



Felix Collin
Maritime Product Liability at the Dawn of
Unmanned Ships – the Finnish Perspective
UTULAW Research Paper Series 2/2018

Maritime Product Liability at the Dawn of Unmanned Ships – the Finnish Perspective

University of Turku, Faculty of Law Research Paper Series 2/2018

Felix Collin
Faculty of Law
20014 University of Turku, Finland
felix.collin@utu.fi

Abstract

In February 2015, the Finnish Funding Agency for Innovation Tekes approved a joint industry-academia research project on unmanned ships. The project, called Advanced Autonomous Waterborne Applications Initiative (AAWA), analysed challenges in different scientific fields related to unmanned shipping operations. The project was kicked off in March 2015 and continued until December 2017.

In AAWA, the Faculty of Law of the University of Turku focused on the implications that unmanned ships may pose to the maritime liability framework. Generally, having no crew on board the vessel will undoubtedly mean that technology will have a more central role than ever before. The reliability of data connections, sensor technology, and software will be crucial. One of the key questions in this project was, therefore, could product liability end up having a more central role as well.

This report has been written as a practical analysis of this topic from the Finnish law perspective. Since maritime product liability is still mainly an overlooked concept at least in the Nordic countries, the study explores the current rules on product liability and discusses the role that they could potentially have with unmanned ships. The project also studied more theoretical questions on the challenges that autonomous technologies may pose to law, but, to keep the report easy to read, they are left outside the scope of this report.

1 Introduction*

In the Nordic countries, product liability has played a very limited role in shipping.¹ Even if a ship causes an accident due to a technical failure, product liability is definitely not the first thing that springs to mind. Instead, the maritime liability framework usually allocates liability based on whether the accident was caused by the shipowner's negligent behaviour, such as a failure to maintain the vessel properly.² If product liability is discussed, most often the question is whether the shipowner—or his liability insurer—has the right of recourse against the party who had manufactured the product that caused the accident. Consequently, the concept of maritime product liability has remained vague and received very little attention.

However, the introduction of unmanned ships may change the status quo. Several equipment manufacturers have already announced their plans to provide equipment that enable shipowners to operate their vessels without having a crew on board. Although technical implementations may differ from each other, it is clear that unmanned ships will rely heavily on technical equipment such as communication systems, sensors, and software.³ The changing role of technical equipment may obviously affect how liability is allocated as well. In road traffic, for example, several legal scholars have already proposed that car manufacturers should be liable to pay damages when a vehicle is operating in autonomous mode and causes damage.⁴ In fact, some car manufacturers have made such promises voluntarily. Volvo, for example, has stated that they will hold themselves 'liable for everything the car is doing in autonomous mode' and even added that 'if you are not ready to make such a statement, you shouldn't try to develop autonomous system'.⁵ Since self-driving cars and unmanned ships may have a lot in common in a technical sense⁶, it seems natural to

* The author wishes to thank Mika Viljanen, Henrik Ringbom, and Lasse Collin for their valuable comments on earlier drafts. Any views expressed in this study are solely those of the author.

¹ See Vibe Ulfbeck, 'Maritime Product Liability' [2006] *SIMPLY* 65, p. 66.

² The definition of 'shipowner' slightly differs depending on the jurisdiction discussed. Under the Nordic maritime codes, the shipowner is most often the person who runs the vessel on his own account (in Finnish: 'laivanisäntä'; in Swedish: 'redare'; in Norwegian: 'reder' or 'rederi'). Most typically this person is the owner of the ship, but it may be e.g. a bareboat charterer as well. Time and voyage charterers are, however, excluded outside the concept. See Thor Falkanger, Hans Jacob Bull and Lasse Brautaset, *Scandinavian Maritime Law : The Norwegian Perspective* (4th edn, Universitetsforlaget 2017), pp. 164–169. For the sake of simplicity, it is assumed in this study that a same person both owns and operates the vessel, and this person is called 'the shipowner'.

³ See 'Global Marine Technology Trends 2030 : Autonomous Systems' (Lloyd's Register; QinetiQ; University of Southampton 2017), pp. 6–22.

⁴ See e.g. Jeffrey K. Gurney, 'Sue My Car Not Me: Products Liability and Accidents Involving Autonomous Vehicles' (2013) 2013 *Journal of Law, Technology & Policy* 247.

⁵ See Autoblog, 'Can't Accept Autonomous Liability? Get Out of the Game, Says Volvo' (9 October 2015) <<https://www.autoblog.com/2015/10/09/volvo-accept-autonomous-car-liability/>> accessed 18 April 2018.

⁶ See Esa Jokioinen and others, 'Remote and Autonomous Ships : The Next Steps' (Rolls-Royce Plc 2016) AAWA Position Paper, pp. 16–19.

ask whether unmanned ships could affect the importance of maritime product liability as well.

Despite technical similarities, the current liability frameworks in shipping and road traffic seem to diverge from each other. Although product liability has not played a major role in either framework, it has clearly established its position as a feasible alternative in road traffic.⁷ In shipping, however, the discussion has been significantly more scattered. In the United States, for example, the roots of maritime product liability may be traced back to 1970s—or arguably even 1940s⁸—and it has clearly established its position as an alternative way to seek compensation. In this sense, the difference to the situation in the Nordic countries is enormous. Although Nordic legal scholars have discussed many questions related to shipbuilder’s liability, most often they have bypassed third party losses caused by ship’s technical failures.⁹

This study has two main objectives. On the one hand, it aims to conceptualise the product liability framework in shipping. The idea is to show that even if product liability has had a very limited significance in manned shipping, the product liability rules could see use in many shipping accidents already today. On the other hand, the study will explore the impact of unmanned ships on liability allocation. The idea is to analyse whether unmanned ships may make product liability litigation more common in shipping even if no legislative changes are made. The study will focus on Finnish law in particular, but the results may obviously be valuable in the other jurisdictions as well, especially when the national rules are based on EU law.

The study is divided into two parts. The first part will explore the maritime product liability framework in general. I will canvass what rules are applicable and discuss their key elements. The second part, in turn, will focus on the impacts of unmanned ships.

2 The maritime product liability framework

In Finland, the product liability framework is relatively fragmented. The most important source of law is the Finnish Product Liability Act (694/1990) which is based on the EU Product Liability Directive¹⁰. However, these rules only apply to personal

⁷ The Finnish Product Liability Act, for example, originally excluded losses that were covered by motor insurance. In 1993, however, this exclusion was abolished as it was seen to be in a conflict with the EU Product Liability Directive. See ‘Finnish Government Proposal 251/1992: Hallituksen esitys Eduskunnalle laiksi tuotevastuulain muuttamisesta ja eräksi siihen liittyviksi laeiksi’, p. 3. Recently, the Finnish legislature even abolished the provision that excluded the motor insurer’s right of recourse against car manufacturers. The government even noted in its proposal that technological development may increase the need to utilise the product liability rules in road traffic. See ‘Finnish Government Proposal 123/2015: Hallituksen esitys eduskunnalle liikennevakuutuslaiksi ja eräksi siihen liittyviksi laeiksi’, p. 37.

⁸ See Robert Force, ‘Maritime Products Liability in the United States’ (1986) 11 *The Maritime Lawyer* 1, pp. 8–12.

⁹ As an important exception, see Ulfbeck.

¹⁰ Council Directive 85/374/EEC on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products.

injuries and damage caused to property that the aggrieved party has used in non-commercial activities.¹¹ Consequently, damage to or destruction of property used in commercial activities must be evaluated based on other rules. Because no special legislation on this matter exists, the existence of product liability in these cases depends on the Finnish Tort Liability Act (412/1974)—which provides the general tort liability rules in Finland—and the general principles of tort law.¹² In addition, contractual rules and practices affect how liability is eventually allocated. Most often it is a shipowner—or his liability insurer—who first compensates the loss according to the Finnish Maritime Code (674/1994), and product liability appears afterwards in the form of contractual liability between the shipowner and his contracting parties.

This part of the study explores the different forms of product liability and analyses their role in shipping. The study begins by discussing the Finnish Product Liability Act, then continues to the general tort liability rules, and finally explores contractual arrangements that are used in shipbuilding. This approach enables us to understand where maritime product liability currently stands in Finland.

2.1 Finnish Product Liability Act

In the following, the analysis of the Finnish Product Liability Act is divided into four subsections. The first subsection will determine the range of things that can be considered as ‘products’ in the shipping context. The second subsection, in turn, will discuss the basis of liability whereas the third subsection will determine the range of persons that may be liable. Finally, the fourth subsection will discuss the amount of compensation that an aggrieved party is entitled to achieve under the Finnish Product Liability Act.

2.1.1 What is a product?

According to Section 1 of the Finnish Product Liability Act, the Act only applies if there is ‘a product’ that causes personal injury or damage to or destruction of property used in non-commercial activities. The notion of product clearly includes ordinary consumer goods such as bicycles and kitchen machines, but the position of ships may seem less clear. Commercial vessels are exceptional by their scale, and they are used by enterprises. This section aims to determine whether ships and their components are products under the Finnish Product Liability Act. The position of software will be discussed as well.

In the Act, the concept of product receives a very wide definition. Section 1 of the Act, which follows closely Article 2 of the Product Liability Directive, states that the concept of product extends to ‘all movables with the exception of buildings on land owned by others’. Furthermore, the Act applies to losses caused by a product ‘even if the product

¹¹ See the Product Liability Directive’s Article 9 and the Finnish Product Liability Act’s Section 1.

¹² See Marko Mononen, *Yritysten välinen tuotevastuu* (Talentum 2004), pp. 153–196.

has been incorporated into another movable or real property'. A component of a product is, therefore, a product as well. According to the same section, a component means 'raw materials and parts of a product as well as materials used in the manufacture of production of a product'. Electricity is also deemed a product.¹³

The wide-reaching definition of the concept of product means that all kinds of movable objects can be products, no matter how they are produced or who uses them.¹⁴ According to Section 7 of the Act, however, they must be 'put into circulation' in the course of producer's business. Except electricity, the object must also be tangible.¹⁵ This restriction excludes e.g. services outside the scope of the Act. But if a product causes damage in the course of providing a service, the Act may still apply; a product cannot be disguised as a service to avoid product liability.¹⁶

In the shipping context, it seems clear that the ship itself must be regarded as a product. It is a movable and tangible object that is put into circulation in the course of producer's, i.e. shipyard's, business.¹⁷ It is also obvious that ships consist from an enormous number of components which are products as well even if they are incorporated into a ship. The position of software is, however, less clear and must be discussed in more detail.

Generally, legal scholars have presented varying opinions on the question whether software can be classified as a product. This discussion originates from the observation that the Product Liability Directive extends to tangible objects only. Because of this fact, some scholars have argued that software cannot be a product unless it is delivered in a tangible object such as a DVD or a USB stick. According to this viewpoint, software downloaded from the Internet cannot be regarded as a product under the Directive.¹⁸ The treatment of *embedded software* may, however, be different. Embedded software is incorporated into tangible goods, and it may be difficult to distinguish it from the object itself. As *Fairgrieve and others* state, e.g. '[t]he flight operation software of an aeroplane (...) must be treated as a product within the meaning of the Directive, given

¹³ The quotations are from the unofficial translation made by the Finnish Ministry of Justice.

¹⁴ See Thomas Wilhelmsson and Matti Rudanko, *Tuotevastuu* (2nd edn, Talentum 2004), pp. 67–68.

¹⁵ See Duncan Fairgrieve and others, 'Product Liability Directive' in Piotr Machnikowski (ed), *European Product Liability : An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016), pp. 41–42.

¹⁶ See *Case C-203/99, Veedfald v Århus Amtskommune*, para. 12. See also Fairgrieve and others, pp. 43–44.

¹⁷ Support for this conclusion can be found from the preparatory works of the Finnish Product Liability Act as well. In its proposal, the government considered whether there was a need to exclude losses caused by defective transportation vehicles outside the scope of the Act. With the exception of road traffic, however, the government saw no such need. See 'Finnish Government Proposal 119/1989: Hallituksen esitys Eduskunnalle tuotevastuulaiksi', pp. 21–22. See also Ulfbeck, pp. 67–68. She refers to the history of the Norwegian Product Liability Act, which originally excluded i.a. damage caused by a ship outside the scope of the Act. This exclusion was, however, abolished when Norway joined the European Economic Area. According to *Ulfbeck*, the exclusion was seen to be inconsistent with the Product Liability Directive.

¹⁸ See Fairgrieve and others, pp. 46–47.

its inextricable link with the product itself¹⁹. Defective software may, therefore, result in manufacturer's liability. Nevertheless, it remains somewhat unclear whether embedded software itself can be regarded as a product, or whether it is just *a part* of a product. This question is, however, relevant only if the manufacturers of the tangible object and the embedded software are different persons.²⁰

As a result, there may clearly be at least two types of products in the shipping context: first, vessels themselves, and second, the tangible components of a vessel such as engines, propellers, and bolts. In addition, if e.g. an auto-pilot system is supplied as a package that contains not only software but tangible objects as well, the package is clearly a product. Defective software may then cause the system—and the ship herself—to be defective as the software is necessary for the functioning of the system. Nevertheless, it still seems questionable whether the software itself can be regarded as a product as algorithms themselves are intangible. This question does not, however, affect only ships; it affects all kinds of machines that utilise software. Thus, it is quite likely that this issue will sooner or later be clarified either via case law or legislative means.²¹

2.1.2 Basis of liability

The previous section explored the range of things that may be considered as 'products' in the shipping context. However, merely the fact that a product has caused damage does not result in liability under the Finnish Product Liability Act; instead, Section 3 of the Act requires that the product must have been 'defective'. This subsection discusses what this requirement means in the shipping context and especially in the case of sophisticated technologies.

According to Article 6 of the Product Liability Directive, a product is defective when it does not provide 'the safety which a person is entitled to expect, taking all circumstances into account'. In the Finnish Product Liability Act, the formulation of this rule slightly differs but is practically the same: according to the Act's Section 3, compensation shall be paid if 'the product has not been as safe as could have been expected'.²² Consequently, a product is not automatically defective even if it is dangerous. Take a sharp chef's knife as an example: a person may cut his or her finger with a knife when cooking, but the knife is still working as intended. But if the grip of a knife suddenly detaches which leads to a personal injury, the knife may, of course, be

¹⁹ See Fairgrieve and others, p. 47.

²⁰ *Wilhelmsson and Rudanko*, for example, seem to argue that e.g. a defective operating system of a computer may cause *the computer* to be defective, but the software itself cannot still be regarded as a product. See Wilhelmsson and Rudanko, pp. 79–80.

²¹ On the need for such clarification, see e.g. Piotr Machnikowski, 'Conclusions' in Piotr Machnikowski (ed), *European Product Liability : An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016), pp. 700–701. See also 'Evaluation of Council Directive 85/374/EEC on the approximation of laws, regulations and administrative provisions of the Member States concerning liability for defective products' (European Commission 2018), pp. 74–76.

²² The quotation is from the unofficial translation made by the Finnish Ministry of Justice.

defective. A person must be aware that a knife may be sharp and may, therefore, cause damage, but he also has a right to expect that the knife does not abruptly break down.²³

The evaluation of the defectiveness of a product is meant to be objective: a product is defective if it does not meet the safety expectations that *a normal person* is entitled to have. In addition, the criterion to establish defectiveness is also normative: a court must establish the level of safety the public is entitled to expect.²⁴ Safety regulations may, of course, provide certain guidelines for this evaluation. Basically, an aggrieved party has usually a right to assume that the manufacturer of a product has followed the safety rules issued by regulatory bodies. If a product fails to fulfill these requirements, it heavily indicates that the product is defective. Nevertheless, these rules may still only act as the minimum level of required safety. If the safety rules are e.g. outdated, a product may be defective even if the manufacturer has followed the safety requirements established in law.²⁵

In the shipping context, there are obviously numerous rules that determine how ships should be built, and a failure to follow these rules may often indicate that a ship is defective. However, the important thing here is that the legitimate safety expectations may even exceed the level of safety that is possible to achieve in the real world. At least in the context of medical products, case law has indicated that a patient receiving transfused blood has the right to expect that the blood contains no harmful viruses even if there is always a small statistical chance of infection.²⁶

Nevertheless, Section 3 of the Finnish Product Liability Act ties the required level of safety to the time when the product was put into circulation. Products are obviously constantly developed further, and new technical innovations may even lead to the prohibition of older technologies. Think e.g. car manufacturing: nowadays every new car must have an anti-lock braking system (ABS). Such cars are undoubtedly much safer than cars that are not equipped with such a system. This fact alone does not, however, automatically mean that an older car without an ABS system would be defective, especially if such systems did not even exist when the car was put into circulation.²⁷ Technical development may, therefore, affect the level of safety that the public is entitled to expect. The defectiveness of a particular product is, however, still evaluated based on the legitimate safety expectations that existed when the product was put into circulation.

Furthermore, Article 7(e) of the Directive includes a provision that allows the liable party to avoid liability by proving that ‘the state of scientific and technical knowledge at the time when he put the product into circulation was not such as to enable the

²³ See Wilhelmsson and Rudanko, p. 146.

²⁴ Daily Wuyts, ‘The Product Liability Directive More Than Two Decades of Defective Products in Europe’ (2014) 5 *Journal of European Tort Law* 1, pp. 8–9 and Fairgrieve and others, pp. 50–53.

²⁵ See ‘Finnish Government Proposal 119/1989: Hallituksen esitys Eduskunnalle tuotevastuulaiksi’, p. 45.

²⁶ See the discussion and cases referred in Wuyts, p. 9.

²⁷ See Fairgrieve and others, pp. 60–61.

existence of the defect to be discovered'. At first sight, this defence could be a major limiting factor of liability especially in unmanned shipping. It is evident that our knowledge on autonomous technology is still limited and will increase during the coming years. The practical relevance of this 'development risks defence' may, however, be more limited due to two reasons.

First, Article 15 of the Directive allows a Member State to decide whether it incorporates the development risks defence into national law at all. Although the vast majority of the Member States has incorporated the provision, Finland is one of the countries that implemented the Directive without it. The development risks defence is not, therefore, available under Finnish law.²⁸

Second, even if the defence were available, its practical relevance could still be more limited than it may seem at first. As *Taschner* emphasises, the defence should be understood to only protect the liable party 'in respect of the unknown' and nothing more. As he puts it, we are then dealing with 'an objectively harmful product, which would have been considered as defective at the time of manufacturing, if only the damaging properties had been known, but where there are no means available in science and technology for discovering them'.²⁹ However, the problem with new technologies is that we often *know* that there are problems that have just not been discovered yet. Sophisticated software, for example, has almost always bugs, no matter how thorough testing it has passed.³⁰ Sometimes e.g. security issues are discovered only years—or even decades—after the software release.³¹ Our current knowledge may very well be sufficient to discover these issues, but due to economic reasons it may be practically impossible. Consequently, it may be questionable whether the development risks defence is available in such cases.³²

Furthermore, software may have to be updated during the product's life cycle. This fact raises two important questions. The first of them concerns the question whether the public is entitled to expect that software is updated when e.g. a security issue is

²⁸ As a comparison on the way how the Directive is implemented regarding the development risks defence, see Mark Mildred, 'The Development Risks Defence' in Duncan Fairgrieve (ed), *Product Liability in Comparative Perspective* (Cambridge University Press 2005), pp. 168–169.

²⁹ See Hans Claudius Taschner, 'Product Liability: Basic Problems in a Comparative Law Perspective' in Duncan Fairgrieve (ed), *Product Liability in Comparative Perspective* (Cambridge University Press 2005), pp. 163–164. As an example, he refers to a German case where a company had imported blood from the United States to be used as raw material for a medicine. Unfortunately, the blood was contaminated with HIV, but at the time the virus was unknown and was only discovered years later. As a result, numerous people got sick and died.

³⁰ About the limitations of software and testing, see Gerald M. Weinberg, *Perfect Software : And Other Illusions About Testing* (Dorset House Pub 2008), pp. 3–12, 22–28.

³¹ For example, it was recently revealed that Intel's processor chips manufactured during the past decade have a severe design error that makes security exploits possible using normal user programs. This design flaw forced the operating system manufacturers to disable certain features from their systems, which practically slowed down Intel-powered computers. See The Register, 'Kernel-Memory-Leaking Intel Processor Design Flaw Forces Linux, Windows Redesign' (2 January 2018) <https://www.theregister.co.uk/2018/01/02/intel_cpu_design_flaw/> accessed 23 February 2018.

³² Similarly, see Machnikowski, pp. 701–702.

discovered. In such a case, software has appeared to be safe to use when it was released, but, due to the development of external threats, it has later become predisposed to criminal attacks. Although these threats have been developed afterwards, it may seem reasonable to consider the product to be defective since the product itself has not changed since it was released.³³ The second question, in turn, relates to this observation. Basically, a software update may also create *new* problems. Although a product was safe to use when it was put into circulation, a software update may turn the product to be defective afterwards. If the updated software then causes an accident, it is a difficult question who should be liable to pay compensation since only the intangible part of the product has changed. The current product liability rules seem to provide no clear-cut answer for this question.

As a conclusion, it is difficult to provide clear guidelines to the evaluation of the defectiveness of a ship. Of course, the evaluation must be based on the safety expectations that a normal person is entitled to have. However, the problem is that these expectations are always linked to case particulars, and it is, in the end, a court that decides what these legitimate expectations in that particular case are. The maritime safety regulations most likely provide the minimum level of safety that must be followed, but sometimes a ship may be defective even if these requirements are fulfilled. Especially if there is a risk for severe personal injuries, the level of safety that must be followed may be extremely high even if it raises the costs of production significantly.³⁴

2.1.3 Liable party

The study has now explored the range of things that are considered ‘products’ in the shipping context and discussed the general principles of the evaluation of product’s ‘defectiveness’. The next question is who is liable if a defective ship causes damage. Generally, there are numerous persons involved in shipbuilding including ship designers, shipyards, component manufacturers, software houses, and classification societies. Under the Finnish Product Liability Act, however, there are only four types of persons who may be liable: first, the producer of the product; second, the person who presents himself as a producer; third, the importer of the product; and fourth, the supplier of the product.³⁵ The objective in the following is to determine what these different types of persons may be in the shipping context.

a) The producer

According to the Finnish Product Liability Act’s Section 5, the producers of products are the first group of persons that may be liable. The Act contains no explicit definition of the concept of product, but it means, according to Article 3 of the Product Liability

³³ See Machnikowski, pp. 700–702.

³⁴ See Wilhelmsson and Rudanko, p. 158.

³⁵ See the Finnish Product Liability Act’s Section 5 and Section 6.

Directive, ‘the manufacturer of a finished product, the producer of any raw material or the manufacturer of a component part’. The question is, therefore, who are these parties in the shipping context.

In shipbuilding, the producer of a finished product—i.e. a ship—is most often a shipyard. Although the shipyard’s role is often only to assemble the ship, the shipyard is the party who produces the finished product and puts it into circulation. From a risk allocation perspective, this approach may obviously sometimes seem questionable. Ships are usually designed by other enterprises than shipyards, and a shipyard may have little to no influence on what components will be used in a particular ship. Under the Finnish Product Liability Act, however, this observation seems to have no relevance. Even if the party does nothing else than assembles the finished product from components manufactured by other producers, it is still considered as the producer of the finished product.³⁶

Nevertheless, it is important to note that the producer of a defective component or raw material may be liable as well. According to the Finnish Product Liability Act’s Section 4, ‘[i]f an injury or damage is attributable to a defect in a component, the injury or damage shall be considered to have been caused by both the component and the product’. More importantly, if there are two or more persons liable for the same damage, they shall be ‘liable jointly and severally’.³⁷ Thus, if a ship causes an accident due to a defective steering system, the aggrieved party may have the right to choose whether he claims damages from the shipyard or the producer of the system, or from both of them. This rule contains, however, two important exceptions: according to the Act’s Section 7, the producer of a component shall be exempted from liability if ‘the defect which caused the injury or damage is attributable to the design of the product into which the component has been incorporated or to the instructions given by the product manufacturer’.

The concept of producer requires, however, that the person has been involved in the actual manufacturing or producing process of the product. Persons that are involved only in the product’s design phase are, therefore, left outside the scope of the Act.³⁸ Thus, even if the defectiveness of a ship can be traced back to the decisions that a ship designer has made, the designer cannot be held liable unless it has been involved in the actual manufacturing process of the ship.³⁹ Similarly, it is obvious the producer must have produced a thing that can be categorised as ‘a product’. Thus, if software is not

³⁶ Generally, see Wilhelmsson and Rudanko, pp. 109–116.

³⁷ See the Product Liability Directive’s Article 5. The Finnish Product Liability Act contains no such rule, but it is incorporated to the Finnish Tort Liability Act’s Chapter 6 Section 2.

³⁸ See Wilhelmsson and Rudanko, p. 114.

³⁹ The designer may, of course, still be liable under some other liability system such as the general tort liability rules. However, the basis of liability is then most likely based on the concept of fault. Generally on the role of the general liability rules in shipbuilding, see Section 2.2 of this study.

seen as a product, a software house cannot be liable under the Finnish Product Liability Act either.⁴⁰

b) The person who presents himself as a producer

According to the Finnish Product Liability Act's Section 5, the second group of persons includes every person who has 'marketed the product which has caused the injury or damage as his/her own if the product is labelled with his/her name, trade mark or other distinguishing feature'.⁴¹ The purpose of this rule is to offer protection for the aggrieved party if he experiences difficulties in discovering the identity of the actual producer.⁴² In the shipping context, however, this rule has limited significance since at least the identity of the producer is most often known.

c) The importer

According to the Finnish Product Liability Act's Section 5, the group of persons that may be liable also includes the importer of the product. This rule originates from the fact that the producer of the product is quite often located outside the EU borders. Ships, in particular, are often built in Asian countries.⁴³ For an aggrieved party it is often very difficult to achieve compensation from such a manufacturer. Even if the aggrieved party succeeds to obtain a judgement in Finland, it is often impossible to enforce it in the country where the manufacturer is located. Consequently, often the only real possibility for an aggrieved party to achieve compensation from a manufacturer located in a non-EU Member State is to sue the manufacturer in its home country under the rules that apply in that jurisdiction.⁴⁴ Thus, the purpose of importer's liability is to protect consumers in cases where the producer of the product is located outside the EU borders.⁴⁵

A challenge in the shipping context is that there are very few companies—if any—whose main business would be to import vessels, with the exception of small vessels such as private yachts, into the EU. Instead, the shipowner usually buys the vessel from a

⁴⁰ On the question whether software can be deemed a product, see Section 2.1.1 of this study.

⁴¹ The quotation is from the unofficial translation made by the Finnish Ministry of Justice.

⁴² See Fairgrieve and others, p. 64.

⁴³ See The Shipbuilders' Association of Japan, 'Shipbuilding Statistics — March 2018'.

⁴⁴ For an overview on the choice of law and forum in product liability matters, see e.g. Wilhelmsson and Rudanko, pp. 100–108. As an illustrative example of complexity that may be present in transnational product liability litigation, the Überlingen mid-air collision can be mentioned. In the case, 71 people died when two airplanes collided with each other in Germany. Many lawsuits were filed, including one claim based on product liability rules. In that case, the relatives of Russian victims claimed damages from two manufacturers of the aircraft's collision avoidance system. Although the accident had occurred in Germany, and the victims were Russian citizens, the case was brought into a court in Spain which had been the destination of the flight. However, the Spanish court applied the laws of Arizona and New Jersey which were the principal places of manufacturers' businesses. See Hanna Schebesta, 'Risk Regulation Through Liability Allocation: Transnational Product Liability and the Role of Certification' (2017) 42 Air & Space Law 107.

⁴⁵ See 'Finnish Government Proposal 119/1989: Hallituksen esitys Eduskunnalle tuotevastuulaiksi', p. 48.

foreign shipyard or a foreign shipowner directly and then imports it into the EU. Consequently, the key question here is whether shipowners may be considered importers. Answering this question requires an in-depth analysis on the concept of ‘importer’.

The Act and the Directive seem to define the concept of importer in slightly different ways. According to the Act’s Section 5, the concept refers to ‘the party which has imported the product into the European Economic Area with the intention of putting it into circulation there’. According to Article 3 of the Directive, in turn, the concept extends to ‘any person who imports into the Community a product for sale, hire, leasing or any form of distribution in the course of his business’. It is somewhat unclear whether there is any practical difference between these two definitions. However, because the Act is based on the Directive, it is reasonable to suppose that they should be interpreted in the same way.

In principle, it seems relatively clear that the shipowner must be considered to be the importer of the product if he imports a vessel from a non-EU Member State and immediately leases it out. The action is clearly taken ‘in the course of his business’ with an intention to distribute—in this case by leasing—the vessel onwards.⁴⁶

If the shipowner imports a ship and intends to use it himself, the question seems more difficult. On its face, the concept of importer does not extend to persons who import products for their personal use. The intention that the person had when the product was imported is decisive: even if he decides to sell or lease the product afterwards, the person is not considered to be an importer if he has first used the product for his personal use.⁴⁷ However, it is sometimes difficult to distinct ‘personal use’ from ‘any form of distribution’. As *Fairgrieve and others* state, “the mere fact of placing a product at one’s disposal—even for a very limited period in time—is sufficient to qualify the product as being imported for ‘any form of distribution’”. According to the authors, a hotel that imports hairdryers for its guests is considered to be the importer of the products. They even argue that an airline company that imports an aeroplane into the EU should be deemed the importer since the plane is intended to carry passengers.⁴⁸ *Ulfbeck*, in turn, argues that a shipowner who imports a vessel into the EU and puts it on time or voyage charter could be considered to be the importer of the vessel since the ECJ has interpreted the concept of ‘put into circulation’ very broadly.⁴⁹

⁴⁶ Similarly, see *Ulfbeck*, pp. 76–77.

⁴⁷ See ‘Finnish Government Proposal 119/1989: Hallituksen esitys Eduskunnalle tuotevastuulaiksi’, p. 48.

⁴⁸ See *Fairgrieve and others*, p. 66.

⁴⁹ See *Ulfbeck*, pp. 76–77. She refers to *Case C-203/99, Veedfald v Århus Amtskommune* which concerned manufacturer’s liability for damage caused to a kidney that was meant to be used in transplantation. A hospital had manufactured a perfusion fluid to flush the kidney, but due to the defectiveness of the fluid, the kidney was damaged and became unusable for transplantation. Although the fluid never left the medical ‘sphere of control’, the ECJ argued that the fluid was still put into circulation as the person for whom the product was intended had to ‘bring himself within that sphere of

As a result, it seems that a shipowner may indeed be considered to the importer of a vessel. The exact boundaries of the concept of importer are nevertheless unclear.

d) The supplier

Finally, the Finnish Product Liability Act's Section 6 states that the party which has put the product into circulation shall be liable '[i]f the product does not indicate its manufacturer or producer'. This person—the supplier—may nevertheless avoid liability by notifying within a reasonable time 'the injured party of the identity of the party liable for the injury or damage'.⁵⁰ In addition, the Act's Section 6 continues by stating that the same rule applies when the importer of the product is unknown. Supplier's liability is, therefore, a secondary alternative that triggers only if the manufacturer—or the importer—of the product cannot be identified. Since in shipping these persons are usually known, this provision has a rather limited importance here.

2.1.4 Amount of liability

The previous section explored the range of persons who may be liable to pay compensation if a defective ship causes an accident. The result was somewhat surprising: a number of persons—under certain circumstances even the shipowner—could be liable under the Finnish Product Liability Act. However, it is a question why an aggrieved party would like to raise a claim under the product liability rules. In the following, it is argued that the rules on the amount of liability may be such an incentive.

There is a long tradition in maritime law that shipowners and certain other persons have the right to limit their liability when the loss exceeds a specified limit.⁵¹ However, the approach under the product liability rules is different. The Finnish Product Liability Act is based on the principle of full compensation, which means that an aggrieved party is usually entitled to get his losses fully compensated, no matter the size of the loss.⁵² This approach is even strengthened by the Act's Section 10 that states that any 'contractual term, agreed upon before the injury or the damage occurred, which limits the right of the injured party to compensation laid down in this Act shall be null and void'.⁵³ Consequently, the key question here is whether the rules on limitation of liability may be relevant within the product liability framework or whether it may, in fact, be beneficial for an aggrieved party to base his claim on the Finnish Product Liability Act instead of the Finnish Maritime Code.

It is natural to begin this discussion by exploring how the right to limit liability is currently regulated. In the Finnish Maritime Code, these rules are divided into several

control'. Although the case did not specifically concern importer's liability, *Ulfbeck* argues that it shows how broadly the concept of 'put into circulation' has been interpreted.

⁵⁰ The quotations are from the unofficial translation made by the Finnish Ministry of Justice.

⁵¹ For the history of the concept of limitation of liability, see Peter Wetterstein, *Globalbegränsning av sjörättsligt skadeståndsansvar : en skadeståndsrättslig studie* (Åbo Akademi 1980), pp. 18–48.

⁵² See Wilhelmsson and Rudanko, pp. 236–237.

⁵³ The quotation is from the unofficial translation made by the Finnish Ministry of Justice.

chapters: one of them providing the general rules and others that only apply to certain types of damage.⁵⁴ However, it is important to note that these rules are based on several international conventions enacted within the International Maritime Organization (IMO).⁵⁵ Consequently, it seems reasonable to begin the analysis from them. For the sake of simplicity, the following discussion only focuses on the general rules on limitation of liability, which are established by the Convention on Limitation of Liability for Maritime Claims (hereafter ‘the LLMC Convention’).⁵⁶

Article 2(1) of the LLMC Convention includes a list of losses to which the Convention is meant to be applied. Among other things, the list includes ‘claims in respect of loss of life or personal injury or loss of or damage to property (including damage to harbour works, basins and waterways and aids to navigation), occurring on board or in direct connexion with the operation of the ship or with salvage operations, and consequential loss resulting therefrom’. The important thing here is, however, that according to Article 2(1) the LLMC Convention is meant to apply to such losses ‘whatever the basis of liability may be’. Even if the claim is brought as a recourse action in a contractual relation, Article 2(2) states that the right to limit the amount of liability is still available. Consequently, it seems relatively obvious that the LLMC Convention is meant to apply to product liability claims as well if the incurred loss otherwise falls within its scope. This outcome gives rise to a potential conflict between the rules: on the one hand, the LLMC Convention allows a shipowner to limit his liability, but on the other hand, the product liability rules require the loss to be compensated to its full extent if the shipowner is also the importer of the ship.⁵⁷

Nevertheless, the position of vessel manufacturers such as shipyards and component manufacturers is different. According to Article 1 of the LLMC Convention, the right of limitation of liability is only available to four types of persons: first, the shipowner meaning the owner, charterer, manager, and operator of a seagoing ship; second, the salvor meaning any person rendering services in direct connection with salvage operations; third, any person for whose act, neglect, or default the shipowner or salvor is responsible; and fourth, the liability insurer to the same extent as the assured himself. Consequently, because the LLMC Convention does not specifically mention vessel manufacturers, their position depends on whether they can be categorised as ‘any person for whose act, neglect or default the shipowner or salvor is responsible’.

⁵⁴ As an overview on the rules on limitation of liability in the Nordic maritime codes, see Falkanger, Bull and Brautaset, pp. 212–230.

⁵⁵ For the full list of conventions that Finland has ratified, see ‘Chronological List of Imo Instruments and Entry into Force Dates’ <<http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/status-x.xlsx>> accessed 20 June 2018.

⁵⁶ The reader should note that the LLMC Convention has been updated by the Protocol of 1996 to amend the Convention on Limitation of Liability for Maritime Claims. Nevertheless, the 1996 Protocol is not discussed in this study as it did not change any relevant rules in this context. Generally on the international conventions regarding limitation of liability, see e.g. Norman A. Martínez Gutiérrez, *Limitation of Liability in International Maritime Conventions* (Routledge 2011).

⁵⁷ Similarly, see Ulfbeck, pp. 77–79.

Unfortunately, the LLMC Convention provides no definition for this expression. As *Martínez Gutiérrez* notes, ‘with the exception of the salvor and the liability insurer, it seems that all other categories of persons listed in Article 1 can be interpreted in several ways’. The interpretations also vary between jurisdictions.⁵⁸ In Finland, the government has read the term ‘responsible’ to refer to the rules of shipowner’s vicarious liability. These rules, in turn, depend on national law.⁵⁹

According to the Finnish Maritime Code’s Chapter 7 Section 1, the extent of shipowner’s vicarious liability is defined as follows (translated by the author):

‘The shipowner shall, unless otherwise stated in this or other law, be liable for damage caused by the fault or neglect in the service by the master, crew, pilot, or by any other person who, without belonging to the crew, on behalf of the shipowner or the master performs work in the service of the ship.’

The scope of shipowner’s vicarious liability is broad as it extends even to independent contractors.⁶⁰ However, it is still unlikely that a vessel manufacturer could usually be included to the scope of the rule. As *Falkanger and others* state on Norwegian law—which quite closely corresponds to Finnish law on this matter⁶¹—only work that can be categorised as ‘a typical shipowner’s activity’ may fall into the scope of shipowner’s vicarious liability. Consequently, if a person employed by a shipyard causes damage while performing ordinary maintenance activities onboard the ship, the shipowner may be vicariously liable for the damage the person causes. As the authors state, however, ‘[m]ajor works carried out at a shipyard are a good example of work’ which do not result in shipowner’s liability under the vicarious liability rules.⁶² Thus, it is obvious that a shipowner cannot be vicariously liable for errors that e.g. a shipyard has made when the ship was built. It is mainly the ordinary repair and maintenance activities that may fall into the scope of shipowner’s vicarious liability.

As a result, the rules on the amount of liability seem to differ significantly between the Finnish Maritime Code and the Finnish Product Liability Act. Although the LLMC Convention applies to product liability claims in theory, its practical relevance seems limited. It is mainly shipowners who may be subjected to two sets of rules; to the producers of a vessel the right to limit the amount of liability is very seldom available. Thus, it seems evident that it may, under certain circumstances, be beneficial for an

⁵⁸ See *Martínez Gutiérrez*, pp. 202–203.

⁵⁹ See ‘Finnish Government Proposal 10/1984: Hallituksen esitys Eduskunnalle laiksi merilain muuttamisesta ja eräiksi siihen liittyviksi laeiksi’, pp. 14–15.

⁶⁰ See *Falkanger, Bull and Brautaset*, p. 200.

⁶¹ The maritime codes of Finland, Sweden, Norway, and Denmark were drafted in co-operation, and they are very similar—albeit not identical—to each other. See *Falkanger, Bull and Brautaset*, pp. 28–29. According to Section 151 of the Norwegian Maritime Code, the shipowner ‘shall be liable to compensate damage caused in the service by the fault or neglect of the master, crew, pilot, tug or others performing work in the service of the ship’. The quotation is from the Code’s unofficial translation published in *MarIus* no. 435.

⁶² See *Falkanger, Bull and Brautaset*, p. 207.

aggrieved party to base his claim on the Finnish Product Liability instead of the Finnish Maritime Code.

Of course, it could be argued that the attempts to circumvent the rules on limitation of liability would be rare. However, the existing case law shows that such attempts are not purely imaginary, and, more importantly, they may even succeed. In *Case C-188/07, Commune de Mesquer v Total France SA and Total International Ltd*, the oil tanker MV *Erika* had sunk and caused one of the worst oil disasters in the history of Europe. Since the amount of damage exceeded the limits that were established in the applicable IMO conventions, a French municipality attempted to circumvent these limits by basing its claim on the French waste legislation which, in turn, was based on the EU Waste Framework Directive⁶³. The claimant argued that heavy fuel oil had become waste when it had spilled into the sea and that oil company Total should reimburse the costs to their full extent. Interestingly, the ECJ reached a conclusion that the EU was not bound to the IMO conventions as neither the EU nor all of its Member States had ratified them. Consequently, the right to limit the amount of liability did not extend to the area of the EU Waste Framework Directive.⁶⁴

As a conclusion, it is possible that aggrieved parties may receive a more comprehensive compensation under the Finnish Product Liability Act than under the Finnish Maritime Code, and this possibility should be taken seriously. Even if this possibility is utilised very rarely, in an isolated case it may cause extremely difficult problems if the liable party has not taken this possibility into account in his risk management. In addition, in the future this possibility will most likely be more often available as the usage of sophisticated technologies becomes more and more common. Especially in unmanned shipping where there is no crew on board to ensure that technical equipment function as they should, the root cause of accident may be a technical failure more frequently than before.

2.2 General tort liability rules

In the previous section it was discovered that the Finnish Product Liability Act may apply to damage caused by a ship. However, it was also noted that the Act has one important limitation: it does not apply to damage to property that the aggrieved party has used in commercial activities. In shipping, this limitation is significant. For example, if a defective ship collides with a commercial vessel, the shipowner who has suffered the loss cannot claim damages under the Finnish Product Liability Act since

⁶³ Council Directive 75/442/EEC of 15 July 1975 on waste.

⁶⁴ For an analysis of ECJ's judgement, see Christina Eckes, 'Case C-188/07, Commune de Mesquer v. Total France and Total International Ltd., Judgment of the Court (Grand Chamber) of 24 June 2008 [2008] ECR I-4501; Case C-301/08, Irène Bogiatzi v. Deutscher Luftpool, Société Luxair, European Communities, Luxembourg, Foyer Assurances SA, Judgment of the Court (Fourth Chamber) of 22 October 2009, not yet Reported' (2010) 47 *Common Market Law Review* 899.

he has used the vessel in a commercial activity. The objective in this section is to explore which rules may apply in such cases.

In *Case C-285/08, Moteurs Leroy Somer v Dalkia France and Ace Europe*, the ECJ stated that the Product Liability Directive does not affect the way a Member State is allowed to regulate product liability for damage to property used in commercial activities.⁶⁵ Consequently, a national legislator may extend the national product liability regime to apply to such losses—as it has been done in France⁶⁶—or regulate them in some other way. In Finland, there is no special legislation on this matter. This means that manufacturer’s liability in these cases must be evaluated based on the Finnish Tort Liability Act, which contains the general rules of liability, and the general principles of tort law.⁶⁷

According to the Finnish Tort Liability Act’s Chapter 2 Section 1, ‘[a] person who deliberately or negligently causes injury or damage to another shall be liable for damages, unless otherwise follows from the provisions of this Act’. In other words, liability is based on the concept of fault. This observation is important since it highlights that a manufacturer may be able to avoid liability even if the product is defective. The claimant must prove that the manufacturer had acted negligently. Especially in the case of sophisticated technology, this requirement may constitute a major obstacle to recovery. In order to prove that a manufacturer was negligent, an aggrieved party may need access to the manufacturer’s internal data which most often is unavailable to third parties.⁶⁸ In fact, the challenges related to fault liability were one of the reasons why the Product Liability Directive was given at the first place.⁶⁹

Furthermore, proving the existence of negligence may be difficult even if the aggrieved party has access to the manufacturer’s internal data. Consider e.g. software defects: as it was stated in Section 2.1.2, sophisticated software will almost inevitably contain bugs, and these bugs may sometimes have serious consequences. Nevertheless, a difficult question is whether they exist because someone has acted *negligently*. The software may have passed the ordinary tests, but, under some very rare circumstances, an undiscovered bug may still be triggered and cause an accident. Since fault liability focuses on what ‘a reasonable person’ would have done⁷⁰, it may be extremely difficult to show that the bug has been caused by someone’s negligent conduct.

Nevertheless, it is somewhat uncertain if the difference between these two forms of liability is as significant as it seems at first. As it was explained in Section 2.1.2, the Finnish Product Liability Act sets the defectiveness of the product as the basis of liability; it is not, therefore, strict liability in its purest form. In certain jurisdictions the

⁶⁵ See *Case C-285/08, Moteurs Leroy Somer v Dalkia France and Ace Europe*, paras. 14–32.

⁶⁶ See Article 1245 of the French Civil Code.

⁶⁷ See Mononen, pp. 153–196.

⁶⁸ Generally, see Wilhelmsson and Rudanko, p. 145.

⁶⁹ See Recital 2 of the Product Liability Directive.

⁷⁰ See Mika Hemmo, *Vahingonkorvausoikeus* (WSOYPro 2005), p. 27.

evaluation of the defectiveness of a product may even include elements that resemble the evaluation of fault.⁷¹ Even in Finland, some legal scholars have argued that the defectiveness of a product often indicates that the manufacturer of the product had acted negligently.⁷² In addition, it is important to note that a court has—at least in Finland—the right to reverse the burden of proof if it finds it necessary.⁷³ Such a need may undoubtedly exist in product liability if the aggrieved party has no access to the manufacturer’s internal data. In some of the EU Member States the reversed burden of proof had, in fact, been adopted before the Directive was given.⁷⁴

In addition, it is important to note that the general principles of tort law may affect the basis of manufacturer’s liability as well. Although the Finnish Tort Liability Act requires negligence to be triggered, the preparatory works of the Act explicitly state that the courts are allowed to develop strict liability rules via case law. Product liability was even mentioned as an example of an area where such development could occur.⁷⁵ However, in the existing case law there are no signs that strict liability would—with the exception of the Finnish Product Liability Act—apply in product liability.⁷⁶ Even in general, the Finnish Supreme Court has been cautious to extend the area of strict liability via case law.⁷⁷ Consequently, it is evident that under the Finnish tort liability rules the basis of manufacturer’s liability is currently based on the concept of fault.

As a conclusion, an aggrieved party may face significant challenges when seeking compensation for damage that a ship has caused to property used in commercial activities. The aggrieved party may have to prove the existence of manufacturer’s negligence which may often be too difficult. More importantly, the liability framework for these losses is significantly more fragmented between the EU Member States than it is in the area where the Product Liability Directive applies. In shipping, this observation is a major uncertainty factor as shipping activities are remarkably international by their nature.

2.3 Contractual liability

The study has now explored the maritime product liability framework from a third party’s perspective. However, it is a completely different question how liability is allocated between the liable parties after one of them has compensated the loss to a

⁷¹ See e.g. discussion in Geraint Howells, ‘Defect in English Law — Lessons for the Harmonisation of European Product Liability’ in Duncan Fairgrieve (ed), *Product Liability in Comparative Perspective* (Cambridge University Press 2005).

⁷² Mononen, pp. 157–160.

⁷³ See Wilhelmsson and Rudanko, p. 22.

⁷⁴ See e.g. Magdalena Sengayen, ‘Product Liability Law in Central Europe and the True Impact of the Product Liability Directive’ in Duncan Fairgrieve (ed), *Product Liability in Comparative Perspective* (Cambridge University Press 2005), p. 282.

⁷⁵ See ‘Finnish Government Proposal 187/1973: Hallituksen esitys Eduskunnalle vahingonkorvausta koskevaksi lainsäädännöksi’, p. 12.

⁷⁶ See Wilhelmsson and Rudanko, pp. 12–17.

⁷⁷ See Pauli Ståhlberg and Juha Karhu, *Suomen vahingonkorvausoikeus*, (6th edn, Talentum 2013), p. 176.

third party. This question has two dimensions: first, the shipowner—or his liability insurer—may have compensated the loss after the aggrieved party has made a claim against him, and second, the producer of the product may have compensated the loss if the aggrieved party has decided to claim damages directly from him. The objective in this section is to explore how liabilities between shipowners, shipyards, and component manufacturers are currently allocated.

Generally, tort law aims to channel liability to the party whose fault the accident has been. The Finnish Product Liability Act's Section 8 refers to the Finnish Tort Liability Act on this matter. According to the Finnish Tort Liability Act's Chapter 6 Section 3, '[t]he damages payable shall be allocated to those liable as is deemed reasonable in view of the guilt apparent in each person liable, the possible benefit accruing from the event and other circumstances'. The provision continues that '[a] person who has paid damages beyond his/her allocated share shall have the right to recover from the other persons liable the amount paid on behalf of that person'.⁷⁸ Consequently, if the root cause of the accident is e.g. a defective steering system of a ship, the tort liability rules allocate the eventual liability to the producer of the system if the defect existed when the system was put into circulation.

However, the liable parties are allowed to agree on liability allocation that differs from the general rules.⁷⁹ In shipbuilding, there are numerous standard contracts that are practically always used. For the sake of simplicity, the following discussion is limited to two of these contracts: first, the Standard Form Shipbuilding Contract 2000 which is often used between shipowners and shipyards in the Nordic countries, and second, the Orgalime General Conditions S 2012 which are often used in the supply of mechanical, electrical, and electronic products.

Shipyard's liability for damage caused by ship's technical failure is typically very limited. According to Article X of the Standard Form Shipbuilding Contract 2000, the shipbuilder issues the buyer a guarantee whose length is typically 12 months. During the guarantee period the builder has a duty to 'repair and rectify at its own cost and expense and free of charge to the Buyer, any defects—including latent defects or deficiencies—concerning the Vessel or parts thereof, which are caused by faulty design, defective material and/or poor workmanship on the part of the Builder, its servants, employees or Subcontractors'. More importantly, if the builder has rectified the deficiencies within a reasonable time, the builder shall have 'no responsibility for defects or the consequences thereof (including loss of profit and loss of time) discovered after the Delivery and Acceptance of the Vessel'. Consequently, third party losses are most often excluded. Mainly two exceptions seem to exist: first, if the builder

⁷⁸ The quotations are from the unofficial translation made by the Finnish Ministry of Justice.

⁷⁹ See Wilhelmsson and Rudanko, p. 283. Of course, such agreements are not allowed to weaken the rights of an aggrieved party. See the Finnish Product Liability Act's Section 10.

does not rectify the defect within a reasonable time, and second, if the damage is caused intentionally or by gross negligence as then the liability exclusions do not apply.⁸⁰

The situation seems similar under the Orgalime General Conditions S 2012. In this case the outcome must be derived from two provisions.

First, Section 40 of the Orgalime General Conditions S 2012 states that the supplier—in this context a component manufacturer—shall not be liable for ‘any damage to property caused by the Product after it has been delivered and whilst it is in the possession of the Purchaser’. As it states, however, this provision only applies when the product is ‘in the possession of the Purchaser’. Consequently, this provision has limited significance in shipbuilding. A component manufacturer typically supplies the product to a shipyard which, in turn, incorporates it into a vessel and puts the finished product into circulation. Therefore, the supplied product is often no longer in the possession of the purchaser—i.e. the shipyard—when it causes damage. However, if a component manufacturer makes the contract directly with the shipowner, which happens too, the provision does apply.

Second, Section 45 states that ‘[s]ave as otherwise stated in the General Conditions there shall be no liability for either party towards the other party for loss of production, loss of profit, loss of use, loss of contracts or for any other consequential or indirect loss whatsoever’. The key question here is what does the clause ‘any other consequential or indirect loss’ mean. Although the first part of the rule provides some examples, the list is not inclusive.⁸¹ Consequently, the interpretation of the clause depends on national law.⁸² In Finland, the applicable law on this matter is the Finnish Sale of Goods Act (355/1987).⁸³ According to its Section 67(2), ‘loss due to damage to property other than the goods sold’ is an indirect loss.⁸⁴ Thus, if a component of a ship causes damage to third party’s property, the producer of the component is clearly not liable to compensate the damage to its contractor.

Nevertheless, the position of personal injuries is less clear. On the one hand, Section 40 of the Orgalime General Conditions S 2012 only applies to damage to property; the exclusion clearly does not apply to personal injuries. In fact, such an exclusion would even be null and void against the injured party because of Section 10 of the Finnish Product Liability Act. On the other hand, it is uncertain if a personal injury can be categorised as an ‘indirect or consequential loss’ under Section 45 of the Orgalime General Conditions S 2012 either. In the preparatory works of the Finnish Sale of

⁸⁰ Generally on the effects of gross negligence on liability exclusions, see Mika Hemmo, *Sopimusoikeus III* (Talentum 2005), p. 254.

⁸¹ See Mats Bergström and others, *Orgalime General Conditions S 2012: Guide on Their Use and Interpretation* (The European Engineering Industries Association 2014), pp. 128–130.

⁸² See Section 47(2) of the conditions as it states that ‘[t]he Contract shall be governed by the substantive law of the Supplier’s country’.

⁸³ See the Finnish Product Sale of Goods Act’s Section 1. It states that ‘[t]his Act applies to the sale of property other than real property (goods)’. The quotation is from the unofficial translation made by the Finnish Ministry of Justice.

⁸⁴ The quotation is from the unofficial translation made by the Finnish Ministry of Justice.

Goods Act, the government noted that personal injuries caused by a product had not been dealt with the contractual liability rules, and such losses would not be covered by the Act either.⁸⁵ However, it is questionable whether a personal injury caused by a product should, in fact, be regarded as a *financial loss* when it has already been compensated to the injured party. If this is the case, Section 45 of the Orgalime General Conditions S 2012 could apply as the loss would then most likely be considered as an indirect and consequential loss. Nonetheless, the interpretation is uncertain, and, more importantly, both interpretation alternatives have gained support at the international level.⁸⁶

As a result, liability exclusions have a central role in shipbuilding. They are utilised both in shipbuilding contracts and the supply of components. If a product causes damage to property, the right of recourse is very seldom available. The situation of personal injuries is less clear, but even with them it seems that the right of recourse may often be unavailable. Against this background, the following conclusion can be drawn: the maritime liability framework has been built on an idea that liability is most often channelled to the shipowner, and, more importantly, the contractual structures in shipbuilding industry even strengthen this approach further.

However, it is a different question how liability is allocated if an aggrieved party has claimed compensation directly from a person that would otherwise have been protected by a liability exclusion clause. Consider the following example: a defective collision avoidance system of an unmanned ship causes damage to property that the aggrieved party has used in non-commercial activities. The aggrieved party decides to claim damages directly from the producer of the collision avoidance system. The claim is based on the Finnish Product Liability Act so the producer cannot avoid liability by the liability exclusion clause that it has in its contract with the shipyard. Does the producer of the collision avoidance system then have the right of recourse against the shipyard?

Under the Orgalime General Conditions S 2012, the answer depends on whether the product was in the possession of the purchaser when the accident occurred. Section 40(2)—which applies when the product is in the possession of the purchaser—states that ‘[i]f the Supplier incurs liability towards any third party for such damage to property as described in the preceding paragraph, the Purchaser shall indemnify, defend and hold the Supplier harmless’. Consequently, under this provision the producer of the collision avoidance system could demand the shipyard to compensate the loss. However, in our example this possibility would be unavailable since the product is no longer in the possession of the purchaser, and the Orgalime General Conditions S 2012 contain no corresponding rule for such situations. In addition, it is

⁸⁵ See ‘Finnish Government Proposal 93/1986: Hallituksen esitys Eduskunnalle kauppalaiksi’, p. 128.

⁸⁶ See e.g. the discussion regarding the United Nations Convention on Contracts for the International Sale of Goods (CISG) in Ingeborg Schwenzer, ‘Section II. Damages’ in Ingeborg Schwenzer (ed), *Commentary on the UN Convention on the International Sale of Goods (CISG)* (4th edn, Oxford University Press 2016), pp. 1070–1071.

important to note that the Standard Form Shipbuilding Contract 2000 contains no indemnity clause at all. Thus, if the example above had concerned the relationship between a shipowner and a shipyard, the yard would have had no right to claim compensation from the shipowner.

From the risk management perspective, the lack of an indemnity clause may be problematic. If a producer has tried to avoid liability by using a liability exclusion clause, it may be an unpleasant surprise if the producer must still bear the consequences of the accident because the aggrieved party has claimed damages from the producer directly. Of course, nothing prevents the parties to utilise standard contracts and still agree on specific terms that differ from the general provisions. The existence of such provisions is even likely since at least the Orgalime General Conditions S 2012 are used in various situations that may significantly differ from each other.⁸⁷ In any case, it is important to carefully consider where to use these terms since their significance increases when the importance of technical equipment grows.

Finally, it is worth asking what the liability insurers of these parties think about the current contractual arrangements in the shipbuilding industry. It is a well known fact that losses caused by a shipping accident are most often compensated by an insurer. The liability exclusion clauses discussed above are obviously significant to insurers as well: if the assured has no right of recourse against his contractor, the insurer cannot have it either. It could even be argued that such clauses would be problematic since the assured is not allowed to limit the insurer's right of recourse neither before nor after the accident has occurred. Nevertheless, such liability exclusions have been allowed in practice as they are commonplace, and insurers can easily take them into account when issuing policies.⁸⁸ However, the question remains whether the insurers will be willing to accept these clauses in the future if the nature of risks changes due to the introduction of new technologies. Without sufficient insurance coverage many contractual arrangements are difficult or even impossible to adopt. In other words, the position that insurers take affects the liability allocation practices as well.

3 Impact of unmanned ships

The first part of the study showed that the product liability rules could be applied in shipping, but the absence of case law indicates that there has usually been no need to utilise them. However, the introduction of unmanned ships may change the status quo. Basically, if a ship has no crew on board, the role of technical equipment will increase significantly. Even if a ship is meant to be remotely controlled by human, the shipowner must heavily rely on technical equipment because remote control is only possible via data connection, sensor systems, and software. Consequently, unmanned ships will definitely lead to an increasing number of cases where aggrieved parties can

⁸⁷ See Bergström and others, p. 15.

⁸⁸ Generally, see Esko Hoppu and Mika Hemmo, *Vakuutusoikeus* (WSOYpro 2006), p. 282.

invoke the product liability rules. This part of the study discusses how likely it is that these new possibilities will be utilised in reality.

In my view, the main reason why maritime product liability has played so little a role in manned shipping is the way how the shipowner's liability framework is arranged. Basically, the Finnish Maritime Code includes many advantages that make the Code attractive to an aggrieved party. For example, the shipowner has often a duty to obtain liability insurance.⁸⁹ This rule is important as it also means that an aggrieved party has the right to make claims directly against the insurer.⁹⁰ In product liability, in turn, the producer of a product has no duty to obtain liability insurance⁹¹, and even if an insurance policy exists, it is a completely different question what kind of losses it covers. In addition, Section 9 of the Finnish Product Liability Act requires that the claim must be made 'within ten years from the date on which the liable party (...) put the product which caused the injury or damage in circulation'.⁹² Although the general tort liability rules do not have this kind of limitation, the requirement of fault makes claiming damages difficult under those rules as well. When taken into account that the area of strict liability has also grown within the Finnish Maritime Code⁹³, it is unsurprising that the aggrieved parties have most often based their claims on the Finnish Maritime Code instead of the product liability rules.

Consequently, it is unlikely that the introduction of unmanned ships could drastically affect the position of the Finnish Maritime Code as the main way to seek compensation unless the liability rules are significantly changed. In my view, product liability seems attractive mainly in two situations: first, if the shipowner is not liable to compensate the loss at all, and second, if the scale of the loss is exceptionally large, and the shipowner is not liable to compensate the loss to its full extent due to the right of limitation of liability.

The first situation—the shipowner is not liable at all—may arise because shipowner's liability is usually based on the concept of negligence.⁹⁴ Although a shipowner may act negligently in numerous ways even with an unmanned ship, there may be situations where finding negligence may be extremely difficult. For example, if the data connection between the vessel and the remote control center is lost, the shipowner may not have enough time to send a person on board the vessel to remedy the situation.

⁸⁹ According to the Finnish Maritime Code's Chapter 7 Section 2, liability insurance must be obtained if the gross tonnage of the vessel is at least 300.

⁹⁰ According to Section 67 of the Finnish Insurance Contracts Act (543/1994), the injured party is entitled to claim compensation directly from the liability insurer if 'the insurance policy has been taken out pursuant to laws or regulations issued by the authorities'.

⁹¹ The question whether manufacturers should have a duty to obtain liability insurance was considered when the Finnish Product Liability Act was enacted. Nevertheless, the government saw no need for such an approach. See 'Finnish Government Proposal 119/1989: Hallituksen esitys Eduskunnalle tuotevastuulaiksi', p. 17.

⁹² The quotation is from the unofficial translation made by the Finnish Ministry of Justice.

⁹³ On the position of strict liability in the Nordic maritime codes, see Falkanger, Bull and Brautaset, pp. 192–193.

⁹⁴ See Falkanger, Bull and Brautaset, pp. 189–191.

However, it is not clear that product liability should be the instrument to use in filling the potential gaps in shipowner's liability. It is still the shipowner who seeks financial gain by operating the ship, and if a decision to use an unmanned ship creates liability gaps, the solution may very well be a wider adoption of strict liability within the shipowner's liability framework.

The second situation—the shipowner is not liable to compensate the loss to its full extent—may be a more difficult challenge. It seems that an aggrieved party may be able to secure a more comprehensive recovery by basing his claim on the product liability rules instead of, or in addition to, the Finnish Maritime Code. In theory, this problem could be solved in two ways: first, the right to limit the amount of liability could be extended to vessel manufacturers, and second, the right to limit the amount of liability could be abolished completely. However, it may be difficult to get enough support for either approach. On the one hand, regulators have been reluctant to extend the range of persons that have the right to limit the amount of liability⁹⁵, and this approach could also be difficult to accept under EU law as the product liability rules are meant to protect consumers.⁹⁶ On the other hand, the complete abolition of limitation of liability seems unlikely as well. Although the existence of this right has been criticised many times, the international maritime community has only been willing to increase the limits instead of abolishing the right entirely.⁹⁷

Nevertheless, the most important question that unmanned ships will raise in respect to product liability is whether the current contractual arrangements between shipowners, shipyards, and component manufacturers will remain as they are at the moment. Applying the general principles of tort law likely leads to a finding that manufacturers should bear the consequences of maritime accidents more often than they currently do, but it is questionable whether such an approach would be acceptable to the shipbuilding industry. It would expose manufacturers to new risks which in practice would require new kinds of insurance arrangements. This development, in turn, would create multiple insurance layers which would not only complicate the allocation of liability but also potentially increase costs. However, opposing arguments can be found as well. For example, the liability insurers of shipowners may find it difficult to insure technology risks especially at the early stages of the development.⁹⁸

⁹⁵ On the position of shipyards, see e.g. Wetterstein, pp. 99–102.

⁹⁶ See Recital 4 of the Product Liability Directive. The importance of the principle of full compensation has been noted by the ECJ as well. In *Case C-203/99, Veedfald v Århus Amtskommune*, the ECJ stated that although it is left to national legislatures to determine the precise content of compensable damage, 'full and proper compensation for persons injured by a defective product must be available' for 'damage resulting from death or from personal injuries and damage to, or destruction of, an item of property'. See paras. 25–27 of the judgement.

⁹⁷ See Martínez Gutiérrez, p. 201.

⁹⁸ See Marine Electronics & Communications, 'Autonomous Ships Will Need Major Insurance Changes' (2017) <http://www.marinemec.com/news/view,autonomous-ships-will-need-major-insurance-changes_49132.htm> accessed 2 July 2018.

Consequently, it would be unsurprising if insurers aspired to gain more extensive right of recourse against the manufacturers of unmanned ships.