOL are obvious examples, as is the recent adoption of the Polar Code to better meet the environmental challenges of Arctic and Antarctic waters. Although such measures can have good environmental effects when the standards are stringent enough, they still tend to apply at quite large scales. That limits not only the scope for regulatory measures tailored to more local conditions but also has repercussions for the ability to take local knowledge into account or to allow for participation in the elaboration of rules and the associated trade-offs between affected interests. The multilateral processes available for adopting additional measures also tend to be onerous and it can be quite challenging to reach agreement among the members of the IMO.

There are ways to increase the compatibility between the regulation of shipping and fundamental tenets of ecosystem-based management. One way is to facilitate use of the existing mechanisms for areas-based management. The procedure under UNCLOS Article 211(6) for designating areas in the EEZ where additional protective measures can be taken by the coastal State should be clarified and streamlined so as to make it a useful instrument. The sovereign rights of coastal States for conserving and managing natural resources and with regard to other activities for the economic exploitation of their EEZs open for creative ways of conducting such activities so that they also provide some protection for specific areas.

Many coastal States can also make more use of the regulatory powers they have to direct shipping away from sensitive areas in internal waters and, to a somewhat more limited extent, in the territorial sea. In doing that, they must be aware of the environmental trade-offs that may be associated with different routes, where one route may, for example, reduce noise pollution in a sensitive area but at the same time increase exposure of another area to air pollution, or cause more overall emissions of greenhouse gases. In some respects, the balance struck between environmental protection and the expedience of shipping in the territorial sea is dated. Not least the fact that pollution must be both wilful and serious to disqualify the passage of a ship from being considered innocent. With few exceptions, intentional pollution should not be considered innocent in the often busy and sensitive coastal areas covered by the territorial sea.

States can use port state jurisdiction to set and enforce more stringent standards in relation to ships that voluntarily enter their ports, at least in relation to

matters that have clear links to the port. This includes, for example, restrictions on emissions of polluting substances to the air or the water while in the vicinity of the port, even if this entails prescribing CDEM standards that go beyond what is internationally accepted. Such requirements may come at a cost, since they can prevent ships that do not easily meet the requirements from using the port, thus pushing trade flows to other ports or driving up the cost of ship transport. Such issues can at least partly be addressed by regional cooperation between neighbouring States so that the additional standards are the same in all ports in a region, thereby creating stronger incentives for modifying ships and enabling the costs to be borne by larger volumes of trade.

The emergence of marine (or maritime) spatial planning (MSP) as a widespread instrument for marine management can enhance the practical conditions for integrated management of environmental pressures and for making informed trade-offs. MSP can also strengthen the role of sub-national entities like ports or municipalities that play a significant role in such processes.¹⁴² It does not, however, create any new competences for national or local actors to regulate shipping not previously available to coastal and port States.

The many virtues of having global standards for the regulation of shipping, or regional rules that have the explicit support of the global community as represented by the IMO, must not be forgotten. There are good reasons for protecting shipping from many of the impediments that may result from a fragmented regulatory landscape. Area-based management of environmental pressures should not be pursued unless it fills an important environmental function. And even when it does, such measures should be devised so as not to cause unnecessary or disproportionate obstacles to international shipping.

It must also be remembered that local abatement is not relevant for all environmental pressures. The location of CO₂ emissions is largely immaterial to the environmental consequences in the form of climate change and ocean acidification. There is hence little purpose in calling for a more area-specific regulation of such emissions. Although special measures against air pollution in ports or straits can be needed in some cases, the fact that such pollution readily spreads hundreds of kilometres typically makes it suited for more general or large-scale responses. It can also be particularly challenging to achieve compliance with local standards and restrictions.

The best option from an environmental perspective is obviously when pressures can be eliminated, as is the intention with, for example, the global ban on TBT. The interest of the freedom of shipping and the current largely

142 Ringbom (n 62) 250.

harmonized regulatory system put pressure on the shipping sector to accept and comply with general standards that are stringent enough to render local measures superfluous in most cases. With such standards a largely harmonised system and a level playing field for all actors can coexist with the vulnerable ecosystems and natural processes that make the oceans so valuable.

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Autonomous Shipping: Some Reflections on Navigational Rights and Rescue at Sea

Martin R. Leopardi

1 Introduction

Until recently, autonomous shipping seemed mostly a theoretical and futuristic vision of technical pioneers and innovative ship builders. However, technical landslides and major economic interests have contributed significantly to the prospect of autonomous shipping. The idea of autonomous and unmanned ships sailing on the seas raises several pertinent legal questions. Legal obstacles are also often said to exist in this area impeding the introduction of new technology. Consequently, in 2017 the International Maritime Organization (IMO) decided to launch a 'regulatory scoping exercise' of the challenges linked to 'Maritime Autonomous Surface Ships (MASS)'.¹ The scoping exercise aims to 'determine how safe, secure and environmentally sound [MASS] operations might be addressed in IMO instruments'.² While the scoping exercise was at the time of writing not yet finished, it clearly shows that there is a growing discussion about the legal prerequisites of autonomous shipping.

This chapter seeks to contribute to this discussion by addressing some key matters in this context, namely the regulation of navigational rights and rescue at sea under international law. While the IMO's scoping exercise is logically limited to 'IMO instruments', the scope of the chapter is slightly different focusing mainly on the international law of the sea. Although the United Nations Convention on the Law of the Sea (UNCLOS) may seem rigid and more closed to change or amendments than some of the relevant IMO instruments, analysis of the law of the sea may still be valuable to better understand the legal prerequisites of autonomous shipping.³ In addition to the UNCLOS, the discussion involves some more specific instruments such as the International

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- 1 'Report of the Maritime Safety Committee on its Ninety-Eighth Session', IMO Doc MSC 98/23 (28 June 2017) paras 20.1–20.2.
 - 2 'Framework for the Regulatory Scoping Exercise for the Use of Maritime Autonomous Surface Ships (MASS)', IMO Doc MSC 100/20/Add. 1 annex 2 (12 December 2018) para 1.
 - 3 United Nations Convention on the Law of the Sea (opened for signature 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3 (UNCLOS).

Convention for the Safety of Life at Sea (SOLAS Convention),⁴ the International Convention for Maritime Search and Rescue (SAR Convention)⁵ and the International Convention on Salvage (Salvage Convention).⁶

Drawing on an operative focus, the chapter examines some key rules and principles concerning navigational rights and rescue at sea in the context of autonomous and unmanned ships. Using a legal perspective, it deals with a number of questions taken to be of practical significance for the navigation of autonomous and unmanned ships – for example, whether such ships enjoy navigational rights in the same way as other ships and if coastal States are right to regulate their navigation differently from that of other ships.

In addition to such and other navigational issues, the chapter considers questions about rescue at sea and some other closely related matters in the context of autonomous shipping. For example, it discusses whether autonomous and unmanned ships are subject to the same international law requirements in respect of rescue at sea as other ships and whether flag States shall impose the same requirements to engage in rescue on autonomous and unmanned ships as on other ships. In addition to questions about assistance rendered *by* autonomous and unmanned ships, the chapter deals with questions about assistance rendered *to* such ships in distress. Are coastal States under the same obligations concerning maritime search and rescue in relation to autonomous and unmanned ships in danger compared to other ships in danger? And what about the rights of ships in distress: are autonomous and unmanned ships allowed to enter and seek shelter in ports and places of refuge?

The chapter deals with international law as understood in a classical sense as the system of legal norms that govern relations between independent States. It makes use of a conventional legal method, rooted in legal positivism, whereby the content of the law is taken as that which flows from its generally accepted sources.⁷ The term ‘autonomous and unmanned ships’ is used in a broad sense for ships with high levels of automated decision processes. Accordingly, it covers both ships that have no crew on board at all (constantly unmanned ships)

4 International Convention for the Safety of Life at Sea (opened for signature 1 November 1974, entered into force 25 May 1980) 1184 UNTS 2 (SOLAS Convention).

5 International Convention on Maritime Search and Rescue (opened for signature 1 November 1979, entered into force 22 June 1985) 1405 UNTS 97 (SAR Convention).

6 International Convention on Salvage (opened for signature 1 July 1989, entered into force 14 July 1996) 1953 UNTS 165 (Salvage Convention).

7 Statute of the International Court of Justice art 38(1) directs the International Court of Justice (ICJ), whose function is to decide disputes in accordance with international law, to international agreements, international custom, general principles of law and, as subsidiary sources, judicial decisions and legal scholarship.

as those that have a crew on-board but where this crew operates the ship only periodically (periodically unmanned ships).⁸

Following this introduction, the chapter is organized into three sections. Section 2 (Navigational Rights) considers navigational rights in the context of autonomous shipping. Section 3 (Rescue at Sea) examines some key rules and principles concerning rescue at sea and a number of other closely related matters in the context of autonomous shipping. This examination concludes that autonomous and unmanned ships are in some respects outside the scope of international maritime rescue. In more conceptual terms, the chapter ends with the assertion that the regulation under international law of navigational rights seems mostly underpinned by machine/ship-oriented interests whereas that of rescue at sea seems more directed at human/seafarer-oriented interests (section 4 Closing Remarks).

2 Navigational Rights

This section considers some key rules and principles concerning navigational rights in the context of autonomous shipping. Questions dealt with include: 'Do autonomous and unmanned ships enjoy navigational rights in the same way as other ships?'; 'Are coastal States right to regulate foreign autonomous and unmanned ships different than other ships?'; 'Do autonomous and unmanned ships enjoy innocent passage?' and 'What about passage through international straits?'

In international waters, ships of all States enjoy freedom of navigation.⁹ In national waters, ships of all States enjoy the right of innocent passage through the territorial sea.¹⁰ Both the regime of freedom of navigation and that of

8 See generally Henrik Ringbom, 'Regulating Autonomous Ships: Concepts, Challenges and Precedents', (2019) 50:2–3 *Ocean Development & International Law* 141; Robert Veal and Michael Tsimplis, 'The Integration of Unmanned Ships into the *Lex Maritima*' [2017] *Lloyd's Maritime & Commercial Law Quarterly* 303. For a discussion of manning issues in the context of autonomous shipping, see Johan Schelin, 'Manning of Unmanned Ships' in Henrik Ringbom, Erik Røsæg and Trond Solvang (eds), *Autonomous ships and the Law* (Routledge 2021) 261.

9 See, eg, UNCLOS arts 58.1, 87, 90. See also Convention on the High Seas (opened for signature 29 April 1958, entered into force 30 September 1962) 450 UNTS 11, art 2.1.

10 UNCLOS art 17. See also Convention on the Territorial Sea and the Contiguous Zone (opened for signature 29 April 1958, entered into force 10 September 1964) 516 UNTS 205, art 14. There is no general right of innocent passage through internal waters: cf UNCLOS art 8.2, Convention on the Territorial Sea and the Contiguous Zone art 5.2.

innocent passage thus apply to ships – and not ‘ships with a crew on-board’, ‘manned ships’ or some other term presupposing an on-board crew. Assuming that autonomous and unmanned ships constitute ‘ships’ within the meaning of the UNCLOS, it seems obvious they would enjoy freedom of navigation and innocent passage through the territorial sea in the same way as other ships.¹¹ However, on closer reading a slightly more complex picture appears.

2.1 *National Waters*

Starting with national waters, coastal States are obliged not to hamper innocent passage.¹² However, they remain entitled to adopt certain laws and regulations relating to innocent passage through the territorial sea. Such laws and regulations may concern, for example, ‘safety of navigation and the regulation of maritime traffic’ and ‘the preservation of the environment of the coastal State and the prevention, reduction and control of pollution thereof’.¹³ However, such rules and regulations shall not apply to the ‘design, construction, manning or equipment of foreign ships unless they are giving effect to generally accepted international rules and standards’, that is, those adopted by the IMO.¹⁴

Accordingly, with the exception of such global IMO rules and standards coastal States have relatively few possibilities under international law to impose different requirements on autonomous and unmanned ships under innocent passage through the territorial sea compared to other ships under such passage. Hence, it seems that autonomous and unmanned ships are in a predominantly similar position as other ships when it comes to innocent passage through the territorial sea.

This view receives further support from the definition of passage which includes ‘stopping and anchoring, but only in so far the same are incidental to ordinary navigation or are rendered necessary by force majeure or distress or for the purpose of rendering assistance to persons, ships or aircraft in danger or distress’.¹⁵ An autonomous and unmanned ship under innocent

11 The UNCLOS refers to both ‘ships’ and ‘vessels’ without defining them. However, it follows from ‘the nature of the activities carried out by the ships here under consideration that they would most likely be regarded as ships/vessels by virtue of their size, features, and functions.’: Ringbom (n 8) 169 fn 72. See also Veal and Tsimplis (n 8) 307–14.

12 UNCLOS art 24.1. See also Convention on the Territorial Sea and the Contiguous Zone art 15.1.

13 UNCLOS art 21.1. See also Convention on the Territorial Sea and the Contiguous Zone art 17.

14 UNCLOS art 21.2.

15 *ibid* art 18.2. See also Convention on the Territorial Sea and the Contiguous Zone art 14.3.

passage through the territorial sea that needs to stop for some navigational reason – for example because of technical issues related to its automated decision processes or some other navigational limitation owing specifically to its high degree of self-operation – would thus normally remain under passage. While this exception to the basic requirement of passage as being ‘continuous and expeditious’ is not unique to autonomous and unmanned ships, it may be especially significant in that context because it allows necessary technical stops without the ship forfeiting its right to innocent passage.¹⁶ Although it is difficult to forecast the technological development of autonomous shipping, it seems reasonably safe to assume that also such ships will come with some navigational limitations and that some of these limitations will differ from those of other ships. The broad definition of passage seems important so as not to exclude such ships from the right of innocent passage. Given that many important navigational routes pass through the territorial seas of several States, this is a question of more than academic interest.

Internal waters are a different story. Like the territorial sea, internal waters are part of the territory of the coastal State and subject to its sovereignty.¹⁷ However, there is no general right to innocent passage through internal waters.¹⁸ Also, there is no general duty of coastal States to allow foreign ships entry into port.¹⁹ Rather, coastal States remain free under the law of the sea to make entry into its ports subject to requirements. A coastal State may for example impose special pilotage requirements on autonomous and unmanned ships or open only some ports to such ships.²⁰ The readiness of coastal States to accept autonomous and unmanned ships into port therefore seems a key factor for the prospect of autonomous shipping.

16 UNCLOS art 18.2. See also Convention on the Territorial Sea and the Contiguous Zone art 14.2.

17 UNCLOS art 2.1. See also Convention on the Territorial Sea and the Contiguous Zone art 1.1.

18 But see UNCLOS art 8.2 and Convention on the Territorial Sea and the Contiguous Zone art 5.2, recognizing a right to innocent passage in waters enclosed by straight baselines that previously were not considered internal waters: ‘Where the establishment of a straight baseline ... has the effect of enclosing as internal waters areas which had not previously been considered as such, *a right of innocent passage* ... shall exist in those waters’ (emphasis added).

19 Ships in distress is an important exception, which is further commented on below in Section III Rescue at Sea.

20 For a similar note, see Veal and Tsimplis (n 8) 318: ‘effected by coastal States as a condition of entry of unmanned ships into their ports. An alternative would be that a master and possibly a small crew would embark with a pilot before entering port.’

2.2 *International Waters*

As for international waters, all States enjoy the freedom of navigation,²¹ that is, the right to sail ships flying their flag, which possess the nationality of the State whose flag they are entitled to fly.²² In the exclusive economic zone, the coastal State enjoys sovereign rights regarding natural resources and related jurisdictional rights²³ and all other States enjoy freedom of navigation as well as a couple of other freedoms of the high seas.²⁴ Besides with respect to living resources²⁵ and artificial islands, installations and structures,²⁶ coastal States have certain rights and duties in respect of the prevention, reduction and control of pollution of the marine environment.²⁷ However, none of the relevant jurisdictional rights appears to provide for differentiation between autonomous and unmanned ships, on the one hand, and other ships, on the other hand.²⁸ Instead, most of the relevant legal provisions use technologically neutral terms such as 'ships' and 'vessels' without any reference as to the degree of self-operation.²⁹

Further out at sea, on the high seas, ships are subject to the exclusive jurisdiction of the flag State.³⁰ Consequently, in principle, no other State may exercise its jurisdiction over a ship on the high seas. However, the exclusive character of flag State jurisdiction is not without exceptions. For example, the rules on piracy allow any State to seize pirate ships and arrest the persons board.³¹ Ships intended to be used, or that have already been used, for piracy by the persons in dominant control are pirate ships.³² In short, piracy involves acts of violence or detention, or an act of depredation, committed for private ends by the crew or the passengers of a private ship directed against another ship on the high seas or outside the jurisdiction of any State.³³ Accordingly, it seems

21 See, eg, UNCLOS arts 58.1, 87.1.a. See also Convention on the High Seas art 2.1.

22 UNCLOS arts 90–92. See also Convention on the High Seas arts 4–5.

23 See, eg, UNCLOS art 56.1.

24 See, eg, *ibid* art 58.1.

25 *ibid* arts 61–67.

26 *ibid* art 60.

27 See, eg, *ibid* Part XII s 5.

28 See, eg, *ibid* art 211.5: 'Coastal States ... may in respect of their exclusive economic zones adopt laws and regulations for the prevention, reduction and control of pollution from *vessels*' (emphasis added).

29 See, eg, *ibid* arts 60.6 ('all ships'), 73.2 ('arrested vessels'), 73.4 ('foreign vessels'), 211 ('vessels'), 220.5 ('vessel navigating').

30 See, eg, *ibid* art 92.1. See also Convention on the High Seas art 6.1.

31 UNCLOS art 105. See also Convention on the High Seas art 19.

32 UNCLOS art 103. See also Convention on the High Seas art 17.

33 UNCLOS art 101. See also Convention on the High Seas art 15.

that the definition of piracy requires either a crew or passengers – something that not all autonomous and unmanned ships may have. However, piracy also includes ‘any act of voluntary participation in the operation of a ship ... with knowledge of facts making it a *pirate ship*’.³⁴ While the notion of ‘participation in the operation of a ship’ appears broader than that of ‘crew’, it does not seem sufficiently broad to cover the situation when a ship with no one on-board is used for attacking another ship – the main reason being that the definition of a pirate ship relies on the ship being intended to be used, or already has been used, for piracy. Accordingly, at least some autonomous and unmanned ships are likely to be outside the scope of the definition of a pirate ship. Additionally, the right of visit allows government ships to visit and search ships suspected of certain activities (piracy, slave trade, unauthorized broadcasting) or whose nationality is unclear – seemingly without any distinction as to the ship’s degree of automation.³⁵

Flag States are not under the same limitations as other States when it comes to jurisdiction over ships. Rather, ships are generally subject to the rules and regulations imposed on it by the flag State.³⁶ Every flag State is also under an obligation to effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag.³⁷ As a result, flag State jurisdiction seems a workable alternative under existing law for meeting various special regulation needs brought about by the navigation of autonomous and unmanned ships.³⁸

2.3 *International Straits*

In international straits,³⁹ all ships and aircraft enjoy the right of transit passage.⁴⁰ States bordering straits shall not hamper transit passage⁴¹ but may

34 UNCLOS art 101.1.b (emphasis added). See also Convention on the High Seas art 15.2.

35 UNCLOS art 110. See also Convention on the High Seas art 22.

36 See, eg, UNCLOS art 92. See also Convention on the High Seas art 6.1.

37 UNCLOS art 94. See also Convention on the High Seas art 10. Ringbom (n 8) 161 notes that the obligation to ensure ‘that each ship is in the charge of a master and officers ... and that the crew is appropriate in qualification and numbers’, pursuant to UNCLOS art 94.2.b, may prevent ‘the introduction of fully autonomous ships, but has less impact on remotely operated ships and even less so on periodically unmanned ships’.

38 See generally Ringbom (n 8) 161–62.

39 For the definition, see UNCLOS art 37. See also Convention on the Territorial Sea and the Contiguous Zone art 16.4.

40 UNCLOS art 38.1. See also Convention on the Territorial Sea and the Contiguous Zone art 16.4.

41 UNCLOS art 44. See also Convention on the Territorial Sea and the Contiguous Zone art 16.4.

adopt laws and regulations relating to transit passage through international straits in some specific respects.⁴² Such laws and regulations shall not discriminate ‘in form or in fact between foreign ships or in their application have the practical effect of denying, hampering or impairing the right of transit passage’.⁴³ Also, States bordering straits may designate sea lanes and prescribe traffic separation schemes for the safety of navigation. Such sea lanes and traffic separation schemes shall conform to generally accepted rules and regulations and shall be referred for adoption within the competent international organization, that is, the IMO.⁴⁴ Accordingly, there seems to be no room for States bordering straits to differentiate between ships merely because of their autonomous and unmanned character.

2.4 *Similar Positions*

This section has asserted that autonomous and unmanned ships are in a predominately similar position as other ships when it comes to navigational rights under international law. Accordingly, the basic international legal framework for navigational rights seems mainly technologically neutral and not destined to pose a serious obstacle for the development of autonomous and unmanned ships.⁴⁵ Rather, it seems more likely that such obstacles would arise from regulations of more specific character, for example requirements resulting from flag State jurisdiction or coastal States’ conditions for entry into ports.⁴⁶ The focus of the IMO’s scoping exercise on ‘IMO instruments’ therefore seems overall reasonable not only for institutional reasons but also because these instruments may well be the most important in practice when it comes to harmonizing the conditions of shipping. The same seems true with respect to rescue at sea, which is the concern of the next section.

42 UNCLOS art 42.

43 *ibid* art 42.2.

44 *ibid* art 41.

45 For further discussion on the need for special regulation for autonomous ships, see Jhonní Mikael Kern’s chapter on autonomous wrecks in this book.

46 For a similar view, see Ringbom (n 8) 16: ‘the IMO can regulate the question of autonomous ships in its entirety ... The wording of [UNCLOS], as a framework convention with “constitutional” objectives, should not be construed as preventing the introduction of new technologies for shipping’.

3 Rescue at Sea

This section deals with some key rules and principles of international law concerning rescue at sea and other closely related matters in the context of autonomous shipping. Questions dealt with include 'Are autonomous and unmanned ships subject to the same requirements under international law concerning rescue at sea as other ships?'; 'Are flag States obliged to impose the same requirements to engage in rescue at sea on an autonomous and unmanned ship as on other ships?'. In addition to questions about assistance rendered *by* autonomous and unmanned ships, the section deals with questions about assistance rendered *to* such ships in danger – are coastal States under the same obligations concerning maritime search and rescue in relation to autonomous and unmanned ships as they are in relation to other ships?

As a matter of basic importance, the section begins with a general introduction to the concept of distress under international law. After having reached a certain degree of understanding of this fundamental concept of international maritime rescue law, the discussion proceeds to an examination of some central obligations concerning rescue at sea. In short, the section explains that autonomous and unmanned ships are in some respects beyond the scope of international maritime rescue law. The focus on distress and rescue at sea is motivated primarily by the fact that these are issues that may be of real and practical significance for the development of autonomous shipping, for example due to close links to insurance policies, technical requirements and similar matters, but also because an increasing use of autonomous and unmanned ships could affect the general availability of rescue resources at sea. If autonomous and unmanned ships are not available for rescue purposes to the same extent as other ships, an increasing use of autonomous and unmanned ships could have serious consequences for the overall efficiency of the maritime search and rescue system. The availability of autonomous and unmanned ships for rescue purposes is further commented on below.

To begin with, international law provides a duty to rescue at sea. This is a central and well-established duty under international law, 'accepted from time immemorial'.⁴⁷ Technically speaking, the duty to rescue involves several

47 Djamchid Momtaz, 'The High Seas' in René-Jean Dupuy and Daniel Vignes (eds), *A Handbook on the New Law of the Sea* (Martinus Nijhoff 1991) 416. See generally Tullio Treves, 'Navigation' in René-Jean Dupuy and Daniel Vignes (eds), *A Handbook on the New Law of the Sea* (Martinus Nijhoff 1991) 857–62; Myron H Nordquist and others (eds), *United Nations Convention on the Law of the Sea 1982: A Commentary*, vol 3 (Martinus Nijhoff 1995) 170–78; Efthymios Papastavridis, *The Interception of Vessels on the High*

different obligations of international law. Flag States, for example, are under an obligation to require shipmasters to assist people in distress at sea. Coastal States shall promote the establishment, operation and maintenance of search and rescue services.⁴⁸ While the different obligations are mainly separable, a couple of features are of general character such as the concept of distress and the prohibition of discrimination.⁴⁹ While the non-discrimination element is crucial in some contexts, it is primarily the concept of distress that demands special attention in the context of autonomous shipping.⁵⁰ The reason is that the prohibition of discrimination does not target differentiation among different types of ships but among people in distress (and perhaps also States) – as such, it is not very likely to trigger special difficulties in the context of autonomous shipping.⁵¹ By contrast, the concept of distress – and the question whether situations that only involve risks to the vessel itself are covered – is thought to be of concrete relevance in the context of autonomous shipping.

3.1 *Concept of Distress*

The concept of distress is of fundamental meaning for the duty to rescue at sea: most of the obligations only applies in the presence of distress. The concept appears in slightly different formulations in the relevant instruments. While the UNCLOS refers to ‘any person found at sea in danger of being lost’, ‘persons in distress’ and ‘after a collision ... the other ship, its crew and

Seas (Hart 2013) 294–300; Jean-Paul Pancracio, *Droit de la Mer* (Dalloz 2010) 113–15; Sir Robert Jennings and Sir Arthur Watts (eds), *Oppenheim's International Law* (9th edn, OUP 1992) 744; DP O'Connell, *The International Law of the Sea* (OUP 1984) 813–14; Donald R Rothwell and Tim Stephens, *The International Law of the Sea* (Hart 2010) 161–62. See also Martin Ratcovich, *International Law and the Rescue of Refugees at Sea* (LLD thesis, Department of Law, Stockholm University 2019) 75–98.

48 See, eg, UNCLOS art 98.2. See also Convention on the High Seas art 12.2.

49 See, eg, UNCLOS art 98.1: ‘Every State shall require the master of a ship ... to render assistance to *any person ... in danger*’ (emphasis added); Convention on the High Seas art 12.1; SAR Convention annex para 2.1.10: ‘regardless of the nationality or status of such a person or the circumstances in which that person is found’; SOLAS Convention annex ch v reg 33.1. See also Brussels Convention for the Unification of Certain Rules of Law Respecting Assistance and Salvage at Sea (adopted 23 September 1910, entered into force 1 March 1913) 1913 UKTS 4 Cd.6677, which requires assistance to be rendered ‘to *everybody, even though an enemy, ... in danger*’ (emphasis added).

50 Incidents involving refugees and migrants is a topical example: see generally Ratcovich (n 47).

51 See, eg, the references above n 49. See also UNCLOS art 24.1.b: ‘The coastal State shall not hamper ... innocent passage ... In particular, in the application of this Convention ... the coastal State shall *not ... discriminate ...* against the *ships of any State* or against ships carrying cargoes to, from or on behalf of any State, (emphasis added).

its passengers',⁵² the SOLAS Convention refers to 'person in distress at sea'⁵³ and the SAR Convention both to 'person in distress at sea' and '[the] situation wherein ... a person, a vessel or other craft is threatened by grave and imminent danger and requires immediate assistance'.⁵⁴ Consequently, it cannot be precluded that the concept of distress under article 98.1 of the UNCLOS is different from the corresponding concepts under the SOLAS Convention and the SAR Convention. While this difference is often mainly theoretical – primarily because most parties to the UNCLOS are parties also to the SOLAS Convention and/or the SAR Convention, and because of the customary status of the relevant duty – it may be significant in the context of autonomous and unmanned ships as it opens up for a possible difference in scope of the various instruments.

The ordinary meaning of 'distress' is something like '[t]he overpowering pressure of some adverse force, such as anger, hunger, bad weather' or 'when a ship requires immediate assistance from unlooked-for damage or danger'.⁵⁵ While the UNCLOS does not define the term, the SAR Convention defines 'distress phase' as the 'situation wherein there is a reasonable certainty that a person, a vessel or other craft is threatened by grave and imminent danger and requires immediate assistance'.⁵⁶ Although this definition is more precise than its counterpart under the UNCLOS, it still leaves some room for States to determine when a situation amounts to distress. This discretionary power also seems to some extent essential. Because not all potential distress situations are identical, the assessment of what amounts to distress seems feasible only on a case-by-case basis. To assist in determining the appropriate operating procedures, the SAR Convention sets out three different phases: 'Uncertainty phase', 'Alert phase' and 'Distress phase'. Importantly for the present purposes, all these phases cover not only life-threatening situations but also those that only involve 'a vessel or other craft'.⁵⁷ Hence, it seems that the notion of 'distress' is broader than that of 'person in distress' in the SAR Convention.⁵⁸

However, the concept of distress is not the sole criterion for the applicability of the various obligations under the SAR Convention. For example, the

52 UNCLOS art 98.1. See also Convention on the High Seas art 12: 'any person found at sea in danger of being lost', 'persons in distress'; Salvage Convention art 10.1: 'any person in danger of being lost at sea'.

53 SOLAS Convention annex ch v reg 33.

54 SAR Convention annex paras 1.3.13, 2.1.1, 2.1.10.

55 *Oxford English Dictionary* (3rd edn, OUP 2013) 'distress' (n, def 1b, 2c).

56 SAR Convention annex para 1.3.13.

57 *ibid* annex para 4.4.

58 *ibid* annex para 2.1.1. For a similar discussion, see Ratcovich (n 47) 78–83.

obligation to ‘participate in the development of search and rescue services’ seems limited to life-threatening situations,⁵⁹ as does the basic obligations ‘to ensure that assistance is provided’⁶⁰ and ‘[to] use search and rescue units and other available facilities for providing assistance.’⁶¹ So it seems that while the concept of distress under the SAR Convention is sufficiently broad to cover both life-threatening situations and those that only involve risks to a ship or other craft, the concrete rescue obligations may be more limited in scope so that they only cover situations involving threats to human life. This means that an autonomous and unmanned ship in danger at sea could come within the concept of distress under the SAR Convention but at the same time fail to trigger rescue obligations. While this difference in scope could seem contradictory and as a lacuna in the law, it may be understandable from an operational point of view: a rescue coordination center that receives information that a ship is in danger may not know if the situation involves threats to human life. The broader concept of distress can be a way to accommodate the need for further inquiries in such cases.⁶²

3.2 *Assistance to Autonomous and Unmanned Ships*

As already noted, the duty to render assistance at sea entails several obligations of both flag States and coastal States. Starting with the first category, the most authoritative expressions of flag State obligations pursuant to the duty to render assistance at sea appear in the SOLAS Convention, the SAR Convention, the Salvage Convention and the UNCLOS. The relevant provisions are similar and provide a relatively coherent yet multifaceted picture. While the SOLAS Convention requires shipmasters ‘on receiving information ... that persons are in distress at sea ... to proceed ... to their assistance’,⁶³ the SAR Convention requires its parties to ensure ‘that assistance be provided to persons in distress

59 SAR Convention annex para 2.1.1: ‘Parties shall ... participate in the development of search and rescue services to ensure that assistance is rendered to *any person* in distress at sea’ (emphasis added).

60 *ibid* annex para 2.1.1: ‘On receiving information that *any person* is, or appears to be, in distress at sea, the responsible authorities of a Party shall take urgent steps to ensure that the necessary assistance is provided’ (emphasis added). See also at para 2.1.9: ‘Parties shall ensure that assistance be provided to *any person* in distress at sea’ (emphasis added).

61 *ibid* annex para 2.1.9: ‘Parties having accepted responsibility to provide search and rescue services for a specified area shall use search and rescue units and other available facilities for providing assistance to a *person* who is, or appears to be, in distress at sea (emphasis added).’

62 See, eg, *ibid* annex paras 4.5.1, 4.5.2, concerning further inquiries, and para 4.8.1, concerning the termination of search and rescue operations ‘when ... all reasonable hope of rescuing *survivors* has passed’ (emphasis added).

63 SOLAS Convention annex ch V reg 33.1.

at sea'.⁶⁴ Similarly, the Salvage Convention requires '[e]very master ... to render assistance to any person in danger of being lost at sea'.⁶⁵ Finally, the UNCLOS obliges

Every State ... [to] require the master of a ship flying its flag ...

- a) to render assistance to any person found at sea in danger of being lost;
- b) to proceed ... to the rescue of persons in distress, if informed of their need of assistance ...;
- c) after a collision, to render assistance to the other ship, its crew and its passengers.⁶⁶

The duty to render assistance clearly applies to flag States. However, it does not require flag States to provide rescue themselves but merely to require masters of ships flying their flag do so. States in their capacity as flag States are simply expected to impose the duty on masters of ships. While this is expressly set out in the UNCLOS and the Convention on the High Seas, the SOLAS Convention and the Salvage Convention are not as clear on this point. Even though these latter conventions refer directly to shipmasters,⁶⁷ the contexts of the relevant provisions make it reasonably clear that the flag State is merely expected to impose the duty on shipmasters.⁶⁸ Consequently, it seems that shipmasters are not obliged directly by international law to engage in rescue at sea but that their obligation to do so arises as a result of implementation by the flag State or, as the case may be, the coastal State.

Importantly, all flag State obligations pursuant to the duty to render assistance at sea refer to the situation when a person is in distress at sea – and not when merely a ship, vessel or other craft is in danger. Accordingly, it seems reasonably clear that the obligations of flag States to require masters of ships flying their flags to render assistance at sea do not cover autonomous and unmanned ships in danger without there being real threats to human life. Even

64 SAR Convention annex para 2.1.10.

65 Salvage Convention art 10.1.

66 UNCLOS art 98.1. See also Convention on the High Seas art 12.1.

67 SOLAS Convention annex ch V reg 33.1: '*The master of a ship* ... is bound to proceed ... to ... assistance' (emphasis added); Salvage Convention art 10.1: '*Every master* is bound ... to render assistance' (emphasis added).

68 See, eg, SOLAS Convention art 1: 'The contracting governments undertake to give effect to ... the present convention and the annex thereto ... [and] to promulgate all laws, decrees, orders and regulations and to take all other steps which may be necessary to give the present Convention full and complete effect.'; Salvage Convention arts 2, 10.2. See generally Ratcovich (n 47) 88–89.

if international law does not prevent flag States from requiring shipmasters to engage in rescue also in such situations, the absence of clear obligations to do so means that an autonomous and unmanned ship in danger at sea cannot count on the masters of other ships to be legally obliged to come to its assistance.

In addition to flag State obligations, the duty to render assistance involves obligations of coastal States. Article 98.2 of the UNCLOS requires coastal States to 'promote the establishment, operation and maintenance of an adequate and effective search and rescue service regarding safety on and over the sea'.⁶⁹ Similarly, the SOLAS Convention requires its parties

to ensure that necessary arrangements are made for distress communication and co-ordination in their area of responsibility and for the rescue of persons in distress at sea around its coasts. These arrangements shall include the establishment, operation and maintenance of such search and rescue facilities as are deemed practicable and necessary, having regard to the density of the seagoing traffic and the navigational dangers, and shall, so far as possible, provide adequate means of locating and rescuing such persons.⁷⁰

Notwithstanding the importance of the UNCLOS and the SOLAS Convention, the SAR Convention stands as the main instrument concerning coastal State obligations for the duty to render assistance at sea. In addition to the basic obligations to provide assistance referred to above,⁷¹ the SAR Convention requires its parties to 'participate in the development of search and rescue services' and to establish certain 'basic elements of a search and rescue service: legal framework; ... a responsible authority; organization of available resources; communication facilities; co-ordination and operational functions; ... processes to improve the service'.⁷² They shall also 'ensure that sufficient search and rescue regions are established'.⁷³ Such regions shall be established by agreement.⁷⁴ However, '[i]n case agreement on the exact dimensions of a ... region is not reached ... [the relevant] parties shall use their best endeavors to reach agreement upon appropriate arrangements under which the equivalent

69 See also Convention on the High Seas art 12.2.

70 SOLAS Convention annex ch V reg 33.1.

71 See above nn 60–61.

72 SAR Convention annex para 2.1.2.

73 *ibid* annex para 2.1.3.

74 *ibid* annex para 2.1.4.

overall co-ordinate of search and rescue services is provided in the area.⁷⁵ In addition, there are several other obligations of coastal States set out by the relevant instruments.

Importantly, all the mentioned coastal State obligations under the duty to render assistance at sea refer to 'search and rescue services' and not 'rescue of persons in distress', 'survivors' or any similar term.⁷⁶ Accordingly, it seems that some of these obligations are capable of covering situations that involve a ship or other craft in danger without there being any threat to human life. For example, the arrangements that a coastal State shall make for distress communication and coordination may be sufficiently expansive to cover also autonomous and unmanned ships in danger.⁷⁷ The same holds true for the obligations to have plans of operation,⁷⁸ to forward information concerning emergencies⁷⁹ and to 'evaluate such information and determine ... the extent of operations required'.⁸⁰ So, while autonomous and unmanned ships may not be covered by the basic rescue obligations of coastal States, they may still be covered by some obligations with respect to rescue.⁸¹ While this coverage may be incomplete and perhaps also insufficient in some respects, it clearly shows that the international legal framework for maritime search and rescue is not completely ignorant of the possible needs of assistance of *ships* in danger at sea.

3.3 *Assistance by Autonomous and Unmanned Ships*

In addition to questions about assistance rendered *to* autonomous and unmanned ships, the duty to render assistance raises questions about assistance *by* such ships. It may, for example, be asked whether autonomous and unmanned ships are subject to the same requirements under international law concerning rescue at sea as other ships and whether flag States are obliged to impose the same requirements to engage in rescue at sea on autonomous and unmanned ships as on other ships.

75 *ibid* annex para 2.1.5.

76 SOLAS Convention annex ch V reg 2.5 and SAR Convention annex para 1.3.3 define 'search and rescue services' as '[t]he performance of distress monitoring, communication, coordination and search and rescue functions, including provision of medical advice, initial medical assistance, or medical evacuation, through the use of public and private resources including co-operating aircraft, ships, vessels and other craft and installations'.

77 See, eg, SOLAS Convention ch V reg 7.1; SAR Convention annex paras 2.1.2.4, 2.3.2, 4.1.1, 4.2.1, 4.2.2; UNCLOS art 98.2; Convention on the High Seas art 12.2.

78 See, eg, SAR Convention annex para 4.1.3.

79 See, eg, *ibid* annex para 4.2.3.

80 *ibid* annex para 4.2.4.

81 See above nn 60–61.

Naturally, questions may be raised about the ability of autonomous and unmanned ships to assist others in distress at sea. Although it seems obvious that such ships may not have the same rescue capabilities as other ships, it needs to be noted that a variety of acts can constitute assistance, for example, recovery from the water, towing or simply standing by to calm the sea.⁸² Furthermore, the meanings of ‘assistance’ and ‘rescue’ are rather vague and the duty to render assistance leaves some discretionary room for shipmasters decide whether they are able to provide assistance.⁸³

To begin with, it needs to be recalled that the duty to render assistance applies to States – but that shipmasters generally are under such a duty as a result of implementation at national level.⁸⁴ While the UNCLOS obliges States to require ‘*the master of a ship* flying its flag’ to render assistance,⁸⁵ the SOLAS Convention uses similar terms when it stipulates that ‘[*t*]he master of a ship at sea which is in a position to be able to provide assistance, on receiving information from any source that persons are in distress at sea, is bound to proceed with all speed to their assistance.’⁸⁶ In the context of autonomous shipping, it needs to be noted that the relevant flag State obligations are not limited to ‘masters of manned ships’, ‘masters on-board ships’ or the like but that they refer to ‘the master of a ship’. The notion of autonomous and unmanned ships obviously implies that certain ships can be operated either remotely or autonomously/by the ship itself, thus triggering the question whether such ships have a master or not.

While neither the UNCLOS nor the SOLAS Convention defines the term ‘master’, the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW Convention) defines it as the person in command of the ship – seemingly presupposing that the master is on board the ship.⁸⁷ Also, the UNCLOS requires flag States to ensure that each ship under

82 See generally International Maritime Organization and International Civil Aviation Organization, ‘International Aeronautical and Maritime Search and Rescue Manual’, vol 3 (11th edn, 2019) (IAMSAR Manual).

83 See, eg, UNCLOS art 98.1: ‘in so far as he can do so *without serious danger* to the ship, the crew or the passengers’ and ‘in so far as such action may *reasonably be expected*’ (emphasis added); SOLAS Convention ch v reg 33.1: ‘The master of a ship which is *in a position to be able* to provide assistance’ (emphasis added).

84 See above nn 63–66.

85 UNCLOS art 98.1.

86 Ratcovich (n 47) 89.

87 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (opened for signature 7 July 1998, entered into force 28 April 1984) 1361 UNTS 2 (STCW Convention) reg I/1. See, eg, Schelin (n 8) 274. See also Ringbom (n 8) 158 noting that ‘the STCW Convention and the related STCW Code ... represent the most direct legal hurdle for remote operations’.

their flag is in the charge of a master.⁸⁸ Numerous obligations attach to the shipmaster, many of which appears to presuppose that the master is on board the ship.⁸⁹ As a result, States seem free to not impose special requirements on persons exercising control over an autonomous and unmanned ship compared with those on shipmasters – thus allowing autonomous and unmanned ships to fly their flag without being subject to the same requirements to render assistance as the masters of conventional ships. Given the important role of private ships in the global search and rescue system this seems a possible gap. Whether this means that the relevant law needs to be changed is, however, primarily a political matter. However, as noted by Schelin, to exempt ‘unmanned remotely controlled ships would seriously undermine the fundamental obligation to save lives at sea.’⁹⁰

While questions concerning entry into port of ships in distress may not fully match the title of the present section – Rescue at Sea – they still seem more related to rescue than to the title of the previous section – Navigational Rights. To begin with, there is no general right under international law for foreign ships to access ports. Because such a right would necessarily impinge upon the authority of a State over its territory, the non-existence of such a right is nothing but an aspect of the territorial sovereignty of the coastal State over its internal waters, including ports.⁹¹ Accordingly, in *Military and Paramilitary Activities in and against Nicaragua (Nicaragua v. United States of America)*, the ICJ explained that ‘it is ... by virtue of its sovereignty that the coastal State may regulate access to its ports.’⁹² However, there is wide acceptance that ships that enter a port in distress or because of force majeure are not subject to the jurisdiction of the coastal State. This exception to the main rule of the jurisdiction of the coastal State over its territory seems, on the other hand, to be motivated

88 UNCLOS art 94.4.b.

89 See generally Schelin (n 8) 274–78.

90 *ibid* 277. But see Aristotelis Komianos, ‘The Autonomous Shipping Era: Operational, Regulatory, and Quality Challenges’ (2018) 12 *International Journal on Marine Navigation and Safety of Sea Transportation* 335, 343: ‘an [a]utonomous ship ... most probably will not be able to provide ... assistance ... A proper adjustment or an exemption ... from the [s]earch and [r]escue operations seems to be the most appropriate solution’.

91 See, eg, RR Churchill and AV Lowe, *The Law of the Sea* (3rd edn, Manchester University Press 1999) 61; Henrik Ringbom, *The EU Maritime Safety Policy and International Law* (Brill 2008) 207.

92 *Military and Paramilitary Activities in and against Nicaragua (Nicaragua v. United States of America)* (Merits), [1986] ICJ Rep 14, 111–12.

primarily by humanitarian considerations.⁹³ Autonomous and unmanned ships in danger at sea may thus not be entitled to the same immunity against local law as other ships after having entered a port or a place of refuge in distress at sea.

4 Closing Remarks

This chapter has examined, albeit only briefly, some key rules and principles under international law concerning navigational rights and rescue at sea in the context of autonomous shipping. It has been asserted that autonomous and unmanned ships are in a predominately similar position as other ships when it comes to navigational rights and that autonomous and unmanned ships are in some respects outside the scope of international maritime rescue law. One way to understand this difference in scope is to draw on the different 'ethe' of the two regimes.⁹⁴ While that of navigational rights appears to be mostly underpinned by machine or ship-oriented interests, that of rescue at sea seems mainly directed at human/sea-farer oriented considerations.⁹⁵ While an autonomous and unmanned ship clearly remains a machine – irrespective of its degree of self-operation – the key concern of international maritime rescue law is the protection of human life at sea. Hence, it should be no surprise that autonomous and unmanned ships are not fully covered by international maritime rescue law. Whether this is a problem in need of a legal solution is primarily a political question. However, to equate autonomous and unmanned ships in danger with persons in distress at sea would be a clear break with the humanitarian underpinnings of international maritime rescue law. Whether this can be done without undermining the general respect for the duty to render assistance at sea, and thus for the safety of (human) life at sea, is not very easy to say.

93 See, eg, Yoshifumi Tanaka, *The International Law of the Sea* (2nd edn, CUP 2015) 84; Richard Barnes, 'Refugee Law at Sea' (2004) 53 *International and Comparative Law Quarterly* 47, 58; Douglas Guilfoyle, *Shipping Interdiction and the Law of the Sea* (CUP 2009) 202.

94 'Ethe', 'ethea' or 'ethoses' is plural for 'ethos'.

95 For a general discussion of the nature of the law of the sea in the context of protection of people at sea, see Irini Papanicolopulu, *International Law and the Protection of People at Sea* (OUP 2018) 80–88, 187–90. For the humanitarian underpinnings of international maritime rescue law, see Ratcovich (n 47) 66–68.

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Maritime and Aviation Law: A Relational Retrospect and Prospect on Unmanned Ships and Aircraft

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1 Introduction and Prelude

Autonomous or unmanned¹ ships is a relatively new phenomenon in the maritime domain, one which the International Maritime Organization (IMO), its member States and the shipping industry alike are moving forward to understand, define and ultimately integrate. Developments have been made in varieties of software, such as those usable in sensor technology, surveillance, analysis and decision support. In addition, algorithms in respect of artificial intelligence usable for shipboard applications including navigation and awareness of particular situations, are rapidly increasing. These unprecedented technological advancements are instigating increasing demands for autonomous ships and remotely controlled navigation. They are shaping a trend that is accelerating towards a new era in maritime transportation. An essential factor in this development is the dire need for a regulatory framework, which is yet to materialize. This is a real concern for all involved in the legal side of the equation given the contemporary growth in the autonomous shipping market, estimated in 2020 to be valued at USD 85 billion, now projected by some to reach a staggering \$165 billion by 2030. This represents a compounded annual growth rate of 6.8 percent from 2020 to 2030.² The world's first unmanned commercial shipping operation reportedly began on 7 May 2019. It was a contemporary event of ground-breaking maritime history when an unmanned vessel, the hull of which was constructed of aluminium and was 12 metres in length, transported a box of oysters from Essex in the United Kingdom to Belgian customs in Ostend. It was also reported that the craft in question was remotely controlled from a remote-control centre belonging to Hushcraft, its designer, situated in the village of Tollesbury on the coast of Essex.³ It must be noted at this juncture that whereas unmanned shipping is still in relative infancy,

1 In the present context, the terms “unmanned” and “autonomous” are used interchangeably.
2 Akshay Jadhav, Sonia Mutreja, “Global Autonomous Ships Market Opportunities and Forecast 2020–2030”, <www.bbc.com/news/business-48871452> accessed 18 February 2021.
3 Stav Dimitropoulos, “Will ships without sailors be the future of trade?”, <www.bbc.com/news/business-48871452>, accessed 18 February 2021.

unmanned aircraft in the form of drones in both civil and military usage have been around for quite some time and today's general public are very much aware of their existence. Technological advancement in aviation facilitated by a relatively advanced legal framework, can be of considerable referential value for articulation of the law on unmanned ships as they evolve in the current milieu.

In light of the above observations, the main objective of this article is to carry out a relational analysis of maritime law and aviation law focusing on a particular subject of contemporary interest, namely, that of unmanned ships. In that vein, it is considered expedient and instructive to examine it comparatively with the phenomenon of unmanned aircraft. The article is organized to reflect the different legislative initiatives on maritime and aviation automation at the international level. The comparative analysis presented herein spans all of the legal aspects of aviation and shipping, which is an ongoing challenge, to determine the most effective and efficient means of addressing the broad scope of topics. The discussion centres first on unmanned ships including current developments mainly in the realm of regulatory law in that field. Discussion on the law respecting unmanned aircraft follows, pointing to specific areas of commonality and lessons that can be learnt for the benefit of the corresponding maritime law.

2 The Maritime Dimension

2.1 *The Definitional Aspect*

An international definition of autonomous or unmanned ship is conspicuously absent; nor is there any definitional indication of the different levels of autonomy which leads to the question whether an autonomous ship is a ship by definition under existing internationally established legal standards. At the outset therefore, without further ado, it would be expedient to seek a definition for "autonomous ship" and ponder over its legal implications. Definitions can sometimes pose a dilemma. In conventions, it is often convenient to articulate them quite broadly to enable the subject of regulation to be adequately addressed; or to customize them to meet a specific need or purpose. One definition of "autonomous ship" is a ship "equipped with an operating system able to make decisions and determine actions by itself. It performs functions related to operation and navigation independently and self-sufficiently". There is also the colloquial term "smart ship" defined as a "ship equipped with

automation systems capable, to varying degrees, of making decisions and performing actions with or without human interaction”.⁴

2.2 *IMO Scoping Exercise on MASS*

The Maritime Safety Committee (MSC) of the IMO undertook a “scoping exercise” to determine the scope of application of its regulatory instruments and their possible reach with respect to Maritime Autonomous Surface Ships (MASS),⁵ a newly coined term defined as “a ship which to a varying degree, can operate independently of human interaction”.⁶ Four degrees of autonomy were established with respect to surface ships which are not intended to be hierarchical. First, there are the ships that have automated processes and are equipped with decision support systems. The systems are automated but may require human intervention at times which requires the presence of crew on board. Crew being available for the operation of shipboard systems as and when required, such ships are not unmanned *per se*. In the second degree, ships are controlled from a shore station but crew are available on board to carry out functions and take over control if need be. In the third degree, ships are remotely controlled from ashore without the presence of any shipboard crew. The fourth degree involves a fully autonomous ship with no crew where the onboard system is capable of making decisions and taking necessary actions without any support or assistance from anywhere.⁷

An important strategic direction incorporated in the 2018-2023 Strategic Plan of IMO is to “integrate new and advancing technologies in the regulatory framework”. The object is to create a balance between the advantages obtained from new technological advancements and concerns over safety and security, environmental impact and international trade facilitation, potential costs to industry, and last but not least their impact on shipboard and shore-based personnel.⁸

In 2017, a proposal was made to the IMO-MSC to put on its agenda, a regulatory scoping exercise in respect of MASS. The aim of the exercise was to

4 See UK P&I, “Autonomous Shipping: Revolution by Evolution”, *UK P&I Club Legal Briefing*, July 2019, p. 3.

5 IMO, “IMO takes first steps to address autonomous ships”, <www.imo.org/en/MediaCentre/PressBriefings/Pages/08-MSC-99-MASS-scoping.aspx> accessed 18 Feb. 2021.

6 *ibid.*

7 Maritime Safety Committee (MSC), 100th session, <www.imo.org/en/MediaCentre/MeetingSummaries/Pages/MSC-100th-session.aspx>, accessed 18 Feb. 2021. See also UK P&I (n 4) 3–4.

8 IMO, “Autonomous shipping”, <www.imo.org/en/MediaCentre/HotTopics/Pages/Autonomous-shipping.aspx> accessed 18 February 2021.

“determine how the safe, secure and environmentally sound operation of MASS may be introduced into IMO instruments”.⁹ The MSC realized the necessity for IMO to adopt a positive and proactive stance and engage in a leadership role in view of commercial ships entering into the autonomous crewless shipping arena and taking advantage of the fast-growing technology. The Legal Committee and the Facilitation Committee of IMO also put the regulatory scoping exercise on their respective agendas to draw in the convention instruments falling within their remit.¹⁰

The scoping exercise is viewed as the launching pad for delving into a host of issues from the human element, safety and security concerns to such matters as protection of the marine environment including liability and compensation for damage suffered, interactions with ports, pilotage, and responding to maritime accidents and incidents.¹¹ The framework and methodology for the regulatory scoping exercise for MASS was approved at the 100th Session of the MSC.¹² The Legal Committee decided to follow suit with a slightly adjusted framework and methodology which was approved at its 106th Session, as did the Facilitation Committee which received approval of its framework and methodology at its 43rd Session.

The scoping exercise basically consists of two steps – the first one to review the adequacy of existing potentially applicable instruments, and the second to further assess and determine the most appropriate way of addressing MASS operations. For the purpose of step one, each IMO instrument related to maritime safety and security, or to liability and compensation, and for each degree of autonomy of MASS, provisions will be identified which:

- Apply to MASS and prevent MASS operations; or
- Apply to MASS and do not prevent MASS operations and require no actions; or
- Apply to MASS and do not prevent MASS operations but may need to be amended or clarified, and/or may contain gaps; or
- Have no application to MASS operations.

Once the first step has been completed, the next step is to analyze and determine the most appropriate way of addressing MASS operations, taking into account, *inter alia*, the human element, technology and operational factors. The analysis will identify the need for:

9 Maritime Safety Committee (MSC), 98th session, <www.imo.org/en/MediaCentre/MeetingSummaries/Pages/MSC-98th-session.aspx> accessed 8 February 2021.

10 IMO (n 8).

11 *ibid.*

12 MSC (n 7).

- Equivalences as provided for by the instruments or developing interpretations; and/or
- Amending existing instruments; and/or
- Developing new instruments; or
- None of the above as a result of the analysis.¹³

Originally, it was hoped that the scoping exercise would be completed by 2020,¹⁴ but it seems that realistically it is likely to be 2022 or even 2023.¹⁵

2.3 *Unmanned Ships in the Legal Framework: Public Law in Perspective*

Given that unmanned or autonomous ships or MASS is a technologically new phenomenon, the regulatory law governing such ships is of prime importance, particularly because the extant regulatory regime respecting conventional ships is well-established and highly clustered. Perhaps more importantly, at the centre of any discussion on unmanned ships, the operative word is “unmanned”, meaning there is no crew on board. Thus, the impact on crewing requirements and the governing maritime labour law pertaining to ships at present are of utmost relevance in tandem with the technological developments regarding unmanned ships. In this regard, the phenomenon of crewless ships, whether partial or total, is in juxtaposition to the concept of the human element; and arguably, autonomous ships pose less of a risk in safety terms which is doubtless of benefit to shipping. Needless to say, almost all of maritime law today, in particular, the regulatory and labour law aspects are subject to international conventions, and with few exceptions, all maritime States are parties to them. Apart from the so-called framework convention, the United Nations Convention on the Law of the Sea, 1982 (UNCLOS),¹⁶ some aspects of which must ostensibly feature in this discussion, there are several conventions and related treaty instruments adopted under the auspices of the IMO and also the International Labour Organisation (ILO).

¹³ IMO (n 8).

¹⁴ *ibid.*

¹⁵ “Maritime Autonomous Surface Ships (MASS) and Framework Development Challenges”, <[www.gsdm.global/2019/07/25/maritime-autonomous-surface-ships-mass-and-framework-development-challenges/#:~:text=Definition%20of%20Maritime%20Autonomous%20Surface%20Ships%20\(MASS\)&text=MASS%20has%20been%20defined%20as,operate%20independently%20of%20human%20interaction%E2%80%9D.&text=Degree%20three%3A%20Remotely%20controlled%20ship,and%20operated%20from%20another%20location](http://www.gsdm.global/2019/07/25/maritime-autonomous-surface-ships-mass-and-framework-development-challenges/#:~:text=Definition%20of%20Maritime%20Autonomous%20Surface%20Ships%20(MASS)&text=MASS%20has%20been%20defined%20as,operate%20independently%20of%20human%20interaction%E2%80%9D.&text=Degree%20three%3A%20Remotely%20controlled%20ship,and%20operated%20from%20another%20location)> accessed 18 Feb. 2021.

¹⁶ United Nations Convention on the Law of the Sea (opened for signature 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3 (UNCLOS).

2.3.1 UNCLOS

It is notable that directing a ship's navigation from a shore station is not a new thing. The functional concepts of vessel traffic systems (VTS) and vessel traffic management systems (VTMS) under UNCLOS and SOLAS have been around for several decades now. In several instances, instructions are given by pilotage authorities, but usually these are directed to pilots, not to shipboard navigators although it is acknowledged that a master is always in command of a ship even if a pilot conducts navigation. Several attempts have been made to widen the scope of shore-based control of navigation in pilotage waters. Over the last decade or so, the European Union project Motorways of the Sea and Electronic Navigation by Intelligence at Sea, otherwise known as MONALISA, has been striving with some success to introduce shore-based navigational control of ships at sea but there has been serious resistance from the international seafaring community. Likewise, the IMO was initially not very receptive to such propositions citing disruption of its existing realm of regulatory conventions and also relevant provisions of UNCLOS.¹⁷

Insofar as UNCLOS is concerned, it is trite that it is virtually impossible to apply UNCLOS rules and requirements to autonomous ships. Simply stated, UNCLOS being a public international law convention, there are several treaty formalities posing as obstacles that are difficult to overcome. Additionally, there are conceptual barriers pertaining to UNCLOS that prevent or impede the application of the convention to autonomous vessels. There are provisions that point to the master and crew of the ship that bear and impinge on rights, responsibilities and undertakings. The master as the authority on board is unequivocally bound by the convention provisions which in real terms is incompatible with the operation of an autonomous ship, in particular of the fourth degree. Among others, these are issues involving UNCLOS that are yet to be seriously considered and resolved.¹⁸

2.3.2 COLREGS

As mentioned above, the *status quo* involves requirements imposed by several international conventions. Of utmost importance is navigational safety and the primary instrument in this regard is the International Convention

17 See Proshanto K Mukherjee, "Impact of the MONALISA Project on the International Legal Framework for Navigation at Sea", 2010, submitted to the Swedish Government on behalf of Lund University.

18 See Roman Dremluiga (1) & Mohd Hazmi bin Mohd Rusli (2), "The Development of the Legal Framework for Autonomous Shipping: Lessons Learned from a Regulation for a Driverless Car", *Journal of Politics and Law*, (2020), Vol. 13, No. 3, p. 300.

on Preventing Collisions at Sea, 1972,¹⁹ (COLREGS). The need for Collision Regulations to govern global shipping became apparent with the transition from sail to steam and the transformation of wooden to steel hulls. These were instances of law responding to technological development of the times, akin to what we are seeing today with the rapid acceleration of technology in the field of autonomous ships. Ironically, it was evident that the effects of collisions at sea resulting from these technological developments were exponentially more severe. Incidentally, the COLREGS also operate as penal law.²⁰ The regulatory law dimension of collision law is correlated to the private law side of collisions involving civil liability arising from a maritime tort and provision of remedies commensurate with damage suffered.²¹

The first point to note about the COLREGS is that they apply to “vessels”, a term conceptually wider than “ships”. The definition of “vessel” is “every description of watercraft including non-displacement craft and seaplanes used or capable of being used as a means of transportation on water” which does not preclude an autonomous ship from being described as a vessel.²² Under the COLREGS, vessels are required to carry out certain steering manoeuvres and movements forward and astern at a safe speed to prevent and avoid collisions, particularly where vessels are at risk of collision particularly in “head-on”, crossing and overtaking situations. It will be virtually impossible for unmanned ships under the fourth degree referred to above to comply with, among others, the aforementioned rules requiring navigational judgments to be made to prevent collisions in specific situations. Rule 2 states that no owner, master or crew member will be exonerated from “the consequences of any neglect to comply with the rules ...”. Furthermore, under that Rule, no exoneration is to be afforded to consequences of “the neglect of any precaution, which may be required by “the ordinary practice of seamen”. An interesting question has been raised as to whether this or the related notion of “good seamanship” in Rule 8 referred to below can be replicated by any computer software.²³ To enable compliance with Rule 2, control centres operating fourth degree autonomous vessels must perhaps employ persons with requisite seamanship understanding and

19 International Convention on Preventing Collisions at Sea (adopted 20 October 1972, entered into force 15 July 1977) 1050 UNTS 16, UKTS 77 (1977), 28 UST 3459 Cmnd 6962.

20 See the *N.F. Tiger*, [1982] 2 Lloyd's Rep. 564 case involving Rule 10 on Traffic Separation Schemes.

21 Mukherjee (n 17) 55.

22 A Komianos, “The Autonomous Shipping Era. Operational, Regulatory, and Quality Challenges”, *International Journal on Marine Navigation and Safety of Sea Transportation*, June 2018, Vol. 13, No. 18, p. 341.

23 UK P&I (n 4),3-4.

experience; otherwise, the Rule may have to be amended to take account of the fact that autonomous vessels will not have seamen (seafarers) on board to ensure that their ordinary practice is observed.²⁴ It is notable that in practical terms, Rule 2 allows for a departure, meaning a non-observance, in the event it is required for avoiding immediate danger.

In Rule 5, it is mandated that a proper lookout must be by “sight and hearing as well as by all available means appropriate in the prevailing in the circumstances”. In this regard, one author seems to have the opinion that the requirement presupposes that all technical means of keeping a lookout have been exhausted and therefore highlights the need to resort to the human senses of sight and sound which trigger judgment and reaction based on experience to avoid collision.²⁵

As alluded to above, where collision avoidance action needs to be taken, Rule 8 requires good seamanship to be observed. Needless to say, these requirements of the COLREGS are food for careful thought in the context of autonomous vessels.²⁶ Rule 17 speaks to last minute action to avoid collision. If one vessel required to keep out of the way fails to do so in good time, the other vessel finding itself too close must “take such action as will best aid to avoid collision”. How this can be safely achieved in the case of an autonomous ship is a valid point of query. As one author has observed, it will require “reliable, safe, and delay-free communications coupled with secure and fast data transfer between the autonomous ship and the control centre”.²⁷

In the context of unmanned ships, a grim reality is that even with dramatic advancements in ship technology, safety remains a major cause for concern in shipping. The relatively recent foundering of the *Costa Concordia* in 2012 bears testimony to the contention that despite remarkable technological breakthroughs, regulatory stringency is not to be compromised.²⁸ Autonomous ships invariably need to be adequately regulated through international instruments to ensure all round maritime safety across the vast expanse of the oceans of the world. Thus, there is a dire need for international regulatory maritime law encapsulating the peculiarities of autonomous vessels of all descriptions.²⁹

24 Komianos (n 22) 342.

25 *ibid.*

26 UK P&I (n 4) 3–4.

27 Komianos (n 22) 342.

28 Schröder-Hinrichs, J-U, E Hollnagel, and M Baldauf. 2012, “From Titanic to Cost Concordia – A Century of Lessons Not Learned”. *WMU Journal of Maritime Affairs* 11: 151–167.

29 Mingyu Kim and others “Autonomous Shipping and its Impact on Regulations, Technologies and Industries” *Journal of International Maritime Safety, Environmental Affairs, and Shipping*, (2020), Vol.4, No.2, p.19.

2.3.3 SOLAS

Among other IMO Conventions, several aspects of the International Convention on Safety of Life at Sea, 1974 (SOLAS)³⁰ warrant attention. First of all, attention must be drawn to Chapter 1 which houses the “Application” provision of the Regulations of the convention. Clearly, paragraph (a) of Regulation 1 states that the Regulations apply to ships “engaged on international voyages”. Furthermore, Regulation 3, paragraph (a) which lists all the varieties of ships excluded from the application of the Regulations, does not mention unmanned ships. Indeed, at the time SOLAS was created, in response to the *Titanic* disaster of 1913, such ships were not in the foggiest contemplations of anyone. Needless to say, in order to accommodate unmanned ships within the legal framework of SOLAS, a major amendment would be necessary.

The structural and ship safety requirements of SOLAS are contained in Chapters 11-1 and 11-2. Detailed technical prescriptions of sorts elaborated in various instruments *para droit* known as Codes, which are mostly mandatory. Apart from those, perhaps the most important aspect of SOLAS is the subject of Safety of Navigation contained in Chapter V. Regulation 14 of this chapter addresses Safe Manning which is of utmost importance in relation to unmanned ships. The first paragraph of this Regulation requiring ships to be “sufficiently and efficiently” manned runs totally contrary to the very essence of unmanned ships regardless of the degree of autonomy. It is postulated by one author that with regard to unmanned ships, the “sufficiency requirement may be met by control stations being “sufficiently manned” and the “efficiency requirement”, satisfied by means of the installation of adequate high technology systems. The requirements of Regulation 14 could thereby be fulfilled by a combination of these two elements of “remote command and control of the unmanned ship”.³¹ It would appear that the related provision in paragraph 2 requiring each State Party’s Administration to issue a “minimum safe manning document” to each of its ships is equally problematic in respect of unmanned ships.

As stated by Mingyu Kim and others,³² unmanned ships possess certain characteristics which warrant serious consideration in terms of the application of the International Safety Management Code (ISM Code) under Chapter IX of SOLAS. Indeed, according to the views of those authors, there are a host of IMO Conventions which should be amended as well. However, it is well

30 International Convention for the Safety of Life at Sea (SOLAS), (adopted 1 November 1974, entered into force 25 May 1980) 1184 UNTS 2.

31 Komianos (n 22) 342.

32 Kim (n 29) 19.

recognized that such an initiative will be an uphill task requiring an inordinate amount of time and the cooperation of the numerous bodies within IMO like the Committees and Sub-Committees to make it happen. In view of the enormity of this task, it would be more expedient to introduce fresh regulatory requirements employing a goal-based approach in line with the Goal-Based Standards (GBS) of the IMO according to the revised generic guidelines produced by the MSC.³³ Specifically, these guidelines have been developed for the purpose of establishing safety goals and functional requirements taking into consideration a typical MASS lifecycle. The objective to be achieved through the adoption of GBS is to ensure that the safety standards of remotely controlled unmanned ships are no less than those applicable to similar conventional vessels.³⁴

2.3.4 Other Regulatory Conventions

It is postulated that conventions do not expressly exclude autonomous ships from the ambit of their application. Apart from the functional necessity of being able to be in motion on water, there is seemingly no provision in international legislation that for a ship to qualify as a ship, it must be manned.³⁵ Be that as it may, in the view of the present author, such a proposition is fallacious at least in terms of the maritime law and practice as it stands. Regardless of whether or not there is specificity in international instruments in this regard, which there is, since time immemorial, ships have been in fact manned until the recent advent of autonomous or unmanned ships which has not yet fully materialized. It is perhaps a valid proposition that in view of the technologically feasible reality of the autonomous ship, there should be a clear legal pronouncement that a ship in the current milieu could be one that is unmanned. That said, in numerous instances, international maritime conventions point to ships being manned by a duly qualified master, officers and crew.³⁶ Indeed, SOLAS provides for ships to have a safe manning document and the Maritime

33 IMO 2019 Generic guidelines for developing IMO goal-based standards, MSC.1/Circ.1394/Rev.2.

34 See DNV GL 2018 "Remote-controlled and Autonomous Ships in the Maritime Industry", Group Technology and Research, Position Paper 2018.

35 Danish Maritime Authority, "Analysis of Regulatory Barriers to the Use of Autonomous Ships", <www.dma.dk/Documents/Publikationer/Analysis%20of%20Regulatory%20Barriers%20to%20the%20Use%20of%20Autonomous%20Ships.pdf> accessed 18 February 2021.

36 See *eg*, UNCLOS Article 94(4)(b).

Labour Convention, 2006 (MLC 2006)³⁷ deals *inter alia*, with the labour or employments aspects of ships' masters, officers and crew.

Insofar as domestic legislation is concerned, whereas in the United Kingdom Merchant Shipping Act 1995, "ship" is simply defined in s.313(1) as including "every description of vessel capable of navigation" with no mention that it must be manned, the French *Code des Transports* 2010 specifically refers to a floating craft "*manned for maritime merchant navigation*".³⁸

Looking to the future, with respect to the issue of safe manning, law makers internationally and nationally will need to generate new and appropriate legal regimes for autonomous ships belonging to the categories of degrees one, two and three. Regarding fourth degree ships, law makers and regulators must devise a proper regime for the "manning" of shore-based control stations.

The role of the master in the new first, second and third-degree autonomous ship regimes is particularly important as his/her powers will be significantly diminished. Concomitant with that, the question will arise regarding whether there will be a "master" of a shore-based control station remotely operating a ship at sea completely. One view is that remotely operated ships, with or without crew on board can meet the convention requirements for a master if the shore-based controller is appropriately qualified.³⁹ In the opinion of the present author, such a proposition is unclear at best. Obviously, such qualifications will not be the same as those of a master serving on board a ship. Be that as it may, if the shore-based controller is clueless about practical seamanship and navigation, he/she will be ill-equipped to remotely direct the ship regardless of his/her hi-technology capability. This would be particularly important in respect of assisting vessels in distress at sea and search and rescue operations under the SAR Convention⁴⁰ and salvage under the Salvage Convention.⁴¹ These are substantive regulatory issues pertaining to autonomous ships *vis a vis* safe manning. In that vein, it is instructive to note a question raised by a

37 Maritime Labour Convention 2006 as amended (MLC), (adopted 23 February 2006, entered into force 20 August 2013), (amendments of 2014 entered into force 18 January 2017) 2952 UNTS 3; 45 ILM 792; 45 ILM 792 as amended in 2014.

38 UK P&I (n 4) 4.

39 *ibid.*

40 International Convention on Maritime Search and Rescue, (SAR), (adopted 27 April 1979, entered into force 22 June 1985) 1405 UNTS 97.

41 International Convention on Salvage, (adopted 28 April 1989, entered into force 14 July 1996) 1953 UNTS 165.

duo of authors as to “whether it is possible for an unmanned ship, by its very definition, to have a master”.⁴²

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978/1993 (STCW Convention)⁴³ applies to masters and seafarers’ qualifications, *i.e.*, training and certification, as the title of the Convention states. It has no application to shore-based remote controllers of unmanned ships. Neither does the Convention apply to others such as programmers associated with the autonomous navigation of the ship. None of them are regulated by the STCW Convention because they are not on-board navigators even though in actual fact, they are engaged in navigating the ships. It is the view of the present author that navigation can be conducted remotely from ashore or a station set up for that purpose, but seamanship cannot be replicated. Good seamanship can only be carried out at sea.

With respect to the efficiency and capability of such shore-based personnel to remotely operate autonomous ships in practical seamanship terms, much depends on factors physically external to the control centre such as the geographical location of the ship, the cargo on board, the prevailing weather conditions and the safety and security of the ship. At the control centre itself, considerations of operator experience and competence and operator fatigue, among other things, are crucial. It is suggested by one author that these factors or prerequisites need to be incorporated into the STCW Convention for it to be up to date functionally and adequately tailored to meet the requirements of autonomous ships. The requirements for training and certification of such shore-based personnel should also include the standards applicable to operators of Vessel Traffic Services (VTS).⁴⁴ As far as the application of labour law to shore-based remote stations is concerned, most likely it would have to be the corresponding land-based law rather than the MLC 2006 which applies exclusively to seafarers.

To end the discussion on the public law implications, it must be noted that conventional ships are subject to coastal state jurisdiction when they traverse the waters of any of the maritime zones under UNCLOS. In the territorial sea, foreign ships have right of innocent passage and in the exclusive economic zone they are entitled to exercise freedom of navigation. Pursuant to several IMO conventions as well as MLC 2006 and UNCLOS, foreign ships voluntarily

42 R Veal and M Tsimplis, “The Integration of Unmanned Ships into the Lex Maritima”, *Lloyd’s Maritime and Commercial Law Quarterly*, 2017.

43 International Convention on standards of training, certification and watchkeeping for seafarers (STCW), (adopted 7 July 1978, entered into force 28 April 1984) 1361 UNTS 2.

44 Komianos (n 22) 341.

entering a port or offshore facility of a coastal state are also subject to port state control (PSC). How an autonomous ship remotely controlled from a shore station will be able to submit itself to coastal state jurisdiction under UNCLOS and to PSC under various maritime conventions is a questionmark. The absence of a legal definition of an autonomous ship poses a problem. Furthermore, under its flag state law, the autonomous ship may be considered a “ship” but a coastal state under its own law may not be willing to recognize an autonomous ship as a ship. This may impede the growth of autonomous shipping.⁴⁵

2.4 *Unmanned Ships in the Legal Framework: Private Law in Perspective*

In the private law sphere of the subject under discussion, two topics are addressed, namely the question of civil liability including its limitation, and the issue of seaworthiness in the context of marine insurance and carriage by sea.

Civil liability in the realm of shipping is essentially governed by national law, and with few exceptions is generally based on proof of fault regardless of the legal system. The difficulty with autonomous or unmanned ships operating with no human intervention such as those categorized in the third and fourth degrees as per the IMO/MSA standards, determination of fault on the part of a human being is virtually impossible. Navigation is conducted by remotely placed human operators or by artificial intelligence (AI) pursuant to algorithms that are pre-programmed. In some such instances, fault may be attributable to a human operator who has failed to properly monitor movements of the ship in question or to take adequate intervening action. In other instances, there may be a failure on the part of the owner or operator of the ship to maintain up-to-date software programmes or has been otherwise negligent. A shipowner or ship manager may be hit with allegations of vicarious liability for the fault of a remote operator who is an employee or agent or even a third party. Liability may rest on the vendor or provider of the software or of the technology used in its development. Needless to say, the relationship of a person actually at fault *vis a vis* his/her/its employer is crucial in terms of who can be liable.⁴⁶

In this context, the exposure to risk of liability is an important factor which must be considered, and the risk should be adequately insured. Civil liability risk and its protection through insurance in all its facets is a concern that begs attention. A related issue in this regard is whether there is any possibility of a

45 UK P&I (n 4) 4.

46 UK P&I (n 4) 6.

shipowner facing strict liability whether by operation of law or through statutory action.⁴⁷ Another question that arises is whether remote operators who in essence take the place of ships' navigating officers in relation to unmanned vessels, should be held independently liable. In the current milieu of shipping, civil liability actions against masters and ships' navigating officers are rare, mainly because they do not have "deep pockets". It is therefore expedient in practical terms for a claimant to sue the employer. The same argument will probably prevail in the context of remote operators who are simply employees of shipowners or of corporate entities who can be held vicariously liable.

Shipowners, of course, can limit their liability pursuant to a convention such as the International Convention on Limitation of Liability for Maritime Claims, 1976 modified by its 1996 Protocol, (LLMC)⁴⁸ or other limitation regime under domestic law. The "conduct barring limitation" provision of LLMC raises the question of its applicability to a remote operator of an autonomous ship and what would be an apt test for recklessness or knowledge assuming that the person alleged to be liable under that convention provision was the shipowner or the shore-based operator entity.

While it is trite that risk of liability is insurable, in private maritime law, there are more ways than one through which liability can arise. One of them, again in respect of the shipowner, is liability in connection with unseaworthiness of a ship which, in the realms of carriage of goods or passengers and marine insurance, is basically contractual in nature. In terms of carriage of goods by sea evidenced by bills of lading, such liability can arise under one of the international conventions such as the Hague-Visby Rules⁴⁹ or the Hamburg Rules.⁵⁰ These conventions pointedly require certain duties to be performed by the ship's master and the crew. This can be problematic for autonomous ships. One author opines that when an autonomous ship is underway at sea,

47 *ibid.*

48 International Convention on Liability for Maritime Claims, (adopted 19 November 1976, entered into force 1 December 1986), 1456 UNTS 221; 16 ILM 606; RMC I.2.330, II.2.330 as amended by Protocol of 1996 (adopted 2 May 1996, entered into force 13 May 2004), 35 ILM 1433.

49 International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading (The Hague Rules) (adopted 25 Aug 1924, entered into force June 2, 1931) 120 LNTS 155 as amended by the Visby Amendments, Protocol to Amend the International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading (Visby and Hague Rules), (adopted 23 February 1968, entered into force 23 June 1977) 1412 UNTS 128.

50 United Nations Convention on the Carriage of Goods by Sea (The Hamburg Rules), (adopted 31 March 1978, entered into force 1 November 1992) 1695 UNTS 3.

only the presence of onboard crew can “prevent accidents and keep the vessel seaworthy”.⁵¹ It must be duly noted however, that under the Hague and Hague-Visby Rules the duty is only to “exercise due diligence to make the ship seaworthy before and at the beginning of the voyage”.⁵²

In the normal course, if the master of a conventional ship is found to be incompetent, it is unlikely that the shipowner will be able to successfully invoke the navigational fault defence of the Hague or Hague-Visby Rules. If the shore-based operators of an autonomous ship are provenly competent individuals and are able to remotely navigate a third or fourth-degree ship safely, the question arises as to whether in those circumstances the seaworthiness requirement is met. On the other hand, if there is inherent failure of the software or of the electronic gadgetry, it is uncertain what the legal consequences might be. A definitive conclusion is seemingly not obvious. Be that as it may, perhaps in the not too distant future, artificial intelligence will take over and reduce or even eliminate the instances of human error.⁵³ In such an eventuality, the legal regime will no doubt have to change correspondingly.

Seaworthiness of ships is a conspicuous element of the law of marine insurance. The universally well-known Marine Insurance Act 1906 of the United Kingdom provides for an implied warranty of seaworthiness in section 39. It is an absolute warranty and applies in respect of voyage policies at the beginning of a voyage. In respect that the vessel is “reasonably seaworthy in all respects”. This warranty applies to voyage policies of marine insurance at the commencement of the voyage and is now tempered by the more recent Insurance Act 2015 which applies to all insurance across the board. How the insurance regime will impact on autonomous ships is uncertain at this stage. Suffice to say that at the present time, unmanned ships will likely be considered unseaworthy under extant marine insurance regimes and will not be eligible for insurance cover.⁵⁴

3 The Aviation Dimension

3.1 *Definition of Unmanned Aircraft*

Unlike unmanned shipping, autonomous aircraft were already in existence at the time of the First World War, operated by both civil and military entities.⁵⁵

51 Komianos (n 22) 345.

52 Art. 3(1).

53 UK P&I (n 4) 5.

54 See reference to statement by Andrew Bardot, Executive Officer of the International Group of P&I Clubs in Komianos (n 22) 345.

55 Manual on Remotely Piloted Aircraft Systems (RPAS), ICAO Doc.10019.

As such, back to 1929 when a Protocol amending the Convention Relating to the Regulation of Aerial Navigation (Paris Convention),⁵⁶ the starting point of the legal framework for international civil aviation, was formulated. That Protocol refers to pilotless aircraft in a subparagraph of Article 15 as “no aircraft of a contracting State capable of being flown without a pilot shall, except by special authorization, fly without a pilot over the territory of another contracting State”. In 1944, the Convention on International Civil Aviation (Chicago Convention)⁵⁷ replaced the Paris Convention. Article 8 of the Chicago Convention entitled “Pilotless aircraft” provides as follows:

No aircraft capable of being flown without a pilot shall be flown without a pilot over the territory of a contracting State without special authorization by that State and in accordance with the terms of such authorization. Each contracting State undertakes to insure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so controlled as to obviate danger to civil aircraft.

The International Civil Aviation Organization (ICAO) adopted the concept of Unmanned Aerial Vehicles (UAVs) in 2004 when it started to work on regulatory development in that field. An UAV is defined as “a pilotless aircraft, in the sense of Article 8 of the Convention on International Civil Aviation, which is flown without a pilot in-command on-board and is either remotely and fully controlled from another place (ground, another aircraft, space) or programmed and fully autonomous”.⁵⁸ In 2007, ICAO suggested that UAVs should instead be referred to as unmanned aircraft systems (UAS). Compared with the term UAV, the term UAS is generally used to describe the entire operating equipment including the aircraft, the control station from where the aircraft is operated and the wireless data link.⁵⁹

The description “Remotely Piloted Aircraft Systems” (RPAS) was subsequently introduced in 2009 by the Unmanned Aircraft Systems Study Group (UASSG) to identify a subset of the UAS.⁶⁰ The UASSG reached the conclusion

56 International Convention for the Regulation of Aerial Navigation (Paris Convention) (adopted 15 October 1919, entered into force 1 June 1922) 11 LNTS 173.

57 Convention on International Civil Aviation (adopted 7 December 1944, entered into force 4 April 1947) 15 UNTS 295.

58 Manual on Remotely Piloted Aircraft Systems (RPAS), ICAO Doc.10019, para. 1.2.5.

59 National Drones Institute, “RPAS, Drone, UAV or UAS?”, <<https://nationaldronesinstitute.com.au/rpas-uav-uas-drones/>> accessed 18 Feb. 2021.

60 ICAO, A38-WP/262 LE/7, at para. 2.2.

that only remotely piloted unmanned aircraft could be integrated with and alongside manned aircraft in non-segregated airspace and at airdromes (aerodromes). The Group thus decided to narrow down the focus of its study to only remotely piloted UAS rather than all categories of them. Thus, it was understood from the start that RPAS are only one type of unmanned aircraft; all such aircraft being subject to the requirements of Article 8 of the Chicago Convention.⁶¹ In 2011, ICAO published a circular captioned *Unmanned Aircraft Systems (UAS)*⁶² providing States with an overview of issues that would have to be addressed in the Annexes of the Chicago Convention to ensure compliance of RPAS with the Chicago Convention. As such, ICAO regulations for manned aircraft apply in the same way as they do to RPAS.

Subsequently ICAO established the RPAS Panel in 2014 to succeed the work of the UASSG. The Panel reached the conclusion that the regulatory framework of RPAS should be the same as that for conventional aircraft. ICAO published *Manual on Remotely Piloted Aircraft Systems (RPAS)*⁶³ in 2015, which set out its vision of RPAS being included in the extant ICAO framework. More recently the ICAO Legal Committee adopted the following terms and their descriptions:

- Unmanned aircraft [UA]: An aircraft which is intended to operate with no pilot on board.
- Unmanned aircraft system [UAS]: An aircraft and its associated elements which are operated with no pilot on board.
- Remotely piloted aircraft (RPA): An unmanned aircraft which is piloted from a remote pilot station.
- Remotely piloted aircraft system (RPAS): A remotely piloted aircraft, its associated remote pilot station(s), the required command and control links and any other components as specified in the type design.⁶⁴

3.2 ICAO Legislative Initiatives

The principal objective of the aviation regulatory framework is to achieve and maintain the highest possible uniform level of safety. In the case of UAS, this means ensuring the safety of any other airspace user as well as the safety of persons and property on the ground. It is evident from the above explanation

61 RPAS Manual (ICAO Doc 10019), at para. 1.2.14.

62 ICAO Cir 328.

63 ICAO Doc 10019 AN/507.

64 ICAO LC/37-WP/2-1; also in ICAO, “Unmanned Aircraft Systems Traffic Management (UTM) – A Common Framework with Core Principles for Global Harmonization”, <www.icao.int/safety/UA/Documents/UTM%20Framework%20Edition%203.pdf> accessed 18 Feb. 2021.

that ICAO has been mainly concerned with RPAS and incorporating it into the existing regulatory framework.

However, as small UAS which are usually less than 25 kg, appear to the general public more frequently, ICAO also started to consider the operation of this subset commonly referred to as “drone”. As UAS develop progressively, their size, performance and complexity vary significantly as may be expected; so does the variety and complexity of their related operations. In some instances, the roles of UAS will be similar to those of manned aircraft. The obvious difference between the two types is that in an unmanned aircraft there is no pilot on board. Thus, the regulatory logic and thought process associated with conventional manned aviation would be inappropriate for all types of UAS. As stated by Joint Authorities for Rulemaking on Unmanned Systems (JARUS), therefore, designing a regulatory regime that would allow industry to continue developing, often rapidly, while concurrently controlling undue risk exposure to other users of airspace and ground personnel and to critical infrastructure, would be a daunting task indeed. Whatever regulatory framework is designed and put into place, a whole host of envisaged systems and roles must be factored into it.⁶⁵

In June 2020, ICAO published a piece of model legislation⁶⁶ that endorses an operation-centric and risk-based regulatory approach by creating UAS operational risk categories and applying corresponding rules. This regulatory framework for UAS emerged from JARUS, a group of experts established in 2007 with the purpose of recommending certification, specifications and operational provisions to interested parties such as ICAO, national aviation authorities and regional authorities for their consideration and use.

According to the UAS Operational Categorization⁶⁷ document published by JARUS in 2019, the operation-centric and risk-based approach is defined in terms of three operational categories as set out herein; namely, Category A (Open) representing very low risk operations, Category B (Specific) representing limited risk operations, and Category C (Certified) representing traditional high risk operations. Every UAS should be characterized by one of these three categories according to the risks associated with the particular operation of the system. The standards for each category involves many operational factors, including the size of the aircraft, location, altitudes, airspace classification

65 JARUS, *JARUS UAS Operational Categorization*, para. 2, <http://jarus-rpas.org/sites/jarus-rpas.org/files/jar_doc_09_uas_operational_categorization.pdf> accessed 18 Feb. 2021.

66 ICAO, “Introduction to Model UAS Regulations and Advisory Circulars”, <www.icao.int/safety/UA/UAID/Pages/Model-UAS-Regulations.aspx> accessed 18 Feb. 2021.

67 JARUS (n 65).

and complexity of the operation, day/night operations and mitigations that may be imposed.⁶⁸ By reason of its operation-centric nature, the same UAS can be operated under different categories because different operational scenarios can possibly be considered. Details and descriptions of each Category (A, B and C) are provided in Appendix I to this article. The value of categorization of UAS operations lies in the application of different levels of regulatory involvement to mitigate the risks identified. There are many ways to mitigate the risks associated with UAS operations, such as airworthiness requirements, operational limitations, operational approvals, the details of which are provided in Appendix II to this article.⁶⁹

4 Summary, Conclusion and Recommendations

4.1 *Maritime Law and Aviation Law Compared*

The origins of *maritima* are lost in obscurity going back over millennia to when humankind first floated a piece of log in the water and learnt that, as a means of transportation, it was more efficient than the cart and the wheel. Maritime law is thus of ancient vintage, mature, and in maritime metaphoric jargon, well-anchored. By comparison, aviation has appeared on the horizon in relatively recent times. Even if several aviation law principles have been derived from maritime law, it must be emphatically acknowledged that in technological terms, aviation, since the latter part of the last century has skyrocketed ahead of shipping.

Against the above brief background, it is noted unsurprisingly that maritime law and aviation law, as modalities of transportation, mostly of an international nature, share important commonalities which engender legal challenges as well as opportunities for innovation providing mutual inspiration. With market expansion hand in hand with technology development, aviation law has grown into an independent legal domain and generated creative legal instruments which can serve as models for maritime law. Prime examples are the legal concepts and theory on unmanned aircraft which can be emulated to resolve legal issues regarding unmanned ships.

Unlike the international shipping regulations promulgated through numerous maritime conventions, there are only a few conventions regulating aviation. The main convention on aviation is the Chicago Convention together with its

68 ICAO, UAS Toolkit- Rules or Guidance, <www.icao.int/safety/UA/UASToolkit/Pages/Toolkit-Guidelines.aspx> accessed 18 February 2021.

69 The texts in Appendices I and II are extracted from JARUS (n 65).

Annexes containing Standards and Recommended Practices. Unmanned aviation has been within the ambit of the Chicago Convention since its inception.

Shipping has, up to this point, been based on the notion of seafarers including master and crew, operating the ship from within the ship itself. The whole maritime law has been based on this proposition. Regulatory legislation dictates that manning is an essential ingredient for seaworthiness of a ship; it must be classed and authorized by a national legal regime to operate. Removal of manning from ships raises important technical, operational as well as legal issues, the extent of which is being actively studied by the maritime community. Despite the divergent approaches, some principles can be borrowed from legislative initiatives on unmanned aircraft in designing a new legal framework for autonomous shipping.

4.2 *Recommendation: Operation-Centric and Risk-Based Regulatory Approach*

As discussed, for carrying out the scoping exercise on unmanned ships, IMO has categorized MASS into four groups according to different degrees of autonomy. This method of categorization may serve the purpose of a scoping exercise but, in this author's opinion, it is not compatible with making regulations designed to govern the operations of unmanned ships with different degrees of autonomy. So far, IMO has placed more emphasis on the autonomous ship as a phenomenon but has given less consideration to its operational environment which may vary. The scoping exercise on MASS is still continuing with the object of determining the extent to which they can be captured by existing conventions. Most likely, the extant legal and regulatory maritime framework will have to be modified to accommodate autonomous ships and facilitate their adaptation to the rules. To achieve this aim, it is advisable that regulations be developed that are consonant with corresponding technological progress in the field. While the lawmaker's aim should always be to embrace the code of safety first, overregulation may have a negative impact on innovation and should be avoided.

In that vein, the recently-developed theory of the operation-centric and risk-based regulatory approach of UAS in aviation law is a good model to follow. It exemplifies how adequate safety levels can be attained without sacrificing or impeding technological development. It has been demonstrated in the foregoing discussion how ICAO initially adopted the same stance as IMO, by attempting to integrate all UAS with the extant legal regime governing manned aviation. However, as different types of UAS, especially smaller varieties of them were developed, ICAO altered its regulatory strategy for all UAS

and their associated operational environments to establish a risk-based form of categorization and corresponding rules.

An operation-centric and risk-based approach to regulating UAS focuses on two principal operational risks shown in the following Figure 15.1, namely, safety risks and other risks. Safety risks associated with UAS operations can be grouped according to the parties who are the potential victims. These include people on the ground, other airspace users, and critical infrastructure such as unmanned aircraft causing a fatality to persons or damaging property on the ground. Likewise, there may be a collision between a UAS and another airspace user in any phase of a flight. There are other risks outside the remit of the aviation regulator such as the risk of privacy infringement, security encroachments, environmental damage *etc.*

Regulators of global aviation must face the challenge of putting into place methods and criteria commensurate with UAS approval requirements respecting design, construction, production and operation taking account of safety factors relating to integration into airspace. This can be achievable through a non-prescriptive, performance-based regulatory approach. While it can be expected that UAS will adopt certain roles similar to those prevailing in manned aviation, it must also be envisaged that given the fact that they will be without pilots, some of the conventional devices utilized in the regulation of manned aviation will become obsolete. In view of further advancements in terms of the range of UAS types, changes in future operating environments and performance variations call for a flexible regulatory approach, one that is susceptible to relatively easy adoption. All said, a risk-based approach is the one that is most compatible with the established scheme of operational categories.

The categorization invariably leads to different regulations designed to mitigate risks at different levels according to the nature and extent of the involvement of the regulator. It would, for example, be appropriate to employ

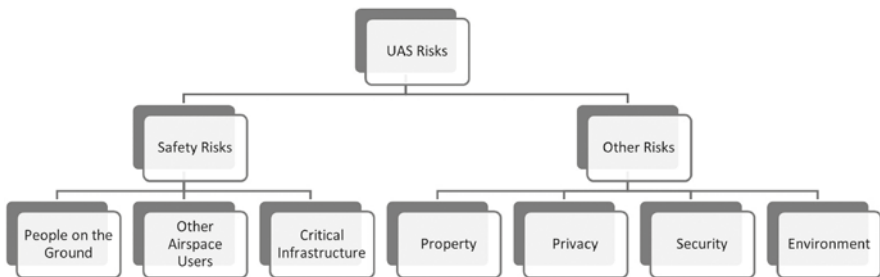


FIGURE 15.1 UAS risks
DIAGRAM DERIVED FROM JARUS (N 67).

traditional approval devices used in manned aviation for UAS operations that are at the highest level of risk. On the other hand, where it is possible, less onerous regulatory measures such as airworthiness requirements or operational limitations could be adopted to mitigate risk at a lower level.

Rapid advancements taking place in the current technological milieu will make fully autonomous shipping a viable reality, perhaps in the not too distant future. However, we must not lose sight of the fact that maritime technology is subject to a plethora of regulatory requirements designed to foster safe and environmentally sound operations. The shipping industry provides an indispensable service to global seaborne trade and commerce. If autonomous shipping is looking to acquire regulatory approval to prosper, it must be demonstrated that the technology involved is uncompromisingly safe and sound, no less than that which is expected of conventional ships.

It is recommended by the present author that the operation-centric and risk-based regulatory approach utilized in the aviation sector be emulated in the maritime sector for the development of a regulatory scheme for unmanned ships or MASS. That is not to suggest, however, that exactly the same legal methodology that has been developed for autonomous aircraft should apply to autonomous shipping. In this article, legal barriers to regulating unmanned ships through extant maritime conventions have been pointed out and examined. In that vein, it is suggested that corresponding legislative initiatives pertaining to unmanned aircraft be consulted, given that unmanned ships and unmanned aircraft share several legal commonalities. The main recommendation directed at the maritime lawmaker is to concentrate on the risk-based regulatory approach which will require, in the first instance, categorization of unmanned ships into different types according to their operational risks, and apply appropriate levels of regulation. It would be expedient for IMO to conduct a full risk assessment of autonomous ships together with their various operations in different environments and to create a risk-based categorization by considering appropriate parameters. Then, commensurate regulatory measures could be applied by IMO to reduce risks identified in the categories through means like seaworthiness, operation approval, operator competence, *etc.*

Inevitably, the law on autonomous shipping and aircraft will have to undergo changes as technology evolves and market demands accelerate. There may also be other aspects worth examining as the ICAO model legislation on UAS progresses. It is not beyond expectations that the law on unmanned ships might grow to be more advanced and become a model for unmanned aircraft. This article has attempted to shed some light on the common denominators of the two modalities of unmanned ships and unmanned aircraft and instigate

a measure of mutuality in the articulation of regulatory legal regimes on both fronts. The recommendations are intended to apprise the rulemaking authorities on possibilities for the future regulation of unmanned ships or MASS operations and provide a baseline regulatory structure.

Appendix 1: UAS Operational Categories **(Excerpts from *JARUS UAS Operational Categorization*)**

2.5 UAS Operational Categories

Based on the unmitigated risk associated with UAS operations, every UAS operation should be characterized by one of three categories. It should be noted that the same UAS can be operated in principle in different categories because of possible different operational scenarios considered.

Category A (Open)

This category identifies those UAS operations that present low unmitigated risk. The concept that there will be minimal regulatory involvement applies in this category. Self-certification or adoption of industry standards may apply but there are no mandatory airworthiness requirements. Risk mitigation is applied through the adoption of operational limitations (e.g. limited to specific geographical locations and in visual line of sight) and hence there will be no mitigation applied through approvals issued by an aviation regulator. The operator *per se* is responsible for safe operations.

Category B (Specific)

Where an UAS operation goes beyond the operational limitations of Category A and safety is not (at least fully) assured by relying on a certificated design as foreseen in Category C, the operation will need to be independently assessed by the authority under this category. An acceptable level of risk is ensured by a risk assessment of the operation that identifies the applicable mitigations, which can contain requirements addressing the design, operational limitations, and qualifications of the operator or of the pilot. Varying levels of oversight will be needed in this category. The aviation regulator will need to decide what level of oversight is required and issue an operational approval.

Several operators may want to conduct similar types of operations in category B. In such cases, compliance with the assumptions and conditions of a generic risk assessment endorsed by the authority may be acceptable in lieu of requiring an individual risk assessment for all operators concerned.

Category C (Certified) – Represents Traditional High Risk Operations

Full regulatory oversight will apply in this category following the traditional approach to manned aircraft regulation. The UAS in this category will carry high levels of risks, which cannot be solely mitigated through operational limitations. A level of risk mitigation will be applied through regulatory oversight. A UAS in this category would likely require a Type Design approval (e.g. Type Certification), a Certificate of Airworthiness, Flight Manuals, Instructions for Continued Airworthiness, production approvals and other associated certificates of traditional civil aviation.

Appendix II: Risk Mitigation Strategies (Excerpts from *JARUS UAS Operational Categorization*)

2.4 Risk Mitigation Strategies

There are many ways to mitigate risks associated with UAS operations. Traditional approval mechanisms from manned aviation are appropriate and should be applied to the highest unmitigated risk UAS operations. Conversely, a less burdensome means of mitigating risk could be applied to lower unmitigated risk operations. This section describes some of the primary means of mitigating UAS operational risks.

2.4.1 *Airworthiness*

Less risk-bearing UAS operations could be deemed fit to fly solely by the operator without interaction with an aviation authority or any type of airworthiness approval. More risk-bearing UAS operations would demand more traditional approval means. The issuance of a Certificate of Airworthiness (CoA) is one means of mitigating risks associated with UAS operations. By terms of ICAO Annex 8, a CoA shall be issued by a contracting Authority based on satisfactory evidence that the aircraft complies with the design aspects of the appropriate airworthiness requirements. This implies a fundamental level of regulator involvement in the oversight of the design aspects and a set of appropriate airworthiness requirements for the UAS. Each of these provides an additional layer of safety, backed by the experience of manned aviation, to ensure the UAS has an appropriately airworthy design. Additionally, it will help ensure that the quality of the production of the UAS is able to catch defects and non-conformities to the design.

2.4.2 *Operational Limitations*

Operational limitations are another way to manage the risks of UAS operations. There are many operational limitations that could be applicable including altitude

limitations, airspeed limitations, geographical limitations, temporal limitations, line of sight limitations, etc. For example, altitude limitations can prevent a small UAS from being lethal in the event of crash or they could control exposure to airspace where manned aviation is frequently found.

2.4.3 *Operational Approvals*

Operational approvals could include such documents as UAS operator certificates, specific approvals, flexibility provisions (e.g. exemptions) or permissions. These should be considered based on a risk- and performance-based approach as well as proportionality. For lower risk operations the requirement of operator or pilot certificates might be too burdensome for operators as well as for authorities. For highest risk operations operator and pilot certificates should be required; the requirements should be comparable to requirements concerning manned aviation. Between the highest risk and lowest risk operations there is a great variety of operations. In most cases the need of operational approvals should be considered thoroughly, and a pilot certificate should be required. Local circumstances (e.g. population density) should be taken into account when considering whether the certificate or approval is required or not, for a certain type of operations. Equipment capability (e.g. number of rotors, fail-safe functions, and redundancy systems) should be a factor when determining appropriate level of requirements. Self-declaration (e.g. registration) could also be considered in some cases.

2.4.4 *Operator Competence*

The operator competence will mitigate risks associated with UAS operations. A competent operator will reduce incidents with regard to the operational limitations set forth by the Authority and ensure proper coordination, as needed, with other airspace users. Basic navigation skills remain important in many UAS operations to ensure the aircraft is flown safely. System specific training will also mitigate operational risk by ensuring proper normal and emergency procedures are followed for each aircraft type.

2.4.5 *Identification*

Proper means of identification of the UA (e.g. in flight) and its operator will mitigate some risk from irresponsible or uninformed use. It would provide a compliance and enforcement tracking mechanism which would instill a level of responsibility in the operator for safe operations. Electronic identification of UAS may in most cases be more practical than visual identification. The standard registration marks for international operation in place for manned aviation could be applicable to UAS, but may not be appropriate for certain types and uses which would require the development of new identification means.

2.4.6 *Design Approvals and Features*

Historically, regulator design approval of all aircraft has been used as an additional layer of safety in protecting the lives of the pilots, passengers, and people on the ground. This paradigm, the risk profile, shifts with the introduction of unmanned aircraft where the crash of the vehicle no longer implies fatalities on-board the aircraft. Fatalities to other airspace users and people on ground are still a possibility. However, aircraft design approval, at a vehicle and component level, can mitigate the safety risks associated with UAS operations.

Design approval can be of the rigor used for manned aviation where regulators or designees extensively review and approve all engineering aspects of the aircraft and its components to ensure it will operate its intended mission with the highest level of confidence. Design approval could also potentially be scaled down to a less onerous process. Component level approval, rather than that of the entire aircraft, could be used to mitigate specific risks. For example, an appropriately designed and installed parachute could mitigate the risk of life and property on the ground. Many Authorities already have regulatory means to approve aircraft component design, e.g. Technical Standard Orders, which could be used in this new capacity.

Design 'features' implies the requirement for specific functionality or capability on an aircraft without regulatory involvement in the design or installation of the functionality. In instances where the risk is relatively low, this 'soft' requirement could provide a level of safety assurance to an UAS operation. Standards for consumer products could be one means of scaling down regulator involvement as a 'softer' requirement than full design approval.

P.S. Such categorization and the SORA for Specific Category has been endorsed by EU⁷⁰ and finally incorporated by ICAO in its model Regulation for harmonization in UAS legislation.

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⁷⁰ Commission Implementing Regulation (EU) 2019/947 of 24 May 2019 on the rules and procedures for the operation of unmanned aircraft.

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Some Perils of Turning Small Ships into Big Boats: On the Relevance of Addressing the Real Issues in Law

Claes Martinson

1 A Relational Property Rights Analysis

It is easy to associate property law with ‘things’. However, the right to property is not about handling things. Like any other law, property law is about managing relationships. More specifically, property law is about regulating and dealing with conflicts of interest among people, even if the conflicts of interest have to do with resources. In spite of this fact, the concepts of objects and property still tend to shape our understanding. As lawyers, we sort the material based on what kind of thing or object the conflicts of interest refer to. Objects can become the central focus of the legal disputes in question. Grounding our starting point in objects can even affect the way lawyers perceive the context at hand. This may mean that lawyers fail to pay attention to what the subjects’ conflict of interest actually consists of, even though it is really the subjects’ conflicts of interest that lawyers need to deal with.

Since law requires simplifications and generalisations, the use of regulatory constructions such as objects and property, fulfils important functions. Using object definitions, lawyers can, to some extent, sort between different contexts. Object definitions can provide some accuracy when it comes to identifying what is special about conflicts of interest between parties that are competing for different objects. For example, the object “ship” implies a certain environment of relationships and conflicts of interests, that differs from other objects such as land, horse or trademark.

The Swedish Maritime Code largely regulates relationships related to subjects (people, companies, etc) who handle ships. According to a central definition in the Swedish Maritime Code 1:2, vessels can be ships or boats.¹ Relatively recently, this definition was changed.² The formal effect of this change was that small ships became big boats. With the new definition, the smallest ships, with a length between 12 and 24 meters, are no longer ships.

¹ Regarding the definition of vessel (*fartyg*), see, for example, Christer Rune, *Rätt till skepp*, (2 ed, Sjörettsföreningen i Göteborg skrifter 68, 1991) 17–19.

² Svensk författningssamling 2017:1056 in force by 1 February 2018.

By changing the definition, the legislator wanted to achieve some expected results.³ First, the legislator wanted to reduce the state's fees for various registration measures. The change was also about making the administration of credit security less difficult to handle. Furthermore, the change addressed a difficulty in the sales process; the requirements for proof of previous owners were so high that it was difficult to prove what was required. Moreover, the change was done to coordinate regulation with maritime security regulation in a couple of aspects. It was also pursued in order to comply with EU directives in a more direct way than before. Finally, it was set out to achieve equal treatment of equal vessels.⁴ In other words, this effort was a matter of re-regulating several issues at once. To change a definition can be a useful technique for doing so. This technique needs however not be the ideal. If the need for re-regulation is to remedy an excessively high fee collection from the state, then the more obvious method is to reduce the fees. If the administration is difficult to handle, then the method could be to change the administration. Also, if the evidentiary requirements are too high, then the method could be to lower the evidentiary requirements. Moreover, when maritime safety regulation sets requirements that needs to be coordinated, it is enough to coordinate the specific requirements. The equivalent can be said about complying to EU directives in a direct or indirect way. Also, the equal treatment of equal vessels can be achieved by addressing the specific similarities. Overall, there may, however, be predominant reasons to attack what appears to be a Gordian knot of regulation. To solve all the issues in one single cut can be an appealing method.

This chapter is about observations on theoretical effects of a change of a legal definition.⁵ These observations are primarily relevant when it comes to understanding legal thinking and methodology. What I underline with this chapter is the relevance of addressing typical conflicts of interest in a direct way, that is without letting the objects get in the way of the understanding. This approach includes translating the conception – “equal vessels to be treated equally”⁶ – into a more elaborate idea on the equal treatment of subjects who have interests in the context at hand.

3 Compare the motives for the earlier definition, proposition 1973:42, 121–122.

4 See proposition 2016/17:205 p 19–23. Johan Schelin, *Regelförenkling för sjöfarten*, (promemoria, 2015) 85–90.

5 For the connected theme of legislative techniques there are several other aspects, see for example Johan Schelin, “Sjölagen – En åldrande nordisk dinosaurie?”, *Juridisk tidskrift* 2006–07, 140–147.

6 Johan Schelin, *Regelförenkling för sjöfarten*, (promemoria, 2015) 90. (My translation of the quote.)

The relationships I have looked into are primarily the relationships between buyers and sellers of ships and boats. It is the parties of these relationships that warrant equal treatment, rather than the nature of the object. To what extent equal treatment is a value that is desirable in this context, needs to be addressed by looking at the relational aspects.

In Swedish and Nordic legal thinking, object definitions and other intermediate concepts have been viewed with some scepticism. The scepticism has to do with cultural, philosophical, and political preferences. It is therefore possible to speak of a Nordic legal culture with a Nordic approach to legal thinking. Instead of starting from concepts and rights, the Nordic approach starts from an identification of the typical conflict of interest of the type of conflict at hand. The Nordic approach starts with identification of the interests of the two typical parties in a certain context. Concepts are kept aside. They are seen as relative, and treated as tools for simplifying communication. This order is due to the fact that concepts should not guide legal thinking towards abstract solutions that are and unrealistic and therefore have low material legitimacy.⁷

7 See, for the theme, in general, ie: Sverre Blandhol, *Nordisk rettspragmatisme: Savigny, Ørsted og Schweigaard om vitenskap og metode*, (Köpenhamn: DJØF 2005) 51–73. Jørgen Dalberg-Larsen, *Pragmatisk retsteori*, (Köpenhamn: Jurist- og Økonomforbundet 2001). Pia Letto-Vanamo och Ditlev Tamm, “Nordic Legal Mind”, in Pia Letto-Vanamo, Ditlev Tamm och Bent Ole Gram Mortensen (eds), *Nordic law in European context*, (Cham, Schweiz: Springer 2019) 1–19. Martin Lilja, “National Report on the Transfer of Movables in Sweden”, in Wolfgang Faber och Birgitta Lurger (eds), (volume 5 Sweden, Norway and Denmark, Finland, Spain, Sellier European Law Publishers, 2010) 1–204. Johan Sandstedt, *Sakrätten, Norden och europeiseringen: nordisk funktionalism möter kontinental substantialism*, (Stockholm, Jure 2013). Erlend Baldersheim, *Til tingsrettens teori*, (Oslo: Cappelen Damm 2017). Karoline Rakneberg Haug, “The historical development of the Scandinavian functional approach to transfer of ownership: a tale of change and continuity”, *European Property Law Journal* 6(2) 2017 236–271. Astrid Millung-Christoffersen, “The Scandinavian ‘functional’ approach to movable property from a Danish view – including the question of ‘tradition’” *European Property Law Journal* 8(1) 2019 4–22. Kåre Lilleholt, “Europeisering av nordisk tingsrett?”, (Lars Gorton and others (eds) *Festskrift till Göran Millqvist*, (Stockholm: Jure 2019) 385–395. Kåre Lilleholt, “Ownership of Goods in the Draft Common Frame of Reference”, (*Festskrift till Torgny Håstad, Iustus* 2010) 447–454. Torgny Håstad, “Derivative Acquisition of Ownership of Goods”, *European Review of Private Law* 4-2009 725–741. For the narrower theme see also: Claes Martinson, *Transfer of title concerning movables part III – Eigentumsübertragung an beweglichen Sachen in Europa Teil III National report Sweden*, (Peter Lang GmbH) 2006. Claes Martinson, “How Swedish lawyers think about ‘ownership’ and ‘transfer of ownership’”, (in Wolfgang Faber och Brigitta Lurger (eds) *Rules for the transfer of movables: A candidate for European harmonisation or national reforms?*, Sellier European Law Publishers 2007) 69–95. Claes Martinson, “Ejendomsrettens overgang – Norden kontra verden”, “Nordiska Juristmötet” 2008 (on-line) and in *NJM* 2011) 823–843. Claes Martinson, “The Scandinavian approach to property law”, *Juridica International* 22/2014 16–26. Claes Martinson, “Något om behoven av att underhålla

Whether the Nordic tradition of thought follows such a pattern as I have just described can be examined in different ways.⁸ It is possible to examine the points, advantages, and disadvantages of such a way of thinking. A special opportunity for such an investigation occurs when there is a change of definition of ships and boats. When such a change is made it becomes relevant to compare how different relations are affected. It becomes relevant to ask questions such as:

What happens if lawyers look at the context, and take, as our starting point, some of the relationships concerned? What characteristics do the parties have, and how are they affected by the change of regulation? Do the hereby identified differences amount to any useful findings for legal actors, law enforcers, or legislators?

I have addressed these questions based on the thesis that object definitions entail risks. Objects are intermediate concepts that may, to some extent, obstruct lawyers from addressing the key issues directly. When objects become the starting point in legal proceedings, they risk obscuring the real conflicts of interest. They also risk hiding the characteristics that the parties typically have. The thesis of this project includes the assertion that a starting point (or framework) based in personal relationships, and the associated conflicts of interest that typically arise in said relationships, has predominant advantages compared to a starting point or framework where the concepts affect our perspectives. What I have done is to analyse different categories of substantive conflicts of interest regarding vessels. I have used the assumption that the subjects in the relationships may have interests that can be divided into the categories of 1) business interests, and, 2) leisure entertainment interests. With the help of these assumptions and a framework based in the relationships

och utveckla den nordiska (funktionalistiska) rättstraditionen – Segelbåtsfallet”, (Lars Gorton and others (eds) *Festskrift till Göran Millqvist*, Stockholm: Jure 2019) 461–480. Claes Martinson, “Det nordiska funktionalistiska angreppssättet och obehörig vinst – Dieselfallet”, *Juridisk tidskrift* 2019–20 (1) 148–170. Claes Martinson, “Blev vi nordiska jurister lämnade i sticket eller har det obemärkt runnit vatten under broarna? – Bensinfallet”, (Jan Kleineman, (ed), *Pragmatism v principfasthet i nordisk förmögenhetsrätt*, 22–23 november 2018, at Stockholms Center for Commercial Law, 2019). Claes Martinson, “Är den nordiska rättskulturella tanketraditionen ofullgånngen? – En illustration utifrån exemplet civilrättsliga sanktioner mot nyttjande av annans egendom”, *Tidsskrift for Rettsvitenskap* 2019, (3–4) 209–268. Wolfgang Faber and Claes Martinson, “Can ownership limit the effectiveness of EU consumer contract law directives? A suggestion to employ a ‘functional approach’”, *Austrian Law Journal* 2019 85–123.

8 See last footnote, but also the methods of Karoline Rakneberg Haug, *Transfer of Movable: A Comparison of the Unitary Approach and the Scandinavian Functional Approach*, (Universiteit van Amsterdam) 2021.

between parties, I have made some observations on the relevance of addressing the relational conflicts of interest, or in other words “the real issues” and not only the conceptual ones.⁹

2 The Property Law Conflicts of Interest Have Varying Characteristics

Using a relational perspective and a starting point in the relationships, it becomes relevant to distinguish between different types of conflicts. Conflicts of interest in these relations arise because different conflicting claims are made against each other. The different kinds of claims that may end up in conflict can vary. In terms of different circumstances that may be behind these conflicts, they are indeed different. Broadly speaking, claims can be sorted into the usual categories of property rights, security rights, usufruct rights and other claims.¹⁰ Also the background of different claims that come into conflict with each other vary. The character of the conflicts of interest varies based on what characteristics the parties both have, and how the parties expect to use the resources that they both want to benefit from. Several variations have to do with how the two subjects who have a conflict of interest have acted. Of central importance is also how third subjects have acted. The two subjects who have the claims may have ended up in the conflict of interest due to this third subject, although they themselves may also be more or less to blame. Examples will follow below, but one example is when someone has lent something to another, and the lender has also disposed of the thing to another.

In the context in which vessels are relevant, it may be appropriate to assume that one party category can be composed of a professional business operator. This professional business party may have reason to use both ships and boats in their operations. It is necessary to point out that the conditions can be such that operating each vessel constitutes an activity in itself. The vessels may have specific personnel who handle the operations and who transport for those who use the vessels. On the other end there are also those business parties who simply use the vessels as a resource to generate liquidity or finance, such as ship-leasing companies.

9 The term is not used with any derogatory intent, and it is not meant to imply that other lawyers deal with something other than the real issues or real problems. It is, however, important to point out that the Nordic approach can be understood by the preference and ambition to address the conflict of typical interests.

10 This is of course basics of property law. Cf Torgny Håstad, *Sakrätt avseende lös egendom*, (6 ed, Norstedts 1996 and 2000).

Other than business parties, there is reason to count on a category of recreational parties that own and use vessels non-professionally. Recreational parties are primarily interested in using boats, rather than ships, for their purposes. It does however also happen that recreational parties use ships.

Both categories of users, business parties and recreational parties, can thus be relevant for both ships and boats. The relationships around ships can, however, be assumed to more generally refer to the relationship between business parties.

Against this set of parties, backgrounds, claims, and acts, I have in my analyses counted on at least thirty different conflicts of interest. What I present are a few of the observations I have made in my analysis of these relationships given the change in legislation. In each of the following sections I have pointed to an effect produced by the lack of a relationship-oriented perspective. In contrast to this point, I present the potential possibilities of adopting a relationship-oriented perspective.

3 Unintentional Re-regulation in Favour of the Stronger Party

Let us say that a business party and a recreational party have each made an acquisition: they have both acquired the same vessel. This occurrence happened because the seller sold the same vessel twice; this is a so-called 'double transaction'.

The double transaction, by virtue of having two acquisitions, has led to conflict between the acquirers. Primarily, the conflict consists of the two acquirers wanting to use what they bought, even though they both cannot. The business party intends to use the vessel in their business throughout the year. The recreational party intends to use the vessel mainly during the summer months. In winter, the recreational party intends to only store the vessel. The acquirers have either paid or not paid the seller for all or part of the agreed price. This implies a number of possible alternatives regarding the payment conditions: for instance, the seller is unable to repay or compensate the acquirers for their inconvenience due to the conflict of interest.

Based on the interests described above, it is possible to conclude that the opposing interests, first and foremost, are in conflict in the desire to use the vessel. In this respect, the interests 'collide' in terms of the sea season of the year when the vessel is intended to be used (in Sweden, this is the summer months). Therefore, one way of dealing with this conflict could be to divide the use of the vessel. However, such a solution is not appropriate because there are interests other than the actual use of the vessel. One such interest is for example the

opportunity to sell the vessel in order to make a profit. Another interest that concerns the parties is the possibility to decide on maintenance and development of the vessel. It is, in general, a matter of an interest to control the resource based on what is happening to it. Having to share decision-making powers and being locked into a relationship with the other party would be a peculiar and unattractive solution for either party; this arrangement would likely have a number of negative consequences for the parties, therefore. The cultural norms that directly address the issue of the use of objects also gives a relatively clear directive: it is evident that the solution should be to prioritise one of the parties.

In the cases when the vessel is a boat, the applicable part of Swedish law, stipulates that it is the chronological order between the acquisitions that shall be decisive in deciding ownership. The first acquirer, based on this approach, must ultimately be given priority regardless of the circumstances.¹¹ This regulation gives the first acquirer a right to redeem the boat even in the cases where the latter acquirer would gain priority because of good faith and possession, as the main requirements are. Later acquirers do however basically always lose concerning the boat as such. In cases where the later acquirer has paid something to the transferor the latter acquirer can however receive financial compensation corresponding to what they paid, but at most the market value.¹² In order for later acquirers to get the boat, the first acquirer must refrain from using their opportunities to redeem the boat. Later acquirers are dependent on what the first acquirer chooses to do.

In the cases when the vessel is a ship, regulation is more neutral. The first acquirer is given priority, but the latter acquirer can in good faith compete with the first acquirer's claim by applying to register as an owner. No possibility of redemption is stipulated for ships.¹³

The regulation, therefore, distinguishes between boats and ships. Priority between acquisitions is determined in both cases by the chronology of acquisition, but first acquirers have more opportunities presented to them when acquiring a boat.

11 Good Faith Acquisition of Personal Property Act (godtrosförvärvslagen) § 2, 3 and 5. C.f. Hugo Tiberg, *Båtköpet*, (Jure, 2018) 11–16.

12 Good Faith Acquisition of Personal Property Act (godtrosförvärvslagen) § 6. See also next section.

13 Swedish Maritime Code (sjölagen) 2:10. Proposition 1993/94:195 176. Proposition 1973:42 246–249, 142–143. Christer Rune, *Rätt till skepp*, (2 ed, Sjörettsföreningen i Göteborg skrifter 68, 1991) s 83–85. Katrin Sundholm, "Kommentar till sjölagen", *Karnov/Juno* 2020-12-30, footnote 67. Torgny Håstad, *Sakrätt avseende lös egendom*, (6 ed, Norstedts 1996 and 2000) 74–75.

Provided the assumption that a business party and a recreational party have equal chances of being the first acquirer, the regulation appears to be neutral. The legislative change in the object's definition may therefore not have entailed any change in the balance between the types of parties that end up in conflicts regarding large boats. Given the different conditions of the typical parties, however, it is possible that business parties have been favoured compared to recreational parties. There is reason to assume that business parties have greater opportunities to exercise the right to redeem in cases where business parties are the first acquirer. In cases where a business party is a later acquirer, there is also a relatively greater chance that the recreational party does not choose to exercise their right to redeem, compared to if the first acquirer was also a business party. This assumption is because recreational parties typically have less financial strength. There is in this regard also an inequality when it comes to taxation: a business party can pay redemption with untaxed funds, and the recreational party cannot.¹⁴ The change in the object definition of ships and boats, has therefore (so long as the assumption is correct), led to a disequilibrium between the typical parties. In principle, the interests of business parties have benefited compared to before the change in legislation.

This example illustrates one of the observations I have made in my analysis. The change in regulation has favoured business parties. Since this effect can be considered to be marginal it is however not the actual effect that is of importance. The frequency of double transactions of large boats is probably quite small.¹⁵ What I want to point out is not a difference in substance: I want to instead give an example of what can be achieved with a relationship-oriented legal perspective or framework. Such a perspective provides satisfactory conditions for ensuring the equilibrium between subjects that are regulated by these laws. The observation shows that even such parts of the problem that can appear marginal will emerge with such a perspective.

14 Income Tax Act (inkomstskattelagen) 16:1, cf 18:7. It does not have to be about formal redemption. Compensation paid in a settlement can also be paid with untaxed funds.

15 This is a pure assumption. I have seen statistics on stolen boats for parts of Sweden, but no statistics on double sales. Note also that Sweboat (ie the national boating industry in Sweden) was a reference body in the introduction of the Good Faith Acquisition Act without indicating anything about their financial needs or the factual circumstances regarding their boats.

4 Legislation That Counteracts Its Purpose

In connection to the observation about the effects of the right to redeem in double transaction cases concerning vessels, it is relevant to point out also another observation, from an earlier act of the legislator. This second observation is that the effect in the first observation had not occurred if the Swedish legislator had distinguished between double transactions and so-called unauthorised transactions, that is transactions where someone who does not have the right to sell the vessel sells it anyway.¹⁶

When the legislator constructed the legislation applicable for boats and movables in general, the Good Faith Acquisition of Personal Property Act of 1986, the legislator made the choice to establish a right to redeem. The reason was to balance the interests between the parties after an unauthorized transaction. It is rather clear that the legislator did not analyse how this right to redeem would turn out in a double transaction conflict.¹⁷ The right to redeem has its foundation in a balance that the legislator has made around affection values that an object might have for an owner.¹⁸

16 See the Good Faith Acquisition of Personal Property Act (godtrosförvärvslagen) § 2, the Swedish Maritime Code (sjölagen) 2:10, the Act on Instruments on Debt (skuldebrevslagen) § 14. Compare the opposite technique in the Act on Instruments on Debt (skuldebrevslagen) 31 § 2 p, the Land Code (jordabalken) 17:1–2, the Act on Accounts for Financial Instruments (lagen om kontoföring av finansiella instrument) 6:3.

17 Since double disposition is not specifically mentioned in the Good Faith Acquisition of Personal Property Act, the question of the right of redemption may appear unclear when the effects become evident. The governmental proposition 1985/86:123 on good faith acquisitions of movables, for example, does not mention the matter, and the considerations presented there are whether the right of disposal should be limited even in the case of unauthorised dispositions. However, see the Council on Legislation's considerations on pages 29–31 in the proposition; in SOU 1984:16 Acquisitions in good faith, 206, it is stated very briefly that the right to redeem shall also apply in the event of a “double sale” (“i tve-salufallet”). In the first SOU 1965:14 Acquisition in good faith of movables 204, it is stated that the right to redeem would also be used in the case of double disposition. Also note Torgny Håstad, *Sakrätt avseende lös egendom*, (6 ed, Norstedts, 1996 and 2000) 85.

18 See proposition 1985/86:123 on good faith acquisitions of movables, 10. In SOU 1984:16 Acquisitions in good faith, 186–206, the right of redemption is stated to be motivated by pure fairness, but the proposal still becomes what is seen as a “general right” to redeem. In the first SOU 1965:14 Acquisition of movable property in good faith 12, the proposal was a right of redemption “where the property for him has a value of a different nature than the purely economic or it is otherwise of special importance for him to regain the property”. SOU 1965:14 Acquisition of movables in good faith, 201–206. – Also note that when the Good Faith Acquisition of Personal Property Act was written, it did not stipulate an exception for stolen property. That exception was introduced through Svensk

The right to redeem in the case of double transactions is a result of a legislating technique that does not distinguish between human relationships: the legislator did not take into account that the right to redeem has the opposite effect when it comes to double transactions (i.e. compared to unauthorised transactions). In effect, the right to redeem counteracts the preservation of affection values if it is used in cases of double transactions! This may be, in some cases, rather relevant, since a later acquirer can have owned the property for quite some time and established himself as the owner of the vessel.

The legislative process for the good faith acquisition of personal property is, therefore (in itself) an illustrative example of the main theme of this chapter: it demonstrates what can happen when lawyers do not keep apart different relationships where the typical interests of those involved differ.¹⁹ What I am pointing out, however, is not a flaw in the legislator's work. My ambition is constructive. The point I am making is that there is reason to consider aspects that appear first with a more pronounced relationship-oriented starting point than one in which objectification and intermediate concepts tend to entail. The Nordic functionalist tradition of thought has only helped facilitate its practitioners to pay attention to this obstacle, but it has not helped them to get past the obstacle on a regular basis.

5 Lack of Regulations in the Interest of Limiting Damage

The conflict of interest in the case of double transactions does not only include the interest in getting priority regarding the ship. Both parties also have an interest in limiting the damages and their inconveniences. In the above-mentioned regulations, the legislator did not use specific regulation for double transactions. Because of this, the parties' interest in limiting their damages from a double disposition has not been noted. With a relationship-oriented starting point regarding the conflict of interest, these aspects become clearer.

In the case of a double transaction, the circumstances do not have to be such that both acquirers have paid what they agreed on with the transferor. In

författningssamling 2003: 161, see proposition 2002/03:17 Acquisition of stolen goods in good faith.

19 None of the consultative bodies whose opinions are set out in the proposition have pointed to the issue of the right to redeem after a double disposition. Some of them did, however, express their preference for a general right to redeem, and interestingly explained this preference with the assumption that it would avoid random results, see proposition 1985/86:123 on good faith acquisition of chattels, 66–68.

such cases, there is a way to limit the damage of a double transaction: after the conflict is discovered, both acquirers can wait to pay anything more than what they have already paid to the seller. As long as the acquirers dispute which of them who should be given priority, they attain support for withholding payment to the seller with reference to breach of contract and fault.²⁰ However, once one of these claimants has been given priority, that acquirer is in principle obliged to pay (albeit with a deduction for the costs the acquirer has had). At the same time, the losing acquirer has the right to recover what they may have paid to the transferor, but they may be left without practical opportunities to get something back.²¹ The transferor may be insolvent, and the risk for this is probably significantly larger than usual when someone has made a double transaction.²² Even if the winning acquirer pays the transferor, the transferor cannot use the payment without further actions to pay the losing acquirer.²³

Under conditions as those described, the two acquirers need to identify that they have a common interest in limiting the damages. There is no regulation that helps them regarding this in either the Good Faith Acquisition of Personal Property Act or the Swedish Maritime Code, or any other property law regulation that can be applied to double transactions.²⁴ No part of the property law regulation on this issue appears to have been constructed on the basis of an analysis of the conflict of interest where these payment aspects are included. Such an analysis could, in a balance between the interests, have led to an explicit rule that the winner must pay the loser instead of the transferor.²⁵

However, despite the lack of rules on double transactions, the two acquirers can, in some cases, succeed in cooperating to limit the overall damages. Namely, the acquirers can agree that the person who paid the most to the transferor must win the dispute between the acquirers; at the same time as

20 Sales of goods act (köplagen) § 41.

21 In the case that the losing acquirer has paid something to the transferor, the loser has the right to recover the payment, Sales of goods act (köplagen) § 41.

22 See further on this assumption Claes Martinson, *Kreditsäkerhet i fakturafordringar*, (Iustus, 2002) 306–307, 272–273.

23 The winning acquirer must, in principle, pay. In the event of bankruptcy, the acquirers cannot, with the effect of set-off, settle that the winner acquires the loser's claim on the transferor and thereby acquires a set-off position, Bankruptcy Act (konkurslagen) 5:15–16.

24 Good Faith Acquisition of Personal Property Act (godtrosförvärvslagen) § 2, the Swedish Maritime Code (sjölagen) 2:10, the Act on Instruments on Debt (skuldebrevslagen) § 14. Compare the opposite technique in the Act on Instruments on Debt (skuldebrevslagen) 31 § 2 st, the Land Code (jordabalken) 17:1–2, the Act on Accounts for Financial Instruments (lagen om kontoföring av finansiella instrument) 6:3.

25 Compare the Good Faith Acquisition of Personal Property Act (godtrosförvärvslagen) § 7 on payment to redeem.

this, they also agree that the person who paid the least must be allowed to buy the vessel (or whatever object is relevant). In order for the acquirers to succeed in this, however, it is required that they communicate despite the disagreement they have about the vessel (the object). This part of the conflict can greatly hamper possibilities because neither party wants to suggest that they may lose.

Communication difficulties can however be counteracted in some cases. When the loser has possession of the vessel (object), the loser can, as the possessor, claim the right of retention (lien) in relation to the transferor. When the circumstances are such, this possessor can succeed in not having to give up the object without receiving the amount that the winning acquirer owes to the transferor. Another legal ground that the losing party can use against the winning party and the transferor (bankruptcy estate) is that the losing party has taken over the transferor's right to payment from the winning party through surrogacy.

Whether or not the two acquirers should have to deal with these factors without clear normative support can be discussed. That the outcome regarding limitation of damage can depend on tactics of this kind, as has now been indirectly described, can be questioned. The legal uncertainty may have some advantages in dispute resolution, but the discussion is whether a rule on the matter would not have been preferable anyway.²⁶

What I pointed out in this section is a further example of what can come out of the application of a relationship-oriented framework to the resolution of conflicts of interest. Such a starting point or framework means that the conflict of interest is handled by taking into account all parts or factors in the relationship. With a starting point or framework in objects, on the other hand, the perspective is easily limited to the question of where the vessel (or object) should go.

26 However, despite the lack of a rule on the probability that the matter can be resolved by a Supreme Court precedent, the decisions of the two acquirers certainly seems significant. If the losing acquirer demands it of the winner, the winner can reduce the funds and object to the insolvency estate's claim against who is considered the right payee. In the dispute between the bankruptcy estate and the losing party, the losing party can, as mentioned, assert priority on the grounds of the right of retention (lien) or doctrine of surrogacy. Given these opportunities for cooperation with winning acquirers that nevertheless exist, the forecast for the losing party can be good.

6 A Semi-unintentional Choice of More Risk

From what has been mentioned above, it follows that the change in the object definition in the Swedish Maritime Code 1:2 affects both double transactions and unauthorised transactions. Unauthorised transactions lead to a different type of relationships than double transactions because the parties' typical interests are different in the two cases. With a relationship-oriented perspective, it therefore becomes appropriate to ask the question of what the change in the object's definition can be assumed to have meant for parties who risk ending up in conflicts of interest due to unauthorised transactions.

Based on the conflict of interest regarding unauthorised transactions, it is appropriate to consider who may be the typical parties: they are subjects who have opposing claims on vessels. As assumed above, these parties can be business parties as well as recreational parties. Regardless of background, the parties have an interest in exclusive priority in the first place. However, they also have other interests such as limiting the harm they suffer if their interests collide. To illustrate the conflict of interest, I have used an example with some variables.

An acquirer of a vessel has ended up in a conflict of interest with the person who was robbed of their vessel, by someone who then sold this vessel to the acquirer. (Instead of theft, this can be a case of fraud or embezzlement.²⁷ The actions can, in principle, also be such that they did not necessarily constitute a criminal act; they can be misunderstandings or the like. The "crime victim" therefore does not necessarily have to be a crime victim.)

During the relevant course of events, the ship had no crew. The acquirer is, in this example, a recreational party and the "crime victim" is a business party. The latter's interest is to be able to run their business. For this purpose, the business party wants to get the vessel back. The recreational party's interest is to keep the vessel. In this example, the recreational party paid a down payment for the vessel and had possession of it.

The example thus includes parties with different interests and variables regarding the circumstances. In terms of regulation, the outcome depends on whether the vessel is a boat or a ship.

Regulation for ships means that the business party must be vigilant; they must not neglect information from the register in case someone else applies to

²⁷ But not in the case that the business party sold with a retention of title clause, because the seller may then be considered to have a completely different set of interests in the conflict of interest; it will be a matter of a security interest instead of interest in using the ship or boat directly or indirectly.

be registered as the owner of the ship. If the business party does not react until someone, in this case the recreational party, has acquired the ship in good faith and has applied for registration, then the acquirer shall be given priority.²⁸ It does not matter if the business party has been exposed to theft, fraud, embezzlement or anything else.²⁹ If an owner of a ship does not pay attention to the registration and acts on time, the owner may lose, *in principle*.

Regulations that are supposed to be used for boats provide significantly greater opportunities for the business party: the oldest right is given priority. In the case of a theft offense, the business party shall be given priority over the acquirer due to the character of the offense.³⁰ Regardless of whether the recreational party has acted in good faith, and regardless of whether they have started using the boat, the business party must then be given priority. The business party must also be given priority in other cases, but then they need to redeem the boat; this later party needs to pay a sum corresponding to the down payment that the recreational party has paid (if the recreational party has gotten possession of the boat in what was then and still is in good faith).³¹

The regulations seem to make it easier for a crime victim to win a dispute over a boat than a dispute over a ship. Given the assumptions made in previous sections about business parties as being financially stronger and more capable to redeem than recreational parties, the change in the object definition could have entailed a re-prioritisation of interests in favour of business parties. One aspect to consider, however, is that there is insurance: a common insurance for boat owners covers damage due to several categories of property crime. Even recreational parties can be assumed to regularly have such insurance. The difference in power ratios, therefore, does not have to be as significant as previously assumed. Let it therefore be assumed from this point that a change in the regulatory model from ship to boat does not entail any re-prioritisation between the parties.

However, the relationship-oriented starting point (or framework) does not only involve the issue of re-prioritisation between interests. With such a

28 The Swedish Maritime Code (sjölagen) 2:9–10. Proposition 1993/94:195 s 176. Katrin Sundholm, Kommentar till sjölagen, Karnov/Juno 2020-12-30, footnote 63–66. Torgny Hästad, Sakrätt avseende lös egendom, 6 ed, Norstedts 1996 (2000) p 74–75. Christer Rune, *Rätt till skepp*, (2 ed Sjörettsföreningen i Göteborg skrifter 68, 1991) 81–83.

29 Proposition 1973:42 p 245–249, 143–144. Christer Rune, *Rätt till skepp*, (2 ed, Sjörettsföreningen i Göteborg skrifter 68, 1991) 85.

30 Good Faith Acquisition of Personal Property Act (godtrosvärslagen) § 3.

31 Good Faith Acquisition of Personal Property Act (godtrosvärslagen) § 5–6. C.f. Hugo Tiberg, *Båtköpet*, (Jure, 2018) 11–16.

starting point, it also becomes relevant to ask which model most evidently satisfies the interests of the parties, as seen as a whole.

A difference between the two regulatory models refers to the risk that an acquirer is assumed to take on given the requirements that are set for a good faith acquisition. The regulation of ships can then be assumed to give little practical opportunity to fulfil the requirement that the acquirer's transferor, the "criminal", must be registered in the ship register. The requirements to succeed in being registered are high.³² According to the preparatory work for the change in the legislation, which turned small ships into large boats, the requirements include showing documentation of the entire chain of owners from the time the ship was built. The requirements set by the authority responsible for the register are said to be so high that in some respects they even pose problems for legitimate acquisitions.³³ Compared to the requirements set for good faith acquisitions of boats, the risks for good faith acquisitions of ships appear to be less pertinent; the regulation of ships can be assumed to have a significant preventive effect. By comparison, the requirements set in the regulation that is used for boats seems to involve greater risks. Admittedly, these requirements may also cover register checks in a significant proportion of cases, but not all boats are covered.³⁴

Another difference between the regulations has to do with the fact that the regulation of ships provides certain opportunities for an injured party to receive compensation from the register holder, that is the state.³⁵ Such an opportunity entails a limitation of the risks and damages. The effects of the damage are spread out to the collective. To address the conflict of interest between parties, such a limitation of harm is important. Given an assumption that the possibility for private risk limitation through insurance are the same

32 Compare The Swedish Maritime Code (sjölagen) 2:18. The Ship Register Regulation (fartygsregisterförordningen) § 14. Cf Erik Enkullen, *Skeppsregistrets uppbyggnad och funktion i Sverige och Cypern – en jämförande studie*, (Examensarbete i Sjörätt) 24, 27, 18–20. For an example that the requirements do not make acquisitions impossible after illegitimate transactions see, Lennart Hagberg, "Tvättning av skepp", *Svensk juristtidning* 1995 594–597.

33 Johan Schelin, *Regelförenkling för sjöfarten*, (promemoria, 2015) 87–88. Compare the Swedish Maritime Code (sjölagen) 2:22.

34 The Act on registration of boats (lagen om registrering av båtar) stipulates that certain boats must be registered.

35 The Swedish Maritime Code (sjölagen) 22:4. See for comments Erik Enkullen, *Skeppsregistrets uppbyggnad och funktion i Sverige och Cypern – en jämförande studie*, (Examensarbete i Sjörätt) 34–35. Christer Rune, *Rätt till skepp*, (2 ed, Sjörättsföreningen i Göteborg skrifter 68, 1991) 148–149.

for ships and boats, there will be a difference if in addition there is also a state risk limitation for one kind of vessel.

The comparison thus indicates that the conflict of interest is to a greater extent handled through the regulation of ships, than through the regulation of boats. It appears that the total risk is lower for both parties in the regulation model for ships. A relationship-oriented perspective tends to lead to an aspect like this being noticed.

As mentioned at the beginning of this section, it is conceivable that the choice of perspective in this case only implies an insignificant difference when it comes to paying attention to different aspects in a choice of regulatory model. In any such choices, regulators are expected to investigate and make assumptions about effects so that comparisons can be made. In regard to good faith acquisitions of large boats, it is possible that the frequency of unauthorised dispositions is so low that it is not worth the costs and inconvenience to use the system to better minimise the risks. In the case of changing the object definition in the Swedish Maritime Code there were, as mentioned, several reasons behind it. What I have just reported is an illustration of the fact that a relationship-oriented perspective (that is based on the conflicts of interest between the subjects being regulated), does, with a certain probability, lead to the interests of total risk levels being noticed. It may seem that this is not remarkable at all, but nevertheless, there is a point to be made: my point is that the relationship-oriented perspective, which is based on the approach of addressing conflict of interest between people, is a tool for the purpose of settling disputes. This tool can be used consciously for the benefit of the analysis behind a legal decision.

7 **Attention to the Fact That Disputes Are a Matter of Prioritisation between Different Interests**

In the examples I have used above, business parties and recreational parties have two different categories of interests. These differences are relevant in relationships where the parties have claims on vessels that 'collide'. What I have pointed out is the risk of overlooking the interest and thereby "the real issue". Something I have not touched upon is the possibility of consciously prioritising between the parties based on their different interests. In an equilibrium between different interests there could however be reason to do so. One aspect of the relationships around vessels that could cause such consideration is that vessels do not have to be seen as objects only. The conflicts of interest can be about enterprises, projects, and also human beings, more so than about

vessels. Ships and personnel can therefore be a somewhat integrated resource, and so can the customers who buy transports that are performed by staff with the use of the vessel. By only paying attention to the vessel, lawyers may end up with a result where none of the parties get what they are interested in.

Let us say that an acquirer has acquired a part of a business that includes a ship, personnel, and customers. The acquirer has signed employment agreements with the personnel who manned the vessel at the time of acquisition. This acquirer has also taken over agreements with the transport customers who have had goods shipped with the ship for a long time on a regular basis. The idea on the part of the acquirer is to take over part of the role, and part of the business, that the transferor had.

This example also includes the condition that the transferor actively wanted the acquirer to take over: for the transferor, this was a way to meet the interests of the staff and customers, since the transferor struggled economically. After the deal was completed, the transferor went bankrupt. However, due to the difficulties that led to the bankruptcy, a representative of the transferor made the mistake of transferring the vessel, and note, only the vessel, to another acquirer before the bankruptcy occurred. This other acquirer had so far only agreed on the terms of acquiring the vessel and intends to use it in another activity: this is an activity that the current staff prefers not to work in.

What has happened can generate several different conflicts of interest. For the conflict of interest between the two acquirers, it can be stated that the regulation does not mention anything about the interests painted in the example: the regulations do not mention those interests as being relevant for how the conflict of interest is to be handled. Nor do the regulations concerning the possible conflict of interest between the transferee and the transferor's creditors indicate anything. The regulations of validity of transfers, transfer perfection and recovery, are silent.³⁶ Nothing is mentioned about taking into account the interests of staff and transport customers. The notion that a party's interests coincide with other subjects' interests because they are affected by the conflict of interest is cut off by the regulation. In other words, it is cut off by the object's definition. The regulations are concentrated on objects: in this case, the vessel. An exemption that to some marginal extent acknowledges these kinds of interests is rules on priority for personnel.³⁷ The regulation of conflicts of interest between acquirers and creditors does not however mention

36 The Swedish Companies Act (aktiebolagslagen) 17 chapter. The Swedish Maritime Code (sjölagen) 2:9 or Consumer Sales Act § 49 and the principle of *traditio* (traditionsprincipen). Bankruptcy Act (konkurslagen) 4 chapter. Proposition 1973:42 p 241–246, 141.

37 The Swedish Maritime Code (sjölagen) 3:36 p 1.

anything about the enterprise aspects or the going concern aspects. There are also regulations that affect a related situation that could become relevant if the transferor had instead waited to act and let a bankruptcy trustee take care of the business.³⁸ However, the transferor has not then had the opportunity to influence the circumstances.

Can a relationship-oriented perspective, that is based on addressing conflicts of interest between people, contribute something regarding the legal handling of property law conflicts as they are now indicated? – The answer is a resounding yes. Such a perspective can operate as a reminder that property law definitions of objects are limitations in relation to the conflicts of interest that lie behind them. By taking typical conflict of interests between people as a starting point, it becomes clear that objects and concepts are tools for dealing with something that is more complex; this reminder serves the purpose of justifying why the tools fit, or why they do not. This is hereby an important and relevant part of the thought process for lawyers in all roles.

What I have pointed out in the example of this section is not that the acquirer of the business should be given priority due to their and others' interest in that particular solution. I have not solved the conflict. Instead, I have pointed out that a relationship-oriented perspective, or framework, that is based on typical conflicts of interest, is important for understanding what lawyers do in their legal thinking. It may be an inevitable fact that a changed definition of an object, by which small ships become large boats, can determine how a conflict of interest, such as that in the example of vessels, is to be handled. With a relationship-oriented perspective or framework based on the typical conflicts of interest, lawyers can however understand why we make such decisions. We can understand how it relates to the real problem we deal with, and how we can justify our decisions. By doing so we get the advantage of not being subconsciously directed by the object definition. Instead, we have made a conscious prioritisation between the interest behind the conflict.

38 Bankruptcy Act (konkurslagen) 7:8. With a general insolvency settlement (compare the proposal in SOU 2010:2 Ett samlat insolvensförfarande) that provides an opportunity to reconstruct operations, the alternative of letting a bankruptcy administrator or a business reconstructor handle the societal interests of staff and customers could have been an obvious approach.

8 The General Point

With the title of this chapter, I give attention to the fact that there are perils of turning small ships into big boats. The general theme of what I have presented is however that perils like these occur whenever lawyers use concepts or draws lines with legal definitions. As lawyers we need the concepts, the norms, and the mutual ideas of what we mean when we communicate. We need the simplifications. What I have addressed is not meant to be used to oppose those fundamentals of law. From what I have illustrated of my analyses, it is however relevant to not become too closely tied to these fundamentals. It is namely also a fundamental of law that the real conflicts that lawyers deal with are relational. The conflicts of interest are between people. To deal with these conflicts of interests from a relational starting point, is rather useful. By using the concepts, norms and mutual legal ideas as tools in the process, the quality and understanding of what we do can be upheld and maintained. In this way we can make an elaborated decision on when to cut through the Gordian knot, and when to choose a more nuanced and delicate solution. To deal directly with “the real issues” is useful, and not something marginal that can be more or less set aside and forgotten in the process.

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The International Regulatory Framework of MASS Disruption

Maximo Q. Mejia Jr.

1 Introduction

The exponential progress in technology is pushing the world inexorably towards the dawn of autonomous shipping. Advances in broadband capacity, big data, high-speed processing, and rapid interconnectivity are enabling more shipboard automated systems to be remotely controlled. Research and development will presumably continue at an uninterrupted pace until the unmanned ship finally becomes a commercial reality.

Just as advocates of the development of maritime autonomous surface ships or “MASS” submit that such ships hold great potential for even safer seas, cleaner oceans, and more efficient shipping, pragmatists firmly point out that the disruptive nature of this advanced technology will bring wide-ranging implications upon society, economy, environment, law, and policy for many years to come.

As technology companies team up with maritime partners, so has the shipping sector rapidly begun to realize that some of the most difficult challenges it faces are understanding the nature of this disruptive technology and the effects of its integration with existing shipping infrastructures, operations, and processes. The development of maritime autonomous technologies need to be guided by an international regulatory framework that will ensure such applications will only serve to enhance the interest of the greater safety of life, property, and the environment. To be sure, a myriad other issues need to be answered such as security, pollution, liability, compensation, ethics, education, training, testing, data transfer, cybersecurity, systems architecture, communications, connectivity, reporting, artificial intelligence, among others.

Lachs, J., gave an admonition some five decades ago that the “great acceleration of social and economic change, combined with that of science and technology, have confronted law with a serious challenge: one it must meet, lest it lag even farther behind events than it has been wont to do.”¹ Keeping

1 North Sea, 1969 ICJ REP. at 222, 230 (Lachs, J, dissenting); Manfred Lachs, ‘Thoughts on Science, Technology and World Law’ (1992) 86 The American Journal of International Law 673, 698.

law and policy abreast and in pace with science and technology has always been a challenge, and the advances in autonomous transport technology are no exception.

The International Maritime Organization (IMO), being the United Nations specialized agency responsible for the safety and security of shipping and the prevention of pollution by ships, has decided to address this issue squarely and proactively and take the first important steps in a long and comprehensive process towards developing a solid international regulatory framework for MASS. IMO's senior technical body – the Maritime Safety Committee (MSC) – commenced work in 2018 to determine how MASS operations may be addressed in international maritime agreements and instruments.

This chapter browses through some of the salient issues and questions posed by leading academics and researchers regarding the space that MASS is anticipated to occupy in the international legal framework for shipping. Using IMO meeting documents, it then recounts decision points, workflows, and timelines from the inception of the regulatory scoping exercise to its current state of animated suspension due to the pandemic.

2 MASS Disruption

Despite these benefits, MASS, in particular those with no crew on board, will also fundamentally disrupt the current international regulatory frameworks, including those covering safety, security, environmental protection, and liability, compensation and insurance. Though the regulatory frameworks governing the maritime industry have adapted well over time to accommodate new technologies, they were never drafted to consider ships with no crew on board.²

Disruptive technologies, according to Kostoff and others, “can be considered scientific discoveries that break through the usual product/technology capabilities and provide a basis for a new competitive paradigm”.³ Having been operated by humans on board for millennia since the dawn of sea transport, it is only a matter of time before the industry sees the first maritime autonomous surface ship (MASS) enter into commercial service. Once it becomes

2 International Maritime Organization, ‘Proposal for a regulatory scoping exercise and gap analysis with respect to Maritime Autonomous Surface Ships (MASS)’ (19 January 2018) LEG 105/11/1.

3 Ronald N Kostoff, Robert Boylan, and Gene R Simons, ‘Disruptive Technology Roadmaps’ (2004) 71 *Technological Forecasting and Social Change* 141, 142.

mainstream, the unmanned vessel will represent a paradigm shift only rarely seen in the shipping industry. As Van Hooydonk wrote, the “impact on the shipping industry of the replacement within the proximate future of the hard work” of seafarers by computers and “shore-based vessel controllers has the potential to change the social and economic parameters of the shipping industry as much as the introduction of steel construction and steam propulsion did in the nineteenth century.”⁴

The disruption wrought by the idea of MASS is already being felt in many sectors of the industry. Its science fiction novelty has captured the imagination of stakeholders representing every facet of the maritime sector, not the least those in maritime law, policy, and regulation. It has led law and policy researchers and academics to ask a plethora of questions on its potential impact and speculate on how it fits within the international maritime regulatory framework. It has, if you will, caused disruption in the academic community as well.

Chircop observes that “international maritime conventions are largely premised on a human presence on board.”⁵ It comes as no surprise that the most commonly debated issue in the context of MASS relates to situating the concept of an unmanned ship in maritime law. An oft-asked question relates to whether MASS can be defined as ships under maritime law. Writing about a case involving a jet-ski before the Bournemouth Crown Court, Shaw’s reflection may just as well have been made in the context of autonomous vessels -

The answer to the question ‘what is a ship?’ in the context of maritime law has exercised the minds of jurists for many years. No comprehensive definition has ever been produced, and the ever-changing shapes of the craft created by the ship-building and offshore oil industries have presented yet more challenges for lawyers.⁶

Being the constitution of the oceans, the United Nations Convention on the Law of the Sea, 1982, is often the first destination in any search for a universal definition of a ship or vessel. One is inevitably drawn to articles 91 (Nationality

4 Eric Van Hooydonk, ‘The Law of Unmanned Merchant Shipping – an Exploration’ (2014) 20 *Journal of International Maritime Law* 403, 423.

5 Aldo Chircop, ‘Maritime Autonomous Surface Ships in International Law: New Challenges for the Regulation of International Navigation and Shipping’ in Myron H Nordquist, John Norton Moore, and Ronán Long (eds), *Cooperation and Engagement in the Asia-Pacific Region* (Brill 2019). For a further discussion about the future regulatory framework for autonomous vessels, see the chapter by Huiru Liu in this volume.

6 Richard Shaw, ‘What is a Ship in Maritime Law?’ (2005) 11 *Journal of International Maritime Law* 247, 247.

of ships) and 94 (Duties of the flag State),⁷ neither of which offer a definition, and instead leaves this task to be resolved at the IMO⁸ (as the competent international organization) as well as in the domestic law of the contracting state.⁹ Others take the absence of an explicit definition of vessel or ship to mean that MASS fall within the concept of ships in the Law of the Sea Convention.¹⁰

While a definition of ship or vessel is conspicuously absent in UNCLOS, one can find definitions in many other treaties. There seems to be general agreement that the definitions available are sufficiently broad in their formulation as to accommodate autonomous vessels. For instance, Daum and Stellpflug point out that the “focus on ‘a means of transportation’ as the essential characteristic of a vessel” in the definition in the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS) brings MASS squarely within its ambit.¹¹ They posit a similar situation in the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention), Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), Seamen’s Articles of Agreement Convention, 1926 (ILO C-22), and the United Nations Convention on Conditions for Registration of Ships (UNCCROS). Chircop also reviewed a whole list of treaties and found that “for the purpose of the discussion of autonomous ships the difference is immaterial and none of the definitions provided (in those treaties) pose a problem for the consideration of autonomous vessels as ‘ships.’”¹² Others have

7 Proshanto K Mukherjee, *Maritime Legislation* (WMU Publications 2002) 181.

8 Robert Veal and Henrik Ringbom, ‘Unmanned Ships and the International Regulatory Framework’ (2017) 23 *Journal of International Maritime Law* 100, 103.

9 Robert Veal, Michael Tsimplis, and Andrew Serdy, ‘The Legal Status and Operation of Unmanned Maritime Vehicles’ (2019) 50 *Ocean Development & International Law* 23, 27.

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11 Oliver Daum and Timo Stellpflug, ‘The implications of international law on unmanned merchant vessels’ (2017) 23 *Journal of International Maritime Law* 363, 366.

12 Aldo Chircop, ‘Testing International Legal Regimes: the Advent of Automated Commercial Vessels’ (2018) 60 *German Yearbook of International Law* 109. Chircop reviewed the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION), International Convention on Civil Liability for Bunker Oil Pollution Damage (BUNKER), International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious

added the Hague and the Hague-Visby Rules,¹³ and the Protocol Against the Smuggling of Migrants by Land, Sea and Air¹⁴ to this list.

Subsuming MASS within the definition of a vessel or ship in scores of treaties is a relatively agreeable exercise compared to testing it against numerous other provisions contained in those and other instruments that are predicated on the presence of seafarers on board ships. One such instrument is the International Convention for the Safety of Life at Sea (SOLAS), considered the most important maritime safety treaty at IMO. The Convention is filled with required redundancies or duplications that rely on physical human intervention designed to increase reliability and resilience in case of failure, accident, or emergency.

For instance, chapter V (Safety of Navigation) of SOLAS provides that the crew must be ready to switch to the auxiliary steering gear and manually maneuver the impaired vessel in case of failure of the main steering gear.¹⁵ This is obviously impossible in a totally unmanned MASS, where all systems will operate through electrical impulses rather than any physical human intervention. Human intervention is also related to actual situational awareness and monitoring on board all systems on board as well as the environment surrounding the ship. How far have electronics systems advanced in terms of approximating the powers of human multisensory observation? Some put forward periodically unattended machinery spaces as an example of the “optional replacement of the physical watchkeeping of the crew in the engine room by various forms of sensor equipment and alarms.”¹⁶ Others counter that

Substances by Sea (HNS), International Convention for the Prevention of Pollution from Ships (MARPOL), International Convention on Civil Liability for Oil Pollution Damage (CLC), International Oil Pollution Compensation (IOPC) Fund, International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC), International Convention on the Control of Harmful Anti-Fouling Systems on Ships (AFS), International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM), Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA), International Convention for the Unification of Certain Rules Relating to the Limitation of Liability of Owners of Seagoing Vessels, Athens Convention Relating to the Carriage of Passengers and their Luggage by Sea (PAL), International Convention on Salvage, among others.

- 13 Marel Katsivela, 'Unmanned Vessels and Regulatory Concerns' (2020) 26 *Journal of International Maritime Law* 239, 242.
- 14 Paweł Mielniczek and Kasjan Wyligąła, 'International Legal Status of an Unmanned Marine System' (2017) 5 *Przedsiębiorczość i Zarządzanie* 209.
- 15 Daum and Stellpflug (n 11) 373; Van Hooydonk (n 4) 414.
- 16 Henrik Ringbom, 'Regulating Autonomous Ships – Concepts, Challenges and Precedents' (2019) 50 *Ocean Development & International Law* 141, 152.

the unmanned engine room only works because the onboard crew are on call to “guarantee a prompt response to emergency situations and a continuous monitoring of the engine.”¹⁷

Chapter v of SOLAS also includes explicit requirements for ships to be sufficiently and efficiently manned in accordance with a minimum safe manning document issued by the maritime administration. This provision attracts divergent opinions from MASS scholars. Some see minimum safe manning as “the ultimate legal provision of the need to man the ships under the existing legal framework on international maritime law.”¹⁸ Others point out that,

SOLAS relies on states to ensure the safe manning of their ships. There is no minimum number of persons required to be on board so long as the primary safety concern is met. It can therefore be argued that a crew numbering zero is technically “adequate” provided the operation is safe.¹⁹

Indeed, the implementation of minimum safe manning requirements varies widely between States. States such as the UK, Australia, Canada, Hong Kong, and Bermuda practice a discretionary or subjective regime where ship operators are able to propose manning levels depending on the specific particulars of the ship in question. Singapore, the USA, New Zealand, and South Africa follow a prescriptive regime using formulae designed to provide an objective determination of minimum safe manning levels.²⁰

There is also a fair amount of contention surrounding the idea that maritime authorities might approve “equivalents”²¹ that unmanned ships may propose in complying with existing standards and instruments without having to wait for MASS-specific amendments. Some are of the opinion that human presence is a strict requirement in important provisions under conventions such as COLREG, STCW, and SOLAS.²² Others expect the maritime authority

17 Paolo Zampella, ‘Maritime and Air Law Facing Unmanned Vehicle Technology’ (PhD thesis, Università degli Studi di Cagliari 2019), 123.

18 *ibid* 125.

19 Veal and others (n 9) 36.

20 Luci Carey, ‘All Hands off Deck? The Legal Barriers to Autonomous Ships’ (2017) 23 *Journal of International Maritime Law* 202, 207.

21 Veal and Ringbom (n 8) 105–106; Craig H Allen, ‘Determining the Legal Status of Unmanned Maritime Vehicles: Formalism vs Functionalism’ (2018) 49 *Journal of Maritime Law & Commerce* 477, 480.

22 M Bergström, Spyros E Hirdaris, Osiris A Valdez Banda, Pentti Kujala, OV Sormunen, and A Lappalainen, ‘Towards the Unmanned Ship Code’ in Pentti Kujala and Liangliang Lu (eds), *Marine Design XIII* (CRC Press 2018); Ringbom (n 16) 159.

to allow for decision support systems, such as “technically extended sensory organs”²³ that serve as equivalent to the COLREG-mandated lookout and “continuously sense the contacts around the ship’s operating domain and initiate best possible options”²⁴ for the MASS.

Because MASS is still in its infancy, it is impossible to imagine ships without humans on board. Who will port state control inspectors expect to meet, consult, query, and converse with during random inspections?²⁵ How about shore-based operators? Can a shore-based operator or the ship’s onboard control system “assume the duties of a traditional crew?”²⁶ Is STCW applicable to them?²⁷ The fully unmanned MASS represents such a radical paradigm shift that there can be endless discussion and speculation on how the international framework should react, adjust, and adapt.

One view is that a new international legal framework for MASS should be built from the ground up. According to Pritchett,

Instead of attempting the extraordinary task of revising existing law to be more accommodating to [MASS], new legal instruments should be created specifically for, and applying only to, the new class of vessels ... Creating a comprehensive body of law that is targeted at [MASS] operations will allow the necessary forethought to be put into how we want these systems to operate. Failure to proactively make changes to accommodate [MASS] will allow a series of laws that was never designed to apply to such technology to hamper its advancement.²⁸

The following proposal from Bergström and others suggests a more encapsulated approach that involves the adoption of a code specifically designed for MASS.

It is thought that unmanned ships may enable safer, cost-efficient and environmentally friendly maritime transport. However, the origins of existing maritime rules and regulations come from an era before the

23 Daum and Stellpflug (n 11) 372.

24 Akshaya Kumar Mahapatra, ‘Rules of the Road and the Digital Helmsman: an Analytical Review of the COLREG in the Context of Autonomous Ships’ (MSc thesis, World Maritime University 2020), 58.

25 Van Hooydonk (n 4) 415.

26 Jordan (n 10) 302.

27 Daum and Stellpflug (n 11) 371.

28 Paul W Pritchett, ‘Ghost Ships: Why the Law Should Embrace Unmanned Vessel Technology’ (2015) 40 *Tulane Maritime Law Journal* 197, 225.

introduction of such disruptive technologies. To enable the design and operation of unmanned ships from a design for safety and overall regulatory perspectives, several performance driven regulatory challenges have to be addressed. Along these lines, this work suggests the introduction of a new regulatory framework for unmanned ships, namely the 'Unmanned Ship Code' (USC). Our proposal takes under consideration the recently introduced IMO code on the safety for ships operating in polar waters (Polar Code). This means that USC is fundamentally performance driven, goal-based and supplements existing conventional regulations.²⁹

Ringbom echoes the call for a move towards goal-based standards for MASS. Under this approach, the "statutory rules only outline the objectives to be achieved and certain functional requirements, as well as a verification process." The details for "achieving those objectives and requirements to flag states, classification societies, and ship designers and builders."³⁰ Zampella's proposed solution is the adoption of a new SOLAS chapter that will provide "a technical regulatory framework tailored to the specific needs of unmanned vessels, from their construction requirements to the standards of operation, particularly considering their classification as one of the possible categories of ship navigating the oceans."³¹

Timbrell calls for alterations that will allow for the application of collision regulations to MASS – a change that he believes should "take place quickly though through a Convention and not be left to gradual change through the Courts."³² Mindful that extensive amendments to the international regulatory framework will take years, Jordan endorses the development of soft law or para-droit in the interim.³³

3 The IMO Regulatory Scoping Exercise

While the above proposed approaches differ, the one common denominator is that each of them acknowledge the importance of the IMO as the venue and forum for discussions and negotiations on the international regulatory

29 Bergström and others (n 22) 881.

30 Ringbom (n 16) 164.

31 Zampella (n 17) 133.

32 Will Timbrell, 'Can the Prospect of Unmanned Ships Stay Afloat under the Current Collision Regulations' (2019) 9 Southampton Student Law Review 49, 49.

33 Jordan (n 10) 316.

framework for MASS. As will be seen in this section, the IMO has in fact taken a measured and deliberate approach. It recognizes the need to be proactive – to control the lag between technology/science and policy/law, and to provide a practicable tentative framework that will promote the conduct of testing, research, and development in a safe and controlled manner. Yet it is mindful that an unnecessary rush can only be counterproductive – what the international maritime community needs are the proper tools and procedures to initiate considered and rational amendments to IMO instruments as and when appropriate.

To lay a solid foundation for future action on the regulatory framework as it relates to MASS, the IMO commenced a regulatory scoping exercise.

3.1 *Maritime Safety Committee*

Being the senior committee at IMO, and the body primarily responsible for the Organization's work program as it relates to safety and security, including keeping SOLAS and related instruments up-to-date, it falls squarely on the Maritime Safety Committee (MSC) to lead the review of IMO instruments to determine how these apply to maritime autonomous surface ships.

3.1.1 98th Session of the Maritime Safety Committee (MSC 98)

A joint proposal submitted by Denmark, Estonia, Finland, Japan, the Netherlands, Norway, the Republic of Korea, the United Kingdom, and the United States gave impetus to the inclusion of maritime autonomous surface ships in the work programme of the IMO. Document MSC 98/20/2 "Maritime Autonomous Surface Ships: proposal for a regulatory scoping exercise" was submitted jointly on 27 February 2017 by the aforementioned countries for consideration at the 98th meeting of the IMO's Maritime Safety Committee (MSC) held from 7 to 16 June 2017. MSC 98/20/2 prefaced that because the "use of Maritime Autonomous Surface Ships (MASS) creates the need for a regulatory framework for such ships and their interaction and co-existence with manned ships," it becomes incumbent upon the MSC "to undertake a regulatory scoping exercise to establish the extent of the need to amend the regulatory framework to enable the safe, secure and environmental operation of MASS within the existing IMO instruments."³⁴

The co-sponsors expressed concern that a lack of clarity in the international legal framework vis-à-vis MASS could compromise or delay the development

34 International Maritime Organization, 'Maritime Autonomous Surface Ships Proposal for a Regulatory Scoping Exercise' (27 February 2017) MSC 98/20/2.

and adoption of relevant technological solutions for use on board ships. Through MSC 98/20/2, they listed the objectives of the proposed regulatory scoping exercise (RSE) as:

- 1 identifying IMO regulations which, as currently drafted, preclude unmanned operations;
- 2 identifying IMO regulations that would have no application to unmanned operations (as they relate purely to a human presence on board); and
- 3 identifying IMO regulations which do not preclude unmanned operations but may need to be amended in order to ensure that the construction and operation of MASS are carried out safely, securely, and in an environmentally sound manner.³⁵

In their submission, the co-sponsors noted that it is imperative that MASS be included within the existing international regulatory framework while both construction and operation are still in their infancy world-wide. They also underscored the importance of undertaking the regulatory scoping exercise in order to provide a common appreciation of the standards that would become necessary to ensure safety in MASS operations.³⁶

The International Transport Workers' Federation (ITF), an international labor federation with observer status at IMO, added to the proposals contained in MSC 98-20-2 by submitting that the MSC work programme should encompass and include, *inter alia*, "a precise definition of what is meant by an 'autonomous ship'" and should cover different levels of autonomy on board ships, whether "partially manned or unmanned, that depend upon remote shore-based operators for control of a ship."³⁷ Additionally, the Philippine delegation intervened during the deliberations of the MSC's 98th session with an appeal for the body to consider humanitarian and social aspects in the development of the regulatory framework for MASS.³⁸

At the end of its 98th meeting, the Maritime Safety Committee indicated in its 28 June 2017 committee report that the output "Regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS)," with a target

35 MSC 98/20/2 (n 34).

36 *ibid.*

37 International Maritime Organization, 'Maritime Autonomous Surface Ships Proposal for a Regulatory Scoping Exercise' (13 April 2017) MSC 98/20/13.

38 International Maritime Organization, 'Report of the Maritime Safety Committee on its Ninety-eighth Session' (30 June 2017) MSC 98/23/Add.1.

completion date of 2020” would be included in the provisional agenda of its next meeting (MSC 99).³⁹

This was reinforced in the IMO strategic plan adopted at the IMO’s 30th Assembly at the end of the year, which included “Integrate new and advancing technologies in the regulatory framework” as one of the Strategic Directions for the period 2018 to 2023. In particular, it lists “Regulatory scoping exercise for the use of Maritime Autonomous Surface Ships (MASS)” as a specific output. The strategic plan expresses that IMO “will strive towards a legal framework that accommodates new and advancing technologies and approaches” while at the same time balancing their benefits “against safety and security concerns, the impact on the environment and on international trade facilitation, the potential costs to the industry, and finally their impact on personnel, both on board and ashore.”

3.1.2 99th Session of the Maritime Safety Committee (MSC 99)

The work on autonomous ships began in earnest in 2018, with the creation of a Working Group on MASS at MSC 99 to meet from 17–23 May and deliver a report before the end of the session. The Working Group met under the following terms of reference:

- 1 develop a framework for the regulatory scoping exercise, including aims and objectives, methodology, instruments, type and size of ships, provisional definitions and different types and concepts of autonomy, automation, operations and manning to be considered;
- 2 develop a plan of work for the regulatory scoping exercise, including timelines, deliverables and priorities, involvement of other committees and intersessional arrangements;
- 3 consider the need to establish a mechanism for sharing information and lessons learned and liaise with other international organizations to share up-to-date information on MASS, and advise, as appropriate;
- 4 consider the need for a correspondence group and develop draft terms of reference, as appropriate.⁴⁰

39 International Maritime Organization, ‘Report of the Maritime Safety Committee on its Ninety-eighth Session’ (28 June 2017) MSC 98/23; R Glenn Wright, *Unmanned and Autonomous Ships: an Overview of MASS* (Routledge 2020) 213.

40 International Maritime Organization, ‘Regulatory Scoping Exercise for the Use of Maritime Autonomous Surface Ships (MASS): Report of the Working Group’ (23 May 2018) MSC 99/WP.9.

Chaired by Sweden,⁴¹ in attendance in the Working Group were no less than 42 member States, one associate member, and 20 observer delegations. The group was commendably productive vis-à-vis its ambitious terms of reference and laid the groundwork for and formulated the framework within which the regulatory scoping exercise continues to be undertaken today. The group specified that the aim of the exercise “is to determine how safe, secure and environmentally sound Maritime Autonomous Surface Ships (MASS) operations might be addressed in IMO instruments,” while its objective “is to assess the degree to which the existing regulatory framework under its purview may be affected in order to address MASS operations.” It was also this first working group that gave the working definition of MASS as “a ship which, to a varying degree, can operate independent of human interaction.”⁴² Even more importantly, the working group provided the now-ubiquitous delineation of the four degrees of autonomy of MASS, though these underwent some minor modifications by the Correspondence Group.⁴³

In its report to the Maritime Safety Committee, the Working Group proposed that the regulatory scoping exercise follow a two-step process. The first step would entail the identification of IMO instruments which, as currently drafted, (I) apply to MASS and preclude MASS operations; or (II) apply to MASS and do not preclude MASS operations and require no actions; or (III) apply to MASS and do not preclude MASS operations but may need to be amended or clarified, and/or may contain gaps; or (IV) have no application to MASS operations. Following this would be the second step, which calls for an analysis to identify the most appropriate way of addressing MASS operations through, (I) equivalences as provided for by the instruments or developing interpretations;

41 Sweden has continued to chair subsequent meetings of the MASS Working Group.

42 MSC 99/WP.9 (n 40).

43 The Correspondence Group provided some very minor adjustments to the Working Group’s definitions. Below are the resulting delineations (see International Maritime Organization, “Regulatory Scoping Exercise for the Use of Maritime Autonomous Surface Ships (MASS): Report of the Correspondence Group’ (28 September 2018) MSC 100/5):

Degree one: *Ship with automated processes and decision support*. Seafarers are on board to operate and control shipboard systems and functions. Some operations may be automated.

Degree two: *Remotely controlled ship with seafarers on board*. The ship is controlled and operated from another location. Seafarers are available on board to take control and to operate the shipboard systems and functions.

Degree three: *Remotely controlled ship without seafarers on board*. The ship is controlled and operated from another location. There are no seafarers on board.

Degree four: *Fully autonomous ship*. The operating system of the ship is able to make decisions and determine actions by itself.

and/or (II) amending existing instruments; and/or (III) developing new instruments; or (IV) none of the above, as a result of the analysis. In Appendix 1 of the report, the Working Group identified a preliminary list of fourteen mandatory maritime safety and security instruments to be covered by the regulatory scoping exercise.⁴⁴

MSC 99 endorsed the report and recommendations of the Working Group and took a number of associated decisions and actions. One was the establishment of a Correspondence Group on MASS, coordinated by Finland, and assigned with the mandate to test and suggest improvements to the regulatory scoping exercise framework and methodology proposed by the Working Group. Another was to fix 2020 as the target year for completion of the regulatory scoping exercise, in the face of calls to push it back to 2023.⁴⁵ MSC 99 also laid down a number of guiding principles to be observed in the course of regulatory scoping exercise. These include the following –

- 1 the work on MASS should be user-driven and not technology-driven
- 2 given the different interpretations of MASS, clear definitions were needed as a priority in order to move forward with the exercise
- 3 definitions should be broad and provisional to avoid limiting the exercise
- 4 the exercise should not be considered as a drafting exercise
- 5 the result of the exercise should establish which regulations, as written, applied already to MASS and which regulations might be in conflict with MASS, and should identify the relevant gaps to ensure that the safety, security and protection of the marine environment would be maintained.⁴⁶

3.1.3 100th Session of the Maritime Safety Committee (MSC 100)

The 100th session of IMO's Maritime Safety Committee took place from 3 to 7 December 2018. Four main items occupied the meeting's agenda on MASS: the report of the Correspondence Group established by MSC 99, development of interim guidelines for MASS trials, the MASS Working Group for MSC 100, and the intersessional meeting of the Working Group on MASS. The Correspondence Group reported that it was in agreement with the scoping exercise framework and methodology previously agreed at MSC 99. It also reported that while a number of proposals to expand the degrees of autonomy were considered, the

44 MSC 99/WP.9 (n 40).

45 International Maritime Organization, 'Report of the Maritime Safety Committee on its Ninety-ninth Session' (5 June 2018) MSC 99/22.

46 MSC 99/22 (n 45).

Group consensus was that it was advisable to retain the four degrees already agreed at MSC 99,⁴⁷ albeit with some minor proposed modifications.

As with its previous session, MSC 100 established the MASS Working Group. The Group was instructed to finalize the framework for the regulatory scoping exercise and also consider principles for the development of interim guidelines for MASS trials.⁴⁸ To support active participation by member States and observer organizations in the regulatory scoping exercise, it was agreed at the Working Group meeting that a web platform in the form of a MASS module in IMO's Global Integrated Shipping Information System (GISIS) would be developed by the Secretariat. It was also agreed that a clear distinction would be made between the first step and the second step of the scoping exercise.⁴⁹

Pursuant to its mandate to identify possible principles for consideration when developing guidelines on MASS trials, the Working Group proposed that the Guidelines should be a single document that is, *inter alia*, applicable to all entities involved (public as well as private), generic, goal-based, and neither exceedingly technical nor prescriptive. The Guidelines should also encourage information sharing, include a reporting mechanism to relevant coastal state(s), and promote safe, secure, and environmentally sound MASS operations.⁵⁰

MSC 100 approved the Working Group's report in general, to include the proposed principles for developing interim guidelines for MASS trials. Additionally, the Committee endorsed an intersessional meeting of the MASS Working Group to be held from 2 to 6 September 2019, that is, between the 101st and 102nd sessions of the MSC. The intersessional meeting would be set aside to allow the Group to review the results of the first step of the regulatory scoping exercise and then subsequently to commence with the second step.

Of special interest was the note that MEPC took cognizance of MSC's invitation⁵¹ for MEPC to commence its own scoping exercise. MEPC 73 decided that the Committee would review instruments under its purview some time in the future, after "significant progress had been made by MSC on the regulatory scoping exercise."⁵²

47 MSC 100/5 (n 43).

48 International Maritime Organization, 'Report of the Maritime Safety Committee on its One Hundredth Session' (10 January 2019) MSC 100/20.

49 International Maritime Organization, 'Regulatory Scoping Exercise for the Use of Maritime Autonomous Surface Ships (MASS): Report of the Working Group' (6 December 2018) MSC 100/WP.8.

50 *ibid.*

51 MSC 100/20 (n 48).

52 International Maritime Organization, 'Report of the Marine Environment Protection Committee on its Seventy-third Session' (26 October 2018) MEPC 73/19.

Finally, MSC 100 reiterated MSC 99's decision to set May 2020, i.e., the Committee's 102nd session (MSC 102), as the target timeframe for final consideration of the regulatory scoping exercise.⁵³

3.1.4 101st Session of the Maritime Safety Committee (MSC 101)

The 101st session of the Maritime Safety Committee (MSC 101) met from 5 to 14 June 2019. MSC 101 convened the MASS Working Group and instructed it to review the status of the regulatory scoping exercise, prepare terms of reference for the intersessional Working Group on MASS, and finalize the draft interim guidelines for MASS trials.⁵⁴

The Working Group gave a positive update on the MASS module created in IMO's GISIS that has proven useful in encouraging member-state participation in the regulatory scoping exercise. At same time, the Group highlighted the importance of active participation by IMO members and observers as well as the need for more volunteers to undertake an initial review of some instruments.⁵⁵

For the Intersessional Working Group on MASS (ISWG-MASS), the Working Group put forward terms of reference that further elaborated on the ISWG's mandate to finalize the first step and commence the second step of the regulatory scoping exercise. Specifically, the ISWG would be expected to consider how the outcome of the second step should be reported to MSC 102 and develop guidance for use by Member States in the second step. The Group also reviewed and finalized the draft interim guidelines for MASS trials.⁵⁶

The Maritime Safety Committee gave its general approval to the report of the MASS Working Group, adopted the terms of reference for the ISWG-MASS and approved the final version of the Interim guidelines for MASS trials.⁵⁷ MSC 101 also set the tentative dates of the next two sessions of the Committee. MSC 102 was scheduled for 13–22 May 2020 while MSC 103 was to take place some time in November 2020.⁵⁸

53 MSC 100/20 (n 48).

54 International Maritime Organization, 'Report of the Maritime Safety Committee on its 101st Session' (12 July 2019) MSC 101/24.

55 International Maritime Organization, 'Regulatory Scoping Exercise for the Use of Maritime Autonomous Surface Ships (MASS): Report of the Working Group' (12 June 2019) MSC 101/WP.8.

56 *ibid.*

57 International Maritime Organization, 'Interim Guidelines for MASS Trials' (14 June 2019) MSC.1/Circ.1604.

58 MSC 101/24 (n 54).

3.1.5 Intersessional Working Group on Maritime Autonomous Surface Ships (ISWG-MASS)

The ISWG-MASS convened itself from 2 to 6 September 2019 to review the results of the first step of the regulatory scoping exercise, develop guidance on the second step for IMO members and observers, and develop a format for the report on the second step to be submitted to MSC 102.⁵⁹ In its report to the Maritime Safety Committee, the ISWG presented the findings of the first step of the regulatory scoping exercise. It is contained in seven pages that summarize the Group's discussions and observations of the reports provided by volunteering Member States that conducted a first step review of the instruments listed in section 3.1.2 above.⁶⁰ The summary on each instrument during the first step includes notes, recommendations, potential gaps, themes, and other relevant findings. Each section concludes with the Group's decision on whether the second step for that instrument could commence. Having presented its findings, the Group's report declared the first step to have concluded and subsequently the second step of the regulatory scoping exercise to have commenced. It was agreed that volunteering Member States would lead the second step of the scoping exercise.⁶¹

In anticipation of the end of the two-step regulatory scoping exercise at MSC 102, the Group also agreed that the format and content of its final report to the Maritime Safety Committee should include:

- 1 a background section, among others including the process followed during the regulatory scoping exercise (RSE);
- 2 information for all degrees of autonomy for every instrument expected to be affected by MASS operations under the purview of the Maritime Safety Committee;
- 3 the most appropriate way(s) of addressing MASS operations in those instruments, as appropriate;
- 4 identification of themes and/or potential gaps that require addressing;
- 5 identification of possible links between instruments;

59 International Maritime Organization, 'Provisional Agenda for the Meeting of the Intersessional Working Group on Maritime Autonomous Surface Ships (MASS)' (10 July 2019) ISWG/MASS 1/1/Rev.1.

60 MSC 99/22 (n 45), see § 1.1.2.

61 International Maritime Organization, 'Report of the ISWG MASS to the Maritime Safety Committee' (23 September 2019) ISWG/MASS 1/6; International Maritime Organization, 'Development of Guidance to Member States for Use in the Second Step Based on a High-level Discussion on the Gaps, Themes and/or Relevant Findings Identified During the First Step: Regulatory Scoping Exercise' (23 August 2019) ISWG/MASS 1/3/2.

- 6 identification of priorities for further work, including terminology and the order in which instruments could be addressed taking into account common themes and potential gaps; and
- 7 references to the material produced before and during the RSE, in particular IMO documents.⁶²

The ISWG concluded its report by underscoring the need to convene the MASS Working Group at MSC 102, in view of work that needs to be undertaken to finalize the regulatory scoping exercise.⁶³

3.1.6 102nd & 103rd Sessions of the Maritime Safety Committee (MSC 102 & MSC 103)

The 102nd session of the Maritime Safety Committee (MSC 102) was originally scheduled for 13–22 May 2020. Due to the ongoing COVID-19 pandemic, however, the meeting was postponed for six months. MSC 102 eventually took place six months later, from 4–11 November 2020, but not at IMO Headquarters in London. For the first time in IMO's history, MSC met by remote video link.

The limited time available and the obvious challenges presented in holding a meeting across the world's different time zones meant that more than half of the substantive agenda items originally tabled for consideration at MSC 102 had to be postponed. The regulatory scoping exercise for MASS was among them. It meant that the consideration of reports and discussion of submitted documents would be deferred until MSC 103.⁶⁴

One of the documents for consideration was a status report of the scoping exercise prepared by the IMO Secretariat and submitted at the end of January 2020, shortly before the pandemic broke. The status report indicated that by 15 November 2019 all volunteering States were ready with the first phase of the second step of the scoping exercise. This first phase was an preliminary analysis of the most appropriate way(s) of addressing each degree of autonomy by indicating whether this/these would be through, (I) equivalences as provided for by the instruments or developing interpretations, and/or (II) amending existing instruments, and/or (III) developing new instruments, or (IV) none of the above as a result of the analysis.⁶⁵

62 *ibid*; *ibid*.

63 ISWG/MASS 1/6 (n 61).

64 International Maritime Organization, 'Report of the Maritime Safety Committee on its 102nd Session' (30 November 2020) MSC 102/24.

65 International Maritime Organization, 'Regulatory Scoping Exercise for the Use of Maritime Autonomous Surface Ships (MASS): Status report – Progress of the Regulatory Scoping Exercise' (31 January 2020) MSC 102/5.

The Secretariat's submission further reported that IMO members were provided the opportunity between 16 November and 13 December 2019 to comment on the preliminary analysis. Following this, volunteering member States were expected to consider the comments and introduce amendments or modifications where appropriate. These revised versions were then to be submitted by mid-February 2020 and made available to IMO members in preparation for what was meant to be a May 2020 MSC 102 meeting.⁶⁶

MSC 102's postponement, followed by the subsequent deferment to MSC 103 of consideration of all documents in the agenda pertaining to MASS, meant that the conclusion of the regulatory scoping exercise would be delayed by at least one year. MSC 103 is scheduled to take place by remote video conference from 5–14 May 2021.⁶⁷ For consideration at MSC 103 will be 30-odd submitted documents that were deferred from MSC 102.⁶⁸ These include the Secretariat's status report of the scoping exercise, the ISWG-MASS report, and submissions by member States on the second step of the exercise.⁶⁹ On top of this, MSC 103 will also have to consider new MASS-related documents that members would submit before a March 2021 deadline as well as the final report to be submitted by the MASS Working Group that MSC 103 is expected to convene during its session in May 2021.

3.2 *Legal Committee*

The Legal Committee is the IMO body mandated to deal with any legal matters within the purview of the Organization. The Legal Committee is also responsible for updating a number of conventions, and is therefore an important actor in the context of regulations for autonomous ships. The IMO's list of outputs for the 2020–2021 biennium indicates "Regulatory scoping exercise and gap analysis of conventions emanating from the Legal Committee with respect to maritime autonomous surface ships (MASS)" as a deliverable with 2022 as the target.⁷⁰ It was in fact noted as early as during MSC 98 that the MSC scoping

66 *ibid.*

67 International Maritime Organization, 'Provisional Agenda for the 103rd Session of the Maritime Safety Committee, to be Held Remotely from Wednesday, 5 May, to Friday, 14 May 2021' (27 November 2020) MSC 103/1.

68 International Maritime Organization, 'Adoption of the Agenda; Report on Credentials – Annotations to the Provisional Agenda' (11 January 2021) MSC 103/1/1.

69 *ibid.*

70 International Maritime Organization, 'Resolution A.1131(31) List of Outputs for the 2020–2021 Biennium' (6 December 2019) A 31/Res.1131.

exercise “would be an initial step and it may also be necessary to undertake similar work under the other Committees.”⁷¹

The delegations of Canada, Finland, Georgia, the Marshall Islands, Norway, the Republic of Korea, Turkey, CMI, ICS, and P&I Clubs submitted a joint document during the 105th session of the IMO’s Legal Committee (LEG 105, held from 23 to 25 April 2018) proposing that the Committee undertake its own MASS regulatory scoping exercise. The proposal stated that a review and analysis of instruments under the purview of the Legal Committee would allow it to help IMO appreciate “the full range of regulatory implications arising from MASS and plan appropriately to accommodate this new and advancing technology into an effective international regulatory framework.”⁷² Adopting the proposal, the Legal Committee agreed to include “Regulatory scoping exercise and gap analysis of conventions emanating from the Legal Committee with respect to Maritime Autonomous Surface Ships (MASS)” as part of its agenda, with 2022 as its target completion year. Additionally, the Committee invited members to provide proposals and comments on the subject for consideration at LEG 106 for consideration, with appropriate reference to the work at MSC 99 and MSC 100.⁷³

The 106th session of the Legal Committee took place from 27 to 29 March 2019. Recalling the decision at LEG 105 to introduce a regulatory scoping exercise to the work of the Committee, LEG 106 reviewed a number of documents and submissions from IMO members as well as the Secretariat. The Committee resolved to observe some guiding principles such as to follow a common approach as other IMO committees and adopt the same methodology used by the MSC, and consider any potential adverse effects the deployment of MASS may have on seafarers. The Committee established its own LEG Working Group on MASS with the mandate to, *inter alia*

- 1 finalize the list of LEG instruments to be included in the LEG regulatory scoping exercise;
- 2 finalize the framework, methodology, plan of work and procedures for the LEG regulatory scoping exercise;
- 3 consider and recommend if an intersessional correspondence group on maritime autonomous surface ships should be established and, if so, develop draft terms of reference for the correspondence group; and

71 MSC 98/20/2 (n 34).

72 LEG 105/11/1 (n 2).

73 International Maritime Organization, ‘Report of the Legal Committee on the Work of its 105th Session’ (1 May 2018) LEG 105/14.

4 if time permitted, test the methodology on selected articles of LEG conventions.⁷⁴

The Working Group identified twenty-three instruments emanating from the Legal Committee, nineteen of which are conventions under the Committee's direct and exclusive purview, two of which the Committee shares cognizance with other IMO committees, and a further two that are joint treaties with IMO and other UN bodies.⁷⁵

In terms of the framework, methodology, plan of work and procedures for the regulatory scoping exercise, the Working Group recommended that the Committee adopt the MSC methodology, including the two-step process, with some minor refinements. On the issue of a proposed intersessional correspondence group to advance the work on MASS, the Group reported that the creation of such a body would not be necessary considering that the web platform in GISIS was more than sufficient to facilitate the required tasks. In fact, the Group successfully tested the methodology using GISIS.⁷⁶

As in the case of the Maritime Safety Committee, the Legal Committee has had to cancel its original schedule for the 107th session because of the COVID-19 pandemic. LEG 107 was eventually held via remote video conferencing from 27 November to 11 December 2020. At its remote session, the Committee agreed to postpone consideration of the agenda item on MASS and all associated documents to LEG 108.⁷⁷

The 108th session is scheduled for 26 to 30 July 2021, with discussions and comments on MASS submissions to the Legal Committee still allowed in the IMO's GISIS web platform until June.⁷⁸ Following a review of the discussion related to the scoping exercise in GISIS so far, IMO Secretariat identified the role and responsibility of the master, the role and responsibility of the remote

74 International Maritime Organization, 'Report of the Legal Committee on the Work of its 106th Session' (13 May 2019) LEG 106/16; International Maritime Organization, 'Regulatory Scoping Exercise and Gap Analysis of Conventions Emanating from the Legal Committee with Respect to Maritime Autonomous Surface Ships (MASS)' (29 March 2019) LEG 106/WP.5.

75 LEG 106/WP.5 (n 74); International Maritime Organization, 'Regulatory Scoping Exercise and Gap Analysis of Conventions Emanating from the Legal Committee with Respect to Maritime Autonomous Surface Ships (MASS): List of Instruments under the Purview of the Legal Committee' (4 January 2019) LEG 106/8.

76 LEG 106/16 (n 74); LEG 106/WP.5 (n 74).

77 International Maritime Organization, 'Report of the Legal Committee on the Work of its 107th Session' (11 December 2020) LEG 107/18/2.

78 International Maritime Organization, 'Provisional Agenda for the 108th Session of the Legal Committee to be Held Remotely from 26 to 30 July 2021' (15 December 2020) LEG 108/1.

operator, questions of liability, definitions/terminology of MASS, and certificates to be among the potential common gaps and themes.⁷⁹

3.3 *Facilitation Committee*

The 43rd session of the Facilitation Committee (FAL 43), which convened from 8–12 April 2019, considered, *inter alia*, document FAL 43-19-2 submitted by the Secretariat containing a recommendation to include MASS on the agenda of the next FAL session (FAL 44).⁸⁰

Noting the progress of the MASS regulatory scoping exercise in both the Maritime Safety Committee (MSC) and the Legal Committee (LEG), the Facilitation Committee (FAL) approved the establishment of a MASS Working Group at FAL 44, scheduled to meet from 20 to 24 April 2020. The Committee took lessons from both MSC and LEG in drawing up the terms of reference for the Working Group. As practiced in MSC, the FAL Working Group was directed to adopt the two-step methodology. Like LEG, the Facilitation Committee decided to forgo an intersessional Working Group on MASS to instead optimize the use of the GISIS web platform for discussion and exchange of views. The Working Group was expected to “complete the work at FAL 44 and not in two sessions, as was initially proposed, because only one instrument, the FAL Convention, was being reviewed.”⁸¹ Having been scheduled to meet from 20 to 24 April 2020, however, meant that FAL 44 would be postponed to 28 September to 2 October 2020 as a result of the COVID-19 pandemic. As a result, FAL 44 decided, *inter alia*, to also postpone the consideration and completion of the FAL MASS regulatory scoping exercise to FAL 45,⁸² scheduled for 1–4 June 2021.⁸³

Finland volunteered to lead an initial review of the FAL Convention. Since the review covered only a single convention, the initial work was already

79 International Maritime Organization, ‘Regulatory Scoping Exercise and Gap Analysis of Conventions Emanating from the Legal Committee with Respect to Maritime Autonomous Surface Ships (MASS): Summary of Main Gaps and Common Themes in Instruments Under the Purview of the Legal Committee’ (10 January 2020) LEG 107/8/17.

80 International Maritime Organization, ‘Progress on the regulatory scoping exercise for the use of maritime autonomous surface ships (MASS)’ (4 January 2019) FAL 43/19/2.

81 International Maritime Organization, ‘Report of the Facilitation Committee on its Forty-third Session’ (23 April 2019) FAL 43/20.

82 International Maritime Organization, ‘Report of the Facilitation Committee on its Forty-fourth Session’ (19 October 2020) FAL 44/21/1.

83 International Maritime Organization, ‘Provisional Agenda for the Forty-fifth Session of the Facilitation Committee to be Held from Tuesday, 1 June to Friday, 4 June 2021, and on Monday 7 June 2021’ (12 November 2020) FAL 45/1.

finished even before FAL 44 was postponed. Some preliminary findings relate to identification of the master for facilitation purposes, stowaways, refugees, persons rescued at sea, basic accommodation facilities on board unmanned ships, among others. The full report will be considered at FAL 45.⁸⁴

4 Conclusion

IMO's regulatory scoping exercise is only the beginning of a response to the challenges in introducing and incorporating disruptive technology – in this case, MASS – within an existing and already-functioning framework. MSC 99 made it amply clear that IMO does not intend to rush to undertake a drafting exercise, but rather to engage in a true scoping exercise. The regulatory scoping exercise would provide the information and foundation necessary to guide the work of the different concerned committees and subcommittees as and when they determine that particular instruments need to be amended. The results of the regulatory scoping exercise should be taken into account and used as a basis for approximating the impact of MASS and to act, draft, or adjust accordingly, to allow “unmanned ships to come within the ambit of the existing framework, with some important modifications.”⁸⁵

The regulatory scoping exercise should also help clarify numerous issues in order to settle many doubts and uncertainties expressed in certain quarters. Among these relate to fundamental questions that accompany the emergence of MASS. What problem is autonomous shipping really trying to solve? How realistic and feasible are its potential benefits? How ready is the public for autonomous ships? Even as innovation in autonomous systems progresses and its integration continues, it is understandable that there are stakeholders that feel that MASS decisions at IMO “are being imprudently rushed”⁸⁶ by other interests and that,

Regulation in the marine autonomy sphere is pushed forward primarily by companies that prefer to have quantifiable regulatory risks to attract investors rather than feeling exposed to the potentially more extensive

84 International Maritime Organization, ‘Regulatory Scoping Exercise for the Use of Maritime Autonomous Surface Ships (MASS): Report on the Results of the Regulatory Scoping Exercise on the FAL Convention’ (17 January 2020) FAL 44/14.

85 Veal and Ringbom (n 8) 115.

86 Allen (n 21) 479.

general liability regime and with unspecified regulatory obstacles that may prohibit the manufacture, sale, and use of their products.⁸⁷

AP Moeller-Maersk's CEO is recorded as having said that "[e]ven if the technology advances, I don't expect we will be allowed to sail around with 400-meter long container ships, weighing 200,000 tonnes without any human beings on board." He added that, "I don't think it will be a driver of efficiency, not in my time."⁸⁸

One of the proposed benefits of MASS is eliminating the human element in shipboard operations, often touted as the direct cause of around 80% of accidents. However, some question whether the deployment of MASS merely transfers the risk from humans on board to humans ashore faced with even greater difficulties in assessing and tackling imminent accidents and disasters at sea.⁸⁹ Not being "on board, the shore-based vessel controller will be unable to react with the same intuitive feel for the situation ... Indeed, because the operator will be dependent on the satisfactory operation of all the sensors on board and the transmission systems, new kinds of dangers will arise."⁹⁰ IT-related failures could arise in areas such as navigation, communications, and collision avoidance as well as lead to vulnerability to cyberattacks.⁹¹

The broader acceptance of MASS can only be realized when the maturity of technological applications are accompanied by social acceptance. There are those who already fear that MASS equals mass unemployment, or at the very least a reconfiguration of education, training, and skills requirements. As for ferries and cruise ships, "[w]ill passengers want to sail in a ship which is not in the oaken hands of a bearded and weather-beaten captain and without a crew that can ensure order and safety?"⁹² It is also not unreasonable to assume that "societal acceptance is higher for accidents caused by humans than for

87 Veal and others (n 9) 41.

88 Christian Wienberg, 'Maersk's CEO Can't Imagine Self-Sailing Box Ships in His Lifetime' Bloomberg (New York, 15 February 2018) <www.bloomberg.com/news/articles/2018-02-15/maersk-ceo-can-t-imagine-self-sailing-box-ships-in-his-lifetime> accessed 12 January 2021.

89 Barış Soyer, 'Autonomous Vessels and Third-party Liabilities: the Elephant in the Room' in Barış Soyer and Andrew Tettenborn (eds), *New Technologies, Artificial Intelligence and Shipping Law in the 21st Century* (Informa Law from Routledge 2020) 105, 114–115.

90 Van Hooydonk (n 4) 406.

91 Peter Wetterstein, 'Redaransvaret och Autonom Sjöfart – Några Synpunkter' [2019] 1 Tidskrift, utgiven av Juridiska Föreningen i Finland 24, 25–26; Tae-eun Kim and Steven Mallam, 'A Delphi-AHP Study on STCW Leadership Competence in the Age of Autonomous Maritime Operations' (2020) 19 WMU Journal of Maritime Affairs 163, 164.

92 Van Hooydonk (n 4) 406.

accidents caused by machines”⁹³ and that the “general public [will not] be receptive to the idea of a chemical tanker navigating in international waters autonomously.”⁹⁴ Communities, politicians, and environmentalists cannot be expected to be especially welcoming of MASS navigating along their coasts and calling at their ports.

It is speculated that the advancements in MASS technology will proceed at a much slower pace than expected⁹⁵ and there is scepticism whether the next two decades will see more than 1,000 fully autonomous ships commissioned in the international maritime trade.⁹⁶ It might be argued that we are not as yet on the cusp of unmanned and autonomous shipping, but that we are certainly moving in that direction. In the meantime, the absence of universal standards governing the development of relevant technologies could never be in the best interest of the maritime public. If left unresolved, the vacuum could instead be filled by unilateral, national, or regional regulation. Such a development would certainly undermine the important work of IMO toward global implementation of universal standards. A sound international regulatory framework is the best insurance against the disruptive potentials of MASS technology.

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93 Bergström and others (n 22) 885.

94 Soyer (n 89) 114–115.

95 World Maritime University, ‘Transport 2040: Automation, Technology, Employment – the Future of Work’ (Report) (2019), xvi.

96 Wright (n 39) 17.

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Salvage Agreement and Contract Salvage: Risk Dynamics in Salvage Law

Proshanto K. Mukherjee

1 Introduction

Shipping and seafaring are interdependent but as a combined phenomenon has, since time immemorial, been considered a dangerous and risky occupation. If shipping is a risky venture as it doubtless is, then salvage, famously described as an “endeavour so heroic that it is unrivalled in fiction”,¹ is fraught with even greater risk. This chapter concerns the law and practice of salvage as perceived from the vantage point of risks encountered by the salvor on the one side and those from the opposite side, that of the shipowner who needs the salvor’s services. In more specific terms, the chapter examines the legal status of the standard form salvage agreement exemplified by the Lloyds Open Form of Salvage Agreement, popularly referred to as the LOF and whether and how that is different from what in some circles is called “contract salvage”. Incidental to this examination is consideration of the difference between contract and agreement and what that difference implies in the context of salvage services; in other words, what exactly is the legal nature of such services as perceived in maritime law? The focal point of this inquiry is the key question of what is salvage agreement in juxtaposition to contract salvage.

At the outset, before venturing further, let me say that against my better judgement I have chosen to write this piece in the first person which is uncharacteristic of all except one of my previous published writings. Having said that, I have taken the liberty of approaching the subject in the present instance in the same way as I would, a conference keynote speech, and I have felt free to avoid excessive formality in delivering my message. My profuse apologies for adopting that informal stance hoping that the audience and readership will appreciate my frank subjectivity.

¹ *The Holder Borden* 12 Fed Cas. 331 No. 6600, D. Mass 1847.

2 Customary Salvage

First, let me clarify what I mean by customary salvage. Basically, it is the custom and practice of salvage that has grown up over many centuries from Roman times. In the classic case of *Falcke v. Scottish Imperial Co.*,² Bowen L.J. stated in reference to salvage, that it existed “from the time of the Roman law downwards”.³ Thomas J. Schoenbaum mentions that the general maritime law of salvage was a part of customary international law and also that it prevailed in Byzantine times and in the medieval Mediterranean seaport codes.⁴ Sir Christopher Robinon, Judge of the English Admiralty Court expressed the view in the case of *The Calypso*,⁵ that the entitlement to salvage was originally derived from the Roman law doctrine of *negotiorum gestio* found in the Justinian Digests.⁶ Be that as it may, those of English law persuasion would submit that it is a child of equity, which may imply, incorrectly in my view, that salvage did not exist apart from the historical advent of the Chancery, the law of equity being itself the offspring of that institution. In this context, the comment in Kennedy’s book that the Roman law itself had a professedly equitable nature, is elucidatory. I presume his reference to equity is in its general sense of fairness.⁷ The learned judge Sir Christopher Robinon in *The Calypso* also referred to the general principle of natural equity for protecting life and property which in Roman law, generated a cause of action. That this proposition of his was not accepted as stated by him but was simply a distant analogy, is borne out by some judicial decisions and text writers.⁸ But equity, whether in the general sense of fairness, or in terms of its institutional connotation, has been embedded in the law of salvage, and its role in the development of that law in England is indisputably of significant proportions. In *Five Steel Barges*, Sir James Hannen famously referred to salvage “being of a peculiarly equitable character”,⁹ and Lord Denning ostensibly reiterated the same view in *The Teh*

2 (1886), 34 Ch. D. 234.

3 *ibid* 248–249.

4 Thomas J. Schoenbaum, *Admiralty and Maritime Law*, Fifth Edition, St Paul, MN: West Publishing Co., 839–840.

5 (1828) 2 Hag. Adm. 209 at 217–218; 116 E. R. 221 at 224.

6 See lib 3, title 5 (*De Negotitis Gestis*).

7 Francis D. Rose, *Kennedy and Rose Law of Salvage*, 6th Edition, London: Sweet & Maxwell, 2002 at para. 15, 8, hereinafter referred to as “Kennedy”.

8 See Marshall CJ in *Mason v. The Blaireau*, (1804), 2 Cranch 239 at 265. See also Geoffrey Hutchinson, *Roscoe’s Admiralty Jurisdiction and Practice*, 5th Edition. London: Stevens & Sons, Ltd., and Sweet & Maxwell, Ltd., 1931, at 126.

9 (1890) 15 P.D. 142 at 146.

Hu.¹⁰ In *The Beaverford v. The Kafirstan*.¹¹ Lord Wright held that “...the maritime law of salvage is based upon principles of equity”.

Interestingly, in American maritime law jargon, as imprecise as it may be, the term “pure salvage” is used which is equally inexact.¹² The appellation so framed begs the question as to what variety of salvage is impure (no pun or play on words intended). British Authors O’May and Hill use the same terminology, that is, “pure salvage”, seemingly to mean “salvage service rendered independent of contract”,¹³ and in the United Kingdom Marine Insurance Act 1906,¹⁴ the corresponding expression used is “salvage under maritime law”. Incidentally, Francis D. Rose uses the term “common law salvage” which adds to the convolution; he apparently uses it as a term of convenience to mean judge-made law as it prevails in the common law system.¹⁵

All said, it is indisputable that the indispensable ingredients of customary salvage as they have come down to us through the ages, are represented by the triumvirate of danger, voluntariness and success. Brice sums it up well stating that – “A right to salvage arises when a person, acting as a volunteer (that is, without any pre-existing contractual or other legal duty) so to act preserves or contributes to preserving at sea any vessel, cargo, freight or other recognised subject of salvage from danger”.¹⁶ It is a classic exposition of the triumvirate of salvage law, although the author does not use those specific words. This epitomizes the customary law of salvage as in my personal jargon, together with the requirement that the property in question must be a subject of salvage, *i.e.*, maritime property. In his Court of Appeal decision in *Gas Float Whitton No. 2*, Lord Esher M.R. held that the only subjects of salvage were “ship, her apparel and cargo, including flotsam, jetsam and lagan, and the wreck of these and freight”; added to these by statute was life salvage.¹⁷ Another fundamental attribute of customary salvage law apart from the aforementioned ingredients, is the Roman law principle of restitution for unjust enrichment which is the

10 [1970] P. 106 at 124.

11 [1938] AC 136 at p. 147.

12 Schoenbaum, (n4) 852.

13 Donald O’May and Julian Hill, *Marine Insurance Law and Policy*, London: Sweet & Maxwell, 1993, 337.

14 8 Edw. 7 c.4.

15 Francis D Rose, “Aversion and Minimization of Loss”, Chapter 7 at p. 216 in D Rhidian Thomas (Ed.) *The Modern Law of Marine Insurance*, London: Lloyd’s of London Press Ltd., 1996.

16 Geoffrey Brice, *Maritime Law of Salvage*, London: Sweet & Maxwell, 1999, 2nd Edn 1.

17 *Wells v. The Owners of the Gas Float Whitton No. 2* [1896] P. 42 (C.A.) affirmed unanimously by the House of Lords in [1897] A.C. 337.

rationale for the payment of remuneration to the salvor by the owner of the salvaged property, at least on a *quantum meruit* basis. Of the triumvirate of ingredients mentioned above, in the present discussion we are only concerned with the requirement of voluntariness.

The essence of voluntariness is that the service is offered without the stress of any official duty whether imposed by statute or otherwise; and more importantly in the context of the present discussion, without the compulsion of a contractual obligation to provide the services. In *The Neptune*,¹⁸ Lord Stowell described a volunteer as a person who proffers useful service without “*any pre-existing covenant* (emphasis added) that connected him with the duty of employing himself for the preservation of that ship”. The words in italics are particularly pertinent to the subject under discussion. A pre-existing covenant must surely refer to a promise made by a potential salvor or provider of salvage services. It may be arising out of an official duty such as those typically associated with national coast guards or “search and rescue” agencies;¹⁹ In *The Gorliz*,²⁰ it was held that navy personnel would not be entitled to salvage if the service “is no harder and involved no more risk than the work in which they would normally be engaged”. A well-known author refers to “voluntary (private) salvage” implying that only a private salvor provides services voluntarily; thus, services provided by a non-private or government salvor is not voluntary.²¹ However, in respect of public authorities carrying out statutory duties, there may be occasions when they may go well beyond their call of duty to carry out a saving act; in such instances, salvage under customary law may well be payable.

Where by virtue of a pre-existing contractual obligation, salvage is rendered, it would not qualify as a voluntary act under customary salvage law. A good example of this is a seafarer’s employment contract. If a seafarer participates in an activity involving saving his ship or any property belonging to the ship such as cargo or stores, he/she would not ordinarily be entitled to salvage remuneration. As a member of the crew, he/she is under a duty to preserve the ship, its cargo and the lives of people on board. However, if he/she carries out the same activity after a ship is abandoned upon it falling into danger or peril, and the abandonment is *bona fide*, salvage may be claimed by the seafarer as a volunteer provided the salvage effort is successful. The reasoning is that a

18 (1824), 1 Hagg. 227.

19 In China, for example, there is an official government body known as the Rescue and Salvage Bureau.

20 [1917] P. 233.

21 Robert Grime, *Shipping Law*, Second Edition, London: Sweet & Maxwell, 1991 277.

seafarer's employment is deemed to be terminated if the ship has been abandoned or captured. Thus, if he carries out a salvage act after such termination, he/she would be entitled to be remunerated.²²

Another element that negates voluntariness is where the salvage act is carried out in the interest of self-preservation alone, such as in the case of passengers of a ship in distress where they are primarily concerned with saving themselves. In such case, no salvage is payable. But there will be entitlement to salvage if self-preservation is incidental to saving of property. In *The Lomonosoff*,²³ during the first world war, a number of British and Belgian officers boarded a ship flying the flag of Northern Russia to escape capture by the Bolsheviks. In the ensuing court action, Hill J. held that these officers were true volunteers because in the course of saving themselves, they also managed to save the shipowner's property from the enemy.

Flowing from the discussion on voluntariness as a necessary ingredient of the customary law of salvage, it is expedient to look at what other alternatives are available for the provision of salvage services. Indeed, this is the very core of the present chapter.

3 Agreement and Contract: Legal Nature or Its Absence

The notion of pre-existing duty in the context of voluntariness is often misunderstood because most salvage today is carried out under the terms of an arrangement between the shipowner and the would-be salvor which is binding on the parties. Usually, the arrangement is under a standard form; the universally best known one is the Lloyd's Standard Form of Salvage Agreement, also referred to as the Lloyd's Open Form or its abbreviation, the LOF. Before delving into the exact legal nature of the LOF, I will first dwell on the issue of what is a contract as distinguished from an agreement, or *vice versa*, and what if any, is the distinction.

My first remark in this regard is that not every agreement is a contract in legal terms whereas one element, among others, of every contract is an agreement between the parties concerned. The distinction between the two is not always clear and not easy to discern. The basic legal requirements of a contract, at least under the common law, is that there is an offer made by one party which the other accepts, and there is mutual flow of consideration between

²² *The San Demetrio*, (1941), 69 LL.L.R. 5.

²³ (1921), P. 97.

them.²⁴ Apart from these three ingredients, it is necessary that there is *consensus ad idem* or meeting of the minds; that is, both parties must be thinking alike when they enter into the contractual arrangement.²⁵ If one party thinks he/she is selling apples and the other thinks he/she is buying oranges, there is no contract. Related to this, there must be certainty in the arrangement without which there cannot be a contract. In *The Gladys*,²⁶ the buyers of a ship were negotiating on standard terms “to be mutually agreed”, whereas the sellers who had dealt with the buyers before, claimed there was already a binding contract. The Court held that both parties anticipated that the contract in its final form was yet to be agreed by the parties. Therefore, there was no contract between them. The decision hinged on the lack of certainty.

By contrast to a contract, which is invariably a legal arrangement, that is, a legally enforceable arrangement between the parties in question, an agreement is a relatively loose arrangement simply because, strictly speaking, all the necessary characteristics of a contract are not present. As such, an agreement, as distinguished from a contract, may not always be enforceable by law unless certain steps are taken such as including in the agreement a mechanism for dealing with any incomplete requirement and for resolving disputes that may arise. In that sense, an agreement is akin to “a promise for a promise”. In other words, where two parties exchange promises, the failure of one to keep his/her promise may not be legally enforceable, although non-legal enforcement devices may be available in the form of some persuasive action taken by the wronged party against the party in default. Economic or administrative sanctions are examples of such action which may well be a possibility. As explained by Treitel, “the law of contract is concerned with circumstances in which agreements are legally binding”. In other words, agreement is the core element of a contract characterized by the elements of offer and acceptance, whereas its enforceability is represented by the element of consideration.²⁷ At any rate, an agreement can be morally binding and a breach could lead to undesirable consequences for the party in breach. Be that as it may, a contract in legal terms and an agreement not legally enforceable are intimately connected on several fronts, as we shall see, in the context of salvage services that do not unequivocally fall under the tenets of customary salvage law. These observations provide the launching pad for our consideration of the universally well-known

24 See generally, Edwin Peel, *Treitel on the Law of Contract*, Thirteenth Edition, London: Sweet & Maxwell, 2011, chapters. 2 and 3, hereinafter referred to as “Treitel”.

25 See Christopher Hill, *Maritime Law*, Sixth Edn, London: LLP, 2003 49.

26 [1994] 2 Lloyd's Rep. 402.

27 Treitel, (n 24), para 1-008 at 5-6.

Lloyd's Open Form; what this standard form actually is, and why we should be concerned.

4 Lloyd's Standard Form

In the late 1800s and early 1900s, various standard forms were devised purporting to depict agreements for the provision of salvage services. These were generally of the "open" type, where the award was to be determined by arbitration. Revisions and alterations of these forms developed by different salvage organizations eventually culminated into the first Lloyd's Standard Form of Salvage Agreement published by the Committee of Lloyd's. These were characteristically "open forms" meaning that the remuneration payable for the salvage services was left open to be decided and awarded by arbitration. Kennedy notes that in the earlier forms there was a blank space where an agreed figure could be inserted followed by the words "unless this sum shall be afterwards objected to as hereinafter mentioned in which case the remuneration for the services shall be fixed by arbitration in London". Filling the blanks with a specified amount and the stipulated words fell into disuse and eventually London arbitration for determining the award became the norm.²⁸ Thus, in *The Renpor*,²⁹ Brett M.R. held in reference to a salvage agreement that "...it fixes the amount of salvage to be paid both for services to life and property, but leaves untouched all the other conditions necessary to support a salvage award".

It is not the intention here to enter into any analytical probe or examination of the Lloyd's Open Form (LOF) itself, the current version of which is LOF 2020; rather, the object is to determine whether it is in the nature of a contract or is simply an agreement in the sense portrayed in the earlier text. That said, some preliminary observations need to be made in respect of it, including some relatively recent radical changes taking account of tanker disasters and the marine environmental dimension of salvage. Since its 2000 version, the LOF has incorporated the Salvage Convention of 1989 in spirit if not in letter.³⁰ As such, it subsumes the regime of special compensation which is a partial departure from the age-old principle of "no cure-no pay" reflecting another essential ingredient of customary salvage, namely, that of success. Notably, in the Salvage Convention, 1989, the requirement of success is impliedly manifested

28 Kennedy, (n 7) at para. 780, 369.

29 (1883), 8 P.D. 115 at 118.

30 International Convention on Salvage (adopted 28 April 1989, entered into force 14 July 1996) 1953 UNTS 165.

in the notion of “useful result”.³¹ Without further ado, it is now expedient to examine whether the LOF and other similar standard forms are contracts in the true legal sense.

5 Salvage Agreement and Contract Salvage

It is pertinent to note at the outset of this discussion that in *Admiralty Commissioners v. Valverda (owners)*,³² Lord Roche in the House of Lords referred to an observation made by the respondent’s counsel that in the era of that case, numerous salvage operations were carried out by agreement. His Lordship thought that the observation made by counsel in which the LOF was mentioned, was quite accurate. His statement to that effect is the point of departure for our comparative examination of the correlation between salvage agreement and contract salvage. Suffice it to say preliminarily, that one is an agreement whereas the other is a full-fledged contract with all its legal attributes.

In terms of customary salvage law, it is unequivocally the case that a right to payment of salvage is independent of contract. This verity has been imported into the common law of England through the case law. In *Five Steel Barges*, Hannen P. held in respect of payment for salvage rendered

It is a legal liability arising out of the fact that property has been saved, that the owner of the property who has had the benefit of it shall make remuneration to those who have conferred the benefit upon him *notwithstanding that he has not entered into any contract* on the subject.³³

The words in italics emphasizing that point, are instructive. So are the words “pre-existing contractual ... duty” in the statement of Geoffrey Brice cited earlier.³⁴ Where a contract is entered into before danger arises, it is pre-existing and therefore any services provided pursuant to it would not qualify as customary salvage. In the case of a salvage agreement, the rights, duties and liabilities of the parties involved are subject to the agreement which largely incorporates the rules of customary salvage law and bears its hallmarks; but

³¹ See Art. 12 (1) and (2).

³² [1938] AC 1173 at 202.

³³ (1890), 15 PD 142.

³⁴ See Brice (n 16).

those rights, duties and obligations only arise when the agreement is reached in the face of danger. There is therefore nothing pre-existing.

On the basis of the above, therefore, in unison with the author Christopher Hill, my view is that it is erroneous to use the term “salvage contract”. I also fully agree with the author that referring to that term would imply that we are exclusively in the realm of contract which we are not; rather we are in the law of salvage. This statement reinforces the contention that salvage is *sui generis*. The author goes on to say that it is perhaps less misleading to use the term “salvage agreement” presumably for reasons that will become apparent as the present discussion unfolds.³⁵ Mention has already been made of the nature of an agreement as distinguished from that of a contract in terms of the legally binding force of the latter. In another case, *The Hestia*,³⁶ it was stated that “salvage claims do not rest on contract ... the right to salvage is in no way dependent on contract and may exist and frequently does exist in the absence of any expressed contract or of any circumstances to raise an implied contract”. In the UK Marine Insurance Act, the phrase “independently of contract” is used in section 65. A consideration of what that means in the context of that legislation is beyond the scope of the present chapter, but nevertheless, is food for thought in attempting to determine analytically the legal status of the LOF as to whether it is a contract or an agreement.

It is well recorded in the historical annals of shipping that in days bygone, salvage assistance was proffered to ships in distress by the crew of passing ships who were well versed in seamanship but were not salvors by trade. In the 19th century, as engines replaced sails as the predominant means of ship propulsion and power-driven vessels increasingly became the norm, professional salvors entered the world shipping scene. Today, contrary to what was then, the provision of salvage services in the face of danger or peril, without the benefit of an agreement, is virtually non-existent.

Having said that, basically, transactional arrangements in salvage law fall into two groups. One is what should correctly and exclusively be referred to as a salvage agreement, which in my view as I have demonstrated above, is not a contract in the strict sense of that word. Incidentally, a case in point regarding the effect of customary salvage law in the face of a salvage agreement is *The Raisby*.³⁷ The master of the *Raisby*, a disabled ship, entered into a written agreement with the master of the *Gironde*. Pursuant to the agreement, the *Gironde* was to tow the *Raisby* to the nearest port for repairs which was St.

35 Hill (n 25) 335.

36 (1875) P. 193.

37 (1885) 10 P.D. 114.

Nazaire in France. The remuneration payable was to be assessed by arbitrators appointed by the owners of both vessels. A French court having awarded salvage in respect of ship and freight, an action was brought in England by the owners of the *Gironde* against those of the *Raisby* claiming salvage for saving cargo. The English Court held that the agreement in question constituted salvage proper, that is, salvage under customary law. The shipowner was not liable for payment of salvage for the saving of cargo; the cargo owners were directly responsible for that. In so ruling, the presiding judge Sir James Hannen held in effect that the agreement did not change the legal position of the master under customary salvage law.³⁸

The prominent author Professor D. Rhidian Thomas states – “A salvage agreement is a maritime agreement which, in harmony with the general tenets of maritime law, specifies the amount of the salvage award or the method by which the salvage award is to be assessed”. He goes on to say that an agreement that does not reflect these principles is not a salvage agreement. The LOF is widely accepted as a salvage agreement and partial success “without negligence or want of skill and care” is rewardable under it.³⁹

Hence, the LOF is doubtless an agreement, albeit one that is enforceable. It is enforceable because it expressly defines the relationship between two parties involved in a commercial activity germane to shipping with international dimensions. I also find support for my contention that the LOF is an agreement as opposed to a contract, based on the fact that the LOF from its inception, has never been referred to in the instrument as a contract, but on the contrary, always as an agreement. Flowing from that observation, is an interesting query as to whether the LOF is simply an agreement to agree.⁴⁰ In the Treitel text on contract law, the author cites the decision of the House of Lords in *Walford v. Miles*⁴¹ in which Lord Ackner held that “...an agreement to agree is unenforceable simply because it lacks the necessary certainty”. According to this judicial statement, if the LOF were to be characterized simply as an agreement to agree, it would lack enforceability. However, the statement was made by His Lordship in relation to the application of the requirement to use “best endeavours” in the performance of a contract.⁴² Incidentally and notably, the LOF in Article 1(a) provides that the salvor “shall use his best endeavours” to save the

38 *ibid* 116.

39 D Rhidian Thomas, “Lloyd’s Standard Form of Salvage Agreement – A Descriptive and Analytical scrutiny”, (1978), 2 *LMCLQ* 276, 277–278.

40 See Treitel (n 24), para 2–098, 60.

41 [1992] 2 AC 128 at 138.

42 See Treitel (n 24) 63.

property in question. All in all, therefore, the LOF is enforceable despite its status as an agreement.

Another question is whether the LOF as an agreement is within or outside the full scope of the customary law of salvage.⁴³ If the LOF is a contract pure and simple, that is, beyond an agreement, then it cannot fall within the full scope of customary salvage, as otherwise it would be a contradiction in terms unless the instrument is fully reflective of customary law. In my view, the LOF is not so; it simply bears its hallmarks. Even as an agreement, however, it can be postulated that the LOF represents a partial non-statutory codification of the customary salvage law. On the other hand, it is arguable that the customary law requirement of voluntariness is in conflict with any kind of agreement, whether or not it is in the form of a contract proper. Can it be said that services provided pursuant to any such arrangement can never be voluntary service and therefore would not qualify as salvage under customary law? In this regard it has been pointed out that even a professional salvor may qualify as a volunteer in the same manner as a so-called “good samaritan” salvor.⁴⁴ Indeed, in the opinion of Christopher Hill, “[T]he requirement that the service must be given voluntarily does not preclude the salvor ... from making the service the subject of an agreement”.⁴⁵

Regarding the propositions made by the two authors cited above, the question arises as to whether a service initially offered voluntarily but then reduced to an agreement can be rationalized as maintaining the quality of voluntariness. It is suggested by Hill that the assumed obligation to use best endeavours to carry out the salvage operation and take the stricken vessel and its cargo to a place of refuge or safety which can be a named port or “other place to be hereafter agreed”, does not impinge upon the voluntariness of the salvor’s service but an omission to discharge it will involve a breach of the agreement and consequential liability. It would appear, however, that if the owner of property salvaged attempts to show that the service provided was involuntary and thereby avoid paying a claim for salvage, he/she would have to show compellingly that there was a duty on the part of the person providing the services to do so “wholly and completely” and that it was otherwise owed to the owner of the property pursuant to a contractual obligation such as that of a ship’s pilot who has acted beyond his contractual obligations. Such a situation is well within the realm of possibility and the explanation given by Hill is fine.⁴⁶ But as pointed out by

43 It no doubt bears the hallmarks of customary law as mentioned above.

44 Schoenbaum (n 4) 843; see footnote 21 at that page where the case of *B.V. Bureau Wijsmuller v. United States*, 702 F.2d 333; 1983 AMC 1471 (2nd Cir. 1983) is cited.

45 Hill (n 25) 337.

46 Hill (n 25) 337.

Schoenbaum, a contractual or other obligation tantamount to a legal duty to assist will preclude voluntariness.⁴⁷ Furthermore, on the question of whether the LOF is in line with customary salvage law, it is adequately clear that the concept of “no cure-no pay” in the LOF is squarely consistent with the notion of success, and no doubt, the rigid requirement of ultimate preservation of the *res* falls within the compass of success.⁴⁸

In the foregoing discussion, one type of contractual arrangement has been described as the salvage agreement. Another type is, for want of a better description, confusingly referred to as “contract salvage”. The confusion arises, at least partly, from authors and drafters of legal instruments referring to “salvage contract” when the proper term is “salvage agreement” as aptly demonstrated above. For instance, in the Salvage Convention of 1989, Article 6 is captioned “Salvage contracts”, erroneously in my opinion, but is perhaps defensible on the basis that the term is inclusive of all kinds of arrangements for the provision of salvage services; in other words, encapsulating both salvage agreements and contract salvage. The first paragraph of that Article makes the Convention applicable as if it is a residuary regime, only where there is no contract in place, express or implied, thus giving primacy to contract over the Convention. In attempting to codify the customary law of salvage the Convention mentions “danger” in several places and “useful result” in Article 12 as a substitute for success, but the notion of voluntariness is absent.

The salvage agreement is an arrangement where the remuneration may be agreed to be determined later, but all other requirements of customary salvage are either provided for in the agreement or is applicable otherwise anyway. Contract salvage, on the other hand, is like any other contract where the right to remuneration and the amount is based on the terms of the contract. Professor Thomas opines that an agreement that does not qualify as a salvage agreement, in that the amount of the salvage award or how it should be assessed are not specified, is conveniently styled contract salvage. Writing in 1978, he points out that the exact difference between the two was yet to be judicially determined.⁴⁹ Simply stated, the basic distinction is that contract salvage does not have the characteristics of customary salvage. In contract salvage, the contract itself is the only basis for the rights, duties and liabilities of the parties involved. Schoenbaum states that it is the principle of “no cure-no pay” that distinguishes pure salvage from contract salvage. In the latter, the

47 Schoenbaum (n 4) 842. See also American cases cited in footnotes 18 and 19 at that page.

48 See Proshanto K Mukherjee, “Refuge and Salvage” in Aldo Chircop and Olof Linden (Eds), *Places of Refuge for Ships*, Leiden: Martinus Nijhoff, 2006 274.

49 Thomas, (n 39) 278.

remuneration is fixed by contract without regard to success which implies that as a matter of freedom of contract, payment may be owed to the salvor regardless of whether he/she succeeds in the salvage operation. Also, as the author points out, in customary salvage, success is a necessary ingredient and a prerequisite because unless property of value is salvaged, there would be no pot of money from which payment can be made by way of remuneration.⁵⁰ Unlike the LOF, contract salvage, in the common law context, does not fall under the rubric of admiralty jurisdiction and is, therefore, not subject to the action *in rem* which is exclusive to that jurisdiction. Salvage agreements, on the other hand, are amenable to the equitable jurisdiction of admiralty permitting the court to set aside the agreement and impose its own award unlike the case of common law jurisdiction.⁵¹ One other important distinction between salvage agreement and contract salvage is that the former, including the LOF gives rise to a maritime lien.⁵²

Further to the above, another point of comparison between salvage agreement and contract salvage was observed by Professor Thomas,⁵³ by reference to the case of *Admiralty Commissioners v. Valverda* (owners).⁵⁴ In that case, the House of Lords was seemingly of the view that in an agreement which made provision for compensation in respect of expenses incurred, even in the absence of any success, the characteristic of a salvage agreement remained intact.; in other words, the arrangement was a salvage agreement. My observation in this regard is that such an arrangement is not what I have ventured to describe as contract salvage. Professor Thomas comments that the decision attracted some criticism and appears to have been based on legal precedent of doubtful credibility. Even so, he points out that it was relied on by the court in a Canadian case, *North Star Marine Salvage Ltd. v. Muren et al.*⁵⁵ There, the court went even further and held that an agreement in which provision was made for remuneration was a salvage agreement regardless of whether the operation was successful.

50 Schoenbaum, (n 4) 843.

51 Thomas, (n 39) 278.

52 See the United Kingdom Merchant Shipping Act 1995, s. 224 and Senior Courts Act 1981, s.20(6); Clause 4.7 of Lloyd's Standard Salvage and Arbitration (LSSA) Clauses of LOF 2011, Article 20 of the International Salvage Convention, 1989. See also Brice, note 16 paras. 8–79 and 8–80 at p. [554] and para. 8–98 at p. [560] in which reference is made to the decision of Bateson J in *The Goulandris*, [1927] P.127; Ll. L. R. 120 at 125–126.

53 Thomas, (n 39) 278.

54 [1938] AC 1173.

55 (1973), 36 DLR (3rd) 136.

In my view, there are other significant distinctions; contract salvage largely pre-empts the compulsion of all the three ingredients of danger, voluntariness and success. In terms of danger, which is a necessary ingredient of customary salvage, in contract salvage, there may not even be any apprehension of danger let alone its actual presence; in other words, the danger may have come and gone. The ship, in such instance, may be lying sunk or stranded and in need of being lifted or refloated. The owner may enter into a contract with the salvor for lifting or refloating the ship for which he receives a negotiated sum as consideration for the services. The payment may be due under the contract regardless of success, full or partial. Danger may be caused by collision, grounding, fire or some other human-made cause; or it may be the consequence of a natural cause such as the fierce actions of wind and waves like a storm or tsunami. In any event, salvage operations can be carried out under the terms of a contract subject to the doctrine of freedom of contract allowing any lawful provisions to prevail regardless of the presence or absence of danger at the time the services are rendered.

To provide salvage services in respect of the kinds of situations described above, there are several varieties of standard forms generically known as Fixed Price Contracts or Contracts on Negotiated terms. They may provide for lump sum payment or may be based on daily or hourly rates and are typically referred to as Time and Materials Contracts. The Donjon-Smit contract is one that deals with salvage, firefighting and lightering services “after the fact”, and provides for a funding agreement between Donjon-Smit, a joint venture of two internationally recognized salvage companies and the owner of the vessel to be salvaged. The contract operates under the Oil Pollution Act, 1990 (OPA 90) of the United States.⁵⁶ and may incorporate other standard forms such as TOW-HIRE 2008 and WRECKHIRE 2010 produced by the Baltic and International Maritime Council (BIMCO) as well as the LOF, the current version of which, as previously mentioned, is the LOF 2020. One Fixed Price or Lump Sum contract is the SALVCON 2005 produced by the International Salvage Union (ISU). Others are WRECKSTAGE 2010, WRECKFIXED 2010 and RESPONCON 2017 all of which are produced by BIMCO. The last-named standard form pertains to salvage services provided in cases of oil spills consequential to wrecks causing damage to the marine environment. Generally, salvage operations under Time and Materials contracts are controlled and supervised by the shipowner itself

56 101 H.R.1465, P.L. 101-380.

or its insurer.⁵⁷ Notably, all of the above-mentioned standard forms fall under the rubric of what I refer to as contract salvage.

As alluded to above, a contract entered into before danger arose or after the danger has passed would not qualify under the customary rules of salvage law, and services provided under such a contract would therefore, in my view, be considered as contract salvage. With regard to voluntariness, in contract salvage it is trite that the services are not voluntary. They are provided under the terms of a contract freely entered into by the parties and such a contract may or may not be pre-existing. Regarding success, as already discussed, there is no compulsion in contract salvage that the salvor's efforts must succeed, but there is nothing to stop the parties from including success as a term of the contract.

Notably, in respect of salvage agreements, Kennedy has this to say:

An agreement may provide for remuneration on alternative bases without losing its character as a salvage agreement. It may provide for salvage remuneration in the event of the services proving successful or beneficial, and for payment of expenses, loss or damage incurred if the services are not successful or beneficial. Such an agreement does not prevent the agreement as a whole from being regarded as a salvage agreement.⁵⁸

There may be a potential anomaly in the above statement in light of the Salvage Convention of 1989 providing expressly in Article 12(2) that no salvage is payable in the absence of "useful result". Given that the United Kingdom having given effect to it by statute, in English law, if an agreement provides for payment of remuneration regardless of success, in my view, it is not a salvage agreement but rather falls squarely within the concept of contract salvage. It must be noted, however, that Kennedy refers to payment of "expenses, loss or damage incurred" even if the services are not successful or beneficial, but does not mention payment of remuneration in the absence of success or benefit. At any rate, outside the purview of the Salvage Convention, 1989, an agreement such as the LOF is in line with customary salvage law because the salvor offers its services in the face of danger or apprehension of danger and not under the compulsion of a pre-existing covenant to provide the services.

57 See Maksim Shinko, "Salvage Contracts: Standard form contracts vs. Contracts on negotiated terms and other alternatives", unpublished Master thesis, University of Oslo, 2016.

58 Kennedy (n 7) para 780, 369.

An interesting case in the field of contract salvage highlighting its distinctive character is the Chinese case *The Archangelos Gabriel*.⁵⁹ In this case, the owners of the Greek ship *Archangelos Gabriel* contracted with Nanhai Rescue Bureau of the Ministry of Transport of the People's Republic of China to refloat their grounded vessel on the basis of what is known in China as an "employment contract for salvage". The device is akin to contract salvage and in essence is a contract in the ordinary sense, not bearing any of the characteristics of *sui generis* customary salvage. None of the customary law ingredients were present in this particular case.

In a dispute between the shipowners and the Nanhai Rescue Bureau, the Bureau as plaintiffs brought an action against the shipowners in the Guangzhou Maritime Court for payment of the contracted amount and received judgment for their claim. The first instance court ruled that the operation was fully successful and under the "no cure no pay" principle entrenched in the Maritime Code of the People's Republic of China (CMC) giving effect to the International Salvage Convention, 1989 to which China is a party, the full contract amount was payable by the shipowners to the plaintiffs without any apportionment of liability between the shipowners and cargo owners as there was no privity of contract between the plaintiffs and the cargo owners. The shipowners appealed to the Guangdong High People's Court which decided that the appellants were liable but only for a certain percentage of the claim. The Court was of the opinion that the contract amount should be allocated separately as between shipowners and cargo owners.

On further appeal, the Supreme People's Court reversed the decision of the Guangdong High People's Court and held that the full amount of the contract was payable by the respondent shipowners. It held further that the "no cure-no pay" principle entrenched in the CMC was not applicable as this was not a case of ordinary salvage but was rather an employment contract of salvage which was like any other contract and fell within the purview of the Contract Law of the PRC. Under that legislation, whatever amount was specified in the contract was payable by the shipowner. In terms of Chinese jurisprudence, the decision is instructive as it represents a landmark not only because salvage-related cases are relatively uncommon in China, but also because it was held

59 *Nanhai Rescue Bureau of the Ministry of Transport of PRC (Appellants) v. Archangelos Investments E.N.E. (Respondents) (The Archangelos Gabriel)*. Final Appeal Supreme People's Court of PRC, decision rendered per Vice-President, Madame Justice He Rong. See Proshanto K Mukherjee, "Salvage and Related Services" (2016) 22 *Journal of International Maritime Law*, Issue 4, Digest of Contemporary Developments, Commentary on the *Archangelos Gabriel* case, 262–263.

not to fall under salvage law pursuant to the 1989 Salvage Convention to which China is a party, but was treated as what would otherwise be referred to, in my opinion, as contract salvage.⁶⁰

In terms of the distinction drawn between a “salvage agreement” and “contract salvage”, my observation is that the LOF as a salvage agreement by name and specie, particularizes the specific nature of the salvage services to be provided pursuant to it. In that sense, it operates in a manner akin to a contract even if it is not one. Once the agreement is entered into, it is no longer a full-fledged voluntary service where each party may withdraw to its original status at will. Rather, for both, legal obligations arise compelling them to perform the salvage operation as defined in the LOF.

6 Summary and Concluding Remarks

In summary, to put it in precise and concise terms, whereas contract salvage bears all the characteristics of a regular contract, a salvage agreement is a peculiarity of salvage law which, as mentioned previously, is *sui generis*. This characterization stems from the fact that salvage is distinctively different from contract in customary law terms. In a contract proper, if consideration is not pre-determined; the arrangement runs the risk of not being recognized by the law as a contract for want of certainty which is an essential element of a contract.

The notion of contract salvage is closely associated with grounds for rejection of a salvage reward where a pre-existing duty remains unfulfilled. The appellation “contract salvage” and the concept itself is somewhat confusing and its distinction with a salvage agreement is not readily and fully appreciated by all. In view of the inescapable verity that commercial salvage in the modern milieu is largely carried out under LOF or a similar standard form agreement, how the ingredient of voluntariness operates in relation to such agreement is not all that straightforward as one might think. One must contend with the

60 See Proshanto K Mukherjee, “Salvage and Related Services” (2016) 22 *JIML* 262–263, Issue 4, Digest of Contemporary Developments, *Commentary* on the *Archangelos Gabriel* case. See also Mukherjee, *Commentary* in (2016), 15 *China Trial* 18, paragraph 6 (translated from English to Chinese). The original source for both Commentaries is the Court’s Report of the judgement written in Chinese. The author is thankful to Ms Liang Jin Hui and Ms Chen Meiru, law students at Dalian Maritime University for assisting with research and translating the Report. See also Huiru Liu, “Environmental salvage: ‘no cure – no pay’ in transition”(2017), 23 *Journal of International Maritime Law*, 284.

argument that salvage carried out under an LOF or similar agreement, as it is today, is contract-based. My firm view is that a salvage agreement is not a contract in the strict legal sense although it possesses some of its attributes, but contract salvage surely is a contract.⁶¹

A word about risk should be in order in this final part of the chapter. I have elaborated further on this matter in the below text. For salvors, the economic risks associated with ship-source pollution operations led to the adoption of the safety net and eventually, the special compensation regime in the 1989 Salvage Convention. Due to certain turn of events, none of these initiatives turned out to be satisfactory for the salvage industry.⁶² Salvors seem increasingly to prefer a contract salvage arrangement to the well-established traditional salvage agreement including the LOF. Even so, in my observation, use of the SCOPIC which is a part of the LOF albeit as an optional clause has, on the whole, brought the LOF closer to being a contract proper. Much of the uncertainty has diminished due to the provision of an itemized tariff. That said, SCOPIC only operates as an alternative to the infamous Special Compensation regime in Article 14 of the Salvage Convention and its unsavoury treatment by the House of Lords in the *Nagasaki Spirit* case.⁶³

It is apparent that the LOF is on the decline seemingly because the salvage industry is seeking more certainty than what the contemporary regime mainly operating under that standard form, is able to provide. This has led some to conclude that the LOF is a dying concept. Restoring faith and confidence in the form has been high on the agenda at recent ISU annual meetings. In that particular context and others, I have selectively drawn this and the following text from the writings of Nick Burgess and John Witte as herein cited, interspersed with my own remarks.⁶⁴ Nick Burgess is an experienced lawyer who has practiced and continues to do so with internationally reputed law firms in maritime practice. I am prompted to point out that John Witte happens to be President of the International Salvage Union. His views may therefore be considered by some to be laced with one-sided bias. Be that as it may, the information in his published article is no doubt useful and valuable to the maritime

61 I am grateful to Dr. Huiru Liu for the opportunity to consult her on the matters mentioned in this paragraph which she has discussed in her doctoral thesis and in her article in *JIML* referred to in *ibid.* footnote 60.

62 Liu, (n 60) 290.

63 *Semco Salvage & Marine Pte Ltd. v. Lancer Navigation Co. Ltd., The Nagasaki Spirit*, [1995] 2 Lloyd's Rep. 44; [1996] 1 Lloyd's Rep. 449 (C.A.); [1997] 1 Lloyd's Rep. 323 (H.L.).

64 Nick Burgess, BDM Law LLP. "Is the Lloyds Open Form Salvage Contract Dying?" in *Gard News* 24-07-2017 Insight; John Witte, "The shared responsibility of shipowners, salvors and insurers to work together in marine casualty response", *Maritime Risk International*.

public interested in this branch of maritime law and contemporary practice. I therefore do not hesitate to cite his views.

There is both support as well as opposition associated with the LOF. At the end of the day, it is all about risk; who bears it and how it can be minimized. One view is that where parties seek more certainty, the LOF option offers the experience the shipping and salvage industries have derived from its use. Perhaps this is a pre-eminent reason why the LOF is perceived to be the optimum way to protect not only the ship and cargo, but the crew as well, and quite importantly, the marine environment. Advantages are that the parties can enter into the agreement expeditiously without much loss of time which is of great benefit to the property owners and from the perspective of salvors, avoids loss of time which translates into increased opportunities for salvage.

On the downside, critics point to the risk of abuse and inappropriate use of the LOF in some quarters and circumstances, albeit infrequently. More importantly, in salvage agreements of the “no cure-no pay” type, as between salvor and property owners, the risks are imbalanced. From the vantage point of ship-owners, they often feel that the open form contract favours salvors, but the opposite view may be closer to the truth. From their perspective, salvors bear more risk. When salvage remuneration depends on success to the extent of ultimate preservation of the property, the risks are considerably high. From the salvor’s viewpoint, the outlay is high but returns are relatively low. For them, these are high risk agreements with government authorities often hot on their heels to regulate them. The current liability environment is not conducive to salvors accepting open form agreements with indefinite risks and uncertainties.⁶⁵

My own observation is that an arrangement based on freedom to contract such as in contract salvage can perhaps serve to balance the risks in a better way. Indeed, it appears that fixed price terms are gaining more popularity. Many such as Nick Burgess, feel that the traditional open form where awards are based on the salvaged value of the property, are not quite appropriate given the growing impact of the environmental dimension of salvage, and consequently, how success is being measured. It is apparent that the “no cure-no pay” system is no longer as efficacious as in previous times. Salvors are increasingly attracted to daily rate contracts with a bonus in the form of a piece of the salvaged value of the property as an incentive. This development is gradually becoming the norm eliminating several problematic issues connected to the traditional open form, combined with arbitral awards. In such contracts, similar to other professionals, salvors get remunerated for providing the service

65 Burgess, Witte (n 64).

to an objective professional standard, not on the basis of success.⁶⁶ Salvage income from LOF based cases have dropped considerably in recent times. It is evident that “no cure-no pay” salvage agreements are not gaining much favour in the current milieu, not only because of the inadequacy of awards but also because the process of arbitration is tedious and lengthy.⁶⁷

In closing, I would say at the risk of reiteration, that many, including text writers, convention drafters and judges do not seem to distinguish between agreement and contract in the context of the subject under discussion, but I believe the distinction is significant. Those involved in the salvage business in one way or another, whether as shipowners and salvors as the main players, or risk insurers and lawyers acting as advisers and facilitators, should be interested in this distinction. Drafters or revisionists of standard forms, conventions and national legislation giving effect to international instruments, should be equally concerned and pay particular attention to the difference between salvage agreement and contract salvage. There have been calls for amending the Salvage Convention of 1989 and the LOF is being periodically streamlined and updated. In China, efforts to revise the national Maritime Code are ongoing; some of its chief architects with whom I am well acquainted, are looking to obtain suitable input from people in all walks of maritime life, nationally and internationally, and also through contemporary maritime and legal texts. I hope this chapter will be a useful contribution to that body of literature and will inure to the benefit of students, academics, professionals and practitioners alike in this field which, in my view, is at once exciting and challenging.

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66 Burgess, Witte (n 64).

67 See Witte, (n 64).

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(Smart) Contractual Networks in the Carriage of Goods by Sea

Livashnee Naidoo

1 Introduction

The shipping industry is one of the sectors where technological development is seen as the next frontier in order to keep pace with modern developments. Digitisation and international trade law are fast becoming critical areas of enquiry, and is now becoming more urgent, fuelled by the COVID-19 pandemic which has brought to the fore the challenges of paper-based documentation, such as bills of lading.¹ Prompted by these modern challenges, this chapter discusses smart contracts in business networks in the context of the carriage of goods by sea. If one thinks of a 'network', one thinks of concepts such as interconnected or an intersection of people or things. Networks exist in both law and technology, and this chapter seeks to explore that commonality and how smart transactional technologies may be embedded in business networks ('smart contractual networks').²

Contracts are usually thought of as a bilateral transaction between two parties.³ Drawn from socio-legal contractual scholarship, the concept of 'contractual networks' situates and views this bilateral contract as contractually networked to a series of other connected relationships and contracts in the network. Contractual networks exist in many aspects of law and socio-legal scholars have sought to show 'the opportunities and risks presented by networks' and how this may require a modification of concepts and norms.⁴ The

1 See the International Chamber of Commerce, 'ICC Memo to Governments and Central Banks on Essential Steps to Safeguard Trade Finance Operations' (6 April 2020) at <<https://iccwbo.org/content/uploads/sites/3/2020/04/icc-memo-on-essential-steps-to-safeguard-trade-finance-operations.pdf>> accessed 21 October 2020. Also includes bills of exchange, promissory notes, commercial invoices.

2 This draws on Teubner's remark 'that business networks embed modern technologies in their day-to-day operations'. In Roger Brownsword, 'G Teubner, Networks as Connected Contracts', Hugh Collins (ed) (2012) 75(3) MLR 455, 461.

3 Although this is stated as a basic premise, it recognises that unilateral contracts may also be viewed as bilateral contracts as 'bilateral' refers to the number of promises, not the number of parties.

4 Brownsword, 'Networks as Connected Contracts' (n 2) 457. For detailed commentary on contractual networks (and connected contracts) see, Marc Amstutz and Gunther Teubner (eds.),

context of the carriage of goods by sea is viewed as a quintessential example of a network of different commercial relationships.⁵ International trade and carriage of goods entail a network of connected parties (i.e. traders, carriers, banks, insurers) which all ‘collectively constitute a commercial ecosystem’.⁶ A contract of carriage is rarely just a bilateral contract between shipper and carrier but is also connected to the underlying contract of sale and the financing of that sale through documentary credits. Furthermore the carrier may be operating under a charterparty. Goods may also be sold whilst afloat whereby the buyer becomes a party to the contract of carriage – thereby adding a further connection to the contractual network.

Going beyond classical understandings of contract law, a networked understanding of contract law asks whether the ‘network contract’ modifies (or indeed should modify) the understanding of parties in the contractual network of their rights, responsibilities, and reasonable expectations.⁷ By drawing on socio-legal contract theory, this chapter examines how smart contracts fit into a networked understanding of contract law, particularly insofar as it concerns third party beneficiaries.⁸ Smart transactional technologies are viewed as a legal disruption therefore one might ask whether smart contracts alters

Networks: Legal Issues of Multilateral Cooperation (Oxford: Hart, 2009); Gunther Teubner, *Networks as Connected Contracts* (Oxford: Hart, 2011); Roger Brownsword, ‘Contracts in a Networked World’, in Larry DiMatteo, Qi Zhou, Severine Saintier, and Keith Rowley (eds), *Commercial Contract Law: Transatlantic Perspectives* (Cambridge: CUP, 2012); Catherine Mitchell, ‘Network Commercial Relationships: What Role for Contract Law?’ and also Rónán Condon, ‘From ‘the law of A and B’ to Productive Learning at the Interfaces of Contract’ in Rob van Gestel, and Hans-W Micklitz (eds), *Contract and Regulation: A Handbook on New Methods of Law Making in Private Law* (Edward Elgar Publishing, 2017).

- 5 See Brownsword, ‘Networks as Connected Contracts’ (n 2); Roger Brownsword, ‘Smart Transactional Technologies, Legal Disruption, and the Case of Network Contracts’ in Larry A. DiMatteo, Michel Cannarsa, and Cristina Poncibò (eds) *The Cambridge Handbook of Smart Contracts, Blockchain Technology and Digital Platforms* (CUP 2019). Other examples include franchises, consumer financing, letters of credit in international sales, supply and distribution, and in construction.
- 6 Jingbo Zhang, ‘Sea Transport Documents in Banks’ Hands – Bridging the UCP with Commercial Shipping Law’ in Justyna Nawrot and Zuzanna Pełowska-Dąbrowska, *Codification of Maritime Law: Challenges, Possibilities and Experience* (Informa Law from Routledge, 2020) 121.
- 7 See, definition of network contract below. Brownsword, ‘Networks as Connected Contracts’ (n 2) 456.
- 8 For example, the issue of third parties is illustrated in *New Zealand Shipping Company Ltd v. A.M. Satterthwaite & Co Ltd: The Eurymedon*, [1975] AC 154 where independent contractors (i.e. stevedores) who were not a party to the contract of carriage were entitled to the benefit of a limitation clause in the carriage contract.

the understanding of contractual networks, or will contractual networks be shaped by technologies that underpin their operation e.g. contractual networks that will develop around blockchain? Are we likely to see a change in how judges and legislators' approach smart contracts and 'smart networks'?

Part 2 introduces the general concept of networks in law and technology. The first part explains 'technological networks', that is, smart contracts on blockchain platforms, before proceeding to introduce the socio-legal theory of contractual networks. Part 3 considers more closely networks in the carriage context, before reflecting on some conceptual and normative issues pertaining to smart contractual networks in Part 4. Part 5 then concludes. This undertaking adopts a more theoretical than doctrinal approach, but where necessary I refer to English law. There are a number of caveats as to what can be achieved with this research, but a preliminary all-encompassing caveat is the pace at which technological developments are changing and adapting, and law's response to that remains in a developing state. It bears mentioning that we are dealing with 'first-generation smart contracts'⁹ and it is therefore difficult to provide conclusive answers to questions that have not yet been properly defined and where technological topographies remain elusive. Indeed, some of these issues are presently before the English Law Commission which has begun work on a project on smart contracts.¹⁰

2 Networks in Law and Technology

2.1 *Networks and Technology*

The commonality between networks in law and networks in technology form a starting premise for this chapter. Even though one should be cautious about drawing similarities between law and technology, scholars have nevertheless questioned whether the network-like structure of technology amplifies the network-like structure of law.¹¹ Exploring the congruence between technology and law is a natural tendency for scholars given that the very notion of 'smart

9 Larry A DiMatteo, Michel Cannarsa, and Cristina Poncibò, 'Smart Contracts and Contract Law' in Larry A DiMatteo, Michel Cannarsa, and Cristina Poncibò (eds), *The Cambridge Handbook of Smart Contracts, Blockchain Technology and Digital* (CUP 2019) 6.

10 Law Commission, 'Smart Contracts' available at <www.lawcom.gov.uk/project/smart-contracts/> accessed 30 October 2020.

11 Florian Idelberger, 'Connected Contracts Reloaded – Smart Contracts as Contractual Networks' in Stefan Grundmann (ed) *European Contract Law in a Digital Age* (Intersentia 2018) 205, has asked whether smart contracts can be (or should be) viewed as 'a technological materialization of the network-like structure of the law?'

contracts' points to a merging, or a colliding of law and technology. The socio-legal research on contractual networks provides a framework to explore how smart contractual networks may be conceptualised in the carriage of goods context. The socio-legal research will be discussed below but for now the main technologies will be explained.

Blockchain is a form of distributed ledger technology whereas smart contracts are computer codes that are placed on the blockchain platform. Blockchain operates according to a decentralised system (i.e a ledger) which uses a peer-to-peer system rather than a central authority. The network-like structure of blockchain operates through a connected series of blocks that records a number of transactions which is maintained across a network of computers (called nodes). The nodes could be spread within an organisation – or even globally.¹² Each new transaction (represented by a new block) requires the consensus of all participants who are represented by all nodes in the network, and every node holds a synchronised, shared ledger. Information is logged into each block and secured through digital signatures of the users. Each block is also time-stamped and creates an 'append-only purportedly-immutable, tamper-evident, ledger'.¹³ The key features of blockchain are decentralisation and consensus which creates a peer-to-peer system without the need for intermediaries such as banks and lawyers.

The concept of smart contracts on the other hand is not new and indeed predated blockchain technology, having emerged in the mid-1990s.¹⁴ However, the arrival of blockchain technology such as Ethereum, now provides a platform for the operation of smart contracts. Smart contracts are code on a blockchain platform with a self-executing feature which ensures performance when certain pre-agreed conditions are met (if 'X', then 'Y').¹⁵ While some jurisdictions have taken steps towards regulating smart contracts (and blockchain platforms), other countries are still investigating whether to regulate, and if so how.¹⁶ Smart contracts remain an evolving and, in some respects, an uncertain

12 Blockchain may be public (permissionless), a common example is Bitcoin, or it can be private (permissioned) with access restricted to certain participants, such as within a shipping company, or can be semi-private (such as a bank consortia). The (semi) private blockchains offer fewer advantages due to restrictions on its decentralisation feature.

13 Elson Ong, 'Blockchain Bills of Lading and the UNCITRAL Model Law on Electronic Transferable Records' 2020 JBL 202, 207.

14 N Szabo, 'Formalizing and Securing Relationships on Public Networks' (1997) 2(9) First Monday <<https://firstmonday.org/ojs/index.php/fm/article/view/54>> accessed 12 September 2020.

15 M Lipshaw, 'The Persistence of "Dumb" Contracts' (2019) 2 Stan J Blockchain L & Pol'y 1,4.

16 Manuel A Gomez, 'The Chimera of Smart Contracts' in Andrew Hutchison and Franziska Myburgh, *Research Handbook on International Commercial Contracts* (Edward Elgar

legal phenomenon. The uncertainty arises from its classification and its characteristics, notably whether a smart contract is a legal contract in the traditional sense, and whether smart contracts can fit into the traditional legal constructs of contract law.¹⁷ Some argue that smart contracts are congruent with contract law as 'smart contracts are just technological manifestations of familiar contractual processes'.¹⁸ Others argue that smart contracts have a more facilitative role which has an *ex lege* effect and are therefore not contracts in the traditional legal sense.¹⁹ What scholars do agree on is that smart contracts are self-enforcing and immutable. The automation of performance raises questions about the legal enforceability of smart contracts by third parties such as courts. It remains an open question to what extent smart contracts fit into existing legal constructs of contract law, and whether we should continue to think about smart contracts in this sense is also debatable.²⁰

There is a tendency to refer to innovation, or advances in technology as 'smart' (e.g smart phones, smart watches etc.) and this has also been applied to contracts. The 'smart' is intended to refer to the characteristic of smart contracts which is that it is self-enforcing but there are limitations to what smart contracts can achieve in more complex transactions calling into question the 'smart' aspect.²¹ There are likely to be degrees of smart contracts which vary in 'smartness' and which may vary across different industries.²² The advantages

Publishing 2020) 33, where he lists several examples of regulation. The English Law Commission has recently launched a project on smart contracts (see n 10).

17 Such as offer and acceptance, certainty and consideration. Kevin Werbach and Nicolas Cornell, 'Contracts Ex Machina' (2017) 67 *Duke LJ* 313, 317.

18 Werbach and Cornell (n 17) 324. See also Paul Catchlove, 'Smart Contracts: A New Era of Contract Use' (2017) at <<http://10.2139/ssrn.3090226>> accessed 12 October 2020.

19 Elena Orrù, 'The challenges of ICTs in the shipping sector among international uniform law, codification and *Lex Mercatoria*: The electronic bill of lading' in Justyna Nawrot and Zuzanna Pełowska-Dąbrowska, *Codification of Maritime Law: Challenges, Possibilities and Experience* (Informa Law from Routledge, 2020) 140–1.

20 See Brownsword, 'Smart Transactional Technologies' (n 5).

21 See DiMatteo and others, 'Smart Contracts and Contract Law' (n 9) 9, referring to 'Dumb, smart contracts' versus 'smart, smart contracts'. See also, Werbach and Cornell (n 17) 317.

22 Barbara Pasa and Larry A DiMatteo, 'Observations on the Impact of Technology on Contract Law' Larry A DiMatteo, Michel Cannarsa, and Cristina Poncibò (eds), *The Cambridge Handbook of Smart Contracts, Blockchain Technology and Digital* (CUP 2019) 341. See also Mateja Durovic & André Janssen, 'Formation of Smart Contracts under Contract Law' in Larry A DiMatteo, Michel Cannarsa, and Cristina Poncibò (eds), *The Cambridge Handbook of Smart Contracts, Blockchain Technology and Digital* (CUP 2019).

of smart contracts is said to be its efficiency, its potential to reduce transaction costs, to address defective performance, and its added security.²³

Situating this technology in the context of carriage of goods, scholars are examining how smart contracts operating on blockchain platforms may apply to bills of lading, and an appropriate legal framework to govern blockchain bills of lading.²⁴ The modern bill of lading is a standard form document that is issued on behalf of the carrier to the shipper of the goods and it serves as a receipt for the goods shipped; it provides evidence of the contract of carriage between the shipper and carrier; and it serves as a document of title. The traditional paper bill of lading which a carrier issues could be coded as a smart contract on the blockchain.²⁵ A simple example is that the carrier would issue a token on the blockchain platform in the form of a smart contract to the seller, and once the goods have been loaded onboard it will be recorded on the ledger.²⁶ Likewise, any subsequent transfers of the bill of lading would be recorded so that the rightful holder of the blockchain-based bill of lading is entitled to take delivery at the port of destination, and the self-executing feature will ensure that the carrier automatically performs by releasing the goods to the rightful holder. Other parties can be added to this network such as insurance companies, banks where the bill of lading is part of documentary credit transactions, public authorities involved in the seamless carriage of goods such as port and customs authorities.²⁷ Blockchain therefore offers the advantage of

23 For example, paper bills of lading are susceptible to fraudulent activities such as the issuing of fraudulent bills of lading and having multiple copies of bills in circulation. The immutable nature of blockchain offers enhanced security to address these issues.

24 Koji Takahashi, 'Blockchain Technology and Electronic Bills of Lading' (2016) 22 *JIML* 202; Miriam Goldby, 'The Rising Tide of Paperless Trade: Analysing the Legal Implications' in Baris Soyer and Andrew Tettenborn (eds), *International Trade and Carriage of Goods* (Informa Law from Routledge 2016) 147; Ong (n 13); Paul Todd, 'Electronic Bills of Lading, Blockchains and Smart Contracts' (2019) 27 *IJLIT* 339; Livashnee Naidoo, 'From the Book of Lading to Blockchain Bills of Lading: Dynamic Merchant Tradition and Private Ordering' in Andrew Hutchison and Franziska Myburgh, *Research Handbook on International Commercial Contracts* (Edward Elgar Publishing 2020) 223; Huiru Liu, 'Blockchain and Bills of Lading: Legal Issues in Perspective' in Mukherjee PK, Mejia Jr. M, Xu J (eds) *Maritime Law in Motion* (Springer 2020) 432.

25 An example is the CargoX Smart B/L™ governed by 'CargoX Blockchain Based Smart Bill of Lading Solutions Special Terms and Conditions' (version 1.0, 10 February 2020).

26 Takahashi (n 24) 204.

27 Francesco Munari 'Blockchain and smart contracts in shipping and transport: A legal revolution is about to arrive?' in Baris Soyer and Andrew Tettenborn (eds), *New Technologies, Artificial Intelligence and Shipping Law in the 21st Century* (Informa Law from Routledge 2020) 8.

a more efficient single platform for 'connected' parties to approve and execute contractual processes.

Blockchain-based bills of lading are not the focus of this chapter, the aim is to rather situate the bill of lading within the network structure of both law and technology. To some extent this draws a distinction between 'bonds' as they exist in the real world versus the digital world.²⁸ As Savelyev states a '[s]mart contract does not give rise to [a] legal bond between the parties' and even if such a bond exists it is a 'technical bond of a party with [the] Blockchain platform' which is 'more solid than a legal one'.²⁹ In this respect, and as Brownsword has said:

[m]ight a transactional technology comprising networked machines or nodes be the answer to a set of questions presented by networked business relationships and in relation to which the law of contract is arguably unsatisfactory.³⁰

It remains to be seen how traditional contractual 'bonds' may play out in the context of smart contractual networks and this chapter attempts to unpack that.

2.2 *Contractual Networks in Law*

Although it is arguable whether smart contracts are part and parcel of contract law, it remains relevant to consider how smart contracts may become part of the tapestry of contract law. Defining contractual networks is an important foundational premise of this chapter. A network of contracts refers to a group of contracts that pursue a common purpose and each contract (i.e. 'the network contract') contributes to the attainment of that purpose.³¹ But as Mitchell points out, networks are more than 'the sum of the contractual links'³² but rather encompass two primary features: the co-operative nature of the contractual relationships with a focus on relational norms; and a common purpose.³³

28 This distinction is drawn by Alexander Savelyev, 'Contract Law 2.0: "Smart" Contracts as the Beginning of the End of Classic Contract Law' (2017) 26 *Information and Communications Technology Law* 116, 120.

29 *ibid* 120.

30 Brownsword, 'Smart Transactional Technologies' (n 5) 314.

31 John N Adams & Roger Brownsword, 'Privity and the Concept of a Network Contract' (1990) 12 *Legal Studies* 10, 12.

32 Mitchell (n 4) 203.

33 *ibid* 204. See also, Alan Schwartz and Robert E Scott, 'Third Party Beneficiaries and Contractual Networks' (2015) *Journal of Legal Analysis* 10.

To understand networks and contract law, a starting point should be the classical understanding of contract law which sees a contract as a bilateral, reciprocal exchange between two parties. Formalism – which is associated with classical law – refers to a theory of contract law that gives preference to the written contract (form over substance). It is rules-based, favours literal approaches to interpretation, and upholds classical values such as freedom of contract and legal certainty. Informed by socio-legal analysis, scholars have argued that by focusing on bilateral relationships modelled on classical contract law, contract law misses the relational and network dimensions to contracting.³⁴ These relational and network dimensions – which both recognise the implicit dimensions in contracting – may be subsumed under the broader umbrella term of ‘contextualism’.³⁵ Contextualism is sensitive to context and it emphasises values such as fairness and reasonableness. Broadly speaking, contextualism with its subsumed categories emphasises the implicit dimensions of contracting which focus on the underlying or background factors rather than the express terms in the contract as a way to determine the reasonable expectations of contracting parties.³⁶ Put differently, rather than focusing on the intentions of the parties, the contract should be situated within broader contextual relations.

With that broad framework in mind, network theory views the bilateral contract as ‘connected’ to other contracts, such as where a bilateral contract is intended to confer a benefit on a third party.³⁷ Carriage contracts are

34 These include the scholarship of Stewart Macaulay and Ian Macneil on relational contracting. See also inter alia, Simon Deakin Christel Lane and Frank Wilkinson, ‘Trust or Law? Towards an Integrated Theory of Contractual Relations between Firms’ (1994) 21 *Journal of Law and Society* 329.

35 It should be noted that there are differences between relational theory and networks. See Condon (n 4) 173: “While networks can be treated as a form of relational contracting ... Teubner cautions that Macneil’s relational theory relies on the bilateral exchange model and does not capture the tensions in networks between co-operation and competition adequately”.

36 Implicit dimensions refer to the contractual dimensions which do not appear in the formal contract and can include background social expectations, and customary understandings in sectors. These are referred to as a ‘distillation of Macneil’s internal and external relational norms’, according to Condon (n 4) 183. See also, J Wightman, ‘Beyond Custom, Contract, Contexts, and the Recognition of Implicit Understandings’ in D Campbell, H Collins, and J Wightman (eds) *The Implicit Dimensions of Contract* (Oxford, Hart Publishing 2003) 143.

37 Condon (n 4) 173, states that other examples include a contract between A and B connected to contracts with C, D and E; patterns of regular trading where parties do not reduce their contract to writing; and precontractual relations between A and B.

recognised as ‘a paradigm of network contracts’.³⁸ The reasoning of networks is that by viewing the bilateral contract as part of a network it alters the rights, obligations, and expectations of the parties. For example, in *The Eurymedon* the stevedores were entitled to rely on a limitation clause in the carriage contract to which they were not a party, so the question arose whether a third contract came into being (discussed in Part 3.2). Networks reflect a tension between cooperation and competition, and between the individual interest and the collective interest.³⁹ The characterisation of networks is difficult as contract law does not recognise a legal doctrinal concept of ‘network contracts’ although there is a general recognition of the concept of networks in business relations.⁴⁰ Recognition of contractual networks views the law of contract as taking ‘a more responsive approach’⁴¹ and can therefore also be seen as incorporating elements of relational contracting.

Largely led by Lords Steyn and Hoffman, English commercial contract law has linked the reasonable expectations of reasonable business parties to context. Likewise, the concept of networked contracts serves as a reference point for the parties’ reasonable expectations. Although contextualism has been largely embraced in contractual interpretation in recent years, there is scepticism as to whether the law (through the courts) are in fact willing to embrace a more networked understanding of contract law.⁴² Technology has provided a way for these networks to operate in a smarter way and to be ‘shaped by the technologies that underpin their operations’.⁴³ This also holds true for networks in the carriage context which may evolve into a smart contractual network. Mitchell has said that ‘[c]ontractual networks appear dependent on contract norms while simultaneously chaffing against them’ and she adds that, ‘networks seems to eschew the strictures of contract law’.⁴⁴ Something similar

38 Adams & Brownsword, ‘Privity’ (n 31) 27–8. See also for example Brownsword, ‘Networks as Connected Contracts’ (n 2) 455.

39 Mitchell (n 4) 208.

40 See Brownsword, ‘Smart Transactional Technologies’ (n 5) 325. The Law Commission in the UK considered but rejected a doctrine for connected contracts during its consultations on privity of contract (N Adams, D Beyleveld and R Brownsword, ‘Privity of contract – the Benefits and the Burdens of Law Reform’ (1997) 60 M.L.R. 238). See also, Marc Amstutz, ‘Contract Collision: An Evolutionary Perspective on Contractual Networks’ (2013) 76 Law and Contemporary Problems 169, 182; *The Eurymedon* (n 8).

41 Brownsword, ‘Smart Transactional Technologies’ (n 5) 326.

42 *Arnold v. Britton*, [2015] UKSC 36; *Marks and Spencer plc v. BNP Paribas Services Trust Company (Jersey) Limited*, [2015] UKSC 72; *Wood v. Capita Insurance Services Ltd*, [2017] UKSC 24.

43 Brownsword, ‘Networks as Connected Contracts’ (n 2) 461.

44 Mitchell (n 4) 200.

can be said of smart contracts and the technological networks on which they operate as they nevertheless seem to be wedded to contract law (at least in these early stages) whilst also chaffing against it.

3 Networks and the Sea Carriage Context

3.1 *Standard Form Smart Contracts?*

Standard form contracts have long been associated with commercial relationships, and in shipping and international trade the bill of lading is a well-known standard form contract. These types of contracts are also commonly known as ‘contracts of adhesion’ and a key criticism is the asymmetry in bargaining power in these contracts.⁴⁵ Standard form contracts are mentioned here for two reasons: the first related to its *similarity* with smart contracts and the second, related to its *compatibility* with smart contracts.

Considering the former reason, the advent of standard form contracts was viewed as a disruption much like smart contracts are now viewed as a disruption. In the nineteenth century there was an increasing emphasis on objectivity and reasonableness as opposed to consent and agreement in carriage contracts, which allowed carriers to include exculpatory clauses in bills of lading which exempted them from a range of risks and liabilities.⁴⁶ There was growing pressure for regulation to address the one-sided nature of bills of lading which was subsequently addressed through legislative reform, and later provided the impetus for international unification in order to balance the scales between carrier and cargo interests.⁴⁷ The immutability of smart

45 F Kessler, ‘Contracts of Adhesion: Some Thoughts on Freedom of Contract’ (1943) 43 *Columbia Law Review* 629. Unequal bargaining power is more acute in B2C transactions than B2B but this is beyond the scope of this paper.

46 Brownsword, ‘Smart Transactional Technologies’ (n 5) 317.

47 The pioneering turning point for such regulation came through the US Harter Act 1893 – a piece of domestic legislation which imposed mandatory liability rules on international carriers. The Harter Act’s use as a model for domestic legislative enactments had a domino effect in other Commonwealth countries which culminated in an international liability regime for the carriage of goods by sea: the International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading (The Hague Rules) (adopted 25 August 1924, entered into force June 2, 1931) 120 *LNTS* 155. Subsequent amendments resulted in: the Hague Rules as amended by the Protocol to Amend the International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading (Visby and Hague Rules) (adopted 23 February 1968, entered into force 23 June 1977) 1412 *UNTS* 128, the United Nations Convention on the Carriage of Goods by Sea (The Hamburg Rules), (adopted 31 March 1978, entered into force 1 November 1992) 1695 *UNTS* 3, UN Convention

contracts also resembles the ‘immutability’ of standard form contracts which are offered on a ‘take it or leave it basis’.⁴⁸ The blockchain on which the smart contract is coded is immutable therefore the smart contract cannot be modified or amended after it has been created.⁴⁹ Standard form contracts are not immutable in the strict sense of the word, but the ability to negotiate or modify a standard form contract is restricted by the inequality of bargaining power which exists between the contracting parties.

Considering the second reason, as the bill of lading is a standard form document, it is useful to point to the correlation ‘between future smart contract implementations and SFCs [standard form contracts]’.⁵⁰ For instance, the sale of goods and carriage contracts entail a network of different standard form contract terms developed by sellers, carriers, charterers etc. Smart contracts can vary in their level of automation and in terms of the balance between code and traditional text in any agreement. Smart contracts exist on a spectrum with the strength of a smart contract linked to the ascending level of automation, and this may impact how it functions in a networked environment.⁵¹ On one end of the spectrum are ‘weak’ smart contracts represented by a traditional written contract and with a short reference to code that implements a clause. This has been compared to the inclusion of a formula in a traditional contract.⁵² At the other end of the spectrum, are the ‘strongest’ smart contracts which are fully automated and consists only of code.⁵³ The network relationship here will be

on Contracts for the International Carriage of Goods Wholly or Partly by Sea (Rotterdam Rules) (adopted 11 December 2008, not in force yet) UN.Doc. A/RES63/122.

48 Kristin B Cornelius, ‘Standard Form Contracts and a Smart Contract Future’ (2018) 7 (2) *Internet Policy Review* 1. See also, MR Patterson, ‘Standard-Form Contracts in the Electronic Age’ (2010) 52 (2) *William and Mary Law Review* 327, at <<https://papers.ssrn.com/abstract=2010124>> accessed 30 October 2020; R Hillman, ‘Online Boilerplate: Would Mandatory Website Disclosure of E-Standard Terms Backfire?’ (2006) 104 (5) *Michigan Law Review* 837, at <<http://repository.law.umich.edu/mlr/vol104/iss5/2>> accessed 21 September 2020; R Hillman & JJ Rachlinski, ‘Standard-Form Contracts in the Electronic Age’ (2002) 77 (2) *New York University Law Review* 429, at <<https://ssrn.com/abstract=287819>> accessed 25 September 2020.

49 This might have implications for rectification in a digital world as this ‘rectification’ may imply a new contract due to the immutability characteristic. Sarah Green and Adam Sanitt, ‘Smart Contracts’ in Paul S Davies and Magda Raczynska (eds), *Contents of Commercial Contracts: Terms Affecting Freedoms* (Oxford: Hart Publishing 2020) 196.

50 Cornelius (n 48) 4.

51 *ibid* 7.

52 Green and Sanitt (n 49) 197.

53 Stuart D Levi and Alex B Lipton, ‘An Introduction to Smart Contracts and Their Potential and Inherent Limitations’ (Harvard Law School Forum on Corporate Governance, 26 May 2018) at <<https://corpgov.law.harvard.edu/2018/05/26/an-introduction-to-smart-contracts-and-their-potential-and-inherent-limitations/>> accessed 20 October 2020.

governed by code as third party enforcement is removed by the parties who rely on the distributed ledger technology to carry out their intentions.⁵⁴ In the middle sits the hybrid smart contract which consists of code and a hashed reference to a traditional contract.⁵⁵ This is usually used to add natural clauses so there is the possibility of encoding an exception into the smart contract on the blockchain to allow for certain types of enforcement, such as arbitration, choice of law or dispute resolution by the courts.⁵⁶ Although smart contracts do not depend on facilitation or judicial enforcement by third parties,⁵⁷ the decentralisation feature with nodes in the blockchain network scattered in different jurisdictions may cause difficulties to arise in relation to established principles of conflict of laws.

Standardisation is the backbone of trade and shipping where commercial values of freedom of contract and certainty remain core values. Shipping contracts usually contain standard clauses, such as the Himalaya Clause (discussed next), the Clause Paramount,⁵⁸ and applicable law and jurisdiction clause etc. Some clauses may be difficult to transcribe into code because of its specificity to certain shipments.⁵⁹ The shipping industry is unlikely to abandon the bill of lading; a document that has evolved over centuries, rather the aim is to allow smart bills of lading to be recognised as functionally equivalent to paper bills of lading.⁶⁰ The standard form bill of lading and its fine print terms such as the Himalaya Clause are an illustration of how contractual networks operate in this area. The paper bill of lading will remain the model for a smart contract

54 Gomez (n 16) 335.

55 Green and Sanitt (n 49) 198: 'a hash is a cryptographically secure method of creating a reference to a particular document'.

56 See Pasa and DiMatteo (n 22) 341; Gomez (n 16) 335; Green and Sanitt (n 49) 198.

57 Sarah Manski and Ben Manski, 'No Gods, No Masters, No Coders? The Future of Sovereignty in a Blockchain World' (2018) 29(2) *Law and Critique* 151. See also, M Sklaroff, 'Smart Contracts and the Cost of Inflexibility' [2017] 166 *University of Pennsylvania Law Review* 291, at <<https://ssrn.com/abstract=300889>> accessed 20 September 2020.

58 In order to ensure that the protection of the Harter Act would be applied by courts in countries for which American exports were destined, a clause was inserted into bills of lading issued in the US, which came to be known as the Paramount Clause. This practice has retained its significance in modern times by incorporating, usually, the Hague or Hague-Visby Rules into the bill of lading. See Erling Selvig, 'The Paramount Clause' (1961) 10 *Am J Comp L* 205.

59 For example, charter parties contain specific clauses relating to weather conditions, demurrage, dispatch etc.

60 The principle of functional equivalence entails replicating the objectives of the paper bill of lading in electronic form. When choosing an appropriate choice of forum, parties should aim for legal systems that provide for this recognition of bills of lading.

bill of lading on blockchain platforms.⁶¹ These are likely to co-exist in order to find ways in which established and standardised practices and norms can be incorporated into code, such as by identifying the type of clauses which lend themselves to self-execution.⁶² It remains uncertain if standardisation in code is possible and this entails that the shipping industry re-assess its standard clauses. Market organisations, such as BIMCO, will be best suited to this task of how standardisation may play out in code.

3.2 *Himalaya Clause and Network Effects*

Although a networked understanding of contract law extends beyond issues of privity and third party benefits, there have been calls for the law to recognise that the doctrine of privity should not apply as between network contractors (as opposed to non-network parties) i.e where there is an existing contractual relationship and where consideration has been given under that contract.⁶³ This recognition would amount to a legal fiction as the doctrine of privity recognises that only parties to the contract are affected although some exceptions are found in statute and common law permitting third parties to derive benefits or to claim under a contract to which they are not a party.⁶⁴ The primary statute is the Contracts (Rights of Third Parties) Act 1999 ('Rights of Third Parties Act') which allows third parties to enforce contract terms where the intention to do so by the contracting parties' is present.⁶⁵

In the carriage context, an exception to privity is found through reliance on a Himalaya Clause which has its origins in the English Court of Appeal decision of *Adler v. Dickson (The Himalaya)*.⁶⁶ A passenger on the SS Himalaya, Mrs

61 See Grant Hunter, 'Smart Contracts: The BIMCO Experience' in Baris Soyer and Andrew Tettenborn (eds), *New Technologies, Artificial Intelligence and Shipping Law in the 21st Century* (Informa Law from Routledge 2020) 21, where he expresses an industry viewpoint that is cautious about smart contracts.

62 *ibid* 21.

63 Adams & Brownsword, 'Privity' (n 31) 24.

64 *Dunlop Pneumatic Tyre Co Ltd v. Selfridge and Co Ltd*, [1915] AC 847 (HL); *Scruttons Ltd v. Midland Silicones Ltd*, [1962] AC 446 (HL). See also, Bills of Lading Act 1855, s1. See Reynolds F, 'The Significance of Tort in Claims in respect of Carriage by Sea' (1986) Lloyd's Maritime and Commercial Law Quarterly.

65 Contracts (Rights of Third Parties) Act 1999, s1(1) allows a third party to enforce a term if: the contract expressly provides that he may do so (s1(1)(a)); or if the term purports to confer a benefit on him (s1(1)(b)) and subject to s1(b) on a proper construction of the contract there is nothing to indicate that the contracting parties did not intend the term to be enforceable by the third party. S1(6) extends the benefit for third parties to rely on exclusion or limitation clauses in the contract. But note the exception to the exception discussed below.

66 [1954] 2 Lloyd's Rep 267 (CA).

Adler, had been injured when she fell off a gangway and was injured. Her passenger ticket exempted the carrier from liability therefore Mrs Adler instituted proceedings against the master and the boatswain. The Court of Appeal held that in the carriage of both passengers and goods by sea, the law permits a carrier to exempt both itself and its agents from liability. However, on the facts of the case no such exemption – whether express or implied – was included in the passenger ticket therefore the Master could not rely on the exception clause. The Himalaya Clause was a commercial response to this decision and is commonly included in bills of lading by conferring on third parties, such as stevedores, agents and servants of the carrier, the benefit of the exclusions, limitations, and defences that are accorded to a carrier under the contract of carriage even though they are not a party to the contract evidenced by the bill of lading.⁶⁷ This clause remains important because the international carriage rules do not extend the protection which is afforded to carriers under these rules to independent contractors thereby leaving independent contractors open to potential claims from the owner or consignee for loss or damage to goods.⁶⁸ The *Eurymedon* (and cases of stevedore negligence) has exemplified the type of issues presented by networks in carriage contracts.⁶⁹

The *Eurymedon* concerned two contracts and the possibility of a third contract. There was the original contract of carriage between carrier and the owners of the goods in question (contract 1), and there was a second contract between the carrier who contracted the services of stevedores to unload the cargo (contract 2). Contract 1 contained an exclusion clause which excluded the carrier for loss and/or damage unless suit was brought within one year

67 The Himalaya clause has been and continues to remain controversial but the focus here is not on this controversy. See for instance, William Tetley, 'The Himalaya Clause Revisited' (2003) 9 JIML 40.

68 For example, The Hague-Visby Rules (Art. IV, bis r. 2) and the Hamburg Rules (Art. 7, r. 2) extend the protection they give to the carrier to its servants and agents whilst acting within the scope of their employment. However, as stevedores are invariably independent contractors they cannot take advantage of these. Art. III, r. 6 of the Hague Rules and of the Hague-Visby Rules (which apply to bills of lading only) bars proceedings against the carrier unless they are brought within one year of the date on which the goods were, or should have been, delivered.

69 See for eg *Scruttons Ltd v. Midland Silicones Ltd*, [1962] AC 446 (HL); *Port Jackson Stevedoring Pty Ltd v. Salmond and Spraggon (Australia) Pty Ltd* ('*The New York Star*'), [1980] 3 All ER 257; *The Eurymedon* (n 8). The leading case is *Scruttons Ltd v. Midland Silicones Ltd* where stevedores, who were contracted by the carrier, were not allowed to rely on a limitation clause in a carriage contract between the owners of the goods and the carriers when the stevedore negligently damaged the goods on the basis that they were not a party to the carriage contract.

after delivery of the goods and purported to extend that exclusion clause to the carrier's agents, servants and contractors. The stevedore negligently damaged the goods whilst unloading, and the owner of the goods instituted a claim against the stevedores who sought to rely on the benefit of the exclusion clause in Contract 1 (to which the stevedores were not a contracting party). The issue was whether a third contract came into being between the stevedores and the owner of the goods.

The decision in *The Eurymedon* relied on the agency exception to work around the decision of *Scrutton Ltd v. Midland Silicones* where Lord Reid stated that if certain conditions were met the agency theory can be used to allow a third party to benefit by a contract thereby circumventing privity. These conditions included that the limitation clause was intended to protect the stevedores, that the carrier was contracting as an agent (in addition to his own behalf); that the carrier had authority to do so from the stevedore, and that the stevedores provided consideration.⁷⁰ The Privy Council found that these elements were present in *The Eurymedon* and found in favour of the stevedores.⁷¹ The minority disagreed as the plain meaning of the exclusion clause in question was subject to the doctrine of privity and could not have been extended to third parties without more. In particular, the exclusion clause should have expressly mentioned the possibility of an additional unilateral offer to be made by the owners of the goods to any contractors that might be engaged in performing services under that carriage (Contract 1).⁷²

The decision has been criticised in academic circles.⁷³ Lord Wilberforce in *The Eurymedon* based his decision on the rationale that giving effect to the limitation clause was giving effect to 'the clear intentions of a commercial document'.⁷⁴ Tetley views this approach as erroneous and that it highlights the questionable basis of the Himalaya Clause.⁷⁵ In particular the reference to the 'clear intentions' is, he argues, not logical as the bill of lading is a contract of adhesion (insofar as it concerns the shipper), and given that the stevedore was not a party to the bill.⁷⁶ The Rights of Third Parties Act is however a simpler

70 *Scruttons v. Midland* (n 70), 474 (Lord Reid).

71 The recognition of the Himalaya Clause as extending rights to third parties has been given effect to in the UK, see *The New York Star* (n 70); *The Pioneer Container*, [1994] 2 AC 324; cf *The Mahkutai*, [1996] 2 Lloyd's Rep. 1. See also *The Starsin*, [2001] 1 Lloyd's Rep. 437 at p. 462 (C.A.).

72 The details of this are beyond the scope of this chapter.

73 Mitchell (n 4) 209.

74 *The Eurymedon* (n 8) 169.

75 Tetley (n 67) 51.

76 *ibid.*

way to enforce a Himalaya clause than the agency theory. However, there is an exception to the exception where no rights under the Act are conferred on a third party in relation to contracts for the carriage of goods 'except that a third party may in reliance on that section avail himself of an exclusion or limitation of liability in such a contract'.⁷⁷ This has placed the Himalaya Clause on a statutory footing in the UK.

Turning to how the concept of contractual networks might evolve in relation to smart contracts, entails a two-pronged approach: 'Form' relates to whether a standard Himalaya clause is still possible and how might such third-party benefits that arise in the carriage context be encoded on smart contracts operating on blockchain platforms. If independent contractors cause damage to the cargo during unloading, how are they to derive the benefit of any limitation or exception clauses and will existing understandings of privity and its exceptions remain the same in a digital environment. The second-pronged approach focuses on issues of liability as arose in *The Eurymedon*, that is, how will issues of liability to be dealt with in the network particularly given the self-executing feature of smart contracts. Smart transactional technologies are therefore viewed as a legal disruption to substantive legal doctrine as there are challenges in aligning technology with law. In the carriage context smart bills of lading on blockchain are indeed a legal disruption but are also part of the evolutionary development that has been critical to the modern bill of lading today. The concept of 'disruption' therefore requires a consideration of existing or new theoretical frameworks to guide legal discourse.

The well-trodden debates in contract law and practice (discussed in Part 2.2) need to be revisited as engagement with smart transactional technologies grows. How will smart contracts fit into the network-like context discussed above? Will technology amplify the network-like structure in commercial relationships that contract law has been slow to recognise, or does technology alter the legal understanding of networks? These questions point to a second legal disruption in terms of how we think about law. In this respect, Brownsword has proposed a new theoretical framework to better respond to disruptions in law:

77 The Rights of Third Parties Act 1999, s6(5) and s6(6) which defines a contract of carriage as including a bill of lading and by virtue of s6(7)(a) is taken to have the same meaning of a bill of lading etc. as in the Carriage of Goods Act 1992. COGSA 92 specifies the documents to which it applies but does not extend to electronic bills of lading. S1(5) as amended by the Communications Act 2003, sch 17, para 19, states that the Secretary of State may make provision for the application of this Act to electronic bills of lading. However, this has not yet taken place.

One ideal-type, 'regulatory-instrumentalism', views the rules of contract law as a means to implement whatever policy goals have been adopted by the State; the adequacy and utility of contract law is to be assessed by its effectiveness in delivering these goals. The other ideal-type is 'coherentism', according to which the adequacy of the law of contract is to be assessed by reference to the doctrinal consistency and integrity of its rules.⁷⁸

In relation to networks, the coherentist approach is likely to encounter challenges where technology 'is not congruent or symmetrical with traditionally restrictive rules of contract law'.⁷⁹ Whereas the regulatory-instrumentalist approach views these as challenges only if they conflict with 'public policy or particular regulatory objectives'.⁸⁰ Conscious of Brownsword's theoretical framework as to how we think about the collision between law and technology, the next section outlines some thoughts on smart contractual networks in the context of sea carriage.

4 Smart Contractual Networks: Conceptual and Normative Issues

4.1 *Smart Contracts and Contract Law*

Smart contracts have an ex ante automation whereas contract law has an ex post application; smart contracts are concerned with performance ex ante whereas contract law is remedial.⁸¹ As Brownsword citing Bygrave states:

the assumption is that, by embedding norms in the architecture, there is 'the promise of a significantly increased ex ante application of the norms and a corresponding reduction in relying on their application ex post facto'.⁸²

If the use of smart contract technologies is applied to the example of stevedores contracted by the carrier to unload the cargo, this will have to be coded

78 Brownsword, 'Smart Transactional Technologies' (n 5) 320.

79 *ibid* 332.

80 *ibid* 332.

81 Werbach and Cornell (n 17) 318.

82 Brownsword, 'Smart Transactional Technologies' (n 5) 318, citing Lee A Bygrave, 'Hardwiring Privacy' Roger Brownsword, Eloise Scotford, and Karen Yeung (eds.), *The Oxford Handbook of Law, Regulation and Technology* (Oxford: OUP, 2017) 755.

as an *ex ante* instruction in the smart contract. The focus is on ensuring that the act of unloading the goods is completed which will then trigger the next step. The coded instruction to the stevedore does not alter the network structure which exists in carriage contexts whether or not that technological connection can be viewed as analogous to the contractual connection between carrier, stevedore, and shipper.

In theory, the concept of self-enforcement seems to negate the need for judicial enforcement of smart contracts as enforcement in the traditional sense is replaced by technological triggers.⁸³ As smart contracts have an automated execution, the issues will center on the actual outcome rather than on claims for non-performance as the contractual analysis will shift from enforcement to disputes about the automated execution.⁸⁴ Self-execution suggests that the stevedore cannot fall short of its contractual obligations (i.e. breach) and therefore established remedies for breach of contract, such as damages, specific performance are not relevant.⁸⁵ The appropriate contractual remedies in the analogue world remains elusive in the digital world. As smart contracts exist on a spectrum in terms of their automation, so do contracts exist on a spectrum in terms of complexity from the one-off discrete transaction to the longer-term transactions. It is generally believed that smart contracts are more suited to simple transactions than complex contracts as are found in shipping and trade transactions, such as the detailed standard form contracts of charter parties and bills of lading. There may well be a distinction between the remedy for one-off discrete transactions versus longer-term contracts, where in the former instance 'conventional remed[ies]' may be granted such as compensatory damages.⁸⁶ It becomes more complex in longer term contracts where future ongoing performance conforms more closely to the parties' expectations.⁸⁷

The instantaneous recording and processing of information in smart contracts on blockchain and the anonymity of users on nodes in the blockchain, may, in these early stages, render the determination of liability and remedies more complicated in code.⁸⁸ The instantaneous nature points to the faster

83 See Eliza, 'Smart Contracts: Terminology, Technical Limitations and Real-World Complexity' (2017) 9 *Law, Innovation and Technology* 269; Christina M Mulligan, 'Perfect Enforcement of Law: When to Limit and When to Use Technology' (2008) 14 *Richmond Journal of Law & Technology* 1–49.

84 Green and Sanitt (n 49) 203.

85 There is a possibility of encoding such remedies in the code.

86 Green and Sanitt (n 49) 208.

87 *ibid.*

88 This chapter does not deal with issues of liability arising from errors in coding.

recognition of when loss occurs and the responsible party.⁸⁹ However, the rigidity inherent in smart contracts on blockchain might render it difficult to determine liability and quantify liability where there may be more than one party at fault (e.g. not only negligence of the stevedores but also the crew).⁹⁰ In theory it is possible to use ex ante coding to provide for the possible causes of non-performance and various scenarios but contracts – even smart contracts – are necessarily incomplete. In reality it is not possible to provide for every conceivable cause ex ante.

In the real world the stevedore would, in principle, be entitled to rely on the Himalaya clause in the carrier's bill of lading which in effect recognises the stevedore as being a party to the network. In a digital world does this signal the end of the Himalaya clause? This will depend on the extent to which the contract exists only in the virtual world i.e. the type of smart contract. The greater the degree of automation, the less likely it is possible to code traditional contract concepts such as good faith, commercial expectations etc, as well as standard terms such as the Himalaya Clause.⁹¹ The congruence between contractual protective measures in code – whether for purposes of consumer protection or to extend benefits to third parties – may conflict with the 'deterministic character of code'⁹² as described above in relation to stevedore damage.

The Himalaya Clause is viewed as an exception to the doctrine of privity but there is a separation of technology from law; from 'what is legally versus technically binding'.⁹³ 'Privity' in technology is a generalisation of the legal concept of privity, with privity being one of the objectives in smart contract design and this is taken to mean 'that knowledge and control over the contents and performance of a contract should be distributed among parties only as much as is necessary for the performance of that contract'.⁹⁴ The formalistic, immutable nature of smart contracts operating within its own closed system of code as 'rules' differs from what contract law, as traditionally understood, will enforce.

89 Munari (n 27) 6. See also, RH Weber, 'Liability in the Internet of Things' (2017) 6 EuCML, 207. Issues of liability has implications for a carrier's liability as set out in the international carriage rules (n 47) but this is beyond the scope of this chapter.

90 Liu (n 24) 432.

91 Michel Cannarsa, 'Contract Interpretation in Larry A DiMatteo, Michel Cannarsa, and Cristina Poncibò (eds), *The Cambridge Handbook of Smart Contracts, Blockchain Technology and Digital* (CUP 2019) 116.

92 Aaron Wright and Primavera De Filippi, 'Decentralized Blockchain Technology and the Rise of Lex Cryptographia' <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2580664> accessed 30 September 2020, 26.

93 *ibid* 26.

94 Szabo (n 14).

These are the types ‘coherentist’ issues which arise in attempting to align technological and legal connections in commercial networks, and to fit technology into the transactional contract model that we know and understand. As Brownsword says where these questions become difficult, ‘it is probably no longer the right question to be asking.’⁹⁵ In that instance a regulatory-instrumentalist approach is preferable to address the issue of third-party beneficiaries through legislation as the Rights of Third Parties Act allows parties to design their own terms.⁹⁶ This depends on whether contract law’s function in relation to smart contracts is facilitative or intended to pursue regulatory goals such as recognising the implicit dimensions which (should) exist in networks.⁹⁷ A second option, as suggested by Brownsword, is that the law could do this is by recognising the implicit dimensions of contracts, as some have called for law to recognise contract with network effects. English courts have been generally reluctant to enforce implicit dimensions such as the relational dimensions of contracts and are therefore less likely to recognise network effects explicitly. The network critique is that the law focuses on the express terms of the contract rather than on recognising that the network itself ‘has norm creating power among the network participants’.⁹⁸ I argue that code does not change the structural network of carriage contracts as the ‘connectivity’ which exists between parties to carry out common purpose to complete a carriage by sea is maintained. Technology may, however, alter the internal operation as the expectations of the parties to the smart contractual networks may be modified as discussed below. There will be a need for network expectations to be stabilised in some way in a digital environment.⁹⁹ It remains to be seen whether the benchmark is formalist or contextualist and this requires ‘some jurisprudence on the guiding principles that regulate the need for symmetry or congruence of the technological effects with the law’.¹⁰⁰

4.2 *Interpretation and Theory*

Contract interpretation is a fundamental doctrine of contract law and therefore prompts the question about the interpretation of smart contracts although this will depend on the type of smart contract.¹⁰¹ Formalism is inherent in the

95 Brownsword, ‘Smart Transactional Technologies’ (n 5) 327–8.

96 *ibid* 330.

97 Mitchell (n 4) 201.

98 *ibid* 199.

99 Teubner (n 4) 103.

100 Brownsword, ‘Smart Transactional Technologies’ (n 5) 328.

101 See Cannarsa (n 92) for a more detailed analysis.

operation of smart contracts operating on blockchain platforms (If X occurs, then Y happens). An analogy can be drawn between formalism and smart contracts in that the former is ‘pseudo self-enforcing’¹⁰² as ‘courts serve a merely perfunctory role of reiterating the plain meaning of the words of the contract’.¹⁰³ Jeremy Sklaroff has pointed out that smart contracts come with the costs of inflexibility and that smart contracts support a formalist interpretation of contracts based on the terms of the agreement than ‘broader behavior’.¹⁰⁴

The most apparent issue is how to interpret code which is technical as opposed to legal language. The difference is that the emphasis is less on individual words and rather on what the words collectively means as an instruction which also depends on the level of automation of the smart contract.¹⁰⁵ One view is that to determine the meaning of a code it has to be run so the code is not interpreted but executed; the focus is not on code as *words* but on code as *action*.¹⁰⁶ A view that the code is deterministic and formal and is the equivalent of the rights and obligations in a traditional contract, would render interpretation and judicial enforcement superfluous as it views the code as the contract.¹⁰⁷ However, this ignores legal and policy oversight through statute to address, for instance, fraud and illegality.¹⁰⁸ As discussed, contracts are incomplete as it would be prohibitive to provide for every conceivable contingency, which also holds true for smart contracts even though the ‘self-sufficiency of a smart contract is premised on its completeness’.¹⁰⁹ The incompleteness of smart contracts and traditional contracts differs though as with the latter it is possible to build flexibility into contracts through terms such as good faith, duties to cooperate or to use best endeavours, force majeure etc.¹¹⁰ With smart contracts, any ambiguity will preclude self-execution. It is likely that most carriage contracts, at least for the foreseeable future, will be a hybrid – a mixture of code and language, or ‘through the context of a commercial relationship where other documents may form part of the factual matrix’.¹¹¹

102 DiMatteo and others, ‘Smart Contracts and Contract Law’ (n 9) 7.

103 *ibid.*

104 Sklaroff (n 57) 279.

105 Green and Sanitt (n 49) 207–8.

106 *ibid.* 203.

107 *ibid.*

108 *ibid.*

109 Pasa and DiMatteo (n 22) 342.

110 *Ibid.* 344.

111 Green and Sanitt (n 49) 203–4. Such documents can include the need for consistency between the bill of lading and the mate’s receipts.

The expectations of smart contracting parties will differ from that of the reasonable expectations of traditional contracting parties in contract law. The judicial approach is to determine the objective meaning of the parties' agreement by relying on what a reasonable person would have understood the instrument to mean.¹¹² Several issues can arise in 'interpreting' code; some of which are already present when interpreting traditional contracts while some issues will be specific to smart contracts. As with traditional contracts, the smart contract may fail to completely and/or accurately capture the intentions of the parties in code. Like with traditional contracts where the words in the contract may not reflect the true intention of the parties, coding presents a similar problem as the code may fail to correctly capture the parties' intentions. This is exacerbated with code as a traditional contract whether drafted by a third party (e.g a lawyer), by the parties themselves, or even as standard form contract means that parties have the ability to read and understand the natural language of the contract (whether they actually do so is another matter). Yet with code, more reliance is placed on the coder ('the drafter') as the parties may not understand the code but only the intention that the code is meant to convey.¹¹³ If that intention is not correctly captured through code, the execution of the smart contract will not be in accordance with what the parties had agreed.

Applying the judicial approach of a reasonable person to any resultant disputes, 'highlights the tension between English law's objective approach to contractual interpretation and its regard for the intentions of the contracting parties'.¹¹⁴ This may be compared to Macaulay's famous distinction between the real deal and the paper deal which highlighted the disparity between the written contract (i.e the paper deal) and the 'real deal' that governs the transaction.¹¹⁵ The 'paper deal' tends to consist of clear, formal rules that are straightforward to enforce but the 'real deal' emphasises the social relations between the parties. Given this difference, resorting to the paper deal only

112 Lord Hoffman in *Investors Compensation Scheme Ltd v. West Bromwich Building Society*, [1997] UKHL 28, [1998] 1 All ER 98, [1998] 1 WLR 896, [1998] AC 896; Lord Hoffman in *Chartbrook Ltd v. Persimmon Homes*, [2009] UKHL 38; *Wood v. Capita Insurance Services* (n 42).

113 See n 49 regarding rectification. Although Green and Sanitt (n 49) state that the more appropriate method may be novation which has been used to substitute new for existing contracting parties.

114 Green and Sanitt (n 49) 206 referring to J Steyn, 'Contract Law: Fulfilling the Reasonable Expectations of Honest Men' (1997) 113 LQR 433-434.

115 Stewart Macaulay, 'Non-Contractual Relations in Business: A Preliminary Study' (1963) 28 Am Soc Rev 55, 62.

would be invoking a contract that the parties did not think they had agreed upon. In a digital environment the difference arises with the 'real deal', as the 'paper deal' can be largely equated with the 'digital deal' (i.e the smart contract as code). The automation of the smart contract is focused only on the 'digital deal' thereby precluding any consideration of the 'real deal'. How, then, does the formalism of smart contracts fit in with existing theories in contract law, especially in relation to smart contractual networks? Many scholars have called for the law to embrace the implicit dimensions of contract law. Viewing the *effect* of a smart contract as analogous to the intentions of the parties (and to the express terms of the contract), would, according to Brownsword, remove some of the concerns about the congruency between technology and contract law.¹¹⁶ This approach would allow technological effects to be treated as the equivalent to flexible terms and as Brownsword says 'this will simply neutralise the objection that such effects would not normally be implied'.¹¹⁷ On this reading it may arguably be possible for a variation in the 'smartness' in contracts to allow for 'a contextual vision of "smartness" embedded within a relational context?'¹¹⁸ Green and Sanitt state that as with the hybrid smart contracts there is likely to be an interaction with other software with which the platform interacts, such as 'third-party information providers and cloud-based storage'.¹¹⁹ Green adds that:

It is impossible to model and to predict all of these interactions, not least because many depend on real-time constraints. Characterising code as freestanding, self executing pieces of frozen conduct ignores these interactions and dependencies.¹²⁰

The formality of smart contracts seems to operate in contradiction to judicial intervention through interpretation. The confines of smart contracts to operate beyond its technological domain limits its capacity to be relied on in more contextualised contracting practices.¹²¹ The challenge arises with the merging of the virtual and the physical world. It remains to be seen whether legal doctrines, such as interpretation and whether contract theories which attempt to go beyond formalism, will remain relevant in relation to smart contracts.

116 Brownsword, 'Smart Transactional Technologies' (n 5) 327–8.

117 *ibid* 327–8.

118 Pasa and DiMatteo (n 22) 342–3.

119 Green and Sanitt (n 49) 203–4.

120 *ibid*.

121 Cannarsa (n 92) 115.

5 Conclusion

The term 'smart contract' is apt at describing the collision or merging of law and technology and what is frequently termed a 'legal disruption'. Academics, practitioners, and industry stakeholders are increasingly exploring how new transactional technologies align (or fail to align) with the existing legal framework. This is a necessary first step as in order to understand 'first-generation smart contracts'¹²² there will need to be backward glances to existing understandings of contract law. The idea behind this undertaking was to explore whether the network-like structure present in carriage contracts may be modified on a digital platform, and how might this alter the expectations of parties in that smart contractual network. The purpose was to engage a deeper analysis of the carriage contract that extends beyond blockchain bills of lading to identify how smart bills of lading align with the prevailing networked understanding of contract law, particularly insofar as it concerns third party beneficiaries.

The principled parts have shown an imprecise relationship between law and technology but one that requires examination of the digital world through a legal lens, and to examine the legal world through a technological lens. When doing so in this chapter, it has emerged that the network-like structure in law, as seen through the example of carriage contracts, is congruent with the network-like structure in technology in that the 'connected parties' (e.g. shipper, carrier, stevedore) and the common purpose remains the same. Accordingly, the hesitancy of courts in recognising the implicit network dimensions in natural language contracts is likely to persist with smart contracts. However, the internal structure of the technological network may see the development of new norms relating to the expectations of the parties to that network which will depend on how automated the network is (recall the types of smart contracts). Much uncertainty remains about the impact of technological effects and how should this be viewed through a legal lens.

This chapter certainly does not aim to provide all the answers as blockchain and smart contract technology is still developing and the concept of digital contracts are still unfamiliar territory. Rather this chapter aims to stimulate discussion on how contractual networks, through smart contracts and blockchain bills of lading, may prevail in the context of (digital) carriage of goods by sea. Given the importance of continuity in shipping, the wording and standard clauses in shipping contracts are frequently developed and improved upon over time through standardised best practices. Whether existing best practices

¹²² DiMatteo and others 'Smart Contracts and Contract Law' (n 9) 6.

or new best practices, such as to accord third parties protection from liability, in relation to technology can be standardised, translated into coded and then be embedded in algorithmic standard contracts remains uncertain.

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Restricting International Trade through Export Control Laws: National Security in Perspective

Trisha Rajput

1 Introduction and Background

Currently, international trade is witnessing export controls that are being instituted in the name of national security. The European Union (EU), United States (US), United Kingdom (UK) and others in light of Russia-Ukraine war have banned the export of certain items to Russia that include dual-use goods such as semiconductors, microcircuits, specific computers and software, lasers, sensors, marine and aerospace systems.¹ Russia has also retorted by imposing countersanctions in the form of export ban of around 200 products such as telecom, medical, vehicle, agricultural, and electrical equipment, as well as some forestry products on about 48 countries including US and EU.² The existence of an armed conflict may provide the context to justify above-mentioned export bans through seeking recourse to Article XXI General Agreement on Tariffs and Trade (GATT). It could be argued that on this occasion these export restrictions are firmly embedded in international peace and security. However, it may be noted that in the recent past export restrictions have also been imposed in circumstances that bear no connection with an armed conflict, situation of war, public order, territorial sovereignty but are nevertheless couched in national interest and security terms. For instance, US comprehensively tightened its export control regime through the Export Control Reform Act of 2018. This legislation has been successfully utilised to limit Chinese technology giant Huawei's access to semiconductor chips made with US technology on national security grounds.³ Japan has also restricted exports of fluorinated polyimide, resist polymers and hydrogen fluoride, and

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- 1 'Russia sanctions list: What the west imposed over the Ukraine invasion' (FT 4 March 2022) available at <<https://www.ft.com/content/6f3ce193-ab7d-4449-ac1b-751d49b1aaf8>> accessed 10 March 2022.
 - 2 'Russia hits back at Western sanctions with export bans' (BBC 10 March 2022) available at <<https://www.bbc.com/news/business-60689279#comments>> accessed 17 March 2022.
 - 3 S Sacks and G Webster, *The Trump Administration's Approach to Huawei Risks Repeating China's Mistakes*, May 23, 2019 <www.newamerica.org/weekly/trump-administrations-approach-huawei-risks-repeating-chinas-mistakes/> accessed 11 October 2021.

their related technologies to Korea through licensing policies and procedures with a view to safeguard national security.⁴ These products are primarily used in the production of smartphones, TV displays and semiconductors. Japan's position is that more stringent export licensing procedures in relation to the above products and their relevant technologies are applied because it "found that certain sensitive items have been exported to Korea with inadequate management by companies".⁵ Korea has challenged Japan's export restrictions in the World Trade Organization (WTO) through *Japan – Measures Related to the Exportation of Products and Technology to Korea*.⁶ Consultation did not yield any solution following which a Panel was constituted on 29 July 2020 and it remains to be seen what will be the outcome of the dispute. People's Republic of China (China) also instituted an export control law which came into force on 1 December 2020. This law applies to dual-use items, military items, nuclear items and other goods, technologies, services and items relating to the maintenance of national security and national interests, and performance of anti-proliferation and other international obligations.⁷

With the above background, the question that arises is whether GATT Article XXI accommodates concerns that go beyond military threats. Such threats may include a wide variety within the ambit of "new national security"⁸ such as

4 "Regarding the Notification (*tsuutatsu*) to amend parts of notifications including the 'Notification(*tsuutatsu*) on the implementation of the Export Trade Control Order" (1 July 2019, Security Export Licensing Division, Ministry of Economy, Trade and Industry) <www.meti.go.jp/policy/ampo/law_document/tutatu/190701_gaiyo.pdf> accessed 11 October 2021.

5 "Update of METI's licensing policies and procedures on exports of controlled items to the Republic of Korea" (1 July 2019, Ministry of Economy, Trade and Industry) <www.meti.go.jp/english/press/2019/0701_001.html> accessed 11 October 2021. "Regarding the Notification (*tsuutatsu*) to amend parts of notifications including the 'Notification (*tsuutatsu*) on the implementation of the Export Trade Control Order" (1 July 2019, Security Export Licensing Division, Ministry of Economy, Trade and Industry) <www.meti.go.jp/policy/ampo/law_document/tutatu/190701_gaiyo.pdf> accessed 11 October 2021.

6 *Japan – Measures Related to the Exportation of Products and Technology to Korea*, Request for Consultations by The Republic of Korea, WT/DS590/1, para 7. Korea argues that the amended export licensing policies and procedures have increased the level of scrutiny which results in delays. This increased level of scrutiny has no legitimate basis and is politically motivated. For a detailed discussion on Japanese export controls, refer to K Shiojiri, "Japan's Measures on Export Control to the Republic of Korea: From the Perspective of International Law" (2019) 12 (2) *Journal of East Asia and International Law* 337.

7 Art 2, People's Republic of China (PRC) Export Control Law, As passed by Standing Committee of the National People's Congress on October 17, 2020, <<http://www.scio.gov.cn/m/zfbps/32832/Document/1718303/1718303.htm>> accessed 11 August 2022.

8 JB Heath, *The New National Security Challenge to the Economic Order*, (2020) 129 *Yale Law Journal* 1020.

economic crises, climate change, societal and cultural matters, infectious diseases, cybersecurity. The above question is considered by utilising the framework that has been created by China for control/consolidation of the rare earths sector through People's Republic of China Export Control Law (ECL) and the proposed Administrative Regulation on rare earth (ARE).⁹ The prognosis is that China may potentially utilise ECL and ARE framework to restrict export of rare earths to the US as tit-for-tat security claims in view of its recent relationship with the US and potentially utilise GATT Article XXI to justify its action. This chapter considers in detail if the phrase “essential security interest” or “emergency in international law” may provide the opportunity to China to accommodate resource security argument advanced through ECL and ARE within the ambit of GATT Article XXI.

In the past, the GATT Article XXI was seldom utilised by Members and such an approach reflected goodwill and their unwavering support to the WTO/GATT framework. However, the genie was let out of the bottle with Donald Trump's presidency as he aimed to counter the rise of China's economic might by utilising the national security argument to justify trade restrictions.¹⁰ It is projected that trade restrictions, especially export restrictions, may be increasingly couched in national security terms where Members would seek to protect their own economic interests by exerting their own understanding of security in the WTO. In addition, geopolitics has an important impact on security considerations. The current geopolitical dynamic central to the security debate is characterised by the rise of China on the world stage. The liberal Western democracies have expressed concerns about China's meteoric rise as they note that China rejects liberal norms embraced by democracy in Europe and US.¹¹ It is submitted, that this geopolitical dynamic will most certainly play out in the WTO and the adjudicatory mechanism of the WTO¹² will then

9 In China a 'Law' is the equivalent of the Act in common law jurisdictions. Hierarchically an Administrative Regulation falls under the Constitution and Basic Laws. For comprehensive discussion on the hierarchy of legal rules in China, refer to I Castellucci, "Rule of Law with Chinese Characteristics" (2007) 13 (1) *Annual Survey of International & Comparative Law* 35–58.

10 CP Bown, "Export Controls: America's Other National Security Threat" (2020) 283 (30) *Duke Journal of Comparative & International Law* 283.

11 GJ Ikenberry, "The Rise of China and the Future of the West: Can the Liberal System Survive?" (2008) 87(1) *Foreign Affairs* 23–37; M Stephen, "States, Norms and Power: Emerging Powers and Global Order" (2014) 42(3) *Millennium* 888–96; I Clark, "International Society and China: The Power of Norms and the Norms of Power" (2014) 7 (3) *Chinese Journal of International Politics* 31–340.

12 The WTO DSS comprises of a political institution called the Dispute Settlement Body and the quasi-judicial and judicial-type bodies such as the ad-hoc Panels and the permanent

be expected to police the abuse of the exception by undertaking the onerous task of balancing the two competing interests, namely security and trade. It is rightly argued that “major geopolitical disputes now play out within trade and investment institutions rather than outside them”.¹³ While the restrictions signal underlying economic problems¹⁴ and will cause disruption of supply chains, they are particularly problematic from an organizational perspective because such repeated inconsistent practices signal the unwillingness of the Members to abide by their commitments under the WTO Agreements, thus pose a risk to the organization.

Following the introduction, section 2 presents the legal framework offered by ECL and ARE in a comprehensive manner as it is pertinent for the rare earths sector. More specifically, this section considers the question of how the tandem operation of ECL and ARE offers the legal basis to China to restrict the exportation of rare earth on grounds of resource security. In seeking out this question, this section also engages with the idea that resource security is considered as a matter of national security in China pursuant to the Overall National Security Outlook, which includes within its scope both traditional and non-traditional security issues.¹⁵ Section 3 presents a thorough analysis of GATT Article XXI and critically considers *Russia – Measures Concerning Traffic in Transit (Russia – Traffic in Transit)* and *Saudi Arabia – Measures Concerning the Protection of Intellectual Property Rights* dispute (*Saudi Arabia – Intellectual Property Rights*).¹⁶ This detailed discussion allows the chapter to answer the

Appellate Body respectively. The DSS may be argued as one of the most prolific and active of all international State-to-State dispute settlement system and it has also navigated through disputes that were subject to controversy and public debate. For comprehensive discussion on the WTO dispute settlement system refer to P Van den Bossche and W Zdouc, *The Law and Policy of the WTO: Text, Cases and Materials* (Cambridge, 2019) 80–159.

13 *ibid.*

14 RE Hudec, “GATT or GABB? The Future Design of the General Agreement on Tariff and Trade” (1971) 80(7) *The Yale Law Journal* 1299–1386.

15 The Overall National Security Outlook discussed in detail in section 2 includes both traditional and non-traditional view of security and includes resource security amongst other issues such as economic security, cultural security, societal security, science and technology security, cybersecurity, environmental security, nuclear security, and the security of overseas interests. J Blanchette, *Ideological Security as National Security*, December 2020 available at <https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/201202_Blanchette_Ideological_Security_National_Security.pdf> accessed 15 October 2021.

16 The case of *Saudi Arabia – Measures Concerning the Protection of Intellectual Property* is also considered because the language of the security provisions in the GATT and TRIPS is similar neither the parties nor the Panel in contested or deviated from the interpretative approach in *Russia – Traffic in Transit* and it builds on the clarification made in the

question whether China will be able to justify export controls measures under the national security exception under GATT Article XXI. Section 4 concludes by offering some broad observation about the challenges associated with the scope of GATT Article XXI and reliance on adjudication as the only way to address measures that concern security.

2 China's Export Control of Rare Earths

China is a major supplier of rare earths, that are widely deployed in defence, automotive, electronics, renewable energy industries. Japan, US and Netherlands are the three major importers of rare earths from China.¹⁷ Almost 90% of rare earths production is controlled by China and it has emerged as the technological leader in the processing of the element.¹⁸ China was successful in taking over the leadership position in production from the US in the rare earths market simply because it could access cheap labour and had the advantage of lower environmental protection standards.¹⁹ Two new developments in China are of interest in context of rare earths which include: i) ECL passed by the Standing Committee of the National's People Congress that came in force in December 2020, and ii) ARE which was circulated for public comment on 15 January 2021 by Ministry of Industrial Policies and Regulations and Ministry of Information Technology.

Russia case. It is submitted that the paper does suggest transferability of Art. XXI GATT's interpretation to Art. 73 TRIPS or vice versa because of identical language of both the provisions. However, since there has been limited disputes which have involved national security in the WTO interpretation on national security under the TRIPS may be instructive for dispute under the GATT or vice versa.

- 17 Chinese data indicate that its rare earths exports totalled 53,518 metric tons, with a value of \$517 million. China's top three rare earths exports markets by value were Japan (54% of total), the United States (14%), and the Netherlands (8%). China also exported \$1.7 billion worth of magnets containing rare earths (including \$201 million to the United States), an indicator of the significance of Chinese downstream industries that utilize rare earths. Trade Dispute with China and Rare Earth Elements, June 28, 2019 <<https://fas.org/sgp/crs/row/IF11259.pdf>> accessed 11 October 2021.
- 18 M Schmid, "Rare Earths in the Trade Dispute Between the US and China: A Déjà vu" (2019) 54 *Intereconomics* 378–384.
- 19 *ibid.*

2.1 *Brief Overview of the Export Control Architecture Relevant for Rare Earths*

As mentioned above, ECL has been put in place to enhance and regulate export control to safeguard national security and interests, and performance of anti-proliferation and other international obligations. It applies to controlled items that include dual-use items, military items, nuclear items and other goods, technologies, services, and items relating to the national security and national interests.²⁰ Through this comprehensive law, China has implemented a unified export control system that is overseen by the State Export Control Administrative Departments (Departments of the State Council and the Central Military Commission) by making control lists, directories, and catalogues (collectively referred to as “Control Lists”), and implementing export licensing.²¹ ARE is specifically formulated to ensure rational development and utilization of rare earths resources, promoting the sustainable and sound development of the rare earths industry. This proposed regulation utilises management approach to the rare earths sector with the intention of protecting environment and ensuring resource security for Chinese domestic industries.²²

2.2 *Export Control Law and National Security*

Article 1 of ECL spells out clearly that the objective of the Law is to safeguard national security and interest. This provision also clarifies that the controlled items include within its ambit technical information and data related to the items. Currently, no control list has yet been published and thus the question that remains open is whether rare earths will feature on such a list. This delay in the publication of such a list is not unusual as most lists that accompany Laws in China are published after some time has elapsed.²³ Article 9 is particularly important provision as it provides that the State Export Control Administrative Departments may exercise temporary control over any goods, technologies and services outside the export control lists if required for the maintenance of national security and interest. This provision provides usually wide discretion to go beyond the controlled list which has a broad coverage to

20 Article 2 PRC Export Control Law (n 7).

21 Article 4, *ibid*.

22 On January 15, 2021, the Ministry of Industry and Information Technology issued the draft version of the Regulations on Rare Earth Management to gather public opinions until February 15, 2021. Translated version sourced from LexisNexis.

23 This aspect was gleaned from conversation with Prof Yongmei Chen. The example she cited to support the assertion was that no national negative list for services has been published yet.

address national security and interests. Additionally, Article 21 of the National Security Law focuses on resources and considers sustainable, reliable, and effective supply of resources required for economic and social development as a matter of national security.²⁴

Both terms, national security and interests that feature in the above-mentioned key provisions remain undefined. It is not surprising that both the terms national security and interests, which are at the core of this law remain undefined, because that leaves room for diverse and broad interpretations. The interpretation of national security may range from purely traditional threats of security that affect the integrity of the State such as armed or military conflict and appeals to the State's right of self-defence situation brought about by grave danger that threatens its existence.²⁵ It may also include a broader array of threats or risks which extend beyond preservation of territorial sovereignty and includes concern for public welfare and order and health, property, environment, and includes matters of economic interest.²⁶

The question that arises is what are the various interests that may be relevant under national security within the meaning of ECL? In the past, defending the Chinese Communist Party rule and enhancing social stability, promoting economic development and opening to the world has been identified as a part of core national security strategy.²⁷ In the present context, China's national security interests encompasses broad issues such as, strengthening the Party's centralized and unified leadership over national security work, protection of Chinese overseas investment, securing maritime integrity, deepening energy and resource security, extending control of space and cyberspace resources, protection for maintaining industries, and shaping a world order conducive to its development.²⁸ To gain a bit more insight into the China's national security strategy it is imperative to trace back to President Xi Jinping's speech, on 15 April 2014, which he gave while presiding over the first meeting of the Central

24 (n 31).

25 For narrow view refer to JB Heath, "National Security and Economic Globalization: Towards Collision or Reconciliation" (2019) 42 *Fordham International Law Journal* 1431.

26 For broad view refer to JB Heath, "Trade and Security among the Ruins" (2020) 30 *Duke Journal of Comparative and International Law* 223; JB Heath, "The New Security Challenge to the Economic Order Law" (2020) 129 *Yale Law Journal* 924.

27 MS Tanner and PW Mackenzie, *China's Emerging National Security Interests and Their Impact on the People's Liberation Army* (Marine Corps University Press, 2015) 1–26.

28 X Junyong and Z Zhipeng, "Forty Years of Research on the Rule of Law in China's National Security: Retrospect and Prospect" (2019) (Google Translation software was utilized to read this article.)

National Security Committee.²⁹ At this event he unveiled the “Overall National Security Concept” (ONSC) where he emphasized the need to “pay attention to both traditional and non-traditional military security, economic security, cultural security, social security, technological security, information security, ecological security, resource security, and nuclear security”.³⁰ Article 2 of the National Security Law of the People’s Republic of China 2015 (NSL) reflects a broad and all-encompassing definition of “national security” along the lines of ONSC. Article 2 states that “[n]ational [s]ecurity means a status in which the regime, sovereignty, unity, territorial integrity, welfare of the people, sustainable economic and social development, and other major interests of the state are relatively not faced with any danger and not threatened internally or externally and the capability to maintain a sustained security status”.³¹

The ONSC was also reiterated by Xi in 2017 when he called for its implementation and highlighted that national security and development are deeply intertwined with each other.³² An earlier speech made in 2015 by Xi also captures the position well where he had remarked that “security and development are two sides of the same issue, two wheels in the same driving mechanism. Security guarantees development, and development is the goal of security”.³³ His statements reflect a more assertive posture of reinforcing security to promote development. At the National Cybersecurity and Informatization Work Conference, Xi highlighted that cybersecurity and informatization are focus areas for security.³⁴ Promoting breakthrough in core technologies and active

29 This discussion is important as in the case of China the President’s speech is significant and showcases national strategy.

30 “Xi Jinping Chairs First NSC Meeting, Stresses National Security with Chinese Characteristics”, Xinhua News Agency, 15 April 2014, available at <http://www.xinhuanet.com/politics/2014-04/15/c_1110253910.htm> accessed 15 October 2021.

31 National Security Law of the People’s Republic of China, (Adopted at the 15th session of the Standing Committee of the Twelfth National People’s Congress on July 1, 2015) available at <<https://govt.chinadaily.com.cn/s/201812/11/WS5c0fb56498eefb3fe46e8c9/national-security-law-of-the-peoples-republic-of-china-2015-effective.html>> accessed 15 October 2021.

32 “Xi Jinping presided over the first meeting of the 19th Central National Security Committee and delivered an important speech”, Xinhua News Agency, 17 April 2018, available at <http://www.gov.cn/xinwen/2018-04/17/content_5283445.htm> accessed 15 October 2021. (Google Translation software used for reading the speech.)

33 “Xi Jinping’s Speech at Opening of Second World Internet Conference”, Xinhua News Agency, 16 December 2015, available at <http://www.xinhuanet.com/politics/2015-12/16/c_1117481089.htm> accessed 15 October 2021. (Google Translation software used for reading the speech.)

34 “Xi Jinping: Independent Innovation Promotes the Building of a Network Power”, Xinhua News Agency, 21 April 2018, available at <http://www.xinhuanet.com/politics/2018-04/21/c_1122719810.htm> accessed 15 October 2021. (Google Translation software used for reading the speech.)

participation in cyberspace governance processes (with Chinese characteristics) were also mentioned as a part of security policy. The speech has a clear development tone as it is indicative of China's ambition of establishing itself as a cyber superpower. In 2020, Xi did not stress on "economic slowdown", which was considered as a matter of security earlier in 2015. Rather, he associated the term "security" with "quality of development" and "innovation". During this time he emphasised on the need for a holistic national security architecture.³⁵ More recently, during the centenary of Chinese Communist Party in 2021, Xi highlighted the importance of integrating security in every domain.³⁶ 2021 was marked with the deployment of various laws to tighten security controls such as security-related legislation for counterterrorism, cybersecurity, and national intelligence.³⁷ In June 2021, National People's Congress also cleared the Anti-Foreign Sanctions Law that targets "individuals and organisations that take part in the formulation, decision, and implementation of discriminatory restrictive measures" against China.³⁸ It is clear that Xi's leadership has expanded and strengthened China's national security edifice. Currently, the Chinese national security strategy extends beyond the traditional notion of territorial integrity which may be in line with the contemporary interpretation of the term "security", which is not restricted to military or territorial affairs. Rather, it is being increasingly applied in concerns beyond war, conflict and violence.³⁹ In fact, there is a strong argument that the "notion of security bound to the level of individual States and military issues" is simply inadequate as it fails to capture

35 "The CCP 19th Central Committee Fifth Plenum Communique" Xinhua News Agency, 29 October 2020 available at <http://www.xinhuanet.com/politics/2020-10/29/c_1126674147.htm> accessed 15 October 2021; "Xi stresses building holistic national security architecture" Xinhua News Agency, 12 December 2020 available at <http://www.xinhuanet.com/english/2020-12/12/c_139584669.htm> accessed 15 October 2021.

36 Xi Jinping, "在庆祝中国共产党成立100周年大会上的讲话" [Speech at the celebration of 100th anniversary of the founding of the Communist Party of China] (speech, Beijing, July 1, 2021) available at <http://www.gov.cn/xinwen/2021-07/01/content_5621847.htm> accessed on 27 March 2022.

37 For a detailed discussion on the various legal developments refer to KA Mankikar, Preserving National Security, the Xi Jinping Way available at https://www.orfonline.org/wp-content/uploads/2022/01/ORF_IssueBrief_China-NationalSecurity.pdf accessed on 27 March 2022.

38 Standing Committee of the 13th National People's Congress of the People's Republic of China promulgated the Anti-Foreign Sanctions Law on 10 June 2021.

39 K Karause and MC Williams, 'Security and "Security Studies": Conceptual Evolution and Historical Transformation' in A Gheciu and XC Wohlforth (eds), *The Oxford Handbook of International Security* (OUP 2018) p 22.

the dynamics of contemporary security relations.⁴⁰ In fact, it has been argued that the focus should be moved away from State to individuals or social groups for deepening the security agenda.⁴¹ Therefore, the fact that Article 21 of the National Security Law includes within its ambit resources and associated economic development, it is not an unreasonable one and is deeply entrenched in the “new development concepts”.⁴²

2.3 *Intersection of ECL and ARE*

The most striking element of ARE is the articulation of the legislative purpose with particular focus on sustainability, ecological environment, and resource security. Article 1 of ARE refers to resource security, which as indicated above has been considered within the broader ambit of China’s national security strategy. It is important to note that ARE expressly invokes the application of ECL. Article 15 provides for the applicability of ECL to export enterprises. Article 15 stipulates that the rare earth import, and export enterprises shall comply with laws and regulations on foreign trade, export control.⁴³ This short provision is quite potent as it subjects the rare earths to the export control policies and control measures detailed under ECL. In this respect, the State Council and the Central Military Commission (collectively referred to as the State Export Control Administrative Departments or SECADs) may prohibit the export of rare earths if required for the maintenance of national security and national interests.⁴⁴ ECL also prescribes specific licensing procedures and processes to implement export control of items that are on the controlled list or subject to temporary control. Export operators shall apply for the license to the SECADs.⁴⁵ Overall, the State is responsible for implementing the licensing system for exports.⁴⁶ When an export application is made, SECADs will review the export operator’s application and consider

40 B Buzan, *People, States and Fear: An Agenda for International Security Studies in the Post-Cold War Era* (Macmillan 1991) p 26.

41 B Buzan and O Waever and J de Wilde, *Security: A New Framework for Analysis* (Lynne Rienner) 1998; RJ Hanlon and K Christie, *Freedom from Fear, Freedom from Want: An Introduction to Human Security* (University of Toronto Press 2016).

42 First featured in the 13th Five-year plan for economic and social development and includes concepts such as innovative, coordinated, green, open and inclusive development. For a comprehensive insight into understanding the new development concept and its implementation refer to X Jinping, *The Governance of China – II* (Foreign Languages Press 2017) 217–250.

43 Article 5 of ECL.

44 Article 10 of ECL.

45 Article 12 of ECL.

46 Article 12 of ECL.

factors such as national security and national interests, international obligations and commitments, type of export, sensitivity of items, destination of country or region of the export, end users and end use and other factors provided in the regulation.⁴⁷ By virtue of Article 10 of ECL, export of an item may be prohibited to certain countries and regions, organizations and individuals in the interest of national security and national interests. What this entails is that ECL makes it possible to prohibit export of rare earths to a certain company in the name of national security and national interests. The possibility of exercising restrictions towards a company is not unique to ECL and may also be found in other export control regimes such as that of the US and EU. In fact, the US has successfully stopped Huawei, a Chinese company, from buying computer chips made with US technology on the grounds of national security and foreign policy interests.⁴⁸ China has had a turbulent relationship with the US in the past three years over restrictions over Huawei Technologies Co., the Semiconductor Manufacturing International Corp.

While ECL may be seen as China's response to export controls adopted by the US against Chinese companies, through ARE China wants to regulate the rare earths sector more comprehensively to address environmental concerns and plan adequately for rare earths production and domestic utilization. ARE reflects a change in position where China is not satisfied with simply being an exporter of rare earths that has pollution consequences for the country without any real benefit for its value-added sector. As Xi has remarked, "innovation-driven growth has become the pressing demand for China's development".⁴⁹ Once the extraction and processing of rare earths is limited considering sustainability and environmental concerns outlined in ARE, the resource will inevitably be reserved for domestic industries. Rare earths are an important resource for China as it is an important input for many crucial industries (electronics, steel, vehicles etc). Equipment's such as wind turbines and hybrid electric vehicles that use nickel-metal hydride batteries requires the crucial input of rare earths, and China has set its ambition to lead the green technology sector. In this context, there is an economic and social, ecological dimension that is at play. Based on the enforcement of ECL and ARE, and China's current national security strategy, the case for export control in the favour of rare earths for ensuring resource security for its domestic industries can be made. The justification is that it is crucial for the country's economic and

47 Article 13 of ECL.

48 'Huawei: US tightens restrictions on Chinese giant' (BBC, 17 August 2020) available at <www.bbc.com/news/business-53805038> accessed 15 October 2021.

49 X Jinping, *The Governance of China – II* (Foreign Languages Press 2017) 223.

social development and falls within the ambit of the “national security”. Such an expansive approach to security which includes economic and social dimension also finds support in current academic literature.⁵⁰ It should be noted that interplay between security and development is not a novel treatment.⁵¹

It is not the first time that economic development has been argued as a matter of national security. US equates security with self-sufficiency and competitiveness.⁵² Perusal of US’s legislative development reveals that economic welfare of the domestic industries has been linked with national security.⁵³ The Trump administration advocated vehemently for the protection of industries as a matter of national security. The US Department of Commerce conducted multiple investigations under Section 232 (c) of the Trade Expansion Act of 1962 to determine if certain imports threaten to impair national security.⁵⁴ During the investigation for steel and aluminium, both current and

50 K Karause and M C Williams, ‘Security and “Security Studies”: Conceptual Evolution and Historical Transformation’ in A Gheciu and XC Wohlforth (eds), *The Oxford Handbook of International Security* (OUP 2018) p 22; JB Heath (n8).

51 N Tschirgi, ‘International Security and Development’ in A Gheciu and XC Wohlforth (eds), *The Oxford Handbook of International Security* (OUP 2018) p 563.

52 MP Paulsen, “Trade Multilateralism and US National Security: The making of the GATT Security Exceptions” (2020) 41(1) *Michigan Journal of International Law* 109; E Krieger, “Rethinking Presidential Authority in Trade: A Modus Vivendi for Congressional Non-Interference and National Security” (2020) 88 (4) *University of Missouri-Kansas City Law Review* 1039.

53 The following statement of Alexander Hamilton from 1791 captures the direct connection of commercial interests with security as perceived by the US: Not only wealth; but the independence and security of the country, appear to be materially connected with the prosperity of the manufacturers. Every nation, with a view to those great objects, ought to endeavour to possess within all the essential of national supply. This comprises the means of subsistence, habitation, clothing and defence.

Alexander Hamilton’s Final Version of the Report on the Subject of Manufactures, Philadelphia, December 5, 1791 available at <<https://founders.archives.gov/documents/Hamilton/01-10-02-0001-0007#ARHN-01-10-02-0001-0007-fn-0123-ptr>> accessed 24 May 2021.

54 Section 232 (c) of the Trade Expansion Act of 1962 highlights the US’s approach in considering weakening of internal economy as a matter of national security. Section 232 (c) of the Trade Expansion Act of 1962 provides that: In the administration of this section, the Secretary and the President shall further recognise the close relation of the economic welfare of the Nation to our national security and shall take into consideration the impact of foreign competition on the economic welfare of individual domestic industries: and any substantial unemployment, decrease in revenues of government, loss of skills or investment, or other serious effects resulting from the displacement of any domestic products by excessive imports shall be considered without excluding other factors, in determining whether such weakening of our internal economy may impair the national security. For a comprehensive discussion on the investigations see Section 232 Investigations: Overview

future requirements for national defence and 16 specific critical infrastructure sectors were analysed. The investigation concluded that steel and aluminium are pertinent for US national security and that the quantities of imports negatively impacted the domestic production capacity of these products thereby “weakening internal economy” and thus “threatened to impair national security”. The report indicated that steel and aluminium imports led to the weakening of the domestic capacity for providing input for military equipment. Following the investigation, President Trump applied tariffs of 25% and 10% on certain imports of steel and aluminium, respectively.⁵⁵ US was under intense scrutiny for designing regulatory techniques that support domestic industries in the name of security,⁵⁶ but it seems that China may also adopt a similar approach.

While the rationale of resource security remains central to ARE, it is argued that ECL along with ARE is setting the legal ground for Chinese authorities to counter export control regimes such as that of the US which have targeted leading Chinese companies. US has also revoked China Telecom’s licence citing national security concerns.⁵⁷ China has had a turbulent relationship with the US in the past three years over restrictions over Huawei Technologies Co., the Semiconductor Manufacturing International Corp., etc. China has not ruled out the possibility of using rare earths as leverage tool in the US trade war initiated under Trump administration on the basis of national security.⁵⁸ The current Biden administration does not take a dramatically different sentiment towards China than its predecessor and it is not likely that trade disputes will abate.⁵⁹ The proposal that China may use ECL and ARE to impose

and Issues for Congress Updated 18 May 2021, available at <<https://fas.org/sgp/crs/misc/R45249.pdf>> accessed 15 October 2021; T Voon, “The Security Exception in WTO Law: Entering a New Era” (2019) 113 *American Journal of International Law* 45.

55 Presidential Proclamation 9704 of March 8, 2018, “Adjusting Imports of Aluminum into the United States”, 83 Federal Register 11619, March 15, 2018, and Proclamation 9705 of March 8, 2018, “Adjusting Imports of Steel into the United States”, 83 Federal Register 11625, March 15, 2018.

56 CP Brown, “Export Controls: America’s Other National Security Threat” (2020) 30 (2) *Duke Journal of Comparative and International Law* 283.

57 ‘US revokes licence of top Chinese telecoms company’ (BBC, 27 October 2021) available at <www.bbc.com/news/business-59055360> accessed 28 October 2021.

58 S Zheng, ‘China will not rule out using rare earth exports as leverage in trade war with US’ *South China Morning Post* (29 May 2019) available at <www.scmp.com/news/china/diplomacy/article/3012199/china-will-not-rule-out-using-rare-earth-exports-leverage> accessed 15 October 2021.

59 J Disis, ‘The China trade war is one thing Joe Biden won’t be rushing to fix’ CNN Business (BBC, January 26 2021) available at <<https://edition.cnn.com/2021/01/21/economy/china-trade-tech-war-biden-intl-hnk/index.html>> accessed 15 October 2021; ‘The US and China

export restrictions can also be reinforced by looking into its past conduct. In September 2010, China temporarily restricted the rare earths exports to Japan over a maritime incident.⁶⁰ China export restrictions on rare earths on two instances that were challenged in the WTO through, two cases namely *China-Raw Materials* in 2012⁶¹ and *China-Rare Earths* in 2014 by US.⁶² China had sought to justify the export restrictions by constructing an argument based on environmental protection seeking recourse to GATT Article XX (b)⁶³ and Article XX (g)⁶⁴ but failed on both occasions.

3 Consideration under WTO Law

3.1 *Introducing GATT Article XXI*

China may restrict exports of the rare earths through several measures such as export duties, a ban, instituting an export quota, minimum export price requirement, discretionary and non-automatic licensing system. China is most likely to invoke the national security exception under GATT Article XXI if a complaint is made by Member(s) of the WTO to defend ECL and ARE. GATT Article XXI allows Members to adopt measures inconsistent with the any of the provisions of the agreement against other Members for the purpose of security. GATT Article XXI provides regulatory autonomy to the WTO Members to address a matter of (I) national security information; (II) nuclear material; (III) military goods and services; (IV) war or other emergency in international relations; and (v) UN Charter Obligations. The Article allows opportunity for a WTO member to maintain any GATT inconsistent measure to address national security provided the measure in question meets the above stipulated requirements. Security exception also appears in Article XIV bis of the General Agreement on Trade in Services ('GATS') only with modulation to

are already at war. But which kind? Available at <<https://www.ft.com/content/583b44f7-5eb5-4967-983d-70d0f5573f5c>> accessed on 27 March 2022.

60 K Bradsher, 'Amid Tension, China Blocks Vital Exports to Japan' *The New York Times* (Sept. 22, 2010) available at <<https://www.nytimes.com/2010/09/23/business/global/23rare.html>> accessed 15 October 2021.

61 Appellate Body Report, *China – Export Duties on Certain Raw Materials*, WT/DS394/20.

62 Appellate Body Report, *China – Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, WT/DS431/17.

63 *ibid.*

64 Appellate Body Report, *China – Export Duties on Certain Raw Materials*, WT/DS394/20; Appellate Body Report, *China – Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, WT/DS431/17.

accommodate the scope of the Agreement which is services. Both provisions are structured in the same way with similar substantive stipulation except that Article XIV bis of the GATS is concerned with the 'supply of services as carried out directly or indirectly for the purpose of provisioning a military establishment'. Further, national security has also been carved out as an exception in the TRIPS Agreement through Article 73 which is verbatim to GATT Article XXI.

GATT Article XXI strikes a balance or reconciles between trade liberalisation, market access and non-discrimination rules with the security interests of the Member States. Such a reading is viable because it reflects a line of equilibrium between the right of the Members to adopt measures that pursue security interests versus the right of the Members to trade. The support to such an approach may also be found in the following discussion of the drafters:

I think there must be some latitude here for security measures. It is really a question of balance. We have got to have some exceptions. We cannot make it too tight, because we cannot prohibit measures which are needed purely for security reasons. On the other hand, we cannot make it so broad that, under the guise of security, countries will put measures which really have a commercial purpose. We have given considerable thought to it and that this is the best we could preserve that proper balance.⁶⁵

It has also been argued that national security exception under GATT is self-judging which means the exception allows a Member State to evaluate what "it considers necessary for the protection of its essential security interests". What the phrase self-judging means is that the exception is not reviewable by the panel and the AB⁶⁶ or that it is not 'justiciable'. The "self-judging" approach in context of Article XXI (b) is supported by the US, UAE, Bahrain, Saudi Arabia, and Egypt.⁶⁷ The problem with the self-judging approach is that it leaves the

65 United Nations, Econ. & Soc. Council, Preparatory Comm. of the U.N. Conference on Trade & Emp't, Thirty-Third Meeting of Commission A, at 19, U.N. Doc. E/PC/T/A/PV/33 (1947) (Dr. Speekenbrink on behalf of the Netherlands), available at <<https://docs.wto.org/gattdocs/q/UN/EPCT/APV-33.PDF>> accessed on 24 May 2021.

66 R Bhala, "National Security and International Trade Law: What the GATT Says, and What the United States Does" (1998) 19 *University of Pennsylvania Journal of International Law* 263; A Emmerson, "Conceptualizing Security Exceptions: Legal Doctrine or Political Excuse" (2010) 11 *Journal of International Economic Law* 135; RP Alford, "The Self-Judging Security Exception" (2011) *Utah Law Review* 697. RS Whitt, "The Politics of Procedure: An Examination of the GATT Dispute Settlement Panel and Article XXI Defence in the Context of the US Embargo of Nicaragua" 19 (1987) *Law and Policy in International Business* 603.

67 For more discussion on the different positions taken by the WTO Members on the "self-judging" nature of the security exception refer to T Voon (n54).

provision open to misuse without any kind of review. In *Russia – Traffic in Transit* the argument that the Panel lacks jurisdiction to review Russia's invocation of GATT Article XXI(b)(iii) was expressly rejected.⁶⁸ The Panel clarified that it has jurisdiction to determine whether the requirements of the above GATT Article XXI(b)(iii) are satisfied.⁶⁹

3.2 *Scope of Application of GATT Article XXI and Export Duties and Charges on Rare Earths*

A brief discussion on the scope of GATT Article XXI is instructive considering the possibility that China may impose export duties on the rare earths. There is limited interpretative extrapolation on the scope of GATT Article XXI as opposed to Article XX entitled "General Exceptions", but the interpretive approach adopted under the latter provision is relevant and instructive. Article XX allows under specific conditions from the GATT obligations and other WTO Agreements provided it has been explicitly incorporated by reference. In addition, whether GATT Article XX can be utilised to justify inconsistency, for instance with obligations under the Accession Protocol, has been clarified through various cases such as *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products (China – Publications and Audiovisual Products)*,⁷⁰ *China – Export Duties on Certain Raw Materials (China-Raw Materials)*⁷¹ and *China – Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum (China-Rare Earths)*.⁷²

GATT Article XX is available only to justify inconsistency of the obligations of the Protocol of Accession provided there is an objective link between an individual provision of the Protocol and an obligation or right under the GATT 1994.⁷³ Whether there is an objective link between the GATT and the Protocol of Accession requires an evaluation based on rules on customary treaty interpretation and involves the analysis of the relevant provision of the Protocol of Accession, and the Accession working party report.⁷⁴ This analysis also requires the consideration of overall architecture of the WTO system as a single package of rights and obligations.⁷⁵ In the China rare earths cases,

68 Panel Report, WT/DS512/R, paras 7.102 – 7.104.

69 *ibid* paras 7.53–7.58.

70 AB Report, WT/DS363/AB/R, (21 December 2009).

71 AB Report, WT/DS394/20.

72 AB Report, WT/DS431/17.

73 AB Report, *China – Raw Materials* (2012), para 307.

74 AB Report, *China – Rare Earths* (2014) para 5.74.

75 *ibid*.

the Appellate Body (AB) has clarified that GATT Article XX was not available to China to justify measures inconsistent with its commitments under paragraph 11.3 of the Protocol of Accession simply because the language of paragraph 11.3 of the Protocol of Accession does not suggest availability of the Article XX as an exception to justify inconsistency with the obligations arising from the Protocol of Accession.⁷⁶ China had argued that paragraph 1.2 of the Protocol of Accession builds a bridge between the Protocol and the GATT. The AB clarified that while paragraph 1.2 builds a bridge between the provisions of Protocol of Accession, and it does not mean obligations or rights may be automatically transposed from one part of this legal framework to another.⁷⁷ The same analysis may be applied to the use of Article XXI of the GATT to justify inconsistency of a measure with paragraph 11.3 of Protocol of Accession which is of particular interest in the case of rare earths. Paragraph 11.3 of Protocol of Accession provides:

Taxes and Charges Levied on Imports and Exports

3.China shall eliminate all taxes and charges applied to exports unless specifically provided for in Annex 6 of this Protocol or applied in conformity with the provisions of Article VIII of the GATT 1994.

This implication of this paragraph is quite clear in light of *China – Rare Earths* and *China – Raw Materials* which is that China cannot subject a rare earth to export duty or charge unless a particular form of rare earth appears on Annex 6 and if it does it may not be subject to more than what has been stipulated in the Annex. There is nothing in the language of paragraph 11. 3 of Protocol of Accession that suggests that GATT Article XXI is available to China by way of an exception. Therefore, if China was to impose export duties on rare earths inconsistent with its obligations under the Protocol of Accession, then GATT Article XXI would not be available as an exception. The important message is that China's Protocol of Accession has created more onerous obligations for China compared to other WTO members, and this restricts their ability in terms of maintaining export restriction in the form of duties aimed at rare earths management.⁷⁸

76 *ibid.*

77 *ibid.*

78 U Ghorl, "Three Lessons on the Construction of Export Controls under WTO Law" 39 (2020) *University of Queensland Law Journal* 85.

3.3 *Can Economic Development and Resource Security Be Justified under the Phrase “Essential Security Interests” under GATT Article XXI?*

As mentioned above, GATT Article XXI provides the possibility for the WTO members to maintain trade restrictive measures that they may consider necessary to protect their “essential security interests”. Interestingly, “security” has not been defined under the GATT and thus what constitutes a matter of security remains a matter of interpretation. It may be noted that “national security emergency” or “security emergency” clauses appear as open-textured phrases in other treaties too. The China–Australia Free Trade Agreement incorporates GATT Article XXI and Article XIV bis, *mutatis mutandis*, in Chapter 16.⁷⁹ For example, a similar construction of GATT’s essential security exception is to be found in Article 32.2 of the Agreement between the United States of America, the United Mexican States, and Canada.⁸⁰ In this agreement “essential security” remains undefined but also includes “maintenance or restoration of international peace or security”. A similar undefined “essential security” phrase is also found in Argentina–US BIT.⁸¹

In context of the WTO, during discussions in the Geneva session of the Preparatory Committee, drafters of the original Draft Charter had contemplated the challenges associated with the lack of definition of security. The drafters highlighted that a broad interpretation allows that the possibility of restrictive measures to be justified through reasoning that can be connected to security interest. This would mean that anything under the sun could be cited as a matter of security interest. Such a broad approach has the potential of justifying measures that were for the purpose of “protection for maintaining industries under every conceivable circumstance” which has been considered as problematic.⁸² At the same time, the drafters also contemplated against

79 Article 16.3: Security Exceptions.

80 1. Nothing in this Agreement shall be construed to: (a) require a Party to furnish or allow access to information the disclosure of which it determines to be contrary to its essential security interests; or (b) preclude a Party from applying measures that it considers necessary for the fulfilment of its obligations with respect to the maintenance or restoration of international peace or security, or the protection of its own essential security interest.

81 Treaty between United States of America and the Argentine Republic Concerning the Reciprocal Encouragement and Protection of Investment signed 14 November 1991 (entered into force 20 October 1994). This Treaty shall not preclude the application by either Party of measures necessary for the maintenance of public order, the fulfilment of its obligations with respect to the maintenance or restoration of international peace or security, or the Protection of its own essential security interests.

82 Second Session of the Preparatory Committee of the United Nations Conference on Trade and Employment, Verbatim Report, Thirty-Third Meeting of Commission held on Thursday, 24 July 1947 in the Palais Des Nations, Geneva, E/PC/T/A/PV/33, pp. 20–21.

a narrow interpretation because it would prevent adoption of measures by Members that would be pertinent for addressing their security interests.⁸³

It may be recapitulated that Article 21 of the NSL refers to utilization and protection, management and control of resources. It also seeks to ensure the sustainable, reliable, and effective supply of resources and energies required for economic and social development.⁸⁴ The straightforward articulation by China would be based on the fact that rare earths are an important input for critical industries and thus important for economic reasons. Rare earths are an important commodity for value added downstream sectors which is important for reinforcing their industrial base and thus resource security may simply be articulated as a matter of security interest.

In addition to the above, China can reinforce the security argument by seeking recourse to climate change agenda which has been in the recent past argued as a matter of security.⁸⁵ China may pursue the argument that rare earths constitute an important input for the manufacturing renewable energy sector products which ultimately will contribute to address environment and broader climate change issues. China has recently announced its ambitious carbon reduction targets and export restrictions on rare earths may be argued as a tool to achieve these goals.⁸⁶ ARE has a clear management focus for the purpose of rational development and utilization of rare-earth resources and protecting ecological environment.

It is to be recognised that ARE reflects the intention of China of trying to tackle the environmental impact of rare earths mining. Therefore, drawing

83 *ibid.*

84 (n 31).

85 For a comprehensive overview on literature on climate change and security refer to J Bubsy, "Environmental Security" in A Gheciu and XC Wohlforth (eds), *The Oxford Handbook of International Security* (OUP 2018) 471- 479 which refers to literature such as J Barnett, RA Mathew and KL O'Brien, "Global Environment Change and Human Security: An Introduction" in RA Mathew, J Barnett, B Mc Donald and KL O'Brein (eds), *Global Environmental Change and Human Security* (MIT Press 2010) 3-32; I Salehyan, "Climate Change and Conflict: Making Sense of Disparate Findings" (2014) 43 *Political Geography, Special Issue: Climate Change and Conflict* 1-5. EJ Parry, "The Greatest Threat to Global Security: Climate Change Is Not Merely an Environmental Problem <www.un.org/en/chronicle/article/greatest-threat-global-security-climate-change-not-merely-environmental-problem> accessed 15 October 2021. For contradictory view of not using national security frame for climate issues refer to M Jamshidi, "The Climate Crisis is a human security, not a national security issue" (2019) 93 *Southern California Law Review Postscript*.

86 'China and US pledge climate change commitment' (BBC 18 April 2021) available at <www.bbc.com/news/world-asia-china-56790077> accessed 15 October 2021.

connection between environment and security is not an unreasonable one. Rather bringing the issue of climate under the security exception is from a contemporary standpoint, need of the hour. There have been several studies undertaken that has extensively explored climate change in exacerbating security problems.⁸⁷ Until the end of the Cold War “the notion of environment as a significant source of insecurity was not on the radar screen”⁸⁸ but the interplay between the environmental crisis and security has been explored since the mid-2000s.⁸⁹ One view is that as climate change intensifies, natural resources become scarce and that can generate conflict to access resources.⁹⁰ In fact, a recent global survey of people’s opinions about climate change reveals that two thirds of people around the world view climate change as a global emergency.⁹¹ Governments across the world also recognise climate change as a security risk.⁹² It is pertinent to note that climate change was indicated as cause of conflict in Sudan and Darfur by the former UN Secretary General Ban Ki-Moon.⁹³ Hendrix and Glasser identified that climate suitability for agriculture and freshwater availability was responsible for the onset of conflict in Africa.⁹⁴ Framing the climate change as a matter of national security has supporters on both sides. Some argue against utilising the national security frame⁹⁵ while other stress the need for disruption of trade and investment rules that are too onerous for climate.⁹⁶

The above line of argumentation also finds basis in the sovereignty argument by virtue of which every nation has an inherent right to exploit its

87 (n 85).

88 R Dannrether, *International Security: The Contemporary Agenda*: Cambridge: Polity Press.

89 For a quick view of various studies undertaken refer to J Bubsy, “Environmental Security” in A Gheciu and XC Wohlforth (eds), *The Oxford Handbook of International Security* (OUP 2018) 471–479.

90 T Homer Dixon, *Environment Scarcity and Violence* (Princeton University Press 1999); A Mathew, ‘Environment, Conflict and Sustainable Development’ in N Tschirgi, M Lund and F Mancini (eds), *Security and Development: Searching for Critical Connections* (Lynne Rienner 2010).

91 Climate Change: Global poll finds most believe it’s a ‘global emergency’ (BBC 27 January 2021) available at <www.bbc.co.uk/newsround/55822356> accessed 15 October 2021.

92 M McDonald “Climate Change and Security: Towards Ecological Security?” (2018) 10 *International Theory* 153.

93 B Ki-moon, A Climate Culprit in Darfur, 16 June 2007 available at <www.un.org/sg/en/content/sg/articles/2007-06-16/climate-culprit-darfur> accessed 15 October 2021.

94 CS Hendrix and SM Glaser, “Trends and Triggers: Climate Change and Civil Conflict in Sub-Saharan Africa” (2007) 26 *Political Geography* 695–715.

95 Jamshidi (n 85).

96 See (n 85).

natural resources.⁹⁷ *China – Rare Earths* has recognised the sovereignty of all States over its natural resources but with the qualification that “they have the sovereign right to choose to structure and apply their export quota systems in a manner that advances their own conservation goals, but they must do so consistently with their GATT/WTO obligations”.⁹⁸ In this particular case, as highlighted above, it was a matter of technicality that the GATT Article XX was not available to justify obligation under paragraph 11.3 of the Protocol of Accession. However, the sovereignty argument was not outrightly rejected in the instant case.

3.3.1 The Subparagraphs Are Limitative

The relevant paragraph under which China can potentially present its argument is paragraph (b) of GATT Article XXI through the phrase “essential security interests” in the introductory part of paragraph (b). The presence of the phrase “essential security interests” gives the impression of unconstrained discretion to the WTO members. The introductory part where the phrase “essential security interests” features may be characterized as the chapeau for following the three subparagraphs that are enumerated under:

- (i) relating to fissionable materials or the materials from which they are derived;
- (ii) relating to the traffic in arms, ammunition and implements of war and to such traffic in other goods and materials as is carried on directly or indirectly for the purpose of supplying a military establishment;
- (iii) taken in time of war or other emergency in international relation; or

However, seeking the structure of paragraph (b) reveals the limit of what may be included within the scope of the phrase “essential security interests”. The chapeau of Article XXI (b) is followed by detailed enumeration of types of exceptions that are contemplated in the subparagraphs. These subparagraphs are separated from each other by semicolons qualify the sentence in the chapeau. The subparagraphs in a clear sense qualifies the determinative scope of “essential security interests” to actions that must relate only to subject matters – i.e., the “fissionable materials”, “traffic in arms”, and situations of “war

97 General Assembly resolution 1803 (XVII) of 14 December 1962, “Permanent sovereignty over natural resources”.

98 Panel Report para 7.662.

or other emergency in international relations” described in the enumerated subparagraphs. This position has been clarified in *Russia – Traffic in Transit*.⁹⁹ The Panel states:

But if one considers the logical structure of the provision, it is apparent that the three sets of circumstances under subparagraphs (i) to (iii) of Article XXI(b) operate as limitative qualifying clauses; in other words, they qualify and limit the exercise of the discretion accorded to Members under the chapeau to these circumstances.¹⁰⁰

The Panel further clarifies that the subparagraphs establish alternative (rather than cumulative) requirements that the action in question must meet for it to fall within the ambit of Article XXI(b).¹⁰¹ The structural construction of the Article XXI with the chapeau and the subparagraphs is a classic example of purposive enumeration that qualifies measures that can be taken by WTO Members. The construction of the provision reflects conscious design. One may argue that the subparagraphs set out a list of exceptions and hence the grounds are limited and exhaustive.¹⁰² Further, the close relation between the chapeau and the paragraphs of Article XXI (b) is manifested by opening phrases of the subparagraphs. Subparagraphs (i) and (ii) opens with the phrase “relating to” and subparagraph (iii) “taken in time of”. Specific to subparagraph (i) and (ii) dictionary meaning of relate means to “show or make a connection between two or more things”. The AB in *US- Shrimp* interpreted “relating to” in Article XX(g) as “close and genuine relationship of ends and means” between the measure and the end pursued.¹⁰³ Also, in *China-Raw Materials*, the AB defined the term as “hav(ing) some connection with, be(ing) connected to”.¹⁰⁴ Applying the understanding from the dictionary meaning and the AB jurisprudence on “relating to” it emerges that any Member may take measure which it considers necessary for the protection of its essential “security interest” provided it

99 Panel Report, WT/DS512/R, paras 7.127, 7.64-68, 7.82.

100 *ibid* para 7.65.

101 *ibid* para 7.68.

102 This is similar to Art XX of the GATT also contains a limited and exhaustive enumeration listed in paragraphs (a) to (j) along with the introductory clause which is called the chapeau sets requirements for further appraisal of the measures that are sought to be justified under one of the paragraphs. Art XX sets out in paragraphs (a) to (j) grounds of justification for measures taken to protect societal values such public morality; human, animal or plant life; compliance with GATT consistent laws and regulations; exhaustible natural resource, national treasures of artistic, historic or archaeological value.

103 Para 141.

104 AB Report, *China – Raw Material* (2012) Para 355.

relates to fissionable material, traffic in arms, ammunition and implements of war and to such traffic in goods and material for the purpose of supplying a military establishment. Paragraph (iii) opens with the phrase “taken in time of” followed by particular circumstances that only includes time of war or emergency in international relations during which the measure pertaining to security may be taken by a Member.

3.3.2 The Qualification of “Essential”

While the Members are free to define what it considers to be “essential security interests”, not every interest is one that relates to the security of a nation, nor will every security interest qualify as being “essential”.¹⁰⁵ The panel in *Russia – Traffic in Transit* has clarified that “essential security interests” is a narrower concept than “security interests” and concerns “those interests relating to the quintessential functions of the state, namely, the protection of its territory and its population from external threats, and the maintenance of law and public order internally”.¹⁰⁶ While the Panel clarified that this narrow clarification is not a rigid one and that the specific interests may depend on situations perception and changing circumstances,¹⁰⁷ but only dangers of terrorism and extremism were accepted consistent with the formulation described above.¹⁰⁸ The Panel stipulates that the Members are not free to elevate any concern to that of an “essential security interest”.¹⁰⁹ For instance, a trade interest cannot simply be re-labelled as an “essential security interest” by a Member to release itself from the obligations under the “reciprocal and mutually advantageous arrangements” of the WTO.¹¹⁰ It is a settled position that military security is considered essential but it remains unclear whether the ever changing nature of threats that are non-militaristic in nature can also be considered essential. To some extent the Panel has clearly drawn limits on the scope of what can be considered essential. Ultimately, whether a certain interest qualifies as essential will be assessed by Panel and the Appellate Body taking into account all the circumstances of the case at hand and may ultimately be linked to the enumerated sub-paragraphs of Article XXI (b).

105 P Delimatsis and T Cottier and ‘Art XIV bis: Security Exceptions’ in Wolfrum R, Stoll PT, Feinäugle CI, (eds.) in *WTO – Trade in Service* (Martinus Nijhoff Publishers 2008) 329–348.

106 Panel Report, *Russia – Traffic in Transit* (2019), para. 7.130.

107 *ibid.*

108 *ibid.*

109 *ibid* para 7.132.

110 *ibid* para 7.133.

3.3.3 The Requirement of “Necessity”

GATT Article XXI gives discretion to the WTO to assess the necessity of the measure for protecting their essential security interest. The provisions do not set forth any defining ingredients to what circumstances may be considered “necessary”. It is argued that the term “necessary” when read together with “it considers” gives Members of the WTO sufficiently wide discretion to determine the state of necessity to protect their security interests.¹¹¹ This view is supported by Australia, China, Japan, Canada, US and Singapore.¹¹² However, this discretion of the Members is not unfettered because it is qualified by requirement of necessity. The available jurisprudence on the requirements of necessity in context of GATT Article XXI remains limited. The concept of necessity has been interpreted extensively in international law¹¹³ and in the WTO in context of GATT Article XX.¹¹⁴ In identifying if the measure in question is necessary within the context of GATT Article XX, the AB has adopted weighing and balancing the three factors against each other:

- i. the importance of the societal value pursued by the measure;
- ii. the extent to which a measure contributes to the realization of the end pursued; and

¹¹¹ W Weiss, “Adjudicating Security Exception in WTO Law: Methodical and Procedural Preliminaries” (2020) 54(6) *Journal of World Trade* 829–852.

¹¹² Panel Report (n 106) See the section on main arguments of the third parties pg 33–39. Australia’s third-party statement, paras. 9–21; Brazil’s third-party submission, paras. 4–5 and 8–9; third-party statement, paras. 21–30; and response to Panel question No. 6; Canada’s third-party statement, paras. 6–8; and response to Panel question No. 6, para. 8; China’s third-party statement, paras. 18–19; and response to Panel question No. 6, para. 6; Japan’s third-party submission, paras. 32–38; Singapore’s third-party statement, paras. 14–19; United States’ third-party statement, paras. 1, 11–12, 34–35; and response to Panel question No. 6, para. 31.

¹¹³ The formulations of necessity in international law have been considered extensively. Grotius credited for bringing the doctrine from realms of municipal law to international law has explained the doctrine of necessity through examples has regarded necessity is “nothing short of extreme exigency”. He proposed that “under the plea of necessity nothing short of extreme exigency can give one power a right over what belongs to another no way involved in the war”. Ago states, that the essential interest must be “absolutely of an exceptional nature”. One may also seek recourse to the 2001 ILC Art 25 on Responsibility of States for Internationally Wrongful Acts to understand what constitutes necessity. One element of necessity under Art 25 is “to safeguard an essential interest against grave and imminent peril”. In addition, the measures in question must be the “only way” available to safeguard its essential interests. This means that no other alternatives are available to protect its essential interests except the measure adopted by the State. It further stated that this rule would also apply even if such lawful alternatives were more costly or less convenient.

¹¹⁴ Art XX: General Exceptions of the GATT.

- iii. the extent to which the measure in question produces trade restrictive effects¹¹⁵

The above prescription has been referred to as the least restrictive measure test which means that if an alternative measure that is less trade restrictive and is reasonably available with an equivalent contribution¹¹⁶ to the measures that the measure in question will fall short of the “necessary” requirement. The AB has also clarified that an alternative means is not “reasonably available” if it is “merely theoretical in nature and does not achieve the desired level of protection”.¹¹⁷ The jurisprudence regarding necessity available under GATT Article XX disputes may be instructive, albeit in a limited manner, in informing interpretive matters that arise in GATT Article XXI. This is for the reason that the word “necessary” in GATT Article XXI is different from the context of the same word in GATT Article XX.¹¹⁸ It has been argued that the presence of “which it considers” in the provisions extend the Members discretion not only to the determination invoking Member’s essential security interests, but also to the necessity of the measures for the protection of those interests.¹¹⁹

The Panel in *Russia – Traffic in Transit* case has clarified the rubric of necessity by way of two important points. First, the Members must sufficiently articulate the “essential security interests” that it considers the measures at issue are necessary to protect. Second, for a measure to be necessary under GATT Article XXI, it must “meet a minimum requirement of plausibility in relation to the proffered essential security interest, i.e., they are not implausible as measures protective of these interests”.¹²⁰ Arguably, the approach of “minimum requirement of plausibility”¹²¹ could be effective in tackling interests of

115 It is important to consider the AB’s finding in *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R (adopted 5 April 2001) (*EC-Asbestos*) (2001) regarding the requirements of necessity.

116 The AB in the *EC-Asbestos*, para 172 has clarified the meaning of “reasonableness” by stating that a measure with less restriction on trade could not be considered as “a reasonable alternative” if it does not have the potential to achieve the same level of protection sought. *EC-Asbestos* (2001) paras 169–174.

117 *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WT/DS363/AB/R, (21 December 2009) para 318–319.

118 P Ranjan, “National Security Exceptions in the General Agreement on Tariffs and Trade (GATT) and India-Pakistan Trade” (2020) 54 (3) *Journal of World Trade* 643.

119 Wolfgang Weiss, Adjudicating Security exceptions in WTO Law: Methodical and Procedural Preliminaries (2020) *Journal of World Trade* 54(6) 829.

120 (n 99) para 7 138–7 139.

121 (n 99) para 7 138.

the invoking Member that challenge the baseline expectations of the treaty regime in question.¹²²

It is interesting to note that the above two-point evaluation was utilised to the full extent by the Panel in the more recent *Saudi Arabia – Measures Concerning the Protection of Intellectual Property Rights* dispute,¹²³ where inadequate protection of intellectual property rights held by or applied for entities based in Qatar was challenged.¹²⁴ With respect to the first point regarding the formulation of the “essential security interests”, the Panel stipulated that the purpose of this part is simply to assess whether the challenged measures are related to the interest indicated. Only a “minimal satisfactory” standard is applied to this effect.¹²⁵ The Panel accepted Saudi Arabia’s articulation of the “essential security interests” as they relate to quintessential functions of the State.¹²⁶ The standard of plausibility which explores the connection between the measures and essential interests set forth by *Russia – Traffic in Transit* was applied by the Panel in Saudi Arabia true to its spirit. In conclusion, the Panel found that the measures, that directly or indirectly, prevented beIN Media Group LLC from obtaining Saudi legal counsel to enforce its IP rights through civil enforcement procedures before Saudi courts and tribunals meets the requirements of TRIPS Article 73(b)(iii).¹²⁷ The Panel recognised that Saudi’s umbrella policy of ending or preventing any form of interaction with Qatari nationals and access to civil remedies through Saudi courts (anti-sympathy measures) was plausibly directed to protect Saudi population and citizens government institutions, and its territory from the threats of terrorism and extremism.¹²⁸ The Panel clearly remarked that the “anti-sympathy” measures “met a minimum requirement

¹²² (n 118).

¹²³ The case of *Saudi Arabia – Measures Concerning the Protection of Intellectual Property* is also considered because the language of the security provisions in the GATT and TRIPS is similar and neither the parties nor the Panel in this case contested or deviated from the interpretative approach in *Russia – Traffic in Transit*. *Saudi Arabia – Measures Concerning the Protection of Intellectual Property* builds on the clarification made in the *Russia – Traffic in Transit* case. It is submitted that the paper does suggest transferability of Art. XXI GATT’s interpretation to Art. 73 TRIPS or vice versa because of identical language of both the provisions. However, since there has been limited disputes which have involved national security in the WTO interpretation on national security under the TRIPS may be instructive for dispute under the GATT or vice versa.

¹²⁴ *Saudi Arabia – Measures concerning the Protection of Intellectual Property Rights – Communication from Qatar WT/DS567/8*, 5 October 2020.

¹²⁵ *ibid* para 7.281.

¹²⁶ *ibid* para 7.280.

¹²⁷ *ibid* para 7.281.

¹²⁸ *ibid* para 7.286–7.288.

of plausibility in relation to the proffered essential security interests, i.e., that they are not implausible as measures protective of these interests".¹²⁹ However, the Saudi Arabia's non-application of criminal procedures and penalties to broadcasting entity beoutQ did not meet the requirement of minimum plausibility as the connection with the measures and essential security interests remained unclear. Therefore, the criminal procedures and penalties do not meet the requirements for invoking TRIPS Article 73(b)(iii). The Panel indicated that it was not clear how the application of criminal procedures or penalties to beoutQ would require any entity in Saudi Arabia to engage in any form of interaction with beIN or any other Qatari national.¹³⁰

3.3.4 The Scope of "Emergency in International Relations"

Another interesting question is whether the phrase in paragraph (iii) "other emergency in international relations" allows the WTO Members expansive room for manoeuvre to include concerns that may include issues that are social and economic in nature. In fact, COVID-19 crisis has also forced countries to revisit the traditional understanding of what constitutes a matter of emergency. Pauwelyn argues that the phrase gives a great deal of leeway to enact restrictive economic measures in times of emergency in international law.¹³¹ Broadly, the concept of "emergency" in domestic sphere also does not remain confined to event or situation and goes beyond defence concerns, territorial sovereignty or physical safety of the State and includes social cost:

An 'emergency' occurs when there is a general agreement that a nation or some part of it faces a sudden and unexpected rise in social costs, accompanied by a great deal of uncertainty about the length of time the high level of cost will persist 'Emergency powers' describe the expansion of governmental authority generally and the concomitant alteration in the scope of individual liberty, and the transfer of important 'first instance' law-making authority from legislatures to executive officials in emergencies.¹³²

129 *ibid* para 7.288.

130 *ibid* para 7.289.

131 J Pauwelyn, "Export Restrictions in Times of Pandemic: Options and Limits under International Trade Agreements" (April 30, 2020).

132 M Tushnet, "The Political Constitution of Emergency Powers: Parliamentary and Separation-of-Powers Regulation" (2008) 3 *International Journal of Law in Context* 275.

One can also capture the abovementioned broad scope by seeking recourse to the definition of the “emergency” in various jurisdictions. For instance, the UK’s Civil Contingency Act 2004 defines emergency as:

- (a) an event or situation which threatens serious damage to human welfare in a place in the United Kingdom,
- (b) an event or situation which threatens serious damage to the environment of a place in the United Kingdom, or
- (c) war, or terrorism, which threatens serious damage to the security of the United Kingdom.¹³³

Further, human welfare under Section 1 (a) has been defined generously to include loss of human life, human illness or injury, homelessness, damage to property, disruption of a supply of money, food, water, energy or fuel, disruption of a system of communication, disruption of facilities for transport, or disruption of services relating to health. Environment in Section 1 (b) includes disruption or destruction of plant life or animal life.

Canada’s Emergencies Act defines national emergency as an urgent and critical situation of a temporary nature that:

- (a) seriously endangers the lives, health or safety of Canadians and is of such proportions or nature as to exceed the capacity or authority of a province to deal with it, or
- (b) seriously threatens the ability of the Government of Canada to preserve the sovereignty, security and territorial integrity of Canada and that cannot be effectively dealt with under any other law of Canada.¹³⁴

Both the above definitions above capture damage to health and safety of human life, environment within the scope of emergency.

The question is – whether “emergency” covers matters of both military, serious security-related conflicts and non-military interests’ such as natural disasters, pandemics, or financial crises as a permissible basis for Members to excuse themselves from their responsibility under GATT. One may argue for “adverse economic situation” as a basis for deviation from GATT obligations

133 Part 1 – Meaning of Emergency <www.legislation.gov.uk/ukpga/2004/36/contents> accessed 15 October 2021.

134 Emergencies Act R.S.C., 1985, c. 22 (4th Supp.) <<https://laws-lois.justice.gc.ca/eng/acts/e-4.5/page-1.html#h-213808>> accessed 15 October 2021.

under the security-exception clause because the origin of GATT lies in the slumped economic condition post second world war. GATT formulates trade relations between Member States and thus has an economic context which may allow for the above-mentioned phrase to be read to include economic emergency. It should be noted that the option of deviating from treaty obligations in case of adverse economic/industrial situation is not unknown but controversial. In 1975, Sweden notified import restrictions on leather shoes, plastic shoes, and rubber boots on security grounds with the justification that maintenance of a minimum domestic production capacity in vital industries was necessary to meet basic needs in case of war or other emergency in international relations.¹³⁵ Eventually, Sweden decided to terminate the quotas on leather and plastic shoes.

Russia – Traffic in Transit has clarified that only specific type of interests that are similar to the situation of war are justified pursuant to “emergency in international relations”. This is because phrase “emergency in international relations” is prefixed by the phrase “taken in time of war” joined with the “or” which indicates that war is one example of the larger category of “emergency in international relations”.¹³⁶ The Panel has clarified that conflicts that give rise to defence and military interests, are included under this subparagraph.¹³⁷ It seems that the Panel has considered the phrase in the context of the entire provision where the subparagraphs set forth only specific type of matters such as fissionable materials, and traffic in arms, ammunition and implements of war, as well as traffic in goods and materials for the purpose of supplying a military establishment. Without contest, matters included in the subparagraphs fall within the scope of traditional threats that compromise the physical integrity of the State that require immediate action. Although, the Panel has considered a sufficiently wide scope of conflict which includes situations of armed conflict but also latent conflict.¹³⁸ In coming to this conclusion, the Panel relied on the historical diplomatic practice and referred to Article 11 of the Covenant of the League of Nations: “Any war or threat of war, whether immediately affecting any of the members of the League or not, is hereby declared a matter of concern to the whole League ... [i]n case any such emergency should arise ...”.¹³⁹

135 Introduction of A Global Import Quota System for Leather Shoes. Plastic Shoes and Rubber Boots, Notification by the Swedish Delegation, <<https://docs.wto.org/gattdocs/q/GG/L4399/4250.PDF>> accessed 15 October 2021.

136 (n 68) para 7.72.

137 (n 68) paras 7.75–7.76.

138 (n 68) para 7.76.

139 (Covenant of the League of Nations, done at Paris, 28 June 1919, League of Nations Treaty Series, Vol. 108, p. 188).

It is interesting to note that Panel recapitulated the exchange between the delegate from Netherlands and US on meaning of the term “or other emergency in international relations”¹⁴⁰ during the ITO Charter’s negotiations. The US delegate’s position reflected that “other emergency in international relations” reflects the “situation which existed before the last war, before our own participation in the last war”.¹⁴¹

Following the above order, it is interesting to note during clarification of the “emergency in international relations” the Panel in *Russia – Measures Concerning Traffic in Transit* has also included maintenance of law and public order interests within the scope of this phrase. The Panel clarified that “heightened tension or crisis, or of general instability engulfing or surrounding a state”¹⁴² are also included within the ambit of the phrase. By including “maintenance of law” and “public order”, the Panel may have inadvertently suggested the inclusion of law enforcement activities pursuant to police powers to ensure public safety. There is a fine difference between public order and national security which arguably is in the nature of action required for risk management and severity. Public order tends to cover law-enforcement activities during peace time while “security interests” are implicated when the public order itself may be under severe stress due to armed hostilities or acute crises.¹⁴³ Public order may include threats such as riots and other civil disturbances. In most cases the threats that are covered within the ambit of security are related to terrorism, weapons of mass destruction, attack by foreign country, regional conflicts, technology enabled crime, organized crime, critical infrastructure, global pandemics. Following this reasoning, one cannot help but question if it is wise to juxtapose public order into the security exception as the Panel has regarded. In fact, in many instruments such as OECD Declaration on International Investment and Multinational Enterprises C (76)99,¹⁴⁴ the General Agreement

¹⁴⁰ (Second Session of the Preparatory Committee of the United Nations Conference on Trade and Employment, Verbatim Report, Thirty-Third Meeting of Commission A Held on Thursday, 24 July 1947, E/PC/T/A/PV/33, p. 19 (as corrected by Second Session of the Preparatory Committee of the United Nations Conference on Trade and Employment, Corrigendum to Verbatim Report of Thirty-Third Meeting of Commission A, E/PC/T/A/PV/33.Corr.2).

¹⁴¹ *ibid.*

¹⁴² (n 68) 7.76.

¹⁴³ WW Burke-White & AV Staden, “Investment Protection in Extraordinary Times: The Interpretation and Application of Non-Precluded Measures Provisions in Bilateral Investment Treaties” (2008) 48(2) *Virginia Journal of International Law* 308-409.

¹⁴⁴ Adopted on: 21/06/1976 Amended on: 25/05/2011 available at <<https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0144>> accessed 15 October 2021. National Treatment II. 1. That adhering governments should, consistent with their needs to maintain *public order*, to protect their *essential security interests* and to fulfil commitments

on Trade in Services,¹⁴⁵ Agreement on Government Procurement,¹⁴⁶ public order and security interests feature as independent requirements in the same provision or in different provisions as a part of the same agreement.

Overall, *Russia – Traffic in Transit* has nudged the position that that political or economic differences between Members are not sufficient, of themselves, to constitute an emergency in international relations.¹⁴⁷ The Panel also drew attention to the conduct of Members in the past. The Panel stated that in the past Members have generally exercised restraint in their invocations of GATT Article XXI(b)(iii), and only invoked the exception in situation of armed conflict and acute international crisis of the nature where tensions could lead to armed conflict.¹⁴⁸ In the past, the Members have separated military and serious security-related conflicts from economic and trade disputes.¹⁴⁹

relating to international peace and security, accord to enterprises operating in their territories and owned or controlled directly or indirectly by nationals of another adhering government (hereinafter referred to as “Foreign-Controlled Enterprises”) treatment under their laws, regulations and administrative practices, consistent with international law and no less favourable than that accorded in like situations to domestic enterprises (hereinafter referred to as “National Treatment”).

145 Art XIV: General Exceptions Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where like conditions prevail, or a disguised restriction on trade in services, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any Member of measures: (a) necessary to protect public morals or to maintain *public order*; (5) ... Footnote: 5. The public order exception may be invoked only where a genuine and sufficiently serious threat is posed to one of the fundamental interests of society. Article XIV bis: Security Exceptions 1. Nothing in this Agreement shall be construed: (a) to require any Member to furnish any information, the disclosure of which it considers contrary to its *essential security interests*; or ...

146 Art XXIII: Exceptions to the Agreement 1. Nothing in this Agreement shall be construed to prevent any Party from taking any action or not disclosing any information which it considers necessary for the protection of its essential security interests relating to the procurement of arms, ammunition or war materials, or to procurement indispensable for *national security* or for national defence purposes.

2. Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent any Party from imposing or enforcing measures: necessary to protect *public morals, order* or safety, human, animal or plant life or health or intellectual property; or relating to the products or services of handicapped persons, of philanthropic institutions or of prison labour.

147 (n68) para 7.75.

148 (n68) para 7.81.

149 *ibid.*

More recently, in *Saudi Arabia – Intellectual Property Rights*, Saudi Arabia argued that it had severed diplomatic and economic ties with the complaining Member which is an ultimate State expression of the existence of an emergency in international relations. Saudi Arabia alleges that the reason for its action is Qatar's repudiation of the Riyadh Agreements concluded between the GCC members designed to address regional concerns of security and stability of the region¹⁵⁰ and its interference in the international affairs of the countries in the region.¹⁵¹ Saudi Arabia also alleged that Qatar supported terrorism and extremism which affects the peace and stability of GCC members.¹⁵² To assess whether an "emergency in international relations" exist between the disputing parties Panel utilised the analytical framework of *Russia – Traffic in Transit*. The Panel reiterated that the term "emergency in international relations" refers generally "to a situation of armed conflict, or of latent armed conflict, or of heightened tension or crisis, or of general instability engulfing or surrounding a state".¹⁵³ The Panel accepted the argument tendered by Saudi Arabia that severance of all diplomatic, consular and economic ties with Qatar is indicative of exceptional and serious crisis in the relations between the two States and sufficiently establishes the existence of an "emergency in international relations".¹⁵⁴ The Panel recognised that severance of diplomatic or consular relations is a measure of last resort in a situation of severe crisis between the relations of States and thus can be seen as an "exceptional act".¹⁵⁵ The nature of Saudi Arabia's allegations of Qatar's support of terrorism and extremism in the region is indicative of situation of heightened tension or crisis a concern which is beyond political or economic in nature but relates to security interests.¹⁵⁶ The Panel's acceptance of the breakdown of diplomatic and economic relations with Qatar as an "emergency in international relations" reflects that the phrase encompasses action taken to uphold the territorial integrity of the State and counter threats to the peace.

150 Saudi Arabia's opening statement at the first meeting of the Panel, paras. 21–22 and 44–45; closing statement at the first meeting of the Panel, paras. 18–20; and second written submission, paras. 14–18 and 41.

151 Saudi Arabia's opening statement at the first meeting of the Panel, para. 47.

152 Saudi Arabia's opening statement at the first meeting of the Panel, paras. 26–37; closing statement at the first meeting of the Panel, paras. 17–20; and second written submission, paras 14–15.

153 Panel report, WT/DS567/8, Para 7.245.

154 Ibid 7.262.

155 ibid 7.259.

156 ibid 7.263.

3.3.5 China's Projection of National Security in the WTO and Some Overarching Reflections

China's approach to security through ONSC is a comprehensive one and in some manner reflective some of the contemporary understanding of security described in the above sections and is to a large extent is aimed to safeguard China's interests nationally and internationally. It is inevitable that China will seek to argue for its own view on national security in the WTO in line with the visions and strategy of the ONSC. As a matter of fact, the US also demonstrates a much broader understanding of security which goes beyond the scope of the GATT Article XXI in its current form and has in the past also pushed its own understanding of national security in the WTO. The discussion in the above section has highlighted that a formalistic reading of GATT Article XXI shows that it has a narrow scope and potentially covers the security interest that are considered traditional in nature. This does not come as a matter of surprise since the instrument was drafted several decades ago and does not in any way accommodate the reality that the concept of security has been enlarged in light of political, social, cultural and economic developments. There is nothing in the sub-paragraphs of GATT Article XXI (b) that may accommodate the concern for resource security and associated economic concerns. In fact, it could be argued that GATT Article XX (g) that concerns exhaustible natural resource may be somewhat more relevant and may serve as a valid ground for seeking the exception. While Article XX (g) offers a basis for protection of exhaustible natural resource, it does not fully allow the pursuit of the argument of resource security which is intrinsically linked to economic development and stability.

Further, there has been much excitement and optimism built around phrases such as "which it considers necessary for the protection of its essential security interests" and "emergency in international law" on the basis that these phrases leave open the room for manoeuvre by the Members to argue for their position on national security in the WTO. Could this mean that the phrase "essential security interest" or "emergency in international law" may provide the opportunity to China to accommodate resource security argument within the ambit of GATT Article XXI? *Russia – Traffic in Transit* displays a cautious approach in fleshing the meaning of the phrases which has remained confined to war, conflict and violence. The Panels in both the disputes were confronted with situations that pertained to conflict (territorial and diplomatic) and not to situations that reflected the broadened and deepened security concerns that go beyond issues of war and peace. For China's argument of resource security to be recognised, the Panels would have to engage with the broader meaning of security through the elaboration of somewhat open textured phrases. However, the Panel's interpretative exercise may not yield the outcome that

a Member like China that have a broader security frame desires and this is because of the institutional constraint on the Panels. The WTO agreements formalize specific rules and are the written expression of the will and consent of the Member States.¹⁵⁷ The construction and language of the WTO Agreements reflects the objectives of the organization and also the expectations of the WTO Members. In addition, Article 3.2 of the DSU which provides that the DSB serves to provide security and predictability to the multilateral trading system and their recommendation and rulings of the cannot add or diminish the rights and obligations provided in the covered agreements.¹⁵⁸ Article 3.2 of the DSU aims to avoid uncertainties and any judicial activism that can arise from the process. Therefore, the expression of the will and consent of the Members must be upheld by the Panel as it rightly concerns rules that the WTO Members wanted to impose on their relationship. For example, even though the Panel may consider the domestic experience and understanding of “emergency”, they must interpret by reconciling the overall treaty language, structure and prevailing institutional context in which the Agreement operates and also the interest and expectations of the Members.¹⁵⁹ The institutional constraint thus restricts the ability of the Panel to read more into the security provisions keeping in view the contemporary developments. If Panel adopts a broader interpretive approach may go beyond their competence. Moreover, the object and purpose of the WTO Agreement and the GATT 1994 is to promote the security and predictability of the reciprocal and mutually advantageous arrangements and the substantial reduction of tariffs and other barriers to trade. Article 3.2 of the DSU and 19.2 of the DSU indicate that the recommendations and rulings of the DSB cannot add to or diminish the rights and obligations provided in

157 C Fernandez de Casadevante V Romani, *Sovereignty and Interpretations of International Norms* (Springer, Berlin 2007) 4.

158 Art 3.2 provides that the dispute settlement system of the WTO is a central element in providing security and predictability to the multilateral trading system. The Members recognize that it serves to preserve the rights and obligations of Members under the covered agreements, and to clarify the existing provisions of those agreements in accordance with customary rules of interpretation of public international law.

159 The aspect of preservation of legitimate expectation arising out of the covered agreements is manifestly important as it protects and promoted the trade interaction between the Member States which lies at the heart of the existence of the WTO as an institution. An interesting treatment of legitimate expectation is also, found in Korea-Government Procurement Panel where the Panel recognized that legitimate expectations not only arise from the negotiated concessions but also concern measures which impair the concession under negotiations.

Panel Report, *Korea-Measures Affecting Government Procurement Measures*, WT/DS163/R, adopted June 2009, 7.95.

the covered agreements. The Panels carry the burden of ensuring the security and predictability of the regime while doing the difficult task of balancing the competing claims and thus may encounter political risk if they add to what has been set out in GATT Article XXI when addressing questions of national security. One example which demonstrates that the Panel has been aware of the institutional constraints imposed on them was in *Russia – Traffic in Transit* when it clearly articulated that political or economic differences between Members are not sufficient by themselves to constitute an emergency in international relations for purposes of subparagraph (iii). The Panel highlighted that the exception provides flexibility for the Member to pursue their security interest but does not allow for expression of the unilateral will of a Member that would be contrary to the security and predictability of the WTO.¹⁶⁰ While this articulation is praiseworthy from the perspective that it has clarified that the exclusion of economic and political concerns within this particular exception but it does not serve as a panacea for the problems between Members exacerbated by closer coupling of politics and security.¹⁶¹

4 Conclusion

The chapter explored the possibility of accommodating resource security and economic development arguments under GATT Article XXI. The conclusion is that while security is available as an exception for the WTO Members the scope of the provision is very narrow. In fact, the scope is by and large only confined to militaristic matters. If China aims to defend export restrictions under GATT Article XXI, it is most likely to fail. China's argument is representative of a broader understanding of security and GATT Article XXI is not representative of the contemporary field of security and where it is headed. Several issues (climate, health, resources, development, economic) that reflect shifting economic, social and political priorities in terms of security remains excluded. The current security demands of the WTO Members cannot be simply ignored and to hope that Members practice self-restraint that was prevalent before Trump era is not pragmatic. The understanding of the complex interplay between both trade and security has evolved and the US-Ukraine conflict highlights tension surrounding the issue of security. The realignment of WTO in mainly two large blocks with US and Allies on one side and China on the other also

160 (n 68) 7.79.

161 RR Krebs, 'The Politics of Security' in A Gheciu and XC Wohlforth (eds), *The Oxford Handbook of International Security* (OUP 2018) 299.

add to the complexity of consideration of security in the WTO. Members may be tempted to establish their notion of security through the dispute settlement process and given the diverse interpretations by Members it may not be reasonable to conceive that the Panels may be able to offer quick, easy solution by resolving the disputes that concern national security.

The so called undefined catch all phrases such as “essential security interest” or “emergency in international law” touted as possibilities for encompassing the contemporary issues is a falsehood. The Panels are limited in their function and interpretive role by the organizational structure and DSU provisions. While this exposes the limits of WTO’s design, the more important argument is that the Panels cannot make up for what does not exist in the text of GATT Article XXI. A gallant approach to expansive interpretations by a certain Panel that add to the meaning of the provision would expose them to political risk.¹⁶² Moreover, an undesirable outcome for any of the Members may prompt them to discredit the Panel and the implementation of the recommendations may also be protracted amidst geopolitical tensions. While adjudication may assist in helping the Members to understand their priorities¹⁶³ it does not seem to offer a full resolution that the matter requires.

What complicates matters is that the AB has collapsed because US has persistently blocked the appointment of new Members over AB’s interpretive approach. This has implications for the Panel reports as they are not binding subject to appeal. While this entails significant weakening of the WTO Dispute Settlement System with considerable risk for the WTO’s credibility. As Heath rightly remarks that the collapse of the AB has shifted authority dynamics in the trading system.¹⁶⁴ While the EU led Multi Party Interim Appeal Arbitration Arrangement seeks to offer a stop gap measure by providing an appellate function, it does not cover all Members. Most importantly, US has not signed up for it and thus leaves its veracity on national security legalism open for discussion.

The chapter fully explores that for China in context of rare earths, resource security is a matter of importance given its economic (innovation, green-tech sector) and environmental concerns and the failure of the GATT framework to accommodate its interest may be detrimental to their willingness towards their larger commitment to the WTO. China’s resource security argument

162 D Boklan and A Bahri, “The First WTO’s Ruling on National Security Exception: Balancing Interests or Opening Pandora’s Box” (2020) 19(1) *World Trade Review* 122–136.

163 CL Davis *Why Adjudicate? Enforcing Trade Rules in the WTO* (Princeton University Press 2012).

164 JB Heath, “Trade and Security among the Ruins” (2020) 30 *Duke Journal of Comparative and International Law* 223.

simply becomes an example to highlight what lacks in substance under the existing exception. Inadequate rules cannot be a satisfactory explanation for the Members not to address their evolving security interests. The importance of addressing the inadequacy of the provision is critical to ensure Member's commitment to the integrity of the legal structure of the WTO and to address the risk posed to global supply chains in the name of national security. If every Member was to assert their own position on security in the WTO it would jeopardise the delicate order of the WTO.

The contentious nature of security disputes perhaps requires a different strategy for its resolution. In addition, in absence of a clear strategy to resolve the AB crisis and by the WTO Members does make one wonder if judicialization of trade disputes is something in the past. Therefore, it becomes somewhat pressing to find other strategies that can address the issue of security in the WTO. Perhaps, a functional approach to the issue may be adopted where Members may consider arbitration under Article 25 of the DSU or the option of conciliation, mediation and good offices under Article 5 of the DSU to resolve such disputes. Another proposal could be to develop best practices through a specialized committee modelled along the lines of Technical Barrier to Trade committee which will keep track of measures taken for national security under review measures, provide opportunity for periodic review of such measures, and provide a formal forum for Members to raise their concerns. The work in the committee may potentially feed into adopting authoritative interpretation by the Members to clarify the provisions or also transforming the provisions entirely.

To conclude, the overall finding, of this work is that revisiting the security exception provision is the need of the hour. Perhaps, in the larger scheme of things, it also highlights the needs for revisiting GATT and other Agreements to keep up with the rapid pace of economic change and political priorities.

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"Xi Jinping's Speech at Opening of Second World Internet Conference", Xinhua News Agency, 16 December 2015, available at <www.xinhuanet.com/politics/2015-12/16/c_1117481089.htm>. (Google Translation software used for reading the speech.)

Legal Tools for Overcoming Perceived Risks in Green Shipping

Pia Rebelo

1 Introduction

In 2018, the IMO set out its vision to reduce greenhouse gas (GHG) emissions from international shipping and to phase them out as soon as possible as the first step in its Roadmap for developing a comprehensive IMO Strategy on Reduction of GHG emissions (the Roadmap).¹ This initial strategy by the IMO is a composite part of its commitment to the United Nation's 2030 Sustainable Development Goals (SDG), in particular SDG 13 and SDG 14 encompassing climate action and conserving the world's oceans and seas, respectively.² Under identified 'levels of ambition', the goal is to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008.³ Achieving this is a mammoth task for the shipping sector, which needs to find solutions, support, and capital from a number of sources. The IMO recognises that a number of short-term, medium-term, and long-term actions are required to support GHG reductions in shipping, including 'incentives for first movers to develop and take up new technologies'.⁴ To encourage design and innovation, the IMO has endeavoured to leave the choice of technical measures and technologies up to industry to achieve energy efficiency.⁵ However, the multitude of potential green technologies face significant economic, scientific and infrastructural concerns.⁶ Green vessels or eco-vessels are considered high-risk vessels with substantial initial

1 MEPC 72 adopted resolution MEPC.304(72) on Initial IMO Strategy on reduction of GHG emissions from ships; the Roadmap was approved earlier at MEPC 70.

2 UN A/RES/70/1 (21 October 2015) Transforming our world: the 2030 Agenda for Sustainable Development.

3 Resolution MEPC.304(72) Annex II.

4 *ibid* 4.7, although, these incentives are not expanded upon with market-based measures (MBMs) only discussed as medium to long term actions.

5 The main energy efficiency tool mandated by the IMO is the Energy Efficiency Design Index (EEDI) mandated for new ships and the Ship energy efficiency management plan (SEEMP) for existing vessels – as long as a level of energy efficiency is achieved, the design choice is left to the shipowner.

6 Patrizia Serra & Gianfranco Fancello, 'Towards the IMO's GHG Goals: A Critical Overview of the Perspectives and Challenges of the Main Options for Decarbonizing International Shipping' (2020) 12(8) Sustainability 3220.

investment costs to catalyse development and commercialisation.⁷ Therefore, de-risking these technologies is a fundamental step towards achieving the IMO's GHG reduction goals.

To incentivise decarbonisation efforts through technology uptake, the IMO recognised as early as 2013, that its concept of a 'Sustainable Maritime Transport System' (SMTS), 'should be supported with available, *sound financing* for construction of new ships or conversion or modification of existing ships in order to meet requirements for safety and the environment, bearing in mind the cyclical nature of the shipping sector'(emphasis added).⁸ An SMTS was conceptualised to provide Member States and stakeholders with the opportunity to reflect on sustainability issues and is defined as, '*a seamless and reliable service in the most efficient manner, the Maritime Transportation System must deliver safe, secure, efficient and reliable transport of goods across the world, while minimizing pollution, maximizing energy efficiency and ensuring resource conservation*'.⁹ An SMTS envisions a significant commitment from governments, industry, the United Nations Conference on Trade and Development (UNCTAD), and its partner financial sectors to create financial mechanisms and avenues to ensure regulatory compliance and to achieve green innovation. There is thus a strong call for financial institutions (State and non-state) to assist the sector in meeting climate change targets and to drastically reduce emissions.

Despite this early recognition, green financial frameworks that focus on the shipping sector are in their nascent stages.¹⁰ 'Green finance' is a concept defined by the International Trade Centre as 'all the initiatives taken by private and public agents (e.g. businesses, banks, governments, international organizations, etc.) in developing, promoting, implementing and supporting projects with sustainable impacts through financial instruments'.¹¹ Green finance

7 Taehee Lee and Hyunjeong Nam, 'A Study on Green Shipping in Major Countries: In the View of Shipyards, Shipping Companies, Ports, and Policies' (2017) 33(4) *The Asian Journal of Shipping and Logistics* 253–262.

8 IMO, *Concept of a Sustainable Maritime Transport System* (Symposium on Sustainable Maritime Transportation System, World Maritime Day on 26 September 2013) <<https://sustainabledevelopment.un.org/content/documents/1163CONCEPT%20OF%20%20SUSTAINABLE%20MARITIME%20TRANSPORT%20SYSTEM.pdf>> accessed 2 August 2022.

9 *ibid* 9, This definition is centred on providing coordination for maritime sustainable development, enrolling a number of actors along the value chain.

10 Pia Rebelo, 'Green Finance for a Sustainable Maritime Transport System: Developing a Universal Vernacular for Green Shipping' (2020) 34 *A&NZ Mar LJ* 1.

11 ITC, 'What is Green Finance?' <[//stage.intracen.org/What-is-green-finance/](https://stage.intracen.org/What-is-green-finance/)> accessed 2 August 2022.

frameworks are key policy tools in regulating green finance (whether public or private), consisting of minimum standards, taxonomies, and disclosure requirements.¹² They are also key in defining the objectives of ‘green finance’ – a broad concept that must be circumscribed by a set of definitions of ‘green’ activities and eligibility criteria for projects, initiatives, and assets.¹³

This Chapter is concerned with how green finance frameworks can de-risk low-carbon (i.e. alternative) shipping technologies and overcome uncertainty in an inherently risk-adverse maritime sector; one that is still recovering from the 2008 global recession coupled with the COVID-19 pandemic. The need for a fundamental partnership between policy makers and financiers to encourage first-user uptake and the adoption of green technologies in shipping has been neglected. Although not entirely unique to a shipping paradigm, there are few schemes which actively direct funds to green shipping activities.¹⁴ The legal question arises as to how green finance frameworks can de-risk low-carbon green technologies by providing clarity and legal certainty on technology selection and criteria. The implementation of such frameworks is important for two reasons: 1) to allow the financial sector to enhance its ‘green’ product offerings to shipowners and channel funds accordingly; and 2) to provide for a clear set of contractual clauses between lender and borrower that would allow for enforcement and to avoid ‘greenwashing’ of activities and assets. In this context, the institutions involved will primarily consist of banks, who maintain their dominance in ship financing despite recent trends in diversifying capital sources.¹⁵ It is recognised that financial institutions, in particular the private banking sector, can benefit from green finance schemes and participation in environmental sustainability.¹⁶ There exists a real opportunity for collaborative

12 European Banking Federation, *Towards a Green Finance Framework* (2017, Brussels) <www.ebf.eu/wp-content/uploads/2017/09/Geen-finance-complete.pdf> accessed 2 August 2022.

13 Jason Chuah, ‘Legal Aspects of Green Shipping Finance – Insights from the European Investment Bank’s Schemes’ in Mukherjee PK and others. (eds) *Maritime Law in Motion. WMU Studies in Maritime Affairs, vol 8* (Springer Cham 2020) 131–152.

14 Examples include the European Investment Bank’s green shipping schemes; see EIB, ‘Green Shipping Guarantee Scheme’ (2016) <www.eib.org/en/projects/pipelines/all/20150334> accessed 2 August 2022.

15 Fotis Giannakoulis, ‘Chapter 3: Overview of ship finance’, in Kavussanos and Visvikis (eds), *The International Handbook of Shipping Finance* (Palgrave Macmillan 2016).

16 ‘Environmental sustainability’ is a term used in this Chapter to refer to the environmental component of the sustainable development triage comprising social, economic and environmental factors. Sustainable Development is a broad principle of international environmental law with varying interpretations, whilst its environmental pillar has come to include a multitude of objectives from climate alignment and environmental protection

environmental governance between policy makers and the financial sector to address issues stemming from the infancy of the ‘green finance’ market. These are: a lack of clear direction on what constitutes green activities or assets; the issues surrounding environmental obligations in contractual agreements; and creating green products which are tailored to the needs of the shipping sector.

In terms of structure, this Chapter first identifies and systemises the prevailing challenges that are hindering progress in meeting carbon neutral goals. There are a number of risks associated with low-carbon technologies that can be categorised according to a conceptual framework for energy transition barriers. The second part (Section 3) of this Chapter is concerned with the financial sector’s contribution to overcoming the aforementioned challenges. This section aims to identify legal tools which would assist financiers in responding to the present challenges. Section 3.1 deals specifically with the importance of adopting green finance frameworks and how these tools can de-risk alternative technologies. Section 3.2 addresses contractual mechanisms as key enforcement tools of green finance frameworks. An analysis of available contractual tools enabled by green finance frameworks will be considered against a backdrop of English law doctrine, as English law remains the prevailing legal system of the international maritime sector; whilst the majority of shipping loan agreements are governed by English law.¹⁷ Finally, Section 3.3 addresses the need for specific green financial products for the shipping sector to streamline administrative procedures and provide shipowners with access to capital more readily.

2 Risks Associated with Low-Carbon Technologies

Energy transitions have varying theoretical frameworks with a common recognition that environmental problems brought about by unsustainable practices cannot be addressed in incremental improvements and technological fixes – radical shifts to new socio-technical regimes are required.¹⁸ Transformative energy transitions, as opposed to interim or deliberate energy transitions, require that relevant actors understand the benefits of adopting new

to biodiversity and pollution management. The term ‘green’ is used accordingly to refer to those activities and assets which achieve environmental sustainability objectives.

17 Lucy French, ‘Introduction’ in Stephenson Harwood (ed) *Shipping Finance 3rd Ed* (Euromoney 2006).

18 Jonathan Köhler and others, ‘An agenda for sustainability transitions research: State of the art and future directions’ (2019) 31 *Environmental Innovation and Societal Transitions* 1–32.

technologies and practices.¹⁹ Whereas interim transitions arise from policy-driven initiatives without public acceptance, and deliberate energy transitions result from citizen-driven change without supporting regulations; transformative energy transitions occur where both policy (top-down) and citizen-driven (bottom-up) change are present.²⁰ Current IMO regulations are not accompanied by an understanding of how green technologies can benefit shipowners as many of these newer technologies are still considered niche.²¹

Geels et al note that low-carbon energy transitions are complex due to: 1) uncertainties (in respect of the performance of new innovations as well as the regulatory landscape), 2) disagreements (about optimal solutions, costs, and benefits), and 3) the distribution of power (the reliance of policy-makers on actor buy-in).²² This section employs these categories of factors to systemise the risks associated with green technologies for shipping. There are a range of challenges for emerging green technologies such as wide-scale industry acceptance, licensing, regulation, and financing. Carbon-neutral shipping that will meet future IMO targets could require fleet-wide retrofitting with new technologies and the emergence on an entirely new global market; one that incorporates new ways of shipping construction and sale with the transportation of goods, the recycling of vessels, and advanced port infrastructure – all of which would require new policy and regulatory standards.²³ Widespread technological uptake also requires specialised and extensive knowledge across a range of industry actors. If niche technologies are to emerge at an unprecedented rate, then incentivising actors who are willing to adopt these technologies early is crucial in a risk-adverse sector.²⁴ Financing for such retrofitting and technological development is crucial but sharing the risk between various actors in the sector could also incentivise changes to the existing paradigm. Ultimately, a SMTs that is carbon neutral with minimal environmental impacts will appear radically different from the system of today.

19 Norbert Edomah and others, 'Sociotechnical typologies for national energy transitions' (2020) *Environ. Res. Lett.* 15.

20 *ibid.*

21 For niche technologies to become the dominant design, see Frank W. Geels & Johan Schot, 'Typology of sociotechnical transition pathways' (2007) 36 *Res. Policy* 399–417.

22 Frank W Geels and others, 'The Socio-Technical Dynamics of Low-Carbon Transitions' (2017) 1(3) *Joule* 463–479.

23 Conor Walsh and others, 'Charting a low carbon future for shipping: A UK perspective' (2017) 82 *Marine Policy* 32.

24 *ibid* 39.

2.1 *Uncertainty: Regulatory and Technical*

Langlet (in this volume) examines in depth the relationship between shipping and the ecosystem approach. Technological innovation can certainly contribute to the protection and preservation of marine ecosystems. Nonetheless, the uncertainty regarding the performance of green shipping technology is two-fold: there exists a proliferation of technologies coupled with no policy nor regulatory guidance on how to obtain the desired low-carbon outcome. In respect of greenhouse gases, MARPOL Annex VI on air pollution from ships does not cap carbon emissions, which are currently tackled by voluntary or unilaterally prescribed mitigation targets set by States based on international conventions. Despite promoting the necessity of an international uniform standard, the IMO has yet to implement one and seems presently satisfied that its energy efficiency design standards for new ships will steadily contribute to a reduction in emissions from the industry. The present and continuing method endorsed by the IMO in meeting carbon reduction goals remains EEDI – a performance-based mechanism aimed at reducing carbon emissions from fuel usage which leaves the choice of technologies and ship design to industry. Provided that the energy efficiency level is attained, shipowners and operators have free reign in sourcing the most cost-efficient solutions in order to comply with the regulations. The only guidelines given by the IMO in respect of energy efficiency are aimed at assisting verifiers of the EEDI (namely State Administrations or authorised organisations) in conducting the surveys and certification of the EEDI in accordance with MARPOL Annex VI. At the end of 2022, two new energy efficiency requirements will come into force – the Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Indicator (CII).²⁵ The EEXI employs the same methodology as its predecessor, the EEDI, yet is applicable to existing ships presently falling outside the EEDI regulations. The CII measures energy efficiency in grams of CO₂ emitted per cargo-carrying capacity and nautical mile to determine a ship's annual rating ranging from A to E. Neither the EEXI nor the CII will mandate technology selection with parameters set to get more stringent towards 2030. Although this approach is intended to drive innovation and creativity, low-carbon or zero-carbon technologies are not enjoying the rapid uptake necessary to meet climate change targets due to scientific uncertainty and a lack of reliable data regarding the environmental and fuel-savings performance of these newer technologies. There exists a proliferation of available technologies, yet no conclusive verdict on how these

25 MEPC.339(76) (adopted 17 June 2021) 2021 Guidelines on the Operational Carbon Intensity Rating of Ships (CII Rating Guidelines, G4).

technologies will perform or whether they are essentially 'green' within a wider climate change context.

Studies in real options for decarbonisation reveal that regulatory uncertainty is a major factor in deterring actors from investing in new technologies.²⁶ Reinelt and Keith note that regulatory uncertainty increases the social cost of CO₂ abatement, whilst Blyth et al recommends that regulators should reduce long-term policy uncertainty if they seek to encourage investment in energy efficiency.²⁷ To date, there are no comparable IMO studies and investigations dealing with low-carbon or carbon neutral technologies for the sector, as seen with the technical guidance for scrubbers and ballast water management systems.²⁸ However, as Hassellöv discusses (in this volume) scrubber technology continues to be controversial due to discharges that exacerbate marine pollution resulting in the transformation of one type of pollution into another. Furthermore, the IMO seems reluctant to introduce measures beyond the 2023 EEXI and CII and has shown a preference for softer measures such as capacity building and data collection.²⁹ The lack of guidance provided by the IMO is reflective of the broader problems concerning green technologies more generally. There is a lack of decision-making structures when it comes to green technology selection in many sectors, including shipping.³⁰ This is linked to a greater supply-chain management context which requires greening decisions to happen from top management private actors in determining green practices within their companies.³¹ Technological uncertainty and a lack of guidance

26 Christian Haehl & Stefan Spinler, 'Technology Choice under Emission Regulation Uncertainty in International Container Shipping' (2020) 284 *European Journal of Operational Research* 383–396.

27 Peter S Reinelt & David W Keith, 'Carbon Capture Retrofits and the Cost of Regulatory Uncertainty' (2007) 28(4) *The Energy Journal* 101–127; William Blyth and others, 'Investment risks under uncertain climate change policy' (2007) 35 (11) *Energy Policy* 5766–5773.

28 MEPC 67/2/6 on Measures to be taken to facilitate entry into force of the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004. Various Associations, including ICS, IUMI, BIMCO, INTERTANKO, CLIA, INTER-CARGO, InterManager, IPTA, IMCA, INTERFERRY, ITF, the Nautical Institute and WSC submitted, inter alia, that there was a lack of guidance on the BWM systems.

29 In 2016 the MEPC adopted Resolution MEPC.278(70), which prescribes the guidelines on how vessels are to report their oil consumption by fuel type.

30 De Xia and others, 'Developing a framework to identify barriers of green technology adoption for enterprises Resources' (2019) 143 *Resources, Conservation and Recycling* 99.

31 Studies have been conducted on supply chain management in Asian shipping companies which suggest that sustainability needs to be integrated into overall corporate strategic planning to overcome barriers in green practices and multi-jurisdictional challenges; see Muhamad Fairuz Ahmad Jasmia and Yudi Fernando, 'Drivers of maritime green

has a knock-on effect that creates further problems. These are: 1) the significant cost implications for shipbuilding and retrofitting, along with additional operational costs, and 2) risk-adverse behavioural tendencies in a recovering market.

The Organisation for Economic Co-operation and Development (OECD) recognises that certain conditions prevent firms from making optimal choices and identifies ‘imperfect, insufficient or incorrect information’ as a market failure and barrier for decarbonising shipping.³² This information deficiency can cause suboptimal investments in energy efficiency and prevents the uptake of greener technologies. Research and development (R&D) is vital for attaining the quality of knowledge and expertise required for the diffusion of new technologies.³³ However, R&D focusing on green shipping is fairly recent and there exists a shortage of detailed and audited data of various technological options with a low market maturity.³⁴ The insufficiency of dependable information obtained from tested technologies in actual operating conditions presents a ‘chicken-and-egg’ problem – actors are reluctant to adopt the technology and financiers are disinclined to finance such projects with no proof of efficiency and commercial viability.³⁵ Data collection in shipping is also highly variable as a number of external factors influence the fuel consumption of ships, resulting in seemingly inconsistent data for a single ship. The quality of data collection systems and methods can also vary, with continuous monitoring systems potentially misrepresenting data.³⁶ The lack of available scientific data and conclusions regarding the energy performance of green vessel technologies is part of a greater market failure to allocate optimal resources to research and

supply chain management’ (2018) 43 *Sustainable Cities and Societies* 366 <<https://doi.org/10.1016/j.scs.2018.09.001>> accessed 2 August 2022; see also C Yang, ‘An analysis of institutional pressures, green supply chain management, and green performance in the container shipping context’ (2017) *T. Research Part D: Transport and Environment* 61 (Part B) 246.

32 International Transport Forum, ‘Decarbonising Maritime Transport: Pathways to zero-carbon shipping by 2035’ (2018) <www.itf-oecd.org/decarbonising-maritime-transport> accessed 2 August 2022.

33 Valeria Costantini and others, ‘Demand-pull and technology-push public support for eco-innovation: The case of the biofuels sector’ (2014) 44 *Research Policy* 577.

34 International Transport Forum, ‘Decarbonising Maritime Transport: Pathways to zero-carbon shipping by 2035’ (n 32) 57.

35 *ibid.*

36 Nishatabbas Rehmatulla and others, ‘Wind technologies: Opportunities and barriers to a low carbon shipping industry’ (2015) 75 *Marine Policy* 217 <https://doi.org/10.1016/j.marpol.2015.12.021> accessed 2 August 2022.

knowledge.³⁷ This uncertainty deters first-user uptake from both top-down and bottom-up factors. From a bottom-up perspective, shipowners are reluctant to invest in technologies which cannot guarantee that regulatory targets are met, that environmental performance is enhanced for corporate responsibility, and that costs can be recuperated through energy savings. From a top-down perspective, flag State administrations are unable to provide clear technical guidance on how to align the industry with climate change objectives.

The issue of technological uncertainty as a barrier to the uptake of green technologies is perhaps best illustrated by the example of wind technologies which have the potential to propel vessels and diminish energy costs. Although meteorological data exists to illustrate that there is sufficient wind within major sea routes, the viability of the technology depends mainly on quantifying the amount of fuel savings that can be achieved.³⁸ This will require an immense amount of data collection for varying ship models and will have to consider a number of factors such as routes taken, operating speeds and ordinary fuel consumption. Although the potential for energy savings could be huge, not to mention a significant reduction in emissions, this remains the 'most feared' technology by shipowners. In a survey conducted amongst Norwegian shipping companies, it was found that wind propulsion scored the worst in most barrier categories compared to other abatement technologies.³⁹ Most participants in the survey were unfamiliar with available wind technologies, perceived them as less reliable and believed them to be unsafe, inconsistent, and ineffective.⁴⁰ It has also been suggested that the key barrier to implementing wind technologies is a lack of primary practical knowledge and a lack of research and sea trials to test the technology.⁴¹ There is a risk-averse attitude amongst industry, which means that no one wants to be the first-user of these technologies, coupled with the significant financial investments required to implement wind technology.⁴²

Technical uncertainty is also interrelated to significant cost implications. Niche technologies with unproven benefits are expensive, whilst shipowners

37 International Transport Forum, 'Decarbonising Maritime Transport: Pathways to zero-carbon shipping by 2035' (n 32) 57.

38 Nishatabbas Rehmatulla and others, 'Wind technologies: Opportunities and barriers to a low carbon shipping industry' (n 36).

39 Michele Acciaro, Peter Hoffmann, Magnus Eide, 'The energy efficiency gap in maritime transport' (2013) 3(12) *J. Shipp. Ocean Eng* 1.

40 *ibid.*

41 Isabelle Rojon & Carel Dieperink, 'Blowin' in the wind? Drivers and barriers for the uptake of wind propulsion in international shipping' (2014) 67 *Energy Policy* 394.

42 *ibid.*

have no incentive to take out substantial loans to test them. In the joint study by Lloyds Register and UMAS, a survey was conducted amongst shipowners to effectively understand what would be needed to make zero-emission vessels a reality and to identify what thresholds shipowners believe need to be passed in order to do so.⁴³ These survey results indicated that shipowners did not desire vessel costs being increased by more than 10% due to zero-emission shipping. The study then analysed the capital cost increases for seven types of zero-emission technologies and, more specifically, the capital cost increase per type of vessel in accordance with each technology. These technologies included Electric, Hybrid hydrogen, Hydrogen fuel cell, Hydrogen + ICE, Ammonia fuel cell, Ammonia + ICE, and Biofuel. Their cost implications were considered for bulk carriers, containerships, tankers, cruise ships and RoPax vessels. The results indicated that biofuel vessels stayed within the 10% margin as almost near-zero extra capital costs are required; ammonia internal combustion and ammonia fuel cells were roughly around the threshold of 10%; whilst electric vessels proved to be the most expensive vessels with additional capital costs ranging from USD 170 million to USD 8500 million depending on the type of vessel, with an estimated 10000% capital cost increase for containerships. Given that electric vessels are probably the least contentious in terms of transferring the environmental costs elsewhere (granted that power sources are renewable), carbon neutrality seems very far away.

2.2 *Disagreements*

Disagreements as to optimal solutions for low carbon shipping are inextricably linked to uncertainty, but also reflect the fragmentation of interests among shipping actors. The main relationship of focus for writers concerned with market barriers for energy efficiency in shipping has been the principal-agent problem between shipowner and charterer.⁴⁴ A market barrier is something which inhibits investment in low-carbon shipping, contributes to slow diffusion and adoption of newer technologies and prevents the implementation of energy efficiency even though it may be more cost effective for actors in the long term.⁴⁵ On the other hand, a 'market failure' occurs where neoclassical

43 Lloyd's Register Group Limited and UMAS, 'Zero-Emission Vessels 2030: How do we get there?' (Part of the Low Carbon Pathways 2050 Series 2017) <www.lrs.or.jp/news/pdf/LR_Zero_Emission_Vessels_2030.pdf> accessed 2 August 2022.

44 Angeles Longarela-Ares, 'The Influence of Economic Barriers and Drivers on Energy Efficiency Investments in Maritime Shipping from the Perspective of the Principal-Agent Problem' (2020) 12 Sustainability 7943 <<https://doi.org/10.3390/su12197943>> accessed 2 August 2022.

45 *ibid* 4 of 42.

assumptions that define an ideal market are violated and conditions for efficiency are not met. Consequently, the market does not function properly, and imperfect competition and asymmetric information can arise, resulting in a conflict of interest.⁴⁶ Here, this conflict has been described as one of split incentives. The shipowner is tasked with investing in energy efficiency or low carbon technology, with an objective of assuming the lowest possible costs as the owner will not generally be able to benefit from the energy savings and therefore recover the investment through them.⁴⁷ The charterer assumes the role of the principal and benefits from the energy efficiency decisions of the owner, yet the charterer does not assume any of the costs of investment.

Although overcoming split incentives from a chartering perspective falls outside of the scope of this inquiry, workable contractual mechanisms can assist in proposing energy efficiency investment sharing schemes. Economic game theory has provided modelling for achieving the optimum reward for energy efficiency which determines a fair payment and resolves the level of contribution between the contracting parties.⁴⁸ Parties can enhance their position through disclosing optimal information. Clauses are included to reflect the parties' asymmetric information of a variety of issues including costs, performance and environmental attributes. Thus, an owner who has an honest reputation of disclosing accurate information related to high levels of energy efficiency offers a competitive advantage and might have a higher reservation price. It also becomes important to specify fiduciary obligations in the sharing scheme.

In addition to split incentives, there are also controversies surrounding the actual effectiveness of various low-carbon or emission reduction technologies and practices. There are noteworthy disputes surrounding speed reduction, the EEDI, market-based measures, and liquefied natural gas (LNG).⁴⁹ Operational measures such as speed reduction and the EEDI carry significant safety and commercial risks, whilst market-based measures are politically laden and met with opposition from developing nations. As a proposed alternative fuel, LNG fuel raises significant questions as to whether such fuels can actually achieve

46 Marilyn A Brown, 'Market failures and barriers as a basis for clean energy policies' (2001) 29 *Energy Policy* 1197–1207.

47 Paolo Agnolucci and others, 'Energy efficiency and time charter rates: Energy efficiency savings recovered by ship owners in the Panamax market (2014) 66 *Transp. Res. Part Policy Pract* 173–184.

48 George Adamantios Psarros, *Energy Efficiency Clauses in Charter Party Agreements: Legal and Economic Perspectives and their Application to Ocean Grain Transport* (Springer, 2016).

49 Patrizia Serra & Gianfranco Fancello, 'Towards the IMO's GHG Goals' (n 6) 15 of 32.

reductions in GHG emissions. LNG presents a package of environmental concerns including destructive extraction practices and the potential for methane slip – factors which may even outweigh the benefits of a reduction in sulphur oxides and fractionally less carbon emissions.⁵⁰ However, LNG has been touted as a ‘green fuel’ since the American shale gas boom, which made LNG fuels more readily available in the western hemisphere. LNG is also generally cheaper than heavy fuel oil, whilst marine diesel oil is ordinarily 50% more expensive than heavy fuel oil – a further incentive for LNG usage.⁵¹ The LNG debates speak to the fact that environmental sustainability requires a wider perspective on supply chain management and how ‘green’ technologies, fuel options, and practices are sourced and implemented. Concerns surrounding the sustainability of alternative fuel sources are prevalent throughout many industries, not only within shipping. For example, biofuels have many advantages, the most beneficial of which is their availability in significant quantities.⁵² In some cases, biofuels can be used as “drop-in” fuels which require little to no adjustments to existing engines. However, large-scale production of biofuel comes with its own environmental concerns and is thus restricted internationally.⁵³ The agricultural processes and variability of biofuel sources, means that the supply chain would require strict environmental monitoring in order to avoid deforestation and biodiversity loss.

2.3 *Distribution of Power*

Solutions that view the IMO, its Member States, national governments, and regional bodies as the main enablers of green shipping, fail to acknowledge the inherent nature of a transnational maritime sector. Shipping is closely intertwined with retail and the global economy with growing consumer concerns

50 Siyuan Wang and Theo Notteboom, ‘The adoption of liquefied natural gas as a ship fuel: a systematic review of perspectives and challenges’ (2014) 34 *Transp Rev* 749.

51 Paul Balcombe and others, ‘How to decarbonise international shipping: Options for fuels, technologies and policies’ (2019) *Energy Conversion and Management* 182, 76.

52 First generation biofuels include straight vegetable oil, hydrotreated vegetable oil, fatty acid methyl ester and bio-ethanol.

53 In order to address these concerns, the European Parliament and the Council of Ministers of the European Union adopted a revised renewable energy directive in 2018, which establishes an overall policy for the promotion and use of energy from renewable sources in the European Union. The new directive reinforces the sustainability criteria of bio-energy and includes a provision restricting the negative direct impact that the production of biofuels may have; see Provision 80 of Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources).

about the environment.⁵⁴ Environmentally sustainable shipping will rely heavily on the decisions of private actors as environmental governance requires both public and private authority. Private initiatives for sustainable shipping are pivotal in comparison to terrestrial sectors as the principles of transboundary harm pose immense impracticalities when non-state actors are involved in the ownership and management of marine vessels. In addition, customary laws are often inadequate in addressing circumstances where ‘flags of convenience’ are used to evade liability under the jurisdiction of the State enforcing customary responsibility.⁵⁵ Although there is a consumer-driven pressure for private actors to adopt greener technologies, shipowners (as well as port operators) are reported to be conservative, resist innovation, and express reluctance to new solutions.⁵⁶ There is a scepticism surrounding new technology implementation as well as concerns about the huge capital costs necessitated, thus running the risk of being ‘locked-in’ to unsuccessful technologies.⁵⁷ The perception of risk, whether perceived or real has three aspects – technical, business, and external.⁵⁸ Technical concerns have been discussed above while business concerns refer mostly to financing risk; and external concerns refer to the economic climate, fuel prices, regulation and changing policy. A changing regulatory landscape with no clear guidance for GHG emission reduction has contributed to a ‘wait-and-see’ attitude amongst owners and operators as it remains too risky to adopt green technologies where future emission standards are unknown.⁵⁹

Although hesitancy fuelled by perceived risks are dominant, many shipping companies are taking first steps in driving innovation. Multiple shipping companies have invested in technological and research solutions, such as: Aquarius Marine Renewable Energy (Japan),⁶⁰ NYK Super Eco Ship 2030 (Japan), Volvo Penta-led Swedish EcoShip (Sweden), FellowSHIP Programme: DNV (Norway), Post-Panamax ships – S-class: Evergreen (Taiwan), Rotor Sails: Greenwave Wind Engines (UK), Air Cavity System (ACS): DK Group (The Netherlands), Ecospec Global Technology (Singapore), Sea Water Scrubbing System: Hamworthy

54 Jane Lister, ‘Green Shipping: Governing Sustainable Maritime Transport’ (2014) 6(2) *Global Policy* 118 – 129 <<https://doi.org/10.1111/1758-5899.12180>> accessed 2 August 2022.

55 Robin R Churchill & Vaughan Lowe, *The Law of The Sea* (3 ed Manchester University Press 1999) 333.

56 Patrizia Serra & Gianfranco Fancello, ‘Towards the IMO’s GHG Goals’ (n 6) 19 of 32.

57 Jane Lister, ‘Green Shipping: Governing Sustainable Maritime Transport’ (n 54).

58 Patrizia Serra & Gianfranco Fancello (n 6) 19 of 32.

59 *ibid.*

60 Eco Marine Power, ‘Marine Eco-Ship’ (2018) <www.ecomarinepower.com/en/aquarius-eco-ship> accessed 2 August 2022.

Krystallon (UK).⁶¹ These projects have engineered and patented ship designs which are focused on low fuel and emission reduction systems consisting of solar panels, energy storage modules, computer control systems and advanced rigid sail designs. Further developments are said to include fuel cell technology, optimised hull designs, advanced electrical propulsion system, waste heat recovery technologies, low power LED lighting, air lubrication and navigation improvements. Automated shipping has also presented the possibility of replacing a human crew with autonomous technology. This removes the cost of salaries and increases ship capacity, whilst the margin for human error is minimised due to the supply chain being automated through advanced algorithms. This also means that ships can be at sea for longer periods of time as crew safety is no longer a concern. Speed reduction thus becomes more economically viable and fuel costs and emissions are reduced. Port automation technology has already improved operational energy usage as well as minimised the space and land needed within port complexes.⁶² The energy and cost savings of automated systems could play a fundamental role in reducing the overall environmental impact of the global goods movement system. For now, automated and electrical shipping is largely being considered in respect of short voyages aimed at reducing land transport.

3 Legal Tools for Accelerating Green Finance for Shipping

Overall, low-carbon technology in shipping presents a problem of ‘too many alternatives and not one viable solution’, with scarce market and financial incentives.⁶³ Encouraging the uptake of green technology requires de-risking these alternative solutions through providing a means to both overcome the initial capital costs and providing guidance on technology selection. Financiers are obviously crucial in providing the former, however, green finance frameworks can fulfil the latter. From a financier’s (i.e. banker) perspective, incentivisation is also required to participate in a green economy, implement green frameworks, and create green product offerings. These incentives are vast and

61 Adam Weinrit & Tomasz Neumann, *Safety of Sea Transportation* (London: CRC Press, 2017) 127 <<https://doi.org/10.1201/9781315099088>> accessed 2 August 2022.

62 Ana María Martín-Soberón and others, ‘Automation in Port Container Terminals’ (2014) 160 *Procedia – Social and Behavioral Sciences* 195, 202.

63 Shell & Deloitte, ‘Decarbonising Shipping: All Hands on Deck’ (2020) <www.shell.com/energy-and-innovation/the-energy-future/decarbonising-shipping.html> accessed 2 August 2022.

steadily increasing as Environmental and Social Governance (ESG) investing has gained huge momentum in 2020 with competitive returns in comparison to ordinary or 'brown' investments.⁶⁴ A full exposition of the success of the green bond market, the acceleration of the sustainable finance agenda due to the COVID-19 pandemic, and tightening financial regulations regarding environmental reporting and disclosure are beyond the purview of the Chapter. Rather, the focus is on how banks should adopt frameworks that will de-risk the sector, whilst using the appropriate contractual mechanisms to effectively enforce such frameworks to truly achieve environmental sustainability, avoid greenwashing, and reap the benefits of participation in green finance more generally.

This section is therefore concerned with legal tools for assisting financiers and stakeholders in de-risking the sector, incentivising first-user uptake, and advancing funds on a broad scale to a new range of emerging technologies which must necessarily become the 'new norm'. The risks associated with energy efficiency or 'green' technologies have been identified, therefore potential solutions should seek to provide clarity, a cohesive set of criteria, technical guidance, and ways of mobilising investment. First, it is argued that a feasible set of framework criteria for green assets will assist financial institutions in channelling investment towards green shipping. Second, this Section argues that contractual methods of incorporation for green obligations will be necessary to implement such frameworks effectively. Finally, green shipping financial products are necessary for both the transitioning of the shipping sector and for the sustainability of long-term banking approaches that must necessarily consider a set of sustainable development ideals.

3.1 *Green Frameworks for Ship Finance*

A lack of workable language and criteria in classifying green assets is not unique to shipping. Green finance is an emerging market which has been plagued with issues of taxonomy and definitions since its inception. The G20 Synthesis Report in 2016, recognised that, '[i]n many countries and markets, the lack of clarity as to what constitutes green finance activities and products (such as green loans and green bonds) can be an obstacle for investors, companies and

64 Green Finance Platform, 'Undeterred by Pandemic: Four trends in global climate action to watch in the coming decade' (4 January 2021) <www.greenfinanceplatform.org/blog/undeterred-pandemic-four-trends-global-climate-action-watch-coming-decade> accessed 2 August 2022.

banks seeking to identify opportunities for green investing'.⁶⁵ Financial institutions require a 'green' basis upon which to justify their decisions, taking into account environmental risks and alignment with overall policy ambitions. In order to do so, they need to be able to assure investors that the proceeds of their investments – whether through the green bond market, funds or shares – will be used for green activities with clear, transparent and proven benefits for the environment. Through the adoption of framework criteria, trust is fostered amongst investors and accountability is achieved through a set of contractual obligations placed on the issuer of bonds to use the proceeds strictly for certain green activities.

A universal framework for green finance with common definitions and criteria is also favourable given the international nature of the financial markets. A 'common language' for green finance has thus been called for in a joint research report by the EIB and the Green Finance Committee of China Society for Finance and Banking.⁶⁶ The report highlights that a diversity of taxonomies and standards threatens accountability, comparability cannot be achieved, and market participants cannot measure alignment with policy objectives.⁶⁷ Both the OECD and the High-Level Expert Group on Sustainable Finance have provided empirical evidence that a fragmented and inconsistent set of 'green' definitions is a major barrier to green investing.⁶⁸ In the data collected by the OECD and the High-Level Expert Group, it was found that a wide range of definitions not only poses challenges for selecting green projects and activities, but hampers transparency and can result in 'greenwashing' – a misleading form of marketing which aims to persuade the public that certain practices and products are in fact green.⁶⁹

The Green Bond market has perhaps seen the greatest development in terms of the classification of green projects or green assets. The People's Bank of China (PBoC) has significantly grown its green bond market through

65 G20 Green Finance Study Group, *G20 Green Finance Synthesis Report* (5 September 2016) 10 <unepinquiry.org/wp-content/uploads/2016/09/Synthesis_Report_Full_EN.pdf> accessed 2 August 2022.

66 European Investment Bank & Green Finance Committee of China Society for Finance and Banking, *The need for a common language in Green Finance: Towards a standard-neutral taxonomy for the environmental use of proceeds*, White Paper Phase I Report (2017).

67 *ibid.*

68 OECD, *Defining and Measuring Green Investments: Implications for Institutional Investors' Asset Allocations* (2012); High-Level Expert Group on Sustainable Finance, *Financing a sustainable European economy. Interim Report* (2017).

69 *ibid.*

publishing its 'Green Bonds Endorsed Project Catalogue'.⁷⁰ Similarly, the Loan Market Association's Green Loan Principles and the Sustainability Linked Loan Principles have also developed classification systems for green activities.⁷¹ These Principles require that the issuer will undertake to use the capital raised for projects and purposes which have undergone a Process for Project Evaluation and Selection.⁷² The Common Principles for Climate Change Adaptation Finance Tracking have also been developed by a number of Multilateral Development Banks and the International Finance Development Finance Club.⁷³ These include a set of common definitions and guidelines, listing activities and due diligence processes, which should be prioritised by financial institutions.⁷⁴ Possibly the most well-known green banking initiative has been the Equator Principles, which launched a framework initiative in 2003 for determining, assessing and managing environmental and social risk.⁷⁵ In respect of shipping, a group of banks led by Citi, Société Générale and Danske Bank noted the pivotal enabling role that financing plays for the shipping sector and therefore implemented the Poseidon Principles framework to integrate climate considerations into lending decisions with the objective of achieving decarbonisation in the industry. However, the framework does not use a taxonomy as a tool to mobilise funds but rather requires signatories to abide by disclosure requirements on whether their shipping portfolios

70 Announcement No. 39 of 2015 of the People's Bank of China.

71 The Loan Market Association's Green Loan Principles have very recently been applied to container shipping in respect of a transaction by Hapag-Lloyd for six ultra-large 23,500 TEU container ships; see Marc Allen, 'DNV supports Hapag-Lloyd's milestone green financing' (Maritime Direct, 4 March 2021) <maritime.direct/en/2021/03/04/dnv-supports-hapag-loyds-milestone-green-financing/?utm_source=rss&utm_medium=rss&utm_campaign=dnv-supports-hapag-loyds-milestone-green-financing> accessed 2 August 2022.

72 LMA, Green Loan Principles: Supporting environmentally sustainable economic activity (December 2018) <www.lma.eu.com/application/files/9115/4452/5458/741_LM_Green_Loan_Principles_Booklet_V8.pdf> accessed 2 August 2022.

73 Consisting of the African Development Bank (AfDB); the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD); the European Investment Bank (EIB); the Inter-American Development Bank (IDB); and the International Finance Corporation (IFC) and World Bank (IDA/IBRD) from the World Bank Group (WBG).

74 Common Principles for Climate Mitigation Finance Tracking (Version 2 – 15th June 2015) <www.eib.org/attachments/documents/mdb_idfc_mitigation_common_principles_en.pdf> accessed 2 August 2022.

75 Equator Principles at <<http://equator-principles.com./about/>> accessed 2 August 2022. The Equator Principles (EP) apply to four financial products; 1) Project Finance Advisory Services 2) Project Finance 3) Project-Related Corporate Loans and 4) Bridge Loans.

are aligned with the Poseidon Principles, meaning that ‘bank liquidity will be prioritised for those clients supporting IMO target levels’.⁷⁶ Despite this proliferation of taxonomy and framework initiatives, International Shipping has only very recently been considered within major green finance frameworks.⁷⁷ Key frameworks that have included green shipping in 2020 are the Chinese Green Bond Catalogue, the EU Taxonomy Regulation, and the Climate Bonds Initiative – each discussed in turn below.

3.1.1 Chinese Green Bonds

Prior to 2020, green shipping was somewhat alluded to in the Chinese Green Bond Catalogue, yet the range of shipping activities seemed limited to mere regulatory compliance and alignment with outdated policy objectives to phase out older vessels.⁷⁸ There was some hope when shipping was included in the Peoples’ Republic of China’s more recent Green Industry Guidance Catalogue (2019 edition), which included a range of ‘new energy ships’, however the Industry Catalogue is aimed more at policy makers than financial institutions and serves to guide relevant authorities in establishing policies surrounding investment, pricing, finance and tax to facilitate green industry development.⁷⁹ Fortunately, in 2020, the PBoC, China’s central bank, the China Securities & Regulatory Commission (CSRC) and the National Development & Reform Commission (NDRC) announced the release of an updated Green Bonds Endorsed Projects Catalogue that will govern the green bond market.⁸⁰ Green bonds are defined in the Catalogue as:⁸¹

76 Barry Parker, ‘The Poseidon Principles and a ‘green transformation’ of shipping’ (Seatrade Maritime Review, 20 June 2019) <www.seatrade-maritime.com/americas/poseidon-principles-and-green-transformation-shipping> accessed 2 August 2022.

77 Pia Rebelo, ‘Green Finance for a Sustainable Maritime Transport System: Developing a Universal Vernacular for Green Shipping’ (n 10).

78 *ibid.*

79 Climate Bonds Initiative, ‘Comparing China’s Green Bond Endorsed Project Catalogue and the Green Industry Guiding Catalogue with the EU Sustainable Finance Taxonomy (Part 1)’ (September 2019) <www.climatebonds.net/files/reports/comparing_chinas_green_definitions_with_the_eu_sustainable_finance_taxonomy_part_1_en_final.pdf> accessed 2 August 2022.

80 An unofficial English translation of the update Catalogue is available courtesy of the Climate Bonds Initiative, available at <www.climatebonds.net/china/catalogue-2020> accessed 2 August 2022.

81 *Green Bond Endorsed Projects Catalogue (2020 Edition)*. The Catalogue was updated again in May 2021, but the parts pertaining to green shipping have remained identical, see *Green Bond Endorsed Projects Catalogue (2021 Edition)* <www.climatebonds.net/market/country/china/green-bond-endorsed-project-catalogue> accessed 2 August 2022.

marketable securities that use raised funds specifically to support green industries, green projects, or green economic activities that meet specified conditions, and are issued in accordance with legal procedures and repay principal and interest according to agreements, including but not limited to green financial bonds, green corporate bonds, green enterprise bonds, green debt financing tools and green asset-backed securities.

The new Catalogue will allow for the funds mobilised by green bonds to be used for shipping related activities under two sub-categorical programs: 'Program 1.3.2.4 Ship and Port Pollution Prevention and Treatment', and 'Program 1.6.1.3 Green Shipbuilding'. The former includes port construction for the purposes of preventing pollution of ships, namely facilities construction, onshore power supply, and technical upgrading of ships with pollution control equipment. The latter Program is more specific to green operational technology and includes, '[m]anufacturing and trading of green ships including natural gas-powered ships, electric power ships, solar/wind energy ships, and energy-saving and new energy construction ships'. This sub-sectoral category at least broadly encompasses alternative technology types for green shipping. Further clarification on the types of projects eligible for green finance requires some analysis of those shipping projects already financed and the objectives of domestic policies on emission reductions in ports and territorial waters.⁸² To encourage international investor participation in China's green bond market, more concrete eligibility criteria for green shipping activities is preferable as many of China's internal policies are not easily accessible, particularly English translations. Although the 2020 edition of the Green Bonds Endorsed Projects Catalogue has achieved much in the way of consolidating the catalogue with international standards and has removed coal-related projects, it has been generally criticised for not going far enough.⁸³ There are also major concerns

82 The People's Republic of China has already advanced a number of on-shore power facilities, LNG fuelled vessels, and "new energy" vessels. For further information on China's green shipping efforts, see Barbara Finamore, 'Taking Stock of China's Actions to Steer Green Shipping' (Natural Resources Defense Council, 9 April 2020) <www.nrdc.org/experts/barbara-finamore/taking-stock-chinas-actions-steer-green-shipping> accessed 2 August 2022.

83 Gao Baiyu, 'China's new green bond catalogue could be greener' (China Dialogue, 19 June 2020) <<https://chinadialogue.net/en/business/chinas-new-green-bond-catalogue-could-be-greener/>> accessed 2 August 2022.

about the fragmentation of oversight bodies and the lack of transparency in reporting how the funds from green bonds are utilised.⁸⁴

3.1.2 EU Taxonomy Regulation

As part of its realisation that green finance frameworks including appropriate definitions are necessary to ‘create security for investors, protect private investors from greenwashing, help companies to plan the transition, mitigate market fragmentation and eventually help shift investments where they are most needed’;⁸⁵ the EU has applied its Framework to Facilitate Sustainable Investment (the ‘Taxonomy Regulation’) since 1 January 2022 to further clarify an EU-wide classification system in identifying environmentally sustainable economic activities and providing technical screening criteria.⁸⁶ This is part of the European Commission’s Action Plan on Financing Sustainable Growth, which envisions a unified classification system which will prevent fragmentation of different EU bodies and Member States, reorient capital flows to achieve sustainable and inclusive growth, and avoid ‘greenwashing’.⁸⁷

The Taxonomy Regulation is to be supplemented by delegated acts, informed by the recommendations of the Technical Working Group on Sustainable Finance, containing technical screening criteria that will be developed in two phases.⁸⁸ The first Delegated Act was adopted in June 2021 but has only applied from 1 January 2022 and covers activities that contribute to climate change mitigation or adaptation (the first two objectives listed in Article 9 of the Taxonomy Regulation).⁸⁹ The second delegated act is to be adopted in 2022 and will include technical screening criteria encompassing activities aimed at the four remaining Article 9 objectives: sustainable use and protection of water

84 Donovan Escalante and June Choi, ‘China Green Bonds: the state and effectiveness of the market’ (Climate Policy Initiative, 3 August 2020) <www.climatepolicyinitiative.org/china-green-bonds-the-state-and-effectiveness-of-the-market/> accessed 2 August 2022.

85 European Commission, ‘What is the EU Taxonomy’ <https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en> accessed 2 August 2022.

86 Proposal for a Regulation of the European Parliament and of the Council on the establishment of a framework to facilitate sustainable investment COM/2018/353 final; The Taxonomy Regulation came into force on 12 July 2020.

87 The Action Plan also initiated an amendment to the Benchmarks Regulation on low carbon and positive carbon impact benchmarks (Regulation (EU) 2019/2089 of the European Parliament and of the Council of 27 November 2019).

88 The EIB is the first issuer to have aligned its Climate Awareness Bonds and Sustainability Awareness Bonds with the EU Taxonomy in order to extend loan eligibilities in line with adapting legislation.

89 Delegated Regulation (EU) 2021/2800 final supplementing Regulation (EU) 2020/852.

and marine resources, transition to a circular economy, pollution prevention and control and protection of healthy ecosystems.⁹⁰ The first Delegated Act includes maritime transport and related infrastructure in various categories such as:

- Manufacture of low carbon technologies for transport;
- Sea and coastal freight water transport, vessels for port operations and auxiliary activities;
- Sea and coastal passenger water transport; and
- Retrofitting of sea and coastal freight and passenger water transport.

Sea and coastal freight water transport activities include ‘purchase, financing, chartering (with or without crew) and operation of vessels’ as well as ‘purchase, financing, renting and operation of vessels required for port operations and auxiliary activities’. These activities will make a substantial contribution to climate change mitigation if, *inter alia*, the vessel has zero direct (tailpipe) CO₂ emissions or derives at least 25% of its energy from zero direct (tailpipe) CO₂ emission fuels or plug-in power for their normal operation at sea and in ports until 31 December 2025.

Furthermore, vessels may not be dedicated to the transport of fossil fuels to have a substantial contribution to mitigation targets. This will effectively disincentivise investments in tonnage and infrastructure based on the transportation of fossil fuels and serves as a blanket disqualifier which has been criticised as ‘problematic for the transitional period’.⁹¹ This will be particularly challenging for fossil fuel types that have been advanced to meet the 2020 sulphur cap, and transitional fossil fuels (generally those with lower CO₂ emissions) coupled with carbon capture technologies, such as LNG fuel and carbon-capture systems.⁹²

3.1.3 Climate Bonds Certification Standard

A notable inclusion of shipping in a green finance framework is the Climate Bonds Initiative (CBI) certification standard. In addition to working on market

⁹⁰ On 2 February 2022, the Commission approved in principle a Complementary Climate Delegated Act which applies to specific nuclear and gas energy activities in the list of economic activities covered by the EU taxonomy.

⁹¹ Hellenic Shipping News, ‘The EU Taxonomy for Sustainable Investments – Transport’ (12 February 2021) <www.hellenicshippingnews.com/the-eu-taxonomy-for-sustainable-investments-transport/> accessed 9 2 August 2022

⁹² Royal Ministry of Finance, Norway, ‘Taxonomy – Norway’s response to the consultation on the draft delegated regulation’ (17 December 2020) <www.regjeringen.no/contentassets/ffd845da24fd4dfbb0806af5dd5ef2d4/taxonomy_norways_comments.pdf> accessed 2 August 2022.

intelligence and the dissemination of information and data, the CBI's core work is focused on developing a trusted standard and providing policy models and advice.⁹³ Its trusted standard has been the development of a Climate Bonds Taxonomy which clearly defines what projects are climate aligned and will drive a low carbon economy. Due to the 2020 sulphur cap and IMO targets for carbon reduction, the CBI announced early in 2019 that its Shipping Technical Working Group (TWG) and Industry Working Group (IWG) would develop framework criteria for shipping investments. The Shipping Criteria forms part of the CB Standard and provides concise decision rules for determining the compatibility of shipping projects and assets with a low carbon, climate resilient economy, and are therefore eligible for certification under the Climate Bonds Standard. The TWG and IWG received input from a number of representatives from 'academia, civil society, ship owners, operators, investors and international policy bodies from around the world'.⁹⁴ The CBI Shipping Criteria can also be used to certify related infrastructure dedicated to recharging and refuelling zero emissions (e.g. charging stations and fuel bunkering for eligible fuels).⁹⁵

These framework definitions and criteria provide a 'first-step' to channelling green finance to the maritime sector. More detailed policy information based on scientific research and development is required to guide shipowners and operators on the technology selection options for meeting these criteria. Here, the IMO and policymakers can play an instrumental role in collaborating with financial market regulators and market participants in developing a universal vernacular for green shipping. It will also contribute to the stark challenge of technological uncertainty as the industry is guided on technology choice as a prerequisite for obtaining capital. These frameworks and the definitions they provide become increasingly important for the subsequent legal tools which financiers must employ to achieve 'greenness' in commercial relationships. Contractual arrangements need clear wording in describing the activities for which a loan disbursement is to be used. This will assist with the clear allocation of duties and obligations between lenders (shipping banks) and borrowers (i.e. shipowners), thus protecting Lenders in managing a range of risks. This leads to the next Section of this Chapter which discusses methods

93 See CBI Climate Bonds Taxonomy (October 2021) <www.climatebonds.net/> accessed 2 August 2022.

94 CBI Shipping <www.climatebonds.net/standard/shipping> accessed 2 August 2022.

95 CBI, 'Shipping Criteria Document' (2020) <www.climatebonds.net/standard/shipping> accessed 2 August 2022.

of contractual integration of green principles and green frameworks into loan agreements.

3.2 *Contractual Incorporation of Green Finance Frameworks*

Once a green finance framework consisting of uniform and clear criteria for the international maritime sector has been established, the next question becomes one of enforcement. How do lenders hold borrowers accountable to these standards – an extremely important consideration in managing the Bank's reputational, legal, and credit risk.⁹⁶ Generally, there are problems with construing environmentalism in contracts, as green objectives are worded according to prevailing environmental law, which often lacks the clarity required for contractual obligations. It is already common practice for environmental compliance clauses to find their way into loan agreements; these involve a promise by the borrower to comply with prevailing environmental legislation, regulations or standards;⁹⁷ or to undertake periodic reporting on environmental performance and management.⁹⁸ However, once a bank has committed itself to a green framework, certain aspirations beyond mere compliance and regulatory reporting might need to be achieved. The implementation of green frameworks is becoming increasingly important for all institutions who commit themselves to certain green objectives insofar as unfair competition or false advertising is concerned.⁹⁹ To avoid claims of 'greenwashing' or misleading information to obtain an unfair advantage, a financial institution advancing green funds must do so meticulously and with careful consideration of how it negotiates its contractual relationships.

Despite the proliferation of capital sources following the 2008 Financial Crisis, mortgage-backed loans in the traditional sense prevail as the dominant method for advancing funds to shipowners.¹⁰⁰ Thus, bank loans will need to

96 Mohammed A Bekhechi, 'Some observations regarding environmental covenants and conditionalities in World Bank lending activities' in Av Bogdandy & R Wolfrum (eds), *Max Planck yearbook of United Nations law*, (Kluwer Law International Ltd, Leiden 1999 3) 287–314.

97 *ibid* 301.

98 Yinshuo Xu and others, 'The Impacts of Environmental Risks on Bank Loan Covenants and the Cost of Bank Loans: an Australian Case Study and the Implications for China' in Proceedings of the 2018 International Conference on E-Business and Applications (ICEBA 2018). Association for Computing Machinery, New York, NY, USA, 36–40.

99 Unilever, Sustainability cooperations between competitors & Art. 101 TFEU, Unilever submission to DG COMP (2020) <www.climatebonds.net/files/reports/comparing_chinas_green_definitions_with_the_eu_sustainable_finance_taxonomy_part_1_en_final.pdf> accessed 2 August 2022.

100 Fotis Giannakoulis, 'Overview of ship finance' (n 15).

implement a set of controls pertaining to the borrower's environmental behaviour in accordance with a chosen or prescriptive green finance framework. Loan agreements for vessel financing consist of certain contractual mechanisms that govern the arrangements between shipowners and banks. These include, inter alia, Conditions Precedent, Representations and Warranties, Covenants or Undertakings, and Events of Default.¹⁰¹ These types of clauses are not inherently unique and can be classified according to an understanding of English contract law; whereby the terms of a contract can be classified as either conditions, warranties or intermediate/innominate terms.¹⁰² These distinctions become relevant in determining the available remedy upon the breach of a term – i.e. the stronger the obligation imposed by the term, the stronger the remedy.

Whilst conditions 'go to the root of the contract' and a breach thereof entitles an aggrieved party to repudiate the contract and claim damages;¹⁰³ a warranty is merely a statement or promise that a current or future condition is true and only affords damages as a remedy upon breach.¹⁰⁴ A third species of terms, known as intermediate or innominate terms, sits somewhere on the spectrum between condition and warranty. A breach of such an innominate term can result in termination of the entire contract or damages only.¹⁰⁵ This will depend on whether the breach of the innominate term has deprived the aggrieved party 'substantially of the whole benefit' that would be obtained under the contract.¹⁰⁶ If so, then the aggrieved party is reasonably entitled to termination. This classification of terms is usually unnecessary in light of commercial contracts including express termination rights upon the breach of various clauses. However, providing an express termination clause for the breach of certain clauses will not transform the nature of those clauses – a warranty cannot be transformed into a condition because the contract States that a breach of the warranty will result in termination.¹⁰⁷

101 Stefan Otto & Thilo Scholl, 'Legal Treatment of Ship Finance Loans: Analysis of the Ship Loan Contract' in Orestis Schinas, Carsten Grau, Max Johns. (eds) *HSBA Handbook on Ship Finance* (Springer, Berlin, Heidelberg 2015).

102 For more on contractual terms, see Paul S Davies & and JC Smith, *JC Smith's the Law of Contract* (Oxford University Press 2018); see also LexisNexis' Practical Guidance, 'Contract interpretation—conditions, warranties and intermediate terms', *Practice Note: Commercial, Dispute Resolution* (2020, LexisNexis, UK).

103 *Poussard v. Spiers and Pond*, (1876) 1 QBD 410.

104 *United Scientific Holdings Ltd. v. Burnley Borough Council*, [1978] AC 904 (HL).

105 *Hong Kong Fir Shipping Co. Ltd. v. Kawasaki Kisen Kaisha Ltd.*, [1961] 2 Lloyd's Rep 478 (CA).

106 *ibid* 495.

107 Furthermore, exercising the express termination right under a contract will not deprive an innocent party of the common law remedies available where there has been a

Bank loan covenants are also subject to this classification system of contractual terms under English law. A loan covenant is essentially an express undertaking for future action or inaction, which although it may seem similar to a warranty, can in effect be material enough to afford more than damages by way of remedy if breached. It therefore seems to fall within the scope of innominate terms and may also entitle an aggrieved party to remedies such as injunctive relief or specific performance.

“Events of default” are also not clearly defined under English law but are effectively used to allow for express termination rights. In the context of ship mortgages, “default” refers to a failure to abide by the contract on the part of the shipowner.¹⁰⁸ In common commercial practice, “default” is understood as applying to a clearly defined set of “events of default” listed in a facility agreement, whereby the lender acts contrarily to the terms of the agreement.¹⁰⁹ An event of default in respect of a covenant can occur when a borrower/mortgagor breaches the covenant, after which a default will occur if the borrower has not remedied the default within a stipulated time period.¹¹⁰ Loan agreements in respect of ship financing and ship mortgage documentation are drafted to expressly include that upon the occurrence of an event of default, the lender/mortgagee’s rights to stipulated remedies become available.

If a bank were to implement a green finance framework in a manner that reduces the most possibility of risk, it would necessarily consider the full range of contractual terms available to impose environmental obligations on the shipowner. These would most likely involve the use of environmental covenants, but the loan agreement would be able to dictate the ‘seriousness’ of a covenant breach and provide for breach thereof as an ‘event of default’ with resultant remedies. Given the commercial nature of a loan agreement, it seems unlikely that an express environmental undertaking will be interpreted as ‘going to the root of the contract’. Therefore, the seriousness of an environmental covenant should not be left open-ended but should afford adequate remedy to protect the bank’s interests. Where green finance frameworks are taxonomical in nature and prescriptive as to technology selection, the loan agreement should absolutely dictate the technical specifications of the technology for

repudiatory breach; see *Spar Shipping AS v. Grand China Logistics Holding (Group) Co Ltd.*, [2016] EWCA civ 982, [2016] 2 Lloyd’s Rep 447.

108 *Doe ex dem. Gertrude Baroness Dacre v. Mary Jane Roper Dowager Lady Dacre*, 126 ER 887 (CCP), (1798) 1 Bos & P 250, 258.

109 David Osborne and others, *The Law of Ship Mortgages* (Informa law from Routledge, Milton Park 2017) 221.

110 *ibid* 223.

which the loan disbursements should be used as a condition. On the other hand, more normative frameworks which are less concerned with taxonomies and definitions but illustrate broad commitments to climate alignment and mere regulatory compliance, may pragmatically call for a phased approach.

By way of example, the Poseidon Principles framework agreement has provided signatory banks with a standardised covenant clause (SCC) which will be continuously updated in the annual review process.¹¹¹ The SCC for relevant vessel financing documents between Signatories and Borrowers, makes direct reference to Annex VI of MARPOL and mandates compliance with Regulation 22A for Collection and reporting of ship fuel oil consumption data for a ship's SEEMP. However, the SCC is "recommended" but not "compulsory" for signatories, without relevant guidance providing that an equivalent clause or term should be included. The Technical Guidance on Accountability provides little in the way of contractual guidance, except to say, 'Signatories will agree to work with Clients and Partners to covenant the provision of necessary information to calculate carbon intensity and carbon alignment'.¹¹²

The Poseidon Principles framework therefore likely envisions a phased approach to the strength of contractual clauses and remedies. A bank may initially include a set of green clauses as commitments or a convergence of objectives which serve as interpretive statements as opposed to clearly defined obligations.¹¹³ Further steps may involve integrating environmental obligations into every component of the loan agreement: Conditions Precedent, Representations and Warranties, Covenants or Undertakings, and Events of Default. This sort of "belt-and-braces" approach has been adopted by the Equator Principles, which have provided Guidance for the Equator Principles Financial Institutions (EPFIs) in incorporating environmental and social considerations into loan documentation.¹¹⁴ The EP Guidance does not require the EP's Action Plan to be included as an Annex to relevant loan agreements,

111 Poseidon Principles, *Technical Guidance* (Version 3.0 September 2020) <www.poseidonprinciples.org/wp-content/uploads/2019/07/Poseidon_Principles.pdf> accessed 2 August 2022.

112 Poseidon Principles, 'Technical Guidance on Accountability and Enforcement' <www.poseidonprinciples.org/wp-content/uploads/2019/07/Poseidon_Principles.pdf> accessed 2 August 2022.

113 As was done in the seventies with the earliest forms of environmental covenants; see Ibrahim F Shihata, 'The World Bank and the Environment: A Legal Perspective' (1992) 16 *Md. J. Int'l L.* 1.

114 Equator Principles, *Guidance Note* (2014) <https://equator-principles.com/wp-content/uploads/2017/03/ep_guidance_for_epfis_on_loan_documentation_march_2014.pdf> accessed 2 August 2022.

but does suggest that the EPs be included as key components with suggested template clauses. The EPs place a strong emphasis on reporting requirements, including as a Condition Precedent, that the borrower furnish the lender with a compliance certificate which evidences that the project covered by the loan meets all relevant environmental laws and provides a completeness status for the actions referenced in the Principles Action Plan. Events of Default are extended to breaches of any environmental or social covenants, as well as circumstances where it is found that a representation has been incorrect or misleading. An event of default can also include legal claims brought against the borrower which can reasonably be expected to result in 'material adverse effect' on implementing or operating the project in accordance with applicable requirements.

Ship financing might eventually come to include all of these types of terms which will impose stringent environmental requirements on shipowners seeking to access capital. However, at this stage, financiers pushing the green shipping agenda can provide incentives by way of advancing capital on the basis of a green commitment which might be more goal-oriented than strictly premised on compliance – albeit, compliance and enforcement becomes imperative in respect of protecting the bank from risk. There is also an emerging opportunity for financing agreements to contribute more generally to a normative system of pervasive 'green principles' throughout contract law.

3.3 *Green Financial Products for Shipping*

The adoption and implementation of green finance frameworks which include shipping, or are specifically targeted at IMO decarbonisation targets, should be supplemented by specific products for the shipping sector. The inclusion of shipping activities in a green finance framework is a step in the right direction, however, it might be administratively cumbersome for shipowners to undertake some of the environmental assessments which are uniformly applied to all activities in such a framework – terrestrial and non-terrestrial. Green shipping products could assist shipowners in accessing capital in an administratively tailored manner, thus saving time and making green finance accessible to smaller to medium owners. In a 2020 Shell and Deloitte Study, relevant stakeholders called for the lowering of the cost of capital and an improvement of terms for ship-owners 'who make decarbonisation investments through

Guidance is given to EPFIs on how to apply the EPs for four financial products: Project Finance Advisory Services, Project Finance, Project-Related Corporate Loans, and Bridge Loans.

dedicated green financing products'.¹¹⁵ This was identified as one of the ways to make decarbonising shipping a reality. Unfortunately, very few green finance products are focused on energy efficiency in shipping.

The most well-known initiatives are undoubtedly the European Investment Bank's lending and blending products for green shipping. The EIB most notably partnered with Dutch bank, ING, to contribute EUR 150m to a facility available projects with a green innovation element involving the construction of newer cleaner vessels or retrofitting of existing vessels, and applies to both inland shipping and seagoing operators.¹¹⁶ At present, the EIB provides products to finance green shipping in the following ways:¹¹⁷

- 1) Under its traditional lending programme with large shipping corporates
- 2) Under the umbrella of the European Fund for Strategic Investments (EFSI): Green Shipping Loan Programme
- 3) Under the umbrella of the Connecting Europe Facility (CEF): new financial instruments to further support Green Shipping investments, including the Green Shipping Guarantee Programme (GSGP)

Generally, these projects need to be aligned with IMO and regional regulations for vessel-source pollution, safety, and EU policy objectives – i.e. the EU Transport White Paper 2011,¹¹⁸ Trans-European Transport Network (TEN-T),¹¹⁹ and the EIB transport lending policy.¹²⁰ Although considered the pioneering 'golden standard' of green ship finance, the EIB products have a long way to go in terms of eligibility clarity and user accessibility. The TEN-T Guidelines are heavily focused on developing EU transport networks through infrastructure

115 Shell & Deloitte, *Decarbonising Shipping: All Hands on Deck* (2020) 29 <www.shell.com/energy-and-innovation/the-energy-future/decarbonising-shipping.html> accessed 2 August 2022.

116 EIB, 'Netherlands: ING and EIB provide EUR 300m to finance green shipping' (2018) <www.eib.org/en/press/all/2018-036-ing-and-eib-provide-eur-300m-to-finance-green-shipping> accessed 2 August 2022.

117 See Pia Rebelo, 'Green Finance for a Sustainable Maritime Transport System: Developing a Universal Vernacular for Green Shipping' (n 10); see also Jason Chuah, 'Legal Aspects of Green Shipping Finance – Insights from the European Investment Bank's Schemes' (n 13).

118 European Commission, *White Paper, Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system*. COM(2011) 144 final, Brussels (referred to as EU Transport White Paper 2011).

119 The TEN-T project <<https://ec.europa.eu/inea/en/ten-t/ten-t-projects>> accessed 2 August 2022; based on Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU Text with EEA relevance.

120 EIB Transport Lending Policy (13 December 2011) <www.eib.org/attachments/strategies/transport_lending_policy_en.pdf> accessed 2 August 2022.

expansion – activities that seemingly contrast efforts to reduce CO₂ emissions.¹²¹ Activities which are presently enjoying EIB funding under green shipping products are hard to categorise with no apparent framework for degrees of ‘greenness’ in shipping.¹²² It is well known that retrofitting a vessel to meet strengthening sulphur requirements, does not necessarily mean that the vessel has reduced its greenhouse gas outputs in terms of carbon compounds, nor does it guarantee that low-sulphur fuels are sustainable in the greater supply-chain context.

Along with the ambiguities surrounding framework criteria, the environmental standards imposed on borrowers by the EIB have been criticised as ‘too demanding’ for those intending to access capital.¹²³ Shipowners need to evidence significant experience, be well-established, and have a number of competencies to gain access to the available products.¹²⁴ The administrative complexity of the scheme has also been criticised and denies many shipowners the possibility of support.¹²⁵ Although these issues are also reflective of the overall framework inadequacies of green financing of shipping, they also highlight the need for streamlined products which expeditiously and exclusively channel funds to assisting the shipping sector uptake green technologies for decarbonisation. Thus far, the focus on low-sulphur fuels has taken centre-stage with no equivalent finance efforts in decarbonisation.

Although a full analysis of the benefits of green investing is beyond the purview of this Chapter, it is worth noting that sustainable finance efforts are gaining rapid momentum and are projecting better returns and long-term viability. There are growing incentives for private banks to participate in the mobilisation of funds for sustainable development purposes, despite ESG investing and green investments traditionally having a reputation of not equalling the returns of ordinary investments (i.e. those which do not consider ESG factors).¹²⁶ 2020 was a turning point with the COVID-19 pandemic catalysing a

121 See Pia Rebelo, ‘Green Finance for a Sustainable Maritime Transport System: Developing a Universal Vernacular for Green Shipping’ (n 10).

122 *ibid.*

123 Monitor Deloitte, ‘EU Shipping Competitiveness Study: International benchmark analysis’, Study commissioned by the European Community Shipowners’ Associations (February 2017).

124 *ibid* 46.

125 *ibid*; Other criticisms include that the EIB Transport Lending Policy focuses heavily on supporting inland water transport, ports and logistics, whilst only providing funding to vessels flying an EU state flag.

126 John Hill, *Environmental, Social, and Governance (ESG) Investing* (Academic Press, 2020), 26.

completely different set of interests for relevant stakeholders – one which envisions a sustainable future and focuses on human welfare and sustainability.¹²⁷ Although this is being attributed to a new millennial investor base which is “woke” concerning the impact of climate change, the growth in the market is also becoming attributable to long-term pay-offs and favourable returns.¹²⁸ Investors are looking to ESG investing as an alternative because they believe that the fund in question has a long-term view that will withstand a shifting set of market priorities. Private banks are therefore equally incentivised as State banks (which have obvious environmental policy pressures) to create green products. These will not only direct funds specifically to certain green activities but will strengthen accountability by showing investors how the bank uses its money.

4 Conclusion

This Chapter has aimed to elucidate the problems surrounding green technologies for decarbonising the shipping sector – the fundamental issue being one of technological uncertainty. This uncertainty deters first-user uptake and presents difficulties for financial institutions which are called upon to mobilise investments for these newer technologies that are perceived as riskier than their fossil-fuel counterparts. As an initial step, policymakers, researchers, and financiers are presented with an opportunity to develop framework tools for classifying low-carbon technologies. Transformative energy transitions demand this collaboration between regulatory and actor-driven change. The financial sector has experience in setting criteria for green projects in other industrial sectors; shipping must necessarily be included in some of these taxonomies and tools of comparison. It is very likely that the IMO will be called upon to produce further technical guidance for energy efficiency technologies if a carbon cap is seriously considered for the sector. Stakeholder consultation will be an important part of developing such specifications, taking into account the performance and economic feasibility of various technology

127 Eve Maddock-Jones, ‘2020 has been a watershed year for ESG funds – but what does the future hold?’ (Trustnet, 14 August 2020) <www.trustnet.com/news/7465877/2020-has-been-a-watershed-year-for-esg-funds-but-what-does-the-future-hold> accessed 2 August 2022.

128 Eve Maddock-Jones, ‘Has it been worth holding an ESG fund in 2020?’ (Trustnet, 18 July 2020) <www.trustnet.com/news/7464986/has-it-been-worth-holding-an-esg-fund-in-2020> accessed 2 August 2022.

options. Shipowners require both access to capital and guidance on technology selection. Once such a universal, scientifically endorsed, and technically pragmatic set of criteria is widely recognised, the next step for banks will be to implement such frameworks for the eligibility of shipowner activities. Here, a range of contractual mechanisms must be considered and employed to protect the financier from environmental risk and to truly achieve a set of green objectives.

For a bank to effectively implement green finance frameworks and avoid ‘greenwashing’ as well as its broad range of associated risks (from reputational to litigation risks), it will need to tightly control and monitor the way in which loan disbursements are used. Contractual enforcement is therefore key in ensuring that shipowners uptake approved technologies which meet carbon reduction targets. This Chapter has also recognised that financial projects which are specifically dedicated to driving green shipping need to be available to shipowners. Banks have a pivotal role to play in decarbonising the industry, whilst simultaneously developing sustainable models for long-term returns which are aligned with investor interests.

The pervasiveness of green finance frameworks has immense implications for all of the contractual relationships that a shipowner may undertake throughout a vessel’s lifespan. If a vessel has benefited from green finance offerings, banks can both stipulate the future conduct of the vessel in its chartering and dismantling as well as offer a normative framework upon which to base future contractual agreements with third parties. Green finance for shipping therefore has the potential to significantly contribute to the elevation of sustainability principles in contract law more generally.

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Third Party Direct Rights of Action against Insurers under UK Law and International Maritime Liability Conventions

Rhidian Thomas

1 Introduction

The notion that a third party might be entitled to seek redress by a direct right of action against the insurer of the party who has incurred liability to the third party has an obvious attraction. Notwithstanding that the liability is that of the insured, if the insurer is the ultimate payor, it appears to be procedurally sensible, efficient, secure and cost effective to facilitate the recovery of compensation directly from the insurer. The alternative is cumbersome. It involves the third party suing the insured to establish liability, and thereafter the insured claiming an indemnity against the insurer under the policy, with the insurance monies or their equivalent value thereafter passing through the insured to the third party claimant.¹

This issue is peculiarly specific to liability insurance and although the concept of third party direct right of action is attractive it is not without its analytical difficulties. And even if these are surmountable there survives the question of policy. There is no direct link in law as between the third party claimant and insurer. The insurer is in a contractual relationship with the insured only, and in turn the insured is in a distinct legal nexus with the third party claimant, whether contractual or non-contractual. As between third party claimant and insurer there is no contractual relationship,² but this does not prevent some manner of legal relationship arising in particular circumstances.³

1 In the common law the insured does not receive insurance monies as bailor or trustee: consequently there is no obligation to pay over the precise insurance monies received to the third party. See, *In Re Harrington Motor Co Ltd. ex parte Chaplin*, [1928] 1 Ch. 105; *Hood's Trustees v. Southern Union General Insurance Co of Australia*, [1928] 1 Ch. 793.

2 See the judicial analysis in *Harrington Motor Co*; *Hood's Trustees* (n 1).

3 The insurer may occupy a non-contractual relationship with the third party such as to establish a legal duty. For example, in negotiating a settlement with a third party the insurer may be held to be in a fiduciary relationship and that a settlement negotiated may be avoided for undue influence, *Horry v. Tate & Lyle Refineries Ltd.*, [1982] 2 Lloyd's Rep 416. A settlement may also be avoided for misrepresentation, *Saunders v. Ford Motor Co Ltd.*, [1970] 2 Lloyd's Rep 379.

There is a broad division of opinion as to the question whether a legal link should be established between third party and insurer and, if so, to what extent and subject to what terms and conditions. This division is readily visible when global legal traditions and national laws are compared.⁴ The common law tradition has been resistant to the concept of a direct right of action, an approach much influenced by the principle of privity of contract.⁵ Nonetheless, many nation States within the common law tradition have legislated to permit direct rights of action but to different degrees and conditions. The differences may be significant. This is true of the law of South Africa, Nigeria and Canada.⁶ In UK law the right is recognised in limited and specific circumstances.⁷ By contrast Australia and New Zealand have adopted a different course and respectively conferred on third parties preferential rights against insurers including the benefit of a charge over the insurance monies.⁸

The direct right of action is more freely accepted in the civil law tradition although the procedure may again vary as between different jurisdictions.⁹ This is true of Belgian and French law.¹⁰ The Spanish Penal Code, article 117, provides for the direct civil liability of liability insurers¹¹ and article 76 of the Insurance Contracts Act 50/1980 enables a third party to bring a claim governed by Spanish law directly against the liability insurer, either separately or concurrently with the claim against the insured.¹²

There is a close but not inseverable relation between compulsory insurance and third party direct rights of action.¹³ Where insurance is by law

4 Third Parties (Rights against Insurers) Act 1930, Consultation Paper (1998) Law Com. No .152; Sot Law Com No 102, Appendix F, Summary of Schemes of Third Party Rights Against Insurers in Other Jurisdictions.

5 The position under the English common law has to a degree been modified by the Contracts (Rights of Third Parties) Act 1999. See *Re E Dibbens & Sons Ltd.*, [1990] B.C.L.C. 577; *D G Finance Ltd. v. Scott*, [1999] Lloyd's Rep IR 387.

6 *ibid*; Third Parties (Rights against Insurers) Act 1930, Consultation Paper (n 4).

7 See *Watson v. Hemingway Design Ltd.*, [2020] Lloyd's Rep IR 194.

8 Third Parties (Rights against Insurers) Act 1930, Consultation Paper (n 4).

9 Third Parties (Rights against Insurers) Act 1930, Consultation Paper (n 4).

10 Third Parties (Rights against Insurers) Act 1930, Consultation Paper (n 4).

11 The Spanish statutory provision was before the court in *The London Steam-Ship Owners' Mutual Insurance v. The Kingdom of Spain (The Prestige) (No 3)*, [2020] EWHC 1582 (Comm), [2020] Lloyd's Rep IR 413.

12 See, *Hutchinson v. Mapfre Espana Compania De Seguros Y Reaseguros SA and Another*, [2020] EWHC 178(QB), [2020] Lloyd's Rep. IR 333.

13 For example, Directive 2009/20/EC on the insurance of shipowners for maritime claims, which does not contain a third party direct right of claim.

obligatory,¹⁴ there is benefit to both insured and third party.¹⁵ It ensures that a party exposed to liability has the protection of insurance, converting what is an act of prudence to a legal obligation, thereby protecting against the risk of ruinous financial obligations. As for third parties, without the availability of insurance compensation might not be available and the pursuit of a remedy in the courts or arbitration not a realistic or sensible option. Where there is insurance, the financial circumstances of the party liable are removed from immediate consideration, the insurance acts as a guarantee or an assurance.¹⁶ It has long been appreciated that to succeed in a claim against a defendant without funds to feed the judgment or award is a pyrrhic victory. It is a claim which has no value.

An additional and often predominant motive underlying compulsory insurance is the protection of the interests of third parties, by virtue of their membership of an exposed class of persons. In this circumstance the third party may be given a right of direct action against the insurer, with the power to enforce the rights of the insured under the insurance against the insurer. This provides still greater protection to third parties because it protects against the risk of misconduct or insolvency on the part of the insured, or the risk that the insured may not be in a position to claim under the insurance or that insurance monies paid to the insured may not be available to the third party.¹⁷

This interplay between compulsory insurance and rights of direct action against insurers is evident in the emergent international maritime liability conventions relating to oil pollution, passenger liabilities and wrecks.¹⁸ In this

14 The obligation to insure may also arise, for example, from contract and professional rules of conduct.

15 See generally, *Compulsory Liability Insurance*, Ch 9, in *Insurance and The Law of Obligations*, R Merkin and J Steele (2013, OUP, UK); Clarke, *Policies and Perceptions of Insurance Law in the Twenty-First Century*, 20 – 21 (2005, OUP, Oxford).

16 It is often the case that the direct right of action when granted is limited to circumstances when the insured is not a viable defendant: see Watson (n 7).

17 In UK law compulsory insurance has been introduced by legislation sparingly, the principal examples are in relation to employers' liabilities, road traffic liabilities, maritime liabilities (considered *infra*), aviation liabilities and the liabilities of riding establishments. The obligation to insure is on occasions also introduced by or under an authority which derives from subordinate legislation. Alternatively it may be prescribed by the rules of professional bodies or by a contractual obligation. In the case of EU law the insurance of air passenger and related liabilities is compulsory under EU Regulation 785/04 as supplemented by the Civil Aviation (Insurance) Regulations 2005 SI 2005/1089.

18 International Convention on Civil Liability for Oil Pollution Damage 1992 (CLC 1992); The International Convention on Civil Liability for Bunker Oil Pollution Damage 2001 (Bunker Convention 2001); The Athens Convention Relating to the Carriage of Passengers and Their Luggage by Sea 2002 (Athens Convention 2002); The Nairobi International

sector the principal source of insurance cover is provided by P & I Clubs which are members of the International Group of P & I Clubs,¹⁹ but other mutual and market insurers may also underwrite these risks. The international conventions contain a standard mandatory insurance obligation and with third parties given rights of direct action. These provisions are analysed later in the text.²⁰

The debate surrounding rights of direct action against insurers relates not only to the question whether such a right should exist, but also, if it does exist, the terms and conditions that attach to the right. In outline the core debate is whether the position of the insurer when sued by the third party should be precisely the same as had the claim been instigated by the insured. Or should the position of the third party be strengthened so that defences available to the insurer are more limited than would be the case had the claim been made by the insured.²¹ The former position takes the support of strict logic but the latter may be supported by considerations of public policy. If the primary object of obligatory insurance and third party rights of direct action is the protection of identified third parties, it is arguable that third parties should be secure in their expectation that the insurance will pay. This may also mean that third parties should be in an even more secure position than the insured and protected against the risk of defensive counter-measures by insurers, particularly when based on conduct of the insured to which the third party was not privy. If this policy is accepted the question then arises about the extent of the additional protection that should be recognised, as to which opinions may differ.

It is now proposed to examine the issues raised in this Introduction in the context of UK law and the relevant international maritime liability conventions.

Convention on the Removal of Wrecks 2007 (Nairobi Convention 2007). Hereafter the 'international maritime liability conventions'.

19 These are mutual insurance corporate entities which insure third party liabilities of members representing in excess of 90% of global shipping on an indemnity basis. See generally, Hazelwood & Semark, *P & I Clubs Law and Practice* (4th ed) (2010, Lloyd's List, London).

20 *International Maritime Liability Conventions* (n 18).

21 *International Maritime Liability Conventions* (n 18).

2 UK Law²²2.1 *Common Law*

At common law²³ a third party beneficiary of a liability policy has no direct rights of action against the insurer. There is no privity of contract between the third party and insurer. Privity of contract exists only between the insurer and insured, and although the third party may be considered an intended beneficiary of the insurance this does not give the third party any rights under the contract of insurance.²⁴ The design under the common law is that it is for the insured to recover under the policy and thereafter discharge the liability to the third party with the aid of the fiscal benefit provided by the insurance.

The common law doctrine of privity of contract has been modified by the Contracts (Rights of Third Parties) Act 1999 but it would be rare for this legislation to provide the foundation for a third party claim in connection with liability insurance.²⁵ The insurance contract may itself also exclude any application of the Act.²⁶

The risk that the presumptions underlining the common law might malfunction detrimentally is borne by the third party. There is no guarantee that the insured provided with the insurance funds will compensate the third party;²⁷ there is very clearly no obligation to transfer the precise funds received to the third party.²⁸ Also, beyond the possibility of dishonest conduct, the insured may become insolvent or, in the case of an incorporated insured, cease to exist. In the event of insolvency, insurance monies paid to the insured are considered part of the general assets of the insured to be distributed to the general creditors in accordance with the appropriate insolvency rules. There is no

22 The description 'UK Law' in the title is not strictly correct but it is adopted as a convenient label to indicate that the main thrust and analysis in this contribution is applicable to all constituent regions of the UK, although the source of the law and its drafting may differ to some degree in relation to the law relating to Northern Ireland and Scotland.

23 The common law does not prevail in Scotland.

24 *Harrington Motor Co Ltd.; Hood's Trustees* 1 Ch 793 (n 1).

25 Bird's Modern Insurance Law 11th edn, Ch 4, par 4.07 et seq, John Birds (2019), Sweet & Maxwell, London); Bowyer, Contracts (Rights of Third Parties) Bill and Insurance [1997] J.B.L. 230.

26 Section 1(2) of the 1999 Act permits such an exclusion, which right is adopted in many policies.

27 It could be argued that the insured is receiving the insurance monies for the benefit of the third party and is under a fiduciary duty to hold the proceeds for the benefit of the third party. see *Re E Dibbens & Sons Ltd.* 577; *D G Finance Ltd.* 387 (n 5).

28 This is because of the absence of a bailment in relation to the insurance monies, see *Harrington Motor Co Ltd.; Hood's Trustees* 1 Ch 793 (n 1).

trust or rule of preference in favour of the third party who may consequently recover a much smaller sum than the insurance monies paid to the insolvent insured or even nothing at all.²⁹ The same position prevails if at the time of the insolvency only the legal right to claim under the policy exists. The legal right is again considered an asset of the company for the benefit of all the creditors in the insolvency process.³⁰ There is also the risk that the insurance monies paid may be the subject to a charge or floating charge with the chargees secured creditors with priority over the claims of third parties.³¹

Some of the potential difficulties and risks inherent in the common law can to some degree be avoided when the insured is characterised as an agent or trustee of the third party,³² or by the procedural device of joining the insurer to litigation to establish the liability of the insured,³³ or by contractual provisions in the policy relating to the payment of indemnities.³⁴ But, nonetheless, risks remain some of which have been cured by legislation.

2.2 *Statutory Law*

The common law continues to hold sway generally but a small number of statutes have been enacted which establish direct rights of action against liability insurers in the case of particular categories of insurance and circumstances.³⁵ For the present I ignore statutes which give effect to international maritime conventions which I return to later in the text.³⁶

Of particular significance is the *Third Parties (Rights against Insurers) Act 2010 (as amended)*, which is the closest that exists to a statutory measure of general application, and the only statute to be considered in this contribution. It repeals and replaces a statute of the same title enacted in 1930 which

29 *Harrington Motor Co Ltd.; Hood's Trustees* (n 1); *Dibbens & Sons Ltd.* (n 5), *ibid.*

30 *Harrington Motor Co Ltd.; Hood's Trustees* (n 1).

31 *Siebe Gorman v. Barclays Bank*, [1979] 2 Lloyd's Rep 142; *Re Charge Card Services*, [1989] Ch 497(CA); *Re CCG International Enterprises Lt.*, [1993] 1 BCLC 1428.

32 *Vandepitte v. Preferred Accident Insurance Corp of New York*, [1933] AC 70.

33 Customarily this would be achieved under the rules governing court procedure and practice; in England and Wales the Civil Procedure Rules (CPR).

34 For example, the 'Loss Payee' clause, which identifies the party to whom the payment of insurance monies is to be made. The party identified is a mere appointee, not an assured nor an assignee; *Iraqi Ministry of Defence v. Arcepey Shipping Co s.A.* [1979] 2 Lloyd's Rep 491, 497.

35 See, Birds' *Modern Insurance Law*, Chs 21 & 22; Merkin & Steele, *The Law of Insurance Obligations*, Ch 9; Policies and Perceptions of Insurance Law in the Twenty-First Century, Clarke, Ch 1, 20–21.

36 *International Maritime Liability Conventions'* (n 8).

increasingly proved to be dated and deficient, and became the object of persistent criticism.³⁷

The 2010 Act makes significant substantive and procedural reforms, bringing the law into alignment with commercial practice and streamlining the process by which direct rights of action against insurers may be pursued in specified circumstances.³⁸ The Act also materially improves the right of third parties to obtain information relating to insurance.³⁹

Although the Act consistently makes reference to contracts of insurance, it is specifically applicable to contracts which insure liabilities, as is made clear by the Preamble,⁴⁰ with the concept of “liabilities” not defined. But it is the case that a third party liabilities insurance contract must be in its essence a contract of insurance.⁴¹ Contingent insurance, where the payment of an indemnity is discretionary, is not in strictness founded on a contract of insurance.⁴² Although aspects of P & I insurance cover may be discretionary this is not the case with regard to the generality of the cover.⁴³

The Act is an aspect of the *lex fori* and applicable whenever a UK court is vested with jurisdiction.⁴⁴ It is consequently of potential relevance to P & I insurance provided by Group members of the International Group of P & I Clubs domiciled in the UK.⁴⁵ All these Clubs adopt English law as the

37 Goodliffe, What is left of the Third Parties (Rights against Insurers) Act 1930 [1993] JBL 590; Mance, Insolvency at Sea [1995] LMCLQ 34; Merkin, Liability insurance – the rights of third parties [1997] P & I Int 178; Purves, Claims Against Insolvent Insureds [1998] CILR 98; Jess, Reform of direct rights of action by third parties against non-motor liability insurers [2000] LMCLM 192; Merkin & Steele, 397–405.

38 For an analysis of the 2010 Act in the broader context of third party rights against insurers, see Peter MacDonald Eggers QC, Direct Action against Insurers and P & I Clubs, Ch 12 in Soyer and Tettenborn (eds), *Maritime Liabilities in a Global and Regional Context* (2019, Informa Law from Routledge, UK).

39 For a judicial analysis of the significant aspects of the 2010 Act see, Watson (n 7).

40 The ‘Preamble’ is cited in n. 51.

41 *Medical Defence Union Ltd. v. Dept of Trade*, [1980] Ch 82; *The Vainqueur Jose*, [1979] 1 Lloyd’s Rep 580.

42 *ibid.*

43 *Wooding v. Monmouthshire & South Wales Mutual Indemnity Society Ltd.*, [1939] 4 All ER 570; *The Allobrogia*, [1979] 1 Lloyd’s Rep 190.

44 Procedural rights under the 2010 Act are available in any tribunal which is recognised as a “court” although not formally described as such. The 2010 Act does not provide a definition of “court”. In Watson (n 7), it was held that an employment tribunal was a “court” within the meaning of section s 2(6) of the Act.

45 The Group is constituted of the following Clubs described in abbreviated form – Britannia Steamship; London Steam-Ship; North of England; Shipowners’ Mutual; Standard Steamship; Steamship Mutual; United Kingdom Mutual; West of England. See Hazelwood (n 19).

governing law of their insurance contracts and also English jurisdiction and/or London arbitration⁴⁶ and may be exposed to third party claims.⁴⁷ The position in relation to the other Clubs in the International Group will depend on the chosen governing law of each, dependably the domestic substantive and procedural law.⁴⁸ Nonetheless a restricting factor on the availability of the procedure made available under the Act is the implicit requirement that the necessary status of the insured as being insolvent or defunct must result from procedures within the jurisdiction.⁴⁹

It is now proposed to scrutinise the substance of the Third Parties (Rights against Insurers) Act 2010 (as amended)⁵⁰ in some detail.

2.3 *Third Parties (Rights against Insurers) Act 2010 (as Amended)*

The Act relates to two broad issues, the transfer of contractual rights and disclosure of insurance information to third parties. The following analysis adopts this division

2.3.1 Transfer of Contractual Rights

In the Preamble the statute declares that it is, ‘An Act to make provision about the rights of third parties against insurers of liabilities to third parties in the case where the insured is insolvent, and in certain other cases’.⁵¹

The Act applies to liability insurance generally: but it is restricted to occasions when the insured is or becomes insolvent or defunct, the latter relating to incorporated or unincorporated bodies which are or have been dissolved by legal process. The factor common to these two general categories is that they are situations where the insured has lost the “effective power to enforce its own

46 See, for example, P & I Rules 2020 – 2021 of The North of England P & I Association Ltd, Section 8, Rules 49 and 51.

47 Hazelwood (n 19) ch 17.

48 With regard to the three Scandinavian Clubs direct right of action is available under the Insurance Contracts Act 1930, s.95.

49 Third Parties (Rights against Insurers) Act 2010 (as amended) S.1. Hereafter the ‘2010 Act’. The 2010 Act did not come into force until 1 August 2016, after it had been amended by the Insurance Act 2015 s.20 and Schedule 2, in relation to the insured persons to whom the 2010 Act applies. The delay had been incurred and amendment made necessary because the 2010 Act failed to keep abreast of developments in insolvency and corporate law.

51 The 2010 Act is based on a joint Report of the Law Commission for England & Wales and the Law Commission for Scotland, Third Parties-Rights against Insurers (Law Com No 272) (Scot Law Com No 184) Cm 5217, SE/2001/134. (Hereafter referred to as the “Law Commission Report or LCR”). The LCR was preceded by the Third Parties (Rights against Insurers) Act 1930 Consultation Paper (1998) Law Com No 152, Scot Law Com No 104 (Hereafter “Consultation Paper”).

rights and dispose of its own assets".⁵² Otherwise, the application to insureds is unqualified: the insured may be a natural person or an incorporated or unincorporated body or association.

The concept of insolvency is broadly defined as bankruptcy and winding up, and extends to include the range of judicial orders that may be made in the modern law in the face of parties experiencing financial difficulties.⁵³ An incorporated or unincorporated body is defunct when it has ceased to exist as a matter of law, as when a company is removed from the company register, and not subsequently restored.⁵⁴ The statute refers to insureds who or which fall within the Act by the generic term 'relevant person'.⁵⁵

The private international law dimensions of the Act are far from straightforward. Although the point is not expressly made in the legislation it would appear that the insured must be made bankrupt or wound-up or dissolved in England and Wales, Northern Ireland or Scotland. This appears to be a necessary implication for the way 'relevant person' is defined.⁵⁶ It is, however, the case that in England and Wales the courts have jurisdiction in specific circumstances to grant winding-up orders against foreign insureds. Otherwise, no other connection with any part of the UK is necessary with regard to the location of the liability, the residence or domicile of the parties, the governing law of the insurance contract, and the place where sums due under the insurance are payable.⁵⁷ The Act does not apply to reinsurance.⁵⁸

2.3.2 Liability of Insured

The broad proposition on which the Act is based is that the liability of the insured to the third party must always be established before rights may be enforced against the insurer. But it is no longer a condition precedent to the commencement of proceedings, which may be initiated following the incurring of liability.⁵⁹

52 *The Fanti and The Padre Island*, [1989] 1 Lloyd's Rep 239, 247 per Bingham LJ. Approved on appeal by Lord Goff of Chieveley [1991] 2 AC 1, 38.

53 Third Parties Act SS. 4–6.

54 Third Parties Act S. 6(1)(b).

55 S.1 (5)(b) and S. 19 confer the power to amend the meaning of "relevant person" by secondary legislation. This device permits the ambit of the Act to be changed to meet continuing developments without the need to seek an amendment to the Act or introduce new legislation.

56 2010 Act S. 1.

57 2010 Act S. 18.

58 2010 Act S. 15.

59 See *infra*.

As this proposition makes clear, the Act draws a distinction between “incurring” and “establishing” liability. Liability is established only if both the existence and amount of the liability are established by a declaration made under the Act or a judgment or arbitral award, or an enforceable agreement.⁶⁰ The liability of the insured may relate not only to injury and loss caused to the third party but also to liabilities voluntarily assumed by the insured,⁶¹ such as legal expenses and health insurance.⁶²

When liability is “incurred” is not specifically defined in the legislation. Logically it must be at an earlier point in time than the establishment of liability. It is also a patently important issue because it is the time that the rights under the contract of insurance transfer to the third party, placing the third party in a position to bring proceedings to enforce the rights against the insurer.⁶³ The probable interpretation is that the concept alludes to the moment the facts support the conclusion that a cause of action exists but even this suggestion requires qualification. This particular issue is discussed further in the following section.⁶⁴

2.3.3 Transfer of Contractual Rights

The Act does not create new rights, but transfers the rights that arise under the contract of insurance which relate to the insured’s liability to the third party.⁶⁵ As previously observed the Act does not provide a definition of ‘contract of insurance’ but it may be anticipated that the designation will be given a commercial construction and include indemnity insurance.⁶⁶

The Act transfers the insured’s rights by a process which is customarily described as a ‘statutory transfer’.⁶⁷ It is not an assignment or subrogation, or any similar concept. Section 1(2) states –

60 2010 Act S. 1(4).

61 2010 Act S. 16.

62 The contrary was the case under the 1930 Act which was interpreted as not relating to liabilities voluntarily incurred by the insured; see *Tarbut v. Avon Insurance plc*, [2001] 2 All ER 503; *New Zealand Forest Products Ltd. v. New Zealand Insurance Co Ltd.*, [1997] 1 WLR 1237.

63 2010 Act S. 1(1) & (2).

64 LC Report, paras 3.23–3.24 et seq.

65 2010 Act S. 1(2).

66 It is clear that the Act applies to P & I insurance. See generally, *Insurance Contracts and Insurance Market*, Ch. 3, in *Insurance and The Law of Obligations*, R Merkin and J Steele (2013, OUP, UK).

67 LCR (n 63) para 1.1.

The rights of the relevant person⁶⁸ under the contract against the insurer in respect of the liability are transferred to and vest in the person to whom the liability is or was incurred (the “third party”).

This reproduces the technique adopted in the 1930 Act which Lord Denning described in the following terms –

Under the section the injured person steps into the shoes of the wrongdoer. There are transferred to him the wrongdoers’ rights against the insurer under the contract. What are these rights? When do they arise? So far as the liability of the insured is concerned, there is no doubt that his liability to the injured person arises at the time of the accident, when negligence and damage coincide. But the ‘rights’ of the injured person against the insurer do not arise at the same time.⁶⁹

The dictum begs the question as to when precisely rights of the insured against the insurer transfer but without providing a direct answer. Under the 1930 Act there was some uncertainty about this question but the predominant view appears to have been that rights transferred to the third party when the liability of the insured was established. Prior to this moment the third party acquired no right or even a contingent right to an indemnity.⁷⁰

Under the 2010 Act the position is different because the precise moment liability is established is irrelevant. The answer to the question appears to be when the insured acquires the status of a relevant person, in other words becomes insolvent or defunct. The insured may have this status at the time liability is incurred or at a later date, after liability has been incurred, and the transfer of rights will occur accordingly.⁷¹

Section 1 of the 2010 Act is the basis of this proposition. It is nonetheless a difficult provision: it provides for the transfer of rights when the insured, of the appropriate status, has “incurred” liability. The meaning of this phrase is not immediately clear but in the context of the section it logically must mean something other than, and which occurs at an earlier moment in time than,

68 Alluding to “the insured” of whatever legal status.

69 *Post Office v. Norwich Union Fire Insurance Society Ltd.*, [1967] 2 QB 363, 374; [1962] 1 Lloyd’s Rep 216, 219. The statement was endorsed as “unassailably correct” by Lord Brandon in *Bradley v. Eagle Star Insurance Co Ltd.*, (HL) 1989 A.C. 957; [1989] 1 Lloyd’s Rep 465.

70 *Nigel Upchurch Associate v. Aldridge Estates Investment Co Ltd.*, [1993] 1 Lloyd’s Rep 535; *Jackson v. Greenfield*, [1998] BPIR 699, 709; *Sea Voyager v. Bielecki*, [1999] 1 All ER 628, 645.

71 LCR (n 63), paras 3.23–3.24.

when liability is “established”.⁷² The only viable suggestion is that it refers to the occurrence of the factual circumstances out of which liability arises, in other words when the facts establish the cause of action. In the Law Commission Report the word is understood as referring “to the creation of a liability” which appears to support the interpretation suggested.⁷³ But this test must be applied before those facts have been established and it would appear that the most that may be demanded is that the third party honestly and reasonably believed that the facts indicated a liability on the part of the insured, such that he is justified in commencing proceedings against the insurer under the legislation. It is possible that the third party may misjudge the position and ultimately fail to establish liability but providing the litigation has been initiated in good faith there should be no repercussions. Of course, if the issue of liability has already been established no similar question arises.⁷⁴

At their core the rights of the insured relate to the right to an indemnity under the contract of insurance, subject to the terms and conditions of the contract. The transfer is limited to “the liability incurred” by the insured, so, for example, if the insured is entitled to receive a greater sum by way of indemnity from the insurer than the sum of his liability to the third party, the right to the difference is not transferred.⁷⁵

The assertion of transferred rights is dependent on the insured establishing a valid and binding contract of insurance in accordance with the applicable legal principles and complied with the terms and conditions of the contract. To provide an example, under English law a contract of insurance is a contract of good faith and an insured in placing the insurance is under a duty to make fair presentation of the risk.⁷⁶ Further, the terms of the contract may place obligations on the insured with regard to the management of the risk and the making of claims. Breach of one or more of these obligations may have many consequences, one of which may be to prejudice the right to a recovery under the insurance.⁷⁷

The insurer may raise any defence against the claim by a third party based on transferred rights that would have been available to the insurer had the

72 As specified in S. 1(4). See also *Jackson v. Greenfield*, [1998] BPIR 699, 709.

73 LCR (n 63), para 3.36.

74 See *infra* para 2.3.6.

75 2010 Act S. 8.

76 Marine Insurance Act 1906 s 17 as amended by the Insurance Act 2015 S. 14; Insurance Act 2015, Part 2, SS. 2–8, and Sch 1.

77 With regard to “promissory warranties and representations” the default powers for breach are set out in the Insurance Act 2015, Part 3, SS. 9–11 and Sch 1, Part 1.

claim been made by the insured. The insurer may also raise any defence that would have been available to the insured to a claim brought by the third party to establish liability. This latter defence is expressly recognised in the Act⁷⁸ and the former follows from the way the ‘right of an insured under the insurance’ is construed as meaning an effective right that would have been open to the insured in an action on the insurance. This approach gives full meaning to the notion that the third party “steps into the shoes” of the insured wrongdoer and that the position of the insurer is, with some qualification,⁷⁹ precisely the same as had proceedings been commenced by the insured.⁸⁰

Consistent with this analysis it is also the case that any right of set off the insurer would have had as against the insured survives against the third party making a direct claim.⁸¹

Once the rights of an insured under the insurance contract, in respect of its liability to the third party, are transferred to the third party they cease to be enforceable against the insured to the extent of those rights. But they may be enforced against the insured to the extent that the sum recoverable from the insured is greater than the sum recoverable from the insurer,⁸² as also may rights not connected with the liability of the insured.

2.3.4 Protective Provisions – Modification of the General Rule Relating to Transfer

The principles relating to the transfer of rights under the Act might on occasions operate oppressively and unfairly to third parties in the absence of legal protection. To counter this possibility the Act sets out protective provisions which apply in identified circumstances.

Where the transfer of rights is subject to a condition in the insurance contract to be fulfilled by the insured, providing it continues to be possible the condition may be fulfilled by the third party, whose acts are deemed to have been done by the insured.⁸³ Consequently, failure to satisfy the condition by the insured is not crucial and prejudicial to the third party transferee. The clearest example is a condition requiring the insured to give notice of a claim

78 2010 Act S. 3(3).

79 See *infra*.

80 The same position prevailed under the 1930 Act; see *The Vainqueur Jose*, [1979] 1 Lloyd’s Rep 557; *Pioneer Concrete (UK) Ltd. v. National Employers’ Mutual General Insurance*, [1985] 2 ALL E R 395; *Centre Reinsurance International Co v. Curzon Insurance Ltd.*, [2004] 2 All ER (Comm) 28.

81 2010 Act S. 10.

82 2010 Act S. 14(1).

83 2010 Act S. 9(1) & (2).

or service of proceedings within a specified period of time. Under the Act the insurer is denied the right to insist on personal performance by the insured:⁸⁴ the third party is entitled to perform the obligation if that continues to be possible.

If the insurance contains a condition which requires the insured to provide information and assistance to the insurer that cannot any longer be fulfilled because the insured is an individual who has died or a body corporate which has been dissolved, the condition does not continue to apply to the rights transferred.⁸⁵ Further, such a condition is not to be construed as requiring the insured to notify the insurer of the existence of a claim under the contract of insurance.⁸⁶

The Act also protects transferees from the effect of what is known as the 'pay to be paid rule' or 'pay first rule', which is declared void. In the language of the Act, transferred rights are not subject to a condition requiring the prior discharge by the insured of the insured's liability to the third party.⁸⁷ An exception is made with regard to marine insurance⁸⁸ where the 'pay to be paid' rule continues to attach to rights transferred except where the insured's liability relates to death or personal injury.⁸⁹ This provision is of particular significance to P & I insurance relating to maritime liabilities in which the 'pay to be paid' rule assumes a significant position.⁹⁰ The Act follows what had become the established position in the practice of P & I Clubs.⁹¹ Beyond the question of policy, it is a logical absurdity for the condition to survive as against third party transferees.⁹² That it does in the case of maritime liabilities, subject to the one qualification, is an acknowledgement of the desirability of arriving at an internationally agreed position on the question.

84 As was the case under the 1930 Act, see *The Vainqueur Jose*, [1979] 1 Lloyd's Rep 557.

85 2010 Act S. 9(3).

86 2010 Act S. 9(4).

87 2010 Act S. 9(5).

88 As defined in the Marine Insurance Act 1906 s.1.

89 2010 Act S. 9(6). Personal injury includes any disease and any impairment of a person's physical or mental condition, 2010 Act S. 9(7).

90 *The Fanti and The Padre Island*, [1991] 2 AC 1.

91 The Clubs in the International Group of P & I Clubs had ceased to rely on the condition in the case of death and personal injury claims.

92 For a sceptical response to the practice of P & I Clubs, see *Mance, Insolvency at Sea*, [1995] LMCLQ 34.

2.3.5 Procedure under the Act

The most significant aspect of the 2010 Act is the reform introduced to the procedure for the assertion of third party rights. These reforms are additional to the former procedure and represent an alternative approach for third parties. Under the preceding procedure it was essential to first establish the liability of the insured to the third party by obtaining a judgment or award or by agreement.⁹³ In the case of a defunct insured, it was necessary to restore the legal identity of the insured so that liability could be established.⁹⁴

Under the new procedure neither step is necessary. The claim may be made directly against the insurer with all issues determined in those proceedings. The broad effect of the reforms is to bring the legal procedure into line with the way third party claims against insureds are actually conducted in practice, with insurers taking a major managerial role and insureds only a small or no part save in name.⁹⁵ It is anticipated that the new procedure will be far simpler and bring about a saving in cost and time.

2.3.6 Procedure When Liability Separately Established

The 2010 Act continues to recognise the availability of a procedure based on the transfer of rights separate and distinct from the new procedure introduced by the 2010 Act. Under this procedure the third party takes a first and separate step to establish the liability of the insured, by obtaining a judgement, arbitral award or settlement agreement. Thereafter, having established liability, and relying on the transfer of rights under the 2010 Act,⁹⁶ the third party commences a separate proceeding directly against the insurer to establish liability to pay under the insurance and obtain judgment.⁹⁷

This procedure may arise in various circumstances. The insured may become a relevant person after the liability has been established by a judgment, award

93 *Post Office v. Norwich Union Fire Insurance Society Ltd.*, [1967] 2 QB 363; *Bradley v. Eagle Star*, [1989] 1 Lloyd's Rep 465; *Sea Voyager Maritime Inc. v. Bielecki*, [1999] Lloyd's Rep IR 356; *Thornton Springer v. NEM Insurance Co Ltd. and others*, [2000] 2 All ER 489; *William McLroy (Swindon) Ltd. v. Quinn Insurance Ltd.*, [2012] 1 All ER (Comm) 241.

94 *Bradley v. Eagle Star Insurance Co Ltd.*, [1989] 1 AC 957.

95 When insurers are perceived as *dominus litis* they may become liable for costs, see *Travelers Insurance Co Ltd. v. XYZ*, [2019] UKSC 48; [2019] Lloyd's Rep IR 683.

96 2010 Act S. 1(1) & (2).

97 In *Palliser Ltd. v. Fate Ltd. and Others*, [2019] EWHC 43(QB), [2019] Lloyd's Rep IR 341, an insured landlord settled a negligence claim by a lessee after which the landlord went into liquidation. Under the settlement judgement was entered against the landlord with damages to be assessed. The claim was thereafter allowed to continue but as a claim under the 2010 Act.

or agreement. In this circumstance the third party has no option but to initiate proceedings, founded on the transfer of rights, directly against the insurer.

The third party may also choose to adopt this approach when the insured becomes a relevant person during the course of litigation commenced by the third party to establish his liability. It may be a better option to continue the proceedings than abandon them and commence the new procedure under the 2010 Act.

When this approach is adopted, there is at least the risk that the third party may be out of time to make a claim under the insurance contract against the insurer under the 2010 Act. A provision of the Act guards against this risk by providing that the cause of action against the insurer arises at the time the liability of the insured is established.⁹⁸ This means that time starts to run from the time of the judgment establishing liability.

2.3.7 New Procedure before Liability Established

The new procedure introduced by the 2010 Act provides that a third party who claims to be the transferee of insurance rights but who has yet to establish the liability of the insured may proceed directly against the insurer.⁹⁹

In this circumstance the third party commences proceedings directly against the insurer by initially seeking a declaration as to (a) the insured's liability, and/or, (b) the insurer's potential liability, to him.¹⁰⁰ As this provision indicates the third party has a choice how to proceed but it may be imagined that in most circumstances the application will be for declarations against both the insured and insurer. In this proceeding the two major issues may be determined: the liability of the insured to the third party and the insurer's obligation under the insurance contract to indemnify the third party.

Obviously both issues are to be determined on the evidence. On the presentation of sufficient proof, and subject to any defence the insurer may rely on, the court may grant the declaration(s) sought.¹⁰¹ Of particular relevance, where the declaration sought relates to the liability of the insured to the third party, the insurer may rely on any defence that the insured could have relied on had those proceedings been brought against the insured.¹⁰² Also, on the question of the insurer's liability under the insurance contract, the insurer may

98 2010 Act S. 12 (4).

99 2010 Act S. 2(1).

100 2010 Act S. 2(2).

101 2010 Act S. 2(3).

102 2010 Act S. 2(4) subject to s. 12(1); s. 2(5).

rely on any defence that would have been available to the insurer had the claim been made by the insured.¹⁰³

A declaration merely declares the opinion of the court on the question(s) placed before it, and the remedy is discretionary in nature. Under the 2010 Act it appears that once the third party has satisfied the court on the evidence a declaration must be made. Where a declaration is made to the effect that the insurer is liable to the third party it may give a judgment against the insurer.¹⁰⁴ But a declaration is only binding on the insured if it has been made a defendant in those proceedings.¹⁰⁵

It is to be noted that the insured may not be involved in this procedure and it is anticipated that overwhelmingly this will be the position in practice. But it will always be possible for the insured to be joined to the proceedings on the application of the insurer or insured. There is a specific provision in the Act to the effect that where the application for a declaration relates to the liability of the insured, the third party may make the insured a defendant in those proceedings.¹⁰⁶ It is probable that the insurer will be able to achieve the same by reference to the rules of court procedure.¹⁰⁷

In summary, the significance of the new procedure is that the third party may proceed directly against the insurer without first establishing the liability of the insured. And in these proceedings, it is possible for all the legal issues to be determined, the liability of the insured to the third party and the liability of the insurer under the insurance contract. In these proceedings it is anticipated that the insurer will take the major managerial role, with the insured for the most part not participating.

2.3.8 Arbitration

It is always possible that the insurance contract may contain an arbitration clause with claims arising thereunder referred to an arbitral tribunal for determination. It follows from the nature of transferrable rights under the 2010 Act that such an arbitral agreement is binding on a third party to the extent that the insured would have been bound by it. To this extent, applications by third

103 2010 Act S. 1(2) whereunder the 'rights of the relevant person' under the insurance contract are transferred and those rights will be defined, in part, taking into account defences available as against the insolvent assured.

104 2010 Act S. 2(6).

105 2010 Act S. 2(10).

106 2010 Act S. 2(9). This was also the case under the 1930 Act: see *Freshwater v. Western Australia Assurance Co Ltd.*, [1933] 1KB 515; *Cunningham v. Anglian Insurance Co Ltd.*, 1934 SLT 273.

107 Civil Procedure Rules (CPR).

parties for declarations under the 2010 Act will be required to be referred to the designated arbitral tribunal.¹⁰⁸

The 2010 Act recognises this possibility and makes certain accommodating provisions. The procedural provisions of the Act continue to apply to the extent that they are relevant and this is achieved by amendments to the statutory drafting. “Tribunal” is substituted for “court” and the phrase “make the appropriate award” for “give the appropriate judgment”.¹⁰⁹

Where the third party has already established the liability of the insured the reference to arbitration will be concerned only with the claim under the insurance contract against the insurer. If the question of liability is yet to be ascertained, the reference may follow the new procedure under the 2010 Act. In this case the Act expressly provides that where the reference to arbitration relates to an application for a declaration relating to the insurer’s potential liability to the third party, the third party may also in the same proceedings apply for a declaration as to the insured’s liability.¹¹⁰

Where an arbitration clause exists in the agreement between the third party and insured, providing it is applicable the liability of the insured will be determined in the reference to arbitration. But this arbitration agreement does not bind the insurer and would not be relevant to any later proceedings brought by the third party for a declaration against the insurer.

2.3.9 Limitation Periods of Time

The general position adopted is that a claim made under a transferred right relates to the right of the original insured under the insurance contract and is governed by the same limitation of time period as would have applied to a claim brought by the insured. Nonetheless, the precise position is to be considered in the context of the two procedural courses open to the third party.

Where the third party decides to first establish the insured’s liability in separate proceedings, independently of the Act, there arise more than one consideration. In this proceeding the relevant limitation of time will relate to the nature of the cause of action. Any subsequent proceedings by the third party against the insurers relying on rights transferred under the 2010 Act, is governed by the time limitation relating to claims under the insurance contract. There is a danger that the third party in this circumstance may run out of time to initiate the claim against the insurer and to protect against this risk the Act sets out the following rule. The claim against the insurer arises at the time the

108 2010 Act S. 2(7).

109 2010 Act S. 2(8).

110 2010 Act S. 2(7).

third party establishes the liability of the insured,¹¹¹ so time does not commence to run until the moment the liability of the insured is established.¹¹²

Where the third party proceeds directly under the 2010 Act seeking declarations against the insured and/or insurer, it would appear that the time limit relating to claims under the insurance contract applies subject to the following qualification.

The qualification relates to the position when the third party initiates separate proceedings to establish the liability of the insured but thereafter, while these proceedings are on-going, starts proceedings under the 2010 Act for a declaration of the insured's liability. If the application for a declaration was commenced after the expiry of the limitation period applicable to an action against the insured to enforce that liability, but while that action was in progress, the insurer may not rely on the expiry of time as a defence unless the insured is entitled to rely on it in the action against him.¹¹³

2.3.10 Prejudicial Agreements

The impact of agreements entered into by insured and insurer that are prejudicial to third parties was a troublesome issue under the 1930 Act and the problem survives into the 2010 Act. Prejudicial in this context alludes to an agreement which deprives or materially detracts from the rights that the third party would otherwise have possessed under the 2010 Act. It is a little surprising that the opportunity to resolve this matter was not addressed by the 2010 Act.¹¹⁴

The issue has received little and always inconclusive attention in the authorities. If there is a solution it is probably to be found in the common law.

In *Normid Housing Association Ltd. v. Ralphs*, Slade LJ *obiter dictum* suggested that an agreement between insured and insurer might be challengeable if entered into in bad faith or collusively.¹¹⁵ This would be the case if the intention of the agreement was to cheat the third party or it was so disadvantageous to the third party that no reasonable person could consider it as representing the fair value of the third party claim. Where the evidence supported this conclusion, it was suggested that the transferable contract right was an asset and its availability could be protected by resort to an injunction. The same reasoning was cautiously followed in the Scottish case *A B v. Transform Medical Group*

111 2010 Act S. 12(4)(a).

112 2010 Act S. 12(4)(a). See *supra* for the "establishment" of liability.

113 2010 Act S. 12(1) & (2). SS(4) defined when an action is no longer in progress.

114 By contrast, there is such a provision in relation to the disclosure of information under the 2010 Act.

115 [1989] 1 Lloyd's Rep 265 (CA).

(*cs*) *Ltd.* The court concluded that although it could not be said that an agreement entered into by insured and insurer could never be challenged by a third party, it was only in the most extreme of circumstances that such a challenge would be successful.¹¹⁶

In both cases the contention failed on the facts. It was also a factor in both that the insured had not been under a contractual obligation to enter into the insurances. In entering into the insurance, the insured was acting as a volunteer. It was, therefore, not in breach of contract to the third party in negotiating a settlement with the insurer. They were also cases where the agreements had been entered into after liability had been incurred but before contractual rights transferred to the third party. But neither of these circumstances should necessarily preclude the emergence of a common law remedy.

2.4 *Disclosure of Insurance Information*

2.4.1 The General Position

There is a general issue whether in the legal process a claimant is entitled to obtain information from a defendant relating to his insurance status and, if insured, the details of that cover. Such evidence may be beneficial because it will assist the claimant in deciding whether or not to pursue the claim and, if so minded, the remedy to be sought. A positive response could also result in considerable financial savings in costs and the avoidance of wasted time and resources. These considerations are particularly relevant to liability insurance.

The general approach of English law is that the financial circumstances of a defendant, including insurances, are a private matter and not for disclosure.¹¹⁷ Where, however, legal proceedings have commenced the position changes. Under court procedural rules applicable in England and Wales insurance information is subject to standard disclosure.¹¹⁸ The position is much more restricted pre-action when little or no information about the prospective defendant's insurances may be discovered. The position is governed by a narrowly based discretion and limited to specified documents and prospective

116 [2020] CSOH 3, [2020] Lloyd's Rep IR 265 (Court of Session (Outer House)).

117 There are some exceptions. Under the Insolvency Act 1986, s.155, the third party may apply for an order to inspect the books and papers of a company in the course of a winding up, a process which could unearth an insurance policy. Insurers may also be required to divulge information relating to liability insurance under 'A Code of Practice for Tracing Employers' Liability Insurance Policies' (Department of Environment, Transport and the Regions ("DETR"), October 1999).

118 CPR (n 107), Part 31.6.

litigants.¹¹⁹ An order, for example, could not be made against a broker. In general under the court procedure rules pre-action disclosure is confined to exceptional circumstances.¹²⁰

2.4.2 The Position under the 2010 Act

The position changes when the defendant insured is insolvent.¹²¹ The 1930 Act contained disclosure provisions but they were vague, limited and inadequate; and were subject to frequent criticism. A particular bone of contention was the requirement that liability had to be first established before disclosure could be ordered.¹²² The duty of disclosure was also conditional on the evidence provided by the insured to the third party revealing reasonable ground for supposing that rights under the Act had been transferred to the third party.¹²³ There was also no duty to disclose imposed on brokers and other intermediaries.¹²⁴

The 2010 Act introduces a new, more comprehensive and lucid disclosure scheme, with the right to information no longer dependent on the liability of the insured being first established.¹²⁵ It sets out a self-contained procedure by which third parties can obtain insurance information before commencing proceedings and without having to obtain a court order. Although the procedure is primarily about the disclosure of information, in specific circumstances it may relate to documents, sought after the commencement of proceedings, which relate to the insured's liability to the third party. This will apply when the insured is a defunct corporate body.

The duty to disclose information only arises at the request of the third party by giving notice compliant with the terms prescribed by the Act: otherwise, the insurer is not under a duty to disclose or to assume the initiative. The right to request information may be exercised both before and after the

119 For an application under the 1930 Act, see *Peel Port Shareholder Finance Co Ltd. v. Dornoch Ltd.*, [2017] EWHC 876 (TCC); [2017] Lloyd's Rep IR 374.

120 The Practice Direction – Pre-Action Conduct and Protocol applies when the dispute is not within one of the many Protocols that have been formulated for named disputes.

121 *Mance, Insolvency at Sea*, [1995] LMCLQ 34, 43, "True a plaintiff must normally take his defendant as he finds him. But the key to the 1930 Act is to recognise the fundamental difference between an insolvent defendant and other defendants. First the insolvent defendant is and is known to be unable to pay. Secondly, despite his own insolvency, his insurers can and will often make the task of establishing liability against him extremely onerous".

122 *Bradley v. Eagle Star Insurance Co Ltd.*, [1989] AC 957; *Woolwich Building Society v. Taylor*, [1995] 1 BCLC 132; *Mance* (n 121), 34.

123 1930 Act S. 2(2).

124 *ibid* S. 2(1).

125 2010 Act S. 11 and Sch 1.

commencement of proceedings. In the latter case the Civil Procedure Rules (CPR) will also apply.¹²⁶

The new regime improves the position of third party claimants significantly. They, in fact, stand in a better position than third parties claiming against solvent insureds. The information that may be requested and disclosed is specifically prescribed. The object is to enable a third party to obtain basic information relating to the insurance status of the insured, so as to be in a position to make an informed decision on whether or not to pursue a claim.¹²⁷

Any provision in the contract of insurance which purports, directly or indirectly, to undermine the effectiveness of the disclosure provisions is void. Thus, a term that provides that the insurance is avoided or terminated, or that the rights of the parties are altered, on the provision of information or giving disclosure as required under the Act, is void. As also is a term which prohibits or restricts a person from providing such information or giving such disclosure.¹²⁸

The right to disclosure under the Act is additional to any similar rights that may be conferred under the law.¹²⁹ In the case of pre-action disclosure this is unlikely to be helpful because under the rules of court pre-action disclosure is very limited and with orders made only in exceptional circumstances.¹³⁰ The position improves significantly once proceedings are commenced.¹³¹ But there is no obligation to disclose information and documents which are protected by legal professional privilege.¹³²

The legal position under the 2010 Act differs according to whether the insured is insolvent or defunct.

2.4.3 Duty to Disclose Information When the Insured Is Insolvent

A third party may request insurance information from (1) the insolvent insured, when it is reasonably believed that that insured has incurred liability to him, and (11) any person who is able to provide information relating to the insurance, when it is reasonably believed that the person liable to him is insured and that rights under the insurance have been transferred to him.¹³³

126 The CPR regulates the procedure to be followed by parties to civil litigation in the senior civil courts of England and Wales.

127 LCR par 4.21–22.

128 Sch 1 par 5.

129 Sch 1 par 6.

130 CPR 31.16(3)(a) and (b); *Burns v. Shuttlehurst Ltd.*, [19]1 WLR 1449, *Bermuda International Ltd. v. KPMG (a Firm) The Times* (14 March 2001).

131 2010 Act (n 48) S. 9(4).

132 Sch 1 par 2(4).

133 Sch 1 paras 1(1) & (2).

This includes anyone who is in control of the specified information, which probably includes agents, brokers and other intermediaries.

The information that may be requested to be disclosed is specified by the Act.¹³⁴ The initial enquiry relates to whether there is a contract of insurance which covers or might reasonably be regarded as covering the liability.¹³⁵ If there is such a contract, the enquires may relate to (I) the identity of the insurer; (II) the terms of the contract; (III) whether the insured has been informed that the insurer is denying liability under the insurance (but not the grounds of that denial); (IV) whether there are or have been any proceedings between the insured and insurer with regard to the supposed liability of the insured, and if so, the details of these proceedings (but only such details as to enable him to apply to be substituted for the insured if he so decides);¹³⁶ (V) if the insurance sets limits on the fund available to meet the liabilities of the insured, how much of it, if any, has been paid out in respects of other liabilities;¹³⁷ and (VI) whether there is a fixed charge to which sums paid out under the insurance for the supposed liability would be subject.¹³⁸

As previously observed, the object underlying the disclosure of the specified information is to assist the third party in evaluating the acquired insurance rights. What the third party requires is the information and not the documents in which the information is to be found, and the law is so drafted. Consequently a request may be responded to by communicating the information contained in a relevant document or by providing a copy of the document.

The request must be made in a written notice which indicates the precise information requested, consistent with that permitted by the Act. The notice must also include particulars of the facts on which that person relies as entitlement to give the notice.¹³⁹

134 Sch 1 par 1(3).

135 Sch 1 par 1(3).

136 The required details of court proceedings are the name of the court; case number; contents of all documents served or orders made and their contents; and of arbitral proceedings. The name of arbitrator; contents of all documents served or orders made and their contents – para 1(4).

137 Whether there is such a limit will appear from an examination of the terms of the insurance contract, and the further disclosure of payments already made, if any, will reveal the residual value of the insurance proceeds.

138 If the insurance proceeds are made the subject of a fixed charge this will reduce the value of the proceeds, possibly to zero; *Siebe Gorman v. Barclays Bank*, [1979] 2 Lloyd's Report 142.

139 Sch 1 par 1(6).

The recipient, must respond within 28 days beginning with the day of receipt, (a) by providing the information specified which he is able to provide and (b) identify any information the recipient is not able to provide, and explain why this is the case.¹⁴⁰ The recipient is deemed to be able to provide information if it (I) can be obtained without undue difficulty from a document in that person's control, or (II) where the person is an individual, the information is within that person's knowledge.¹⁴¹ A document is within a person's control if it is in that person's possession or has a right to possession or to take copies of it.¹⁴²

If the information sought cannot be provided because it was contained in a document once under recipient's control, but not any longer, but the recipient knows or believes that it is now in the control of another person, the recipient is required to provide whatever particulars he can as to the nature of the information and the identity of that other person.¹⁴³

The duty to disclose is not a continuing duty. It is confined to information known at the time of the request: in other words a "snapshot" of information currently held. There is, however, nothing to prevent a third party making further requests for information. In the face of failure to comply, the party giving the notice may apply to the court for an order compelling compliance with the duty.¹⁴⁴ Where this course is adopted any continuing breach can be punished as a contempt of court.¹⁴⁵

2.4.4 Disclosure of Documents When Insured Defunct

The 2010 Act circumvents the difficulties which arose under the preceding law when an insured becomes defunct. To remind ourselves, a body corporate is defunct if it has been dissolved under insolvency and corporate legislation, and it ceases to be defunct if it is subsequently restored to the companies register.¹⁴⁶ The position adopted by the Act in this regard relates to the disclosure of "documents" and not "information", and in particular to any documents relevant to the liability.¹⁴⁷

140 Sch 1 par 2(1).

141 Sch 1 par 7(a).

142 Sch 1 par 7(b).

143 Sch 1 par 2(2).

144 Sch 1 par 2(3).

145 The punishment is discretionary with a range of possible penalties which may extend, in extreme circumstances, to imprisonment.

146 Sch 1 par 3(4) & (5).

147 Sch 1 par 3(1).

Where the third party has started proceedings under the 2010 Act against an insurer in respect of a liability incurred to the third party by an insured body corporate which is defunct, the third party may by notice in writing request the disclosure of any documents relevant to the liability from (I) a person who, immediately before the time of the alleged transfer of rights under the Act, was an officer or employee of the body corporate, and (II) a person who, immediately before the body became defunct, was an insolvency practitioner in relation to the body or an official receiver relating to the winding up of the body.¹⁴⁸

The notice must be accompanied by a copy of the particulars of claim relating to the proceedings against the insurer, and, if there has been a reference to arbitration, the equivalent particulars of claim.¹⁴⁹

The duties of disclosure of the person receiving notice and the rights of inspection of the party giving notice are the same (subject to any necessary modifications) as the corresponding duties and rights under the Civil Procedure Rules in respect of which an order for standard disclosure has been made.¹⁵⁰

A party who is required to serve a list of documents must do so within 28 days beginning with the day of receipt of the notice,¹⁵¹ but is not required to disclose documents not in his possession at this moment in time.¹⁵²

2.5 *International Maritime Liability Conventions*

2.5.1 Development of the International Regime

A significant development in the recent history of international maritime law has been the growth of the international liability regime relating to maritime risks connected with the activities of commercial shipping. This has been led principally by the International Maritime Organisation (IMO) and resulted in the emergence of a cluster of international maritime liability conventions.

In the field of oil pollution there are the International Convention on Civil Liability for Oil Pollution Damage 1992 (CLC 1992),¹⁵³ and the International Convention on Civil Liability for Bunker Oil Pollution Damage 2001 (Bunker Convention 2001).¹⁵⁴ In relation to the carriage of passengers by sea, the

148 Sch 1 par 3(2).

149 Sch 1 par 3(3).

150 Sch 1 par 4(1).

151 Sch 1 par 4(3).

152 Sch 1 par 4(4).

153 Implemented by the UK in the Merchant Shipping Act 1995, Chapter III, titled 'Liability for Oil Pollution'.

154 *ibid.* The Establishment of an International Fund for Compensation for Oil Pollution Damage 1992 (1992 Fund Convention) is omitted because it does not establish a liability regime in the sense adopted in the text.

Athens Convention Relating to the Carriage of Passengers and Their Luggage by Sea 2002 (Athens Convention 2002).¹⁵⁵ And in connection with wrecks the Nairobi International Convention on the Removal of Wrecks 2007 (Nairobi Convention 2007).¹⁵⁶

In the present discussion the provisions in these conventions are considered as they have been drafted in the convention text and not in the way they have been given effect to in UK legislation. There are on occasions differences.

2.5.2 Obligation to Insure

The conventions reveal a common substantive and procedural design in relation to insurance. An element of which, primarily for the protection of claimants, is that third party liabilities are buttressed by the requirement of mandatory insurance to cover convention liabilities.¹⁵⁷ The obligation to insure falls on the party or parties liable under the convention. By way of an example, under the CLC liability is borne by the registered owner who in respect of a ship registered in a Contracting State and carrying more than 2,000 tons of oil in bulk as cargo is “required to maintain insurance or other financial security, such as the guarantee of a bank or a certificate delivered by an international compensation fund, in the sums fixed by applying the limits of liability” prescribed by the Convention.¹⁵⁸

A hallmark of the conventions is that they each establish the right to limit liability and with the obligation to insure limited to this sum.¹⁵⁹ This approach is adopted notwithstanding that the right to limit may be broken in prescribed, yet very rarely experienced, circumstances.¹⁶⁰ In effect the right is close to being an absolute right.

In parallel with the obligation to insure is a scheme of State attestation introduced to ensure that the insurance acquired is in accordance with the terms of the convention and is subsequently maintained.¹⁶¹ Each vessel is required to

155 In the member States of the EU, the Athens Convention is given effect to by Regulation (EC) 392/2009.

156 Incorporated into UK law by the Merchant Shipping Act 1995, Part 9A. The International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea 2010 (HNS Convention 2010) is not included because it is not yet in force.

157 CLC art VII; Bunker Convention art 7; Athens Convention art 4bis; Wreck Convention art 12.

158 CLC 92 art VII.1.

159 CLC 92 art V and VII.1.

160 CLC 92 art V.2 and VII.1.

161 CLC 92 art VII.2.

carry a certificate of attestation as proof that it complies with its obligation to be insured in accordance with the terms of the relevant convention.¹⁶²

2.5.3 Direct Right of Action against Insurers

The first point to make is that the 2010 Act does not have any application to direct rights of action against insurers under the CLC 92 or any of the other international conventions.¹⁶³

Under all the conventions a claimant may proceed directly against the insurer or other provider of financial security, and in this regard the provisions in the conventions are identical.¹⁶⁴ The precise convention wording in the CLC 92 is “Any claim for compensation for pollution damage may be brought directly against the insurer ...”.¹⁶⁵ Thereafter the nature of the right and the obligation of the insurer are not expanded upon. The proper meaning of the words, therefore, is dependent on the proper interpretation of the words of the convention, bearing in mind that there is no one possibility.¹⁶⁶

There is in these words little to suggest that the claimant is standing in the shoes of insured or otherwise asserting the contractual rights of the insured. It is arguable that the claimant has an independent right to proceed against and claim compensation from the insurer who, in these circumstances, appears to be independently and primarily liable. In other words, the direct right of action is in addition to the right to claim against the convention defendant and insured. It is not the same right transferred, nor is it conditional on default by the insured. The insurer is not a guarantor in the legal sense, but is personally and directly liable under the convention. This analysis also takes some support from the fact that the liability of the insurer may be more extensive than the right of recovery of the insured under the insurance.

If this is an accurate interpretation it follows that the claimant has a choice of defendant. Proceedings may be initiated against the party liable under the

162 CLC 92 art VII 2 & 4; Bunker Convention art 7.2 & 5; Athens Convention art 4bis.2 & 5; Wrecks Convention art 12. 2 & 5.

163 Merchant Shipping Act 1995 s.165(5), is the relevant statutory provision relating to the CLC 92 and Bunker Convention); s. 255 relates to the Wrecks Convention *ibid*.

164 CLC 92 art VII.8; Bunkers Convention art 7.10; Athens Convention art 4bis.10; Wrecks Convention art 12.10.

165 *ibid*.

166 *The Hari Bhum (No 1)*, [2005] 1 Lloyd's Rep 67(CA); *The London Steam Ship Owners Mutual Insurance Association Ltd. v. The Kingdom of Spain and Another (The Prestige) (No 2)*, [2015] EWCA Civ 333, [2015] 2 Lloyd's Rep 33(CA); *The Prestige (No 3)*, [2020] EWHC 1582(Comm), [2020] Lloyd's Rep IR 413.

convention or the insurer, or both. In proceedings directly against the insurer, it is given the power to join the party liable in the proceedings.¹⁶⁷

By contrast the legislation in the UK provides that “proceedings to enforce a claim in respect of the liability may be brought against the person who provided the insurance or other security ...”.¹⁶⁸ These words are again ambiguous and do not provide a clear answer to the question under consideration. They are certainly less precise and direct than the convention drafting. They do not suggest an independent liability on the part of the insurer with the same clarity. Nonetheless they could be construed in this way and there would be the argument that the legislation should be interpreted in a way that gives effect to the CLC Convention.

In the event of litigation under the conventions, it is probable that the claimant would favour instituting proceedings directly against the insurer, with it thereafter open to the insurer to join the assured in the proceedings should that be viewed as appropriate or necessary.

In this context it is also worth repeating that in English law the right to claim against an insurer of third party liabilities arises once the liability of the assured to the third party has been established and quantified by a judgment, arbitration award or settlement.¹⁶⁹ By contrast, in the case of indemnity insurance the liability arises when the assured indemnifies the third party claimant.¹⁷⁰

2.5.4 Position of the Insurer

In the event of litigation under the conventions the insurer may avail itself of the following provisions.

The limits of liability prescribed in the particular convention, even though the assured may not be entitled to limit liability. This is consistent with the obligation to insure, which is in a sum equal to the owner’s limitation sum under the Convention.¹⁷¹

Any defence (other than the bankruptcy or winding up of the assured) which the assured would have been entitled to invoke under the relevant convention

167 CLC 92 art VII.8.

168 MSA 1995 s.165(1).

169 *Teal Assurance co Ltd. v. WR Berkley Insurance (Europe) Ltd. and Another*, [2013] UKSC 57, [2014] Lloyd’s Rep IR 56.

170 *The Fanti and The Padre Island*, [1990] 2 Lloyd’s Rep 191 (HL) [1990] 2 All ER 705(HL) and more recently in *The London Steam-Ship Owners’ Mutual Insurance Association Ltd. v. The Kingdom of Spain (The Prestige) (No 3)*, [2020] EWHC 1582(Comm), [2020] Lloyd’s Rep IR 413.

171 CLC 92 Art VII(8).

against a claim made against itself.¹⁷² This refers to defences to the substantive claim and procedural defences which are set out in the convention. It does not include 'defences' relating to the financial incapacity of the assured.

The defence that insured loss resulted from wilful misconduct by the assured.¹⁷³ This is a defence based on the insurance contract and it survives in the present context as between third party claimant and the insurer. 'Wilful misconduct' alludes to insured loss caused by the intentional or reckless act of the owner.¹⁷⁴ The assured has a similar defence to claims made directly against him by a third party.

The defendant insurer, otherwise, may not avail itself of any defence that it would have been entitled to invoke in respect any claim by the assured under the insurance contract.¹⁷⁵ This alludes to remedial rights that may have existed in relation to the insurance contract, except for the defence of 'wilful misconduct' which is expressly retained independently of this broader provision. Such defences might be based on illegality, absence of an insurable interest, non-disclosure and/or misrepresentation of material circumstances in placing the risk, breach of warranty or other terms and conditions.

In the result the insurer may be obliged to compensate the third party in circumstances when it would have been in a position to resist the claim if it had been made by the assured under the insurance contract.

3 Conclusion

There are no firm international or national legal models for third party rights against insurers, though in the international maritime sphere there has emerged what may be identified as a standardised approach. Otherwise as between legal traditions and national jurisdictions the legal position is highly variable, as also are perceptions of the position to be occupied by parties influenced by considerations of public policy. The two legal regimes highlighted in this contribution, UK law and that under the international maritime liability conventions, are significantly distinct in substance and policy.

172 *ibid.*

173 *ibid.*

174 This concept of 'wilful misconduct' has been extensively examined in the context of the law of marine insurance: see Arnould, *Law of Marine Insurance and Average* 20th edn, ed. Jonathan Gilman QC et al, at [22.56].

175 CLC 92 Art VII(8).

The position adopted in the 2010 Act which applies, with necessary amendments, throughout the UK is weightily analytical and logical. In broad terms the third party stands in the shoes of the insured and consequently third party rights and obligations run in parallel to those of the assured's. The obligations of the insurer to indemnify the third party mirrors the position that would have prevailed had the claim been made directly by the insured. A few modifications to this model have been introduced but, nonetheless, the insurer is not significantly prejudiced by the emergence of a third party claim. With very few substantial exceptions, the defences available to the insured on the question of liability and to the insurer on a claim under the policy survive. It may be said that the law favours the third party in so far as it confers the procedural right to claim directly against the insurer; but it does not confer beneficial rights not enjoyed by the insured and which might be justified on grounds of public policy.

The position adopted in the international maritime liability conventions is significantly different. Beyond its traditional role as insurer, it would appear that the insurer bears a separate and distinct liability for the claim by the third party. The third party may sue the insured or the insurer, or both, but beyond this the conventions do not indicate any particular joint relation to exist between them. It may be that they are independent obligors. This to cast the insurer in a role much greater than a mere "guarantor" or "surety"; it is a principal debtor and consequently bears a significant exposure.

The international maritime conventions are evidence of an evolving trend, which is much broader than the province of the conventions, which views third party claimants as the primary beneficiaries of liability insurance. The logic of the insurance is perceived to be the protection of their interests over and above the precise terms of the contract of insurance. Consequently, not only do third parties take the benefit of mandatory insurance and direct rights of action against insurers, but also the protection of the insurer following its agreement to assume the risk. The insurer, in other words, occupies an independent role as guardian and on grounds of public policy assumes greater obligations than would have been owed to the insured under the contract of insurance.

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