

UiO : **Det juridiske fakultet**

From Manual to Autonomous: One-Hundred Years of Maritime Ship-to-Ship Collision Liability

On the Material Rules and Evaluation of Fault in Collisions between
Vessels: Scandinavian Maritime Collision Liability from 1918 to 2018

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1 Introduction

1.1 From Manual to Autonomous Vessels

Shipping is once again on the verge of transformation. Artificial intelligence (AI) has reached the once traditional business, which consequently will undergo drastic change in the next years. The last time ship owners found themselves in a such a position was with the introduction of standardised containers in the late 1960s, and 40 years' prior, the emerge of telecommunications and the shift from sail to steam.¹

A reminder of this now forgotten age is prominently illustrated by Norwegian author Kielland in his book “Skipper Worse” – where ship owner Consul Garman for an extensive time has been without intelligence of the whereabouts of his ship “FAMILIENS HÅB”.² When at last the ship is spotted sailing into the harbour of Stavanger, Consul Garman, in excitement, dispatches a dinghy to meet the returning ship. Almost there, the Master shouts across the water to Cons. Garman; “[W]e are arriving late, Mr. Consul, but well!”, and exhibits “a sack of good [gold] Sovereigns” – the net earnings from the voyages the ship had carried out worldwide.³

Today, this only serves reminiscing of a bygone era – and a stark contrast to today's highly integrated and intelligent shipping operations. AI and machine learning has developed beyond its traditional statistical business applications⁴ – and is now, through increasing levels of autonomy, able to cater for the independent navigation of a vessel. The synergies are tripartite; improved safety, increased load capacity and environmental gains – mainly due to effective hull design and consequently reduction in bunker consumption.⁵

It is thus safe to claim that in terms of autonomous shipping it is no longer a question of *if*, but *when*. Norwegian vessel YARA BIRKELAND is for example set to engage in remote operated commercial traffic late 2020⁶ and gradually evolve into the higher levels autonomous operation by 2022.⁷ With these new developments there has consequently been a number of critical legal questions in need of being answered.

¹ Lennitzer et al. (2017).

² Brækhus (1993) p. 10.

³ Kielland (1882) p. 8.

⁴ Chui, M. (2018).

⁵ Kretschmann et al. (2017) p. 2.

⁶ Lurås (2018).

⁷ Kongsberg Marine (2018).

In this regard, an assessment of best practice and spill-over effects from other industries is crucial for the technological, financial and legal development of autonomous shipping.⁸ Norwegian authorities has for example been reregulating certain local areas as autonomous vessel test beds, similar to what the State of California provided of regulatory framework in the early development phases of driverless cars.⁹

1.2 On the Need for Research on a National Level

There is however also a risk tied to the emerge of a new technology, especially when that technology potentially can weigh 800,000 tonnes fully laden with crude oil. Headlines of highway collisions between ordinary and driverless cars has been a popular feature in recent newspapers¹⁰, and highlights the fact that no technology is fault-free.

In the sphere of automotive autonomy, liability is either regulated strictly¹¹ in national law – or solved by developing special regulations concerning the testing and development of driverless cars.¹² At sea however, there is currently no special regulations concerning the liability of such vessels, and shipowners are subjected to the traditional maritime liability rules.

Considering that Norway is in the forefront of the technological and commercial development of autonomous vessels,¹³ it highlights the importance of carrying out research in relation to the Norwegian legal framework.¹⁴ Research pertaining this remains marginalised on a national basis, albeit well-researched in relation to the international legal frameworks.¹⁵ Scholars have in this regard been calling for increased legal research pertaining autonomous shipping on a national level.¹⁶

As the Norwegian maritime legal framework has a significant Nordic dimension, research in this regard will also have relevance outside of Norway.¹⁷

⁸ See Rolls-Royce (2016) p. 2

⁹ National Conference of State Legislators (2018).

¹⁰ Inter alia Levin (2018).

¹¹ Automobile Liability Act of 1961 § 4.

¹² Prop.152 L (2016-2017).

¹³ Meld. St. 33 (2016-2017) p. 48 and Dean et al. (2017) p. 2.

¹⁴ Ringbom et al. (2016) p. 35-55.

¹⁵ Veal et al. (2017) p. 116.

¹⁶ Jokioinen (2016) p. 13.

¹⁷ See Section 3.4.2

1.3 On the Scope and Methodical Framework of Research

In order to answer the call for research and contribute to the current academic discourse, I have identified ship-to-ship collision liability in relation to autonomous vessel operation as an interesting topic.

Arguably two marginalised research areas - autonomous vessel liability being barely touched upon in recent academic work, and ship-to-ship collision liability last being thoroughly assed in the 1970s, there is indeed a need for research.

Conducting a review of the various sources of law will enable me to map the Norwegian ship-to-ship collision liability regime, recognise trends and patterns, and consequently identify the core elements in the evaluation of fault. Special attention will be given autonomous vessels, with the end goal of providing insight into how the current maritime liability framework is applied to collisions involving autonomous vessels.

In terms of methodical framework, I will employ the ‘black letter’-methodology as the overall conceptual basis, but with significant emphasis on analysis of relevant cases, as the principles of the evaluation of fault in collision cases is based on a combination of both law, legal theory and court practice. The research method will be limited to the traditional legal dogmatic method, but also and as an auxiliary - the comparative legal method. I will also employ statistical tools in order to highlight and accentuate trends and patterns.

I have in this regard analysed all cases published in *Nordiske Domme* (ND) concerning ship-to-ship collisions since 1918, in total 315 cases. 108 of which I have indexed myself¹⁸, and 207 of which originally was presented by Frode Ringdal in 1973.¹⁹ The basis for the statistical data between 1928 and 1972 is thus the curtesy of Ringdal. In addition, I have supplemented the analysis with non-ND cases where appropriate.

It should also be noted that as ND is subject to an editorial board and voluntary contributions, relevant judgements may have been omitted, or not even submitted to the editors at all.²⁰ For the scope of this thesis however, ND is deemed sufficient in order to make an assessment of the trends and patterns in the Courts’ assessments, as well as identifying the elements of evaluation in the most important cases.

Ship-to-ship collision liability, with the overarching theme of autonomous shipping, is thus the scope of the thesis.

¹⁸ See Annex I.

¹⁹ Ringdal (1973).

²⁰ Meyer (2018).

1.4 Limitations and Research Questions

Other types of maritime liability is outside the scope, inter alia, liability for *ship-to-object* collisions and product liability.²¹ In the final analysis, I will answer these questions:

What is the framework for the evaluation of fault in ship-to-ship collisions?
How does the ship-to-ship collision liability regime apply to autonomous vessels?

In order to provide an answer to this I will present the legal framework for ship-to-ship collision liability, before investigating the trends and patterns in the last one-hundred years of collision case law. Finally, based on the identified material rules and developed Court practice, the elements of the evaluation of fault will be assessed.

Throughout the thesis I will highlight findings and considerations with special relevance to autonomous vessels, and as such one definition must first be clearly established: What is an *autonomous vessel*?

²¹ See Ulfbeck (2006) p. 78-79.

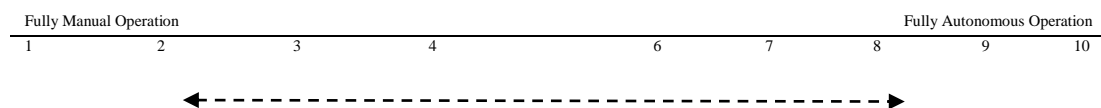
2 On the Different Levels of Vessel Autonomy

2.1 Levels of Autonomous Operation

It is important to understand that in the maritime sector, “autonomous” is a highly dynamic definition. The notion of categorising an autonomous vessel into either remote operated or fully autonomous vessels is not sufficient in order to conduct a legal assessment.²²

During the course of a single voyage, different levels of autonomy will be present. One can therefore not use “autonomous vessels” as a stand-alone definition. When the autonomous system requests attention during engagement, the on-shore or on-board operator will intervene and take control of the operation. During a voyage, the vessel will therefore find itself oscillating between different levels of autonomy (LOA), and one can thus not make the firm distinction between a remote or controlled vessel and a fully autonomous vessel.²³ It is thus the operation of the vessel which must be defined, and this will consequently be subject to different degrees of autonomy. The can be illustrated by this simple figure:

Figure 1: Levels of Autonomy (LOA) in Maritime Operations



The different LOAs thus reflects what level of automation the vessel is under at any given moment. During berthing, the ship may be operating in the lower range, while on the high seas it may operate in the mid- to higher range of autonomy. Should the vessel receive a distress signal from a nearby vessel, or other unexpected events occur, the system will ask for intervention, and thus the LOA may drop to the lower levels again. The vessel is therefore *oscillating* between LOAs during a voyage, depending on the need of supervision. As such, the difference between a traditional autopilot and fully autonomous navigation can be distinguished on account of the LOA.

When defining the different LOAs, the *Sheridan model* is often used.²⁴ This is useful, as the evaluation of fault involving an autonomous ships can to a certain extent be tied

²² Opposite direction: Kretschmann op. cit. p. 76-77.

²³ Ringbom (2018).

²⁴ Jokioinen op. cit. p. 7.

to what LOA the vessel was subjected to at the liability imposing incident. The different LOAs can be structured as follows:

Table 1: Levels of Autonomy (LOA) in Maritime Operations²⁵

Level	Description
10	Computer does everything autonomously, ignores human
9	Computer executes automatically, informs human if it decides so
8	Computer executes automatically, informs human only if asked
7	Computer executes automatically, informs human if necessary
6	Computer allows human restricted time to veto before automatic execution
5	Computer executes the suggested action if human approves
4	Computer suggest single alternative
3	Computer narrows alternatives down to a few
2	Computer offers a complete set of decision alternatives
1	Computer offers no assistance, human in charge of all decisions and actions

In LOAs above six, the navigation system will in all practical terms acts like a virtual Master.²⁶ The system uses the stream of information from all the available sensors, and effectively pilots the vessel. At LOAs from level five and below, the crew effectively has direct control of the navigation, either directly or through assistance such as an autopilot.

2.2 On the Relationship between Manning and Autonomy

In certain discourse the point of departure is that an autonomous vessel cannot be a manned vessel.²⁷ A ship can however be autonomous while having a crew on board, subject to the different LOAs described above, a solution which is observed in the test phases of autonomous vessels.²⁸ Here, technicians and other service personnel may be present on board, and in future use cases one could imagine different janitorial and security functions present on-board, while the supervision of the ship's navigation is handled remotely.²⁹

When introducing the factor of manning, it is clear that the operation of an autonomous vessel is highly multidimensional. It is also apparent from the above that the level of manning and autonomy not necessarily is negatively correlated, and thus not mutually

²⁵ Sheridan (1992)

²⁶ Poikonen et al. (2016) p. 20.

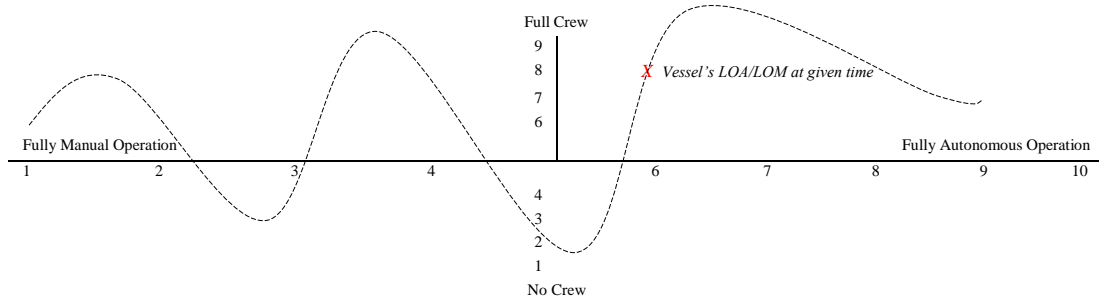
²⁷ Osmo (2017) p. 4 and Kretschmann op. cit.

²⁸ Erdal (2018).

²⁹ Jalonen et al. (2016) p. 57-58

exclusive. As such, the operation and voyage of an autonomous vessel can be illustrated by adding a y-axis to the above Figure 1:

Figure 2: *Example of an Autonomous Voyage in conjunction with LOA and LOM Time (T) at Z-axis.*



A hybrid solution of the above is observed in the case of the YARA BIRKELAND.³⁰ During the development stage, the vessel is planned to be equipped with a removable bridge – which allows the vessel, when necessary, to have a manned bridge. This is particularly useful for development, as the operation gradually can move into the higher levels of autonomy.

In such a use-case scenario there will be crew on board – but the autonomous navigation system takes care of the traditional watch-keeping responsibilities. In case of an anomaly, the navigation system notifies the on-board crew. It is therefore important to note that the level of autonomy and level of manning is two different things, and the two can independently impact the evaluation of fault in ship-to-ship collisions.

2.3 Traditional vs. Autonomous Vessels

A question that also arises in connection with this is what difference there is between an autonomous vessel and an ordinary vessel equipped with an autopilot. The answer is perhaps more complex than first envisaged. Here one must consider that at LOA five, for example, it is still the Master that directly issues orders – and thus the navigation is a result of the crew's action. The autopilot does not deviate from its predetermined course, unless sanctioned by the Master or crew, and as such do not have any capability for independent decision making.

³⁰ Erdal op. cit.

When the vessel operates at LOA six and above, however, it is essentially a computer that is both issuing *and* carrying out the orders. This must be the case, as in the lower LOAs a human is effectively in control at all times.

The LOA is thus essential when establishing the definition of an “autonomous vessel”. A question one must ask when faced with a situation rendering potential collision liability is therefore “how autonomous” the vessel operation was at the time of collision. If the LOA is below level five, liability can simply be established based on the traditional assessment of fault on part of the tortfeasor- but what about a LOAs above six?³¹

This question requires further investigation and identification of the separate elements in the evaluation of fault.

³¹ See Selvig (1977) p. 2. § 3.1

3 Maritime Collision Liability between Vessels

3.1 On the Discrepancy between Actual and Referred Collisions

Looking at the current statistics, and especially vis-à-vis automotive liability, there is clearly a shortage of Scandinavian cases concerning ship-to-ship collisions. In the one-hundred-year period from 1918 to 2018, only 315 cases concerning collisions were referred to the courts, an average of about three per year.

In this period however, there has reportedly been numerous collisions, well exceeding the number of Court referrals. Only in Norway³², as much as 2,447 collisions have taken place since the Norwegian Maritime Authority started recording collisions in 1981. Assuming, for illustrative purposes, that this is a representative number for a longer period of time, ensues an average of 68 ship collisions per year. This amounts to about 7,000 collisions in the last one-hundred-years – only taking Norwegian jurisdiction into account. In Denmark³³ and Sweden³⁴, the same number is respectively about 3,000 collisions, using the same methodology as above.

When looking at the number of submitted cases in combination with the number of collisions, it is thus apparent that only about 1 in every 32 collisions is subject to Court proceedings. When investigating closer, one can also observe that the number of Court cases per year have declined significantly over time, while the number of actual collisions is more or less at a steady level.

This is evidenced by looking at the cases published in ND, which in the period between 1900 and 1918 published a total of 168 cases³⁵ concerning ship-to-ship collisions – an average of about 10 cases per year. In the next 50-year period, between 1918 and 1978, this was more than halved to about *four* cases per year,³⁶ and between 2002 and 2018, only *fifteen* cases³⁷ were submitted to Court – placing the number of average cases referred yearly at *one*. This is clearly a downward trend.

When looking at this negative correlation between referred cases and actual collisions, one can safely assume that ship owners and hull insurers preferably are settling ship collisions outside of court.

³² Norwegian Maritime Authority (2017).

³³ Statistics Denmark (2016).

³⁴ Swedish Transport Authority (2016).

³⁵ NDS Main Register 1900-1918.

³⁶ NDS Main Register 1918-1927 and Ringdal (1973) p. 382.

³⁷ NDS 2001 to 2016 and LOVDATA.

3.2 On Chapter 8 and the Collision Convention of 1910

Before looking closer at the relevant Court practice, I have to consider for a moment the rules regarding collisions liability under Norwegian law – and nonetheless identify the transcribed standards that is to be applied in the evaluation of fault.

The rules concerning ship-to-ship collisions are contained in Chapter 8 of the Norwegian Maritime Code (hereinafter “MC”), and is based on the *Convention for the Unification of Certain Rules of Law with respect to Collisions between Vessels of 1910* (hereinafter “Collision Convention”). The convention establishes liability through the concept of fault, resulting in that the ship owner *only* will be liable in the case that he exhibits fault, referencing here to the rules of privity³⁸. The ship owner will also be held liable for the faults committed by someone it is responsible for under MC § 151, *re* the vicarious liability of the shipowner.³⁹

The rules thus comprise a rigid channelling of liability towards the shipowner, but who is the shipowner under the current scope of the law?

3.3 On the Ship Owner Definition

3.3.1 Owner and Operator

Traditionally, and certainly under English law⁴⁰, the ship owner is the *registered owner* in the ship register.⁴¹ Nevertheless, the different structures of the ship owning entities may divide operational responsibilities between different companies. In these situations, the registered owner might not have anything to do with the navigation of the vessel – and as such a question is whether or not it may be held liable for damage.

This question is further accentuated when introducing new actors in the operation of autonomous vessels – and as such it is important to establish whether the autonomous owner or the autonomous operator, if different entities, is considered the *shipowner* under the scope of the Maritime Code (MC) § 151 and § 161.

³⁸ Falkanger et al. (2017) p. 219-220.

³⁹ Ibid. p. 191.

⁴⁰ Ibid. p. 164.

⁴¹ Brækhus (1954) p. 33.

An example of this situation is the operation of YARA BIRKELAND, which likely is to be operated by a dedicated operator company⁴² rather than the *registered* ship owner. This solution could also be envisaged as a future industry standard for autonomous shipping, as specialized operators can service multiple vessels and thus making it potentially financially viable to centralize different operatorships.⁴³

3.3.2 Navigational and Commercial Risk

The question must furthermore be viewed in unison with the Scandinavian concept of the *reder*. Commonly, this is translated directly to *ship owner*, but the *reder* is not necessarily limited to just encompassing actual ownership, neither is the actual registered ownership of the vessel a requirement.⁴⁴ To establish the legal definition of the “reder”, one must look to the Maritime Code in combination with relevant legal theory and case precedents, on a case-by-case basis.⁴⁵

As mentioned above, the starting point is that the registered owner is the *reder*. It however follows from MC §§ 3 and 103 that in the case of a shipping partnership the registered owners are to appoint a single *reder* – which inter alia assumes the corresponding legal responsibilities of a ship owner under the MC. Another situation where the *reder* is different to the registered owner is under bareboat charter parties⁴⁶, in which a charterer assumes the full legal responsibility of the vessel from the registered owner, and operates the vessel for its own account and responsibility. In this regard, the bareboat charterer becomes the *reder* for the duration of the charter, and is in turn liable *pro hac vice*.⁴⁷ This is certainly the case under Danish law⁴⁸ – and follows from the new (proposed) chapter 2, part VII regarding bare boat charter parties under Norwegian Law.⁴⁹ There is thus apparent that the legal responsibilities and obligations of the *reder* can validly be transferred to a third party in multiple situations under Norwegian law.

⁴² Erdal op. cit.

⁴³ Jalonon op. cit. p. 71.

⁴⁴ Norwegian Ministry of Trade, Industry and Fisheries (2017) p. 3-4 and Falkanger (1969) p. 527-529.

⁴⁵ Blom. (1985) p. 32.

⁴⁶ Norwegian Ministry of Ministry of Trade, Industry and Fisheries Ibid.

⁴⁷ ND-1957-166-DCC KNUT VIKING

⁴⁸ Danish Maritime Act of 1994 § 22

⁴⁹ Norwegian Ministry of Ministry of Trade, Industry and Fisheries op. cit. p. 27-30.

This is also not limited to contractual charters – but also the case in compulsory situations outside contract – such as vessel requisition by public authorities. In these cases the State assumes the ship owner responsibilities *pro hac vice*.⁵⁰

The common denominator under shipping partnerships, bareboat charter parties and requisitions is thus that an entity other than the registered owner assumes both the *navigational* and *commercial* risk of the vessel.

A modified version of this solution is found in the Ship Safety and Security Act (SSA) of 2007, where § 4 cf. § 5 provides that the *reder* is the entity that is stipulated in the ISM-certificate to be the *operating company*.⁵¹ It thus separates the notion of ownership and operatorship – where the latter (the operator) is the entity subjected to the act's legal rights and obligations – and thus is the *reder* under the scope of the SSA.

This is also the case in the Ship Labour Code of 2013 § 2-3, where the same solution as the SSA is adopted. Under both Acts, the *reder* is interchangeable with the assumption of navigational risk. This thus implies that the requirement of “commercial risk” is secondary to the definition of the *reder*.

Support for this argument is further anchored in the regulation of time charter parties, where the time charterer assumes the commercial risk for the period in which the vessel is chartered, while the *time carrier* retains the navigational risk. According to MC § 151, the time charterer is not vicariously liable for neither the Master or crew⁵², as the *time carrier* bears this responsibility. The result is that it doesn't matter in terms of non-contractual liability whether or not the charterer has the commercial responsibility – and as such it must be the navigational responsibility that is determinative for the obligations and responsibilities in the ship owner role.

3.3.3 Navigational Risk and Autonomous Operation

The definition of the *reder* under Norwegian law can thus be described as the entity bearing the navigational risk of the vessel. This fits well with the definition commonly referred to in literature: the “person who operates the ship for his own account”.⁵³ “[F]or his own account” must be interpreted to encompass navigational risk – and thus risk in general. Subcontracting an operator does not necessarily mean that the operator becomes the *reder*, as the ship owning entity still may stipulate navigational

⁵⁰ ND 1948-305, ND-1949-13 and ND-1949-416.

⁵¹ ISM Code 1.1.2.

⁵² Falkanger op. cit. p. 168.

⁵³ Ibid.

orders in which the operator must adhere to. In essence – the actual navigation may be transferred to an operator – but the navigational *risk* as such remains with the ship owner.

In the YARA BIRKELAND case – the registered shipowner still retain both the navigational and commercial risk. The ship owner is thus operating the ship for its own account – merely subcontracting the navigational *operation* to another company subject to the ship owner’s orders. This is not enough to transfer the legal liability of the registered shipowner to the operator – and thus collision liability will as a starting point be channelled to the registered owner. The ship owner can however claim damages through contractual recourse, subject to the contractual relationship between the parties.

Liability will thus in most cases be channelled to the registered shipowner as long as the vessel is not bareboat chartered or otherwise requisitioned. The action of contracting with a remote operator can in relation to autonomous shipping be looked upon as contracting a Crew Manager, rather than a transfer of actual navigational risk. Shall the registered owner avoid such channelling of liability the ship must thus be bareboat chartered out. If this is not the case – the registered ship owner retains the legal responsibilities of the *reder*.

For the sake for simplicity, I will hereinafter use *ship owner* as a direct translation of the Scandinavian term *reder*.

3.4 On the Rules of Ship-to-Ship Collision Liability

3.4.1 A Fault Based Assessment

Looking closer at MC Chapter 8, it is clear that it enacts an idiosyncratic liability regime⁵⁴ regarding collisions, and as a result, the Court may not impose so-called *strict liability*. This is in contrast to the doctrine of strict liability developed in ordinary Norwegian tort law, in which the Court may impose liability even when it cannot be established fault⁵⁵. In terms of collisions at sea, strict liability has only been imposed on ship owners a few times, most prominently in ND-1921-519 NEPTUN, ND-1952-320

⁵⁴ Compare the Norwegian Tort Act of 1969.

⁵⁵ Inter alia RT-1972-965.

and ND-1969-389 LADOGALES, but never in collisions involving *ship-to-ship collisions*. There is as such evidently only to a very limited degree place for strict liability in Norwegian maritime law⁵⁶.

Another and more recent example that substantiates this unwillingness to impose strict liability in ship-to-ship collisions, is the Hazardous and Noxious Substances by Sea Convention of 1996 (hereinafter “HNS Convention”), which is ratified by Norway, but not yet in force. The convention stipulates in Article 42 that the Collision Convention is to take precedence in cases of conflict between the two conventions.

Highlighting the unwanted situation⁵⁷ that might occur when a ship from a Collision Convention-state ship collides with a non-Collision Convention-state ship, i.e. not being able to impose strict liability for HNS damage, the Maritime Law Committee recommended the Norwegian Government in 2003 to resign from the Collision Convention. Albeit termination of the Collision Convention being discussed and accepted at the HNS diplomatic conference, ref. LEG 87/11 no. 13, Norway decided⁵⁸ in consultation with the Swedish and Danish governments to deviate from the Committee’s recommendation, and remain a party to the 1910 Convention for the time being.

This contributes to illustrate the strong and active standing of the fault based liability in the sphere of the Norwegian law governing ship collisions. There is little that signifies a change in this practice – as also is apparent from the subsequent referenced Court practice. The fault based collision liability in MC Chapter 8 thus remains a reputable and resilient *lex specialis* in Norwegian law.

3.4.2 Relevance of Foreign and Scandinavian Practice

Before I continue to establish the scope of applicability of MC § 161, I should say a few words on the special standing of foreign – and more specifically Scandinavian – judgements as a source of law in the Norwegian maritime cases. It is a long-term practice to look to the neighbouring countries when it comes to maritime cases⁵⁹ – as the Maritime Codes in Norway, Sweden and Denmark originates from an inter-Nordic collaboration⁶⁰. To a great extent this is also applicable to Icelandic and Finnish maritime and transport law, in which Finland also is signatory to the Collision Convention

⁵⁶ Mahmood (2016) p. 25 with reference to Selvig op.cit. p. 420 and Nesdal (2017) p. 1-69.

⁵⁷ Prop. 46 LS (2014-2015) s. 26- 27

⁵⁸ Ibid.

⁵⁹ ND-1998-414 p. 427.

⁶⁰ Brækhus op. cit. p. 3-6, and NOU 1992:32 generally.

and thus harmonized in terms of ship-to-ship collision liability. Also, Icelandic collision liability mirrors the same concepts, see inter alia §§ 158-162 of the Icelandic Maritime Act⁶¹.

Another reason is that collision cases are substantially fact dependent. Even though the Court will base its decision on the applicable provision's wording and general considerations, it will as an auxiliary look to the allocation and evaluation of fault made in similar cases without prejudice to the jurisdiction. Especially judgements from the Danish Maritime and Commercial High Court is considered to be especially relevant due to its long standing expertise in maritime matters, as stated on page 427 in ND-1998-414 NCA VAREN. In essence, it is thus clear that the Nordic Courts tend to look to Scandinavian jurisdictions in maritime matters – and that Norwegian maritime law as such has a strong Scandinavian (and nonetheless Nordic) dimension. In the following I will thus reference cases across multiple jurisdictions.

3.5 On the Material Law of MC §§ 161, 162 and 163

3.5.1 Legal Requirements of § 161

It follows from MC § 161 (1) that its application is determined by the fulfilment of three requirements;

- (1) there must be two or more *ships* involved
- (2) there must be a *collision* between those ships
- (3) the collision must subject to Norwegian jurisdiction⁶²

The above raises two immediate questions, in terms of what constitutes a “ship”, and what constitutes a “collision”. In the following I will consider the two independently.

3.5.2 On the Ship Requirement under § 161

Regarding the ship definition, one has to take its ordinary meaning into consideration. Falkanger op. cit. have in legal literature identified three factors that compromises a *ship* under the Maritime Code. In order for an object to be considered a ship, it has to

⁶¹ Siglingalög no. 34/1985.

⁶² Cf. Dispute Act of 2005 § 4-3.

be a “floating construction”⁶³, “capable of transport of goods or persons” and “intended and capable of moving on or through the water”⁶⁴. It also follows from MC § 507 (2), that a drilling rig and similar mobile constructions are to be “regarded as ships” in relation to, among others, MC chapter 8. This is the case when the construction “wouldn’t normally be regarded as a ship” and is “intended for use in exploration for or exploitation, storage or transportation of subsea natural resources or in support of such activities”.⁶⁵

The provision must be construed in light of the Petroleum Act, which regulates liability differently than the Maritime Code – and thus must be considered a special extension of the ship definition rather than a part of it. The term “similar” is also subject for closer interpretation, and an ordinary understanding of the word would imply that there is some element of size and function involved, as drilling rigs are substantive in size compared to a pipeline inspection unit.

Such interpretation was also considered by Hammer in 2004, which argued that a remote operated submarine couldn’t be considered a ship within the scope of the Maritime Code due to its small size, even when involved in petroleum activities prescribed by MC § 507.⁶⁶

That the ship definition encompasses a certain size requirement is therefore very likely, especially concerning equipment used in the oil and gas industry. RT-1973-1334 gives some further guidance as to the relevance of the size requirement concerning non-petroleum related vessels. In this judgement, a 14-foot (4,2 meter) speed-boat was considered a *ship* under the scope of the Maritime Code – and thus the size requirement seems less imperative in terms of traditional sea-going vessels. In practice, the ship definition is seldom and issue.

In some situations, however, there might also be a question coming what encompasses the *ship* in terms of its equipment and appurtenances.

In this regard it is useful to consider the result of ND-2000-100 DSC, where the Danish Supreme Court found that one must distinguish between the ship’s equipment and its appurtenances. Damage caused by a ship’s appurtenances is likely to be considered to form part of the ship, i.e. when a ship’s anchor or hatches is inflicting damage, as opposed to damage inflicted by equipment. In the aforementioned judgement, a towed

⁶³ Falkanger op. cit. p. 50.

⁶⁴ Ibid.

⁶⁵ Norwegian Maritime Act of 1994 § 507.

⁶⁶ Hammer (2004) p. 1-39.

seismic cable was considered to be equipment rather than an appurtenance, and as such not a part of the ship.

Considering the ship definition, it is clear that Falkanger et al.'s identified assessment factors are useful in establishing whether an object is to be considered as a ship or not.

This further raises the popular question if an autonomous vessel can be considered a ship or not under Norwegian law.⁶⁷ I would here argue that the term “autonomous vessel” is an umbrella definition, a mere category for describing an ordinary vessel equipped with certain autonomous features. Even today's ocean-going vessels are operated at various LOA, and a vessel cannot only on this basis be categorized differently. This would be incompatible with the established ship definition.

A recent example, and the closest we get to an evaluation of the ship definition concerning an autonomous vessel operating at a LOA above six, can be found looking at the 2006 collision between the “Njord B” FPSO, and the shuttle tanker “Navion Hispania” which was equipped with a redundant dynamic positioning system.⁶⁸ In this case⁶⁹, the Court assumed that both parties to the collision were to be considered “ships”, and evaluated fault under § 161.

The fact that the collision with Njord B was instigated during Navion Hispania operating at a high LOA, makes this a particular interesting case that I will return to later.

3.5.3 On the Collision Requirement under § 161

In order to become subjected to the rules of Chapter 8, there also needs to be a collision between two or more ships.⁷⁰ What constitutes a “collision” is seldom an issue – but from the ordinary meaning of the word one can deduce that there must be some kind of physical contact between the ships⁷¹ resulting in damage. The provision does not stipulate any requirements as to whether or not the ship must be moving. As such, a stationary, or even a moored ship, will be subject to the same evaluation of fault as the moving one.

⁶⁷ Osmo op. cit. p. 4-6.

⁶⁸ A two-powertrain redundant dynamic position system (DP2), which allows the ship to automatically maintain its exact position during loading/offloading.

⁶⁹ ND-2013-201-NCA NAVION HISPANIA.

⁷⁰ Inter alia ND-1975-366-NCC HAUGSNES and ND-2004-175 DCA BIRGIT.

⁷¹ Falkanger op. cit. p. 269.

It should also be evident that what type of propulsion is behind the movement of a ship is irrelevant⁷², i.e. a ship-to-ship collision caused by a ship moving due to strong currents vs. its own engine is both subject to § 161.

§ 163 further provides an exemption to the § 161 requirement that an actual and physical collision must be taken place “between ships”. It stipulates that § 161 also applies to damage caused by a ship’s manoeuvring, or “in similar ways”, although no physical collision takes place between ships. In other words, so-called “collision without contact”. The wording “in similar ways” is relatively new, and was changed⁷³ from “in other ways” in 1973 in order to better mirror the Collision Convention article 13, which stipulates that it also applies to collisions caused “by the execution or non-execution of a manoeuvre or by the non-observance of the regulations, even if no collision had actually taken place.” As this is a precise wording presuming that the collision is linked to the manoeuvring of the vessel, § 163 should be interpreted restrictively, with emphasis on the “similar”-requirement.

A situation falling under § 163 will typically be the case when a ship tries to avoid a collision, but in the process incurs damage. One textbook example is the case of when a Master orders his vessel to run aground instead of colliding with the other ship⁷⁴. Other cases involve ice breakers breaking ice in a narrow strait, causing sheets of ice to move about and damaging nearby moored vessels.⁷⁵

In the two recent ice cases, no fault was in fact established. The Court argued that no negligence could be identified in the ice breaking operation, even though there was causality between the ice breaking and the damage. This was the result in both ND-2008-252-NCA TOR/MÆRDØ and LB-2012-77585-NCA (EMIL/JELØEN).

The collision requirement can be summarized in a few words: A ship will be subject to the special liability regime in MC Chapter 8 if two or more ships either physically makes contact, or one of them manoeuvres in such a manner that results in damage to the other.

⁷² ND-2000-367-NCA TOP SHELF.

⁷³ Maritime Law Committee IX (1973) p. 33 with reference to Ot.prp.nr.4 (1913) p. 1.

⁷⁴ ND-1995-282-NCA VEABAS.

⁷⁵ See also ND-1975-175-DCC QUEEN OF THE WAVES (concerning waves damaging a moored leisure boat) and ND-1998-414-NCA VAREN (concerning two ships capsizing due to a mooring attaching the one to the other).

3.6 On the Liability Imposed by Chapter 8

3.6.1 Outline of Chapter 8

When a ship is involved in a Chapter 8 collision, fulfilling both the ship and collision requirement above, its liability must consequently be established on the basis of an evaluation of fault.

If there is only fault on one side, that side will be obliged to cover the total damage alone, cf § 161 (1). If fault is established on both sides, the damage must be covered in proportion to the fault cf. § 161 (2). If there are no reasons to apportion in any “definite proportion”⁷⁶, the total claim for damages will be divided equally on the parties. If the collision is accidental, or if fault for other reasons cannot be established on either side, “each ship bears its own losses”, cf. § 163. These other reasons can for example be that the parties to the collision fail to fulfil their burden of proof – i.e. no fault can be established on either side.⁷⁷

Before going closer into the core of the subject matter it is useful to consider the outline of Chapter 8 – and the nature of these rules. On first glance it is apparent that the rules on liability contained in Chapter 8 are not regular impositions and prohibitions, prescribing a certain standard of care, but rather general rules sanctioning compensation for damage based on a universal notion of fault and negligence.⁷⁸ As such, the maritime collision liability regime contained in Chapter 8 is more of a flexible framework. The evaluation of fault must therefore be considered a tool catering to the many dimensions of care that is necessary in maritime operations, and where a detailed doctrine of liability quickly would find itself inadequate to the wide array of situations that can occur at sea.

Nevertheless, one could argue that the *1972 International Regulations for Preventing Collisions at Sea*, commonly known as the *Rules of the Road*⁷⁹ or *COLREGs*, serves this function – at least in terms of providing a benchmark, a standard of conduct, for behaviour at sea. The standard of care, however, must be individually applied – and as such remains a counterbalance to the prescriptive COLREGs, sanctioned by Chapter 8.

⁷⁶ Maritime Code op. cit. § 161 (2)

⁷⁷ See Section 5.2.2.

⁷⁸ Ringdal op. cit. p. 378.

⁷⁹ Falkanger op. cit. p. 278.

3.6.2 Supporting Regulations and Legal Frameworks

Therefore, it is apparent that Chapter 8 alone gives little guidance in terms of what standards of care and conduct should be exceeded in order for a ship owner to be at fault, and thus subject to liability. To establish this, one must look to other laws and regulations paramount to ship safety and security, where both national and international guidelines may be relevant.⁸⁰ The aforementioned COLREGs⁸¹ (norw. sjøveis-reglene) is highly relevant in this regard, but also other international frameworks, such as the ISM-code and SOLAS, is of importance. Commonly, relevant maritime safety frameworks are adopted in national law through the SSA and its regulations. Behaviour contrary to the prescribed conduct can often lead to the establishment of fault, and the Court will seek to develop a specific standard of care and standard of conduct based on these regulations in each individual case.

A stand-alone infringement of the COLREGs is for example usually not enough to establish fault alone, and good seamanship, inter alia, will generally take precedence over the material rules of the regulation.⁸² The safety regulations thus *complement* the evaluation of fault in Chapter 8, and there is thus still significant room for discretion in the Court's evaluation.

Additionally, § 161 (5) contains some guidance concerning the weighting of the arguments, stipulating that upon determining the question of fault, "the Court shall especially consider whether or not there was time for deliberation".

⁸⁰ Ringdal op. cit. p. 378.

⁸¹ Regulation FOR-1975-12-01-5, cf. Ship Safety and Security Act of 2007 §§ 2, 14, 19, 20 and 44.

⁸² COLREG Rule 2.

4 On the Courts' Relationship to Chapter 8

4.1 General Observations

Looking closer at how Chapter 8 has been interpreted in past cases⁸³, it is evident that the Court seldom takes it time to thoroughly interpret the legal provisions. The preparatory works, supporting documents and literature remains legally untouched – with the exception being Chapter 8's inapplicability to collisions with fixed objects – which quite frequently is established as applicable law.⁸⁴ As I will illustrate below, § § 161, 162 and 163 is more made reference to, than commented on.

The same is to a certain extent true for the COLREGs. Although it can be considered a material appendage to Chapter 8, and as such is prominently and frequently referenced in all collision cases – they are often assumed without subjecting its content to a broader interpretation. In most cases the COLREGs prescribes a certain standard of conduct, but contrary to an ordinary tort law evaluation, the fragmented levels of negligence, gross negligence and fault is to a lesser degree applied.

It can thus be observed⁸⁵ that the distinction between the levels of negligence and fault is highly relativized in collisions. Instead of establishing a standard of care and conduct, and consequently comparing this against the actual behaviour to determine the level of negligence, the Court's practice has been to determine fault based on one holistic and un-fragmented evaluation of the facts of the case.

Law will never be a numerical science, and as such one should naturally be careful in drawing legal conclusions based on statistical data. However, in terms of researching and identifying the Court's evaluation of fault, a statistical analysis is a useful tool. Statistics does not necessarily exclude legal analysis, and with this in mind the following numbers are quite interesting.

⁸³ Ringdal op. cit. p. 378 and Annex I.

⁸⁴ Inter alia ND-1952-320-NSC SOKRATES p. 338.

⁸⁵ See Annex I.

4.2 Ship-to-Ship Collisions: Court Referrals vs. Actual Incidents

Looking at the number of referred cases vis-à-vis actual collisions, there is clearly a shortage of cases. In the one-hundred-year period 1918- 2018, only 315 cases concerning collisions were referred to the courts, an average of about three per year.⁸⁶

In this period however, there has reportedly been numerous collisions, well exceeding the number of Court referrals. Only in Norway⁸⁷, as much as 2,447 collisions have taken place since the Norwegian Maritime Authority started recording collisions in 1981. Assuming, for illustrative purposes, that this is a representative number for a longer period of time, ensues an average of 68 ship collisions per year. This amounts to about 7,000 collisions in the last one-hundred-years – only taking Norwegian jurisdiction into account. In Denmark⁸⁸ and Sweden⁸⁹, the same number is respectively about 3,000 collisions, using the same methodology as above.

When looking at the number of submitted cases in combination with the number of collisions, it is thus apparent that only about 1 in every 32 collisions is subject to Court proceedings. When investigating closer, one can also observe that the number of Court cases per year have declined significantly over time, while the number of actual collisions is more or less at a steady level.

In the period between 1900 and 1918, ND published a total of 168 cases⁹⁰ concerning ship-to-ship collisions – an average of about *ten* cases per year. In the next 50-year period, between 1918 and 1978, this was more than halved to about *four* cases per year,⁹¹ and between 2002 and 2018, only *fifteen* cases⁹² were submitted to Court – placing the number of average cases referred yearly at *one*.

When looking at this negative correlation between referred cases and actual collisions, one can safely assume that ship owners (and hull insurers) preferably are settling ship collisions outside of court.

⁸⁶ See Table 2.

⁸⁷ Norwegian Maritime Authority (2017).

⁸⁸ Statistics Denmark (2016).

⁸⁹ Swedish Transport Authority (2016).

⁹⁰ NDS Main Register 1900-1918.

⁹¹ NDS Main Register 1918-1927 and Ringdal (1973) p. 382.

⁹² NDS 2001 to 2016 and LOVDATA.

4.3 On the Trends and Patterns of the Allocation of Fault

In terms of reporting on the different allocation of fault in the judgements, it is sometimes useful to distinguish between cases in which both vessels are moving, and cases in which one vessel is at a standstill. This is correlated with the likelihood of whether or not the Court will institute fault all on one side.

In the last one-hundred years, these allocations of fault have been rendered by Scandinavian courts:

Table 2: Allocation of Fault in Ship-to-Ship Collisions 1918 - 2018

Period	Allocation of Fault 1918 - 2018									Tot.	Avg.
	100/0	90/10	80/20	75/25	66/33	60/40	50/50	0/0	...		
1918 - 1927 ⁹³	18	0	0	2	5 ⁹⁴	1	9	3	3	41	4,1
1928 - 1972 ⁹⁵	107	3	2	18	14	2	34	21	6	207	4,7
1973 - 1981 ⁹⁶	11	0	2	0	1	0	2	6	0	22	2,5
1982 - 1991 ⁹⁷	5	0	1	2	0	0	2	2	0	12	1,2
1992 - 2001 ⁹⁸	8	0	1	3	1	1	2	2	1 ⁹⁹	19	1,7
2002 - 2011 ¹⁰⁰	6	0	0	0	0	0	0	3	0	9	0,9
2012 - 2018 ¹⁰¹	4	0	0	0	0	0	1	1	0	6	0,6
Total	159	3	6	25	21	4	50	38	9	315	3,1
% of all cases	51 %	1 %	2 %	8 %	7 %	1 %	16 %	11 %	3 %		

Ships moving	98	2	5	N/A	N/A	4	N/A	13	N/A
Ship at standstill	61	1	1	N/A	N/A	0	N/A	25	N/A

From the table above, it is clear that there are certain trends in what allocations have been made. In only a minority of the cases – so-called *precise allocations* have been made. This is typically allocations in specific and skewed percentages, for example 84/16¹⁰², 90/10¹⁰³ and even non-integer allocations such as 82,2/17,8¹⁰⁴. As I will revert to later, this is usually a distribution resulting in that each side have to bear its own

⁹³ NDS Main Register op. cit.

⁹⁴ In ND-1918-66 GJØVIK (collision in fog) the allocation of fault was divided 66/33 in addition to the main culprit having to cover the damage to his own ship, which was marginal.

⁹⁵ Ringdal op. cit. p. 380-397.

⁹⁶ NDS Main Register op. cit.

⁹⁷ Ibid.

⁹⁸ NDS 1992 to 2001.

⁹⁹ ND-1999-293 COLOR VIKING (allocation 82,2 / 17,8).

¹⁰⁰ NDS 2002-2012.

¹⁰¹ NDS 2011-2015 and LOVDATA-linked cases MC Chapter 8 2015-2018.

¹⁰² ND-1939-380-NSC GUNDEVANG/RUDOLF and ND 1938-454-DCC MADARE/SOPHIE

¹⁰³ ND-1930-321-NSC, ND-1935-419-DCC and ND-1938-373 DCC

¹⁰⁴ ND-1999-293 NCS COLOR VIKING

costs.¹⁰⁵ Concurrently, one can observe that in the last fifty years, more *general allocations* of fault seems to be the trend – mirroring the contemporary academic discourse.¹⁰⁶

I have in my research identified four main categories of allocations in collision cases, each with its distinctive features in terms of the evaluation of fault and material result:

- 1) *Single fault collision*, where only one side is to blame
- 2) *Zero fault collision*, where no side is to blame
- 3) *Fractional fault collision*, where there is unequal fault on both sides
- 4) *Common fault collision*, where there is equal fault on both sides

Before conducting a legal analysis of the Court's evaluation of fault, I must first provide some context and consider the main factual trend lines in the different categories of allocation.

4.4 Single Fault Collisions

4.4.1 General Observations

Naturally, single fault allocations are more common in cases where one ship is at a standstill. A ship which is moored, or for example at a full stop, and subsequently gets hit by an incoming ship is hardly ever at fault, albeit there exist extraordinary cases. One such case, where the fault was reverted in full to the stagnant ship, was ND-1922-503 NCC, in which a moored ship's lanterns wrongly signalled that it was moving and was subsequently hit by an incoming ship. The Bergen Maritime Court found that no fault could be established in respect of the incoming ship, but that the moored ship was in violation of the 1922 equivalent of the COLREGs concerning signals. As such, the moored ship was found solely to blame for the collision.

Another, and more recent judgement, can be found in ND-1980-74 SAA, where a speed boat collided with a stagnant sailboat at night in a busy strait. The speed boat was not exceeding the speed limit in the strait, and for this reason not found negligent. The sailboat however did not carry the correct light signals for being in a standstill position, and the arbitration tribunal found that it was negligent to not ensure that its

¹⁰⁵ Before ND-1999-293 NCS COLOR VIKING there has only been nine judgements resulting in a precise allocation of the damages. Compare Ringdal op. cit. p. 380.

¹⁰⁶ Falkanger op. cit. p. 270.

lanterns were lit. As such, the sailboat was negligent and had to carry the whole collision liability.¹⁰⁷

The liability is however usually imposed the other way around, and the clear tendency is that the standstill ship-to-ship collision cases, the incoming ship is at fault. Out of all single fault collision cases reviewed, 38 % concerns cases in which at least one ship is at a standstill. These cases are many, but are fairly uncomplicated in terms of the evaluation of fault. More interesting is the remaining 98 cases in which both ships are moving – and where the Court consequently have instituted single fault liability on one of the parties.

4.4.2 Trends and Patterns in Single Fault Collisions

In terms of trends, one can immediately identify that a prerequisite for single fault liability is that there can be established one specific or accentuated cause to the collision. This will usually be the case when a ship is in a gross violation of a prescribed standard of conduct, especially in terms of the COLREGs or applicable safety regulations. Over the last one-hundred years, 84 % of the single fault collisions by moving ships can be attributed to the violation of one or more of the provisions of the COLREGs concerning the right of way, signals, speed and look-out violations. The other cases include inadequate maintenance (2 %), and general negligence in terms of not understanding the situation materialising and its associated risk (14 %). Another interesting observation is that in 12 % of all cases, contributing errors on the other part is wholly excused, and full liability is imposed on one ship.

The following table illustrates my findings, sorted on the applicable COLREG violation category:

¹⁰⁷ See also ND-1984-60 DCA (prosecution).

Table 3: Single Fault Collisions Involving Moving Ships 1918 - 2018

Period	Single Fault Collisions Involving Moving Ships					Total	Avg.
	<i>Violation: right of way</i>	<i>Violation: speed</i>	<i>Violation: signals</i>	<i>Violation: lookout</i>	...		
1918 - 1927	4	1	3	0	3	11	1,1
1928 - 1972	33	11	12	8	0	64	1,5
1973 - 1981	3	0	0	0	4	7	0,9
1982 - 1991	1	0	0	0	1	2	0,2
1992 - 2001	1	1	0	0	4	6	0,6
2002 - 2011	1	1	1	0	2	5	0,5
2012 - 2018	2	0	0	0	1	3	0,5
Total	45	14	16	8	15	98	1,0
~ %	46 %	14 %	16 %	8 %	15 %		

As one can observe, the period itself seems to be an important variable. Single fault in terms of deficient lookout or violation of signal requirements is not really instituted anymore.¹⁰⁸ In general one can observe a decline in cases per year, from 1,5 single fault collisions per year in the period between 1928 and 1972, to a steady 0,5 per year since the mid-1990s. This trend can also be observed looking closer at the cases referred between 1962 to 1972, which was only 9.¹⁰⁹ War might also have a significant impact on the statistics, and could contribute to the explanation for the high numbers of collisions in the years surrounding 1918 and the 1940s.¹¹⁰

However, one should also observe that even though the number of single fault collision cases has declined, so has the aggregate number of referenced cases¹¹¹. While constituting about 50 % of all collision cases between 1918 and 1972, at 125 cases out of 246, the numbers are actually not significantly different in the period from 1973-2018. In this period, single fault collision cases constituted as much as 52 % at 34 cases out of 65. This is actually contrary to Ringdal op. cit., which predicted a significant decline in single fault collisions from 1970s and onward. While this is partly the case, it is evident that adjusted for the general decline of collision cases referred to the Courts – single fault collision liability has remained at a steady level relative to the total number of collisions over the last one-hundred years.

¹⁰⁸ However, see ND-2005-503-DCC LILLE TANJA (dissenting judgement).

¹⁰⁹ Ringdal op. cit. p. 382.

¹¹⁰ Parchomovsky (2018).

¹¹¹ See Table 2.

What has changed, is the increasing percentage of single fault being imposed due to so-called *general negligence*, conduct which cannot be specifically linked to a violation of a COLREG rule. While largely absent until the 1970s, general negligence has been the basis of single fault liability in 50 % of the cases ever since.

One example of this *general negligence* is found in ND-2006-558-DCC FJORD NORWAY, where a Danish tugboat became stuck between the quay and a departing ferry, sustaining heavy damage. The Danish Maritime and Commercial High Court found that the tug had not exhibited any fault, but that the ferry should have been more attentive in departing from the quay. In accordance with § 161, single fault liability was imposed on the ferry.

Another example is the classic case of ND-1995-365-NCA WEST ALPHA. Here, single liability was imposed due to the AHTS vessel's failure to exhibit due care, as no fault could be established on the part of the drilling rig.

4.4.3 Observation: Emerge of a Dominant Cause Principle?

That absolutely no fault on one side is a prerequisite for the Courts to impose single liability is however not the case. Another observation is that there seems to have been developed a *dominant cause principle* in single collision liability cases.

This principle is observed in two variants: (1) in terms of the Court actively excusing smaller contributing and causal errors on part of the innocent ship, and (2) in terms of the Court imposing full liability on the dominating cause leading to the collision. These variants are similar, but also quite different.

The first variant is applicable to older judgements, 1918 to about 1985, and was previously identified by Ringdal as a Scandinavian equivalent of the American “major/minor” doctrine.¹¹² He identified seven clear cases in which contributing faults had been excused on one side, and in extending the time period subject to research, I have been able to identify three more. Three from the 1920s and one from the 1970s.¹¹³

In ND-1975-25-NCA ELGO, a ship collided with another ship while overtaking it, and was found at fault. The other ship did not have sufficient lookout to the rear, and could possibly avoided the collision. This was nevertheless not considered material to the *induction* of the collision and was wholly excused. Single liability was therefore imposed on the overtaking ship.

¹¹² Ringdal op. cit. p. 383.

¹¹³ ND-1921-581-NSC, ND-1926-161-NSC KONG OLAF and ND-1927-81-NSC NADDODD.

Recent judgements now however seem to adopt the second variant, attaching all fault to the dominant cause even though contributory fault is found on both. The Court thus finds and establishes fault on both sides, but imposes liability only on one. Immediately, this does not seem to be compatible with the wording of § 161, which states that “If there is fault on both sides, they shall cover the damage in proportion (...)”.

This alternative interpretation of § 161 however, appears to be rooted in a Norwegian Supreme Court judgement¹¹⁴, ND-1986-79-NSC NORDNORGE, and seems to warrant the dominant cause principle that has developed hereafter.

In this 1986 judgement, the Supreme Court stated, confirming the Court of Appeal’s verdict¹¹⁵, that in its the evaluation of fault, no emphasis was put on the failure to produce a signal on part of the privileged vessel¹¹⁶. In the original verdict, the Court ruled that even though the cargo ship *Coaster Debby* was in violation of COLREG rule 34a concerning the signalling of manoeuvres, this violation did not contribute to the collision, which as this point was inevitable.¹¹⁷ Consequently, full liability was imposed on the passenger ship *Nordnorge*, and *Coaster Debby* was acquitted.

In closer review, this rather seems to reflect the Court’s general considerations of causality – as opposed to a development of a new rule on dominant causes in maritime ship-to-ship collisions. This was however not the approach a Norw. Court of Appeal took in ND-2006-417-NCA KONG HARALD, where it in its interpretation of § 161 stated that:¹¹⁸

“Even though fault can be established on both sides, [the Court] may still impose full liability on one, if its behaviour is deemed to be the dominating cause to the collision. Reference is made inter alia to RT-1983-105¹¹⁹ (pages 108-109) (ND-1986-79)”

Even though this interpretation hardly can be seen as warranted by the NORDNORGE case, the appeal of KONG HARALD was denied by the Supreme Court.

The second time one could observe the dominant cause principle in the sphere of maritime collision law was in TBERG-2012-171358. Here, the Bergen Court of First Instance¹²⁰, using the exact same language as in KONG HARALD, stated that even if

¹¹⁴ RT-1986-105.

¹¹⁵ Case of 27.01.1986 in L.no. 14 B/1986.

¹¹⁶ RT-1986-105 p. 109.

¹¹⁷ Ibid. p. 110.

¹¹⁸ ND-2006-417-NCA KONG HARALD p. 6.

¹¹⁹ Reference made to “RT-1983-105” but “RT-1986-105” is the correct one.

¹²⁰ TBERG-2012-171358 at section 7.1.

there is blame on both sides, full liability may be imposed on one, referring to NORDNORGE.¹²¹

The Court of First Instance here found that the feeder RANA FRAKT was “the dominant cause of the collision” and as such “must be held responsible for the entire damage”. The verdict was appealed in ND-2014-104-NCA, where the Court of Appeal corrected the allocation of fault to 50/50 after finding fault on both sides.

What is interesting is that the Court of Appeal confirmed the Court of First Instance’s interpretation of the law¹²², citing again the now established passage on the dominant cause principle from KONG HARALD, only correcting its *application*. The Court stated that the dominant cause principle, which also was invoked by one of the parties, could not be applied due to the facts of the case not resembling that of NORDNORGE – and as such could not be of significant guidance to the Court.¹²³

What can be inferred from these four cases, is that there is an ongoing, but inconsistent, development of a dominant cause principle in maritime collisions between ships. It seems like the first Supreme Court judgment was wrongly applied in the Court of Appeal’s interpretation of § 161 in 2006, and that the result from this judgement made its way into the 2012 Bergen Court of First Instance judgement which applied the principle as applicable law.

In some way one could argue that the last 2014 judgement concerning RANA FRAKT moderated the applicability of the principle – requiring more proximity with the original facts of the 1986-case. Nonetheless, the Court unmistakeably also confirmed its applicability.

What can be deduced from this is that the dominant principle perhaps is narrower than first assumed. Chapter 8 does not seem to warrant liability based on a dominant cause, and there is no support for this in the preparatory works. Neither have I been able to identify a similar foreign application of the Collision Convention. Looking closer at the NORDNORGE also reveals that there only is an ambiguous basis for such an interpretation of the judgement.

What seems to have happened is that the lower Courts are propelling a development in the fault assessment which is not warranted by applicable law.¹²⁴ Through KONG

¹²¹ ND-1986-79-NSC NORDNORGE p. 109-109.

¹²² ND-2014-104-NCA RANA FRAKT / ROBAS p. 3.

¹²³ Appeal to the Norwegian Supreme Court denied in HR-2015-57-U.

¹²⁴ See section 5.2.1 concerning causality.

HARALD, the Court wrongly interpreted NORDNORGE as an expression of a dominant cause principle. In RANA FRAKT (NSC), however, the practice seems to have been restricted somewhat, now requiring more proximity to the material facts to that of the NORDNORGE case.¹²⁵

The Court should in this situation rather have based its result on the non-causal relationship between the collision and violations of the so-called innocent ship. To establish fault on both sides, for then to impose liability on one is in collision with Chapter 8 – and consequently Norway’s international commitments to the Collision Convention.¹²⁶ That the subsequent appeals have been denied is accordingly surprising.

As an alternative to the dominant cause principle, I want to highlight Ringdal’s 1973 prediction that the Courts would reach single fault result by simply ruling that no fault can be established on the one side. Such solution seems much more elegant – and nonetheless in line with the Chapter 8 provisions.

I believe the dominant cause principle has little place in Scandinavian law – and deviates from almost one-hundred years of steady and conservative development of the collision liability regime. One could rather simply ask the question whether the privileged vessel reacted to slowly or could have acted differently.¹²⁷ If this is not case, there is simply no fault on one side – and the other side would have to bear the full liability.

In any case, it is difficult to establish whether or not the dominant cause principle is to be considered applicable law in terms of single fault collisions between ships. In the final analysis, based on the common factual realities of the cases both preceding and following KONG HARALD, one can infer that single fault liability in certain cases can be imposed even in cases where there is fault on both sides. This however requires that the fault on the other side is only marginal, and, that there is doubt as to whether there exists a causal relationship between the fault and the actual inducement of the collision.

As such, one can impose liability all on one side – either through Ringdal’s solution or through the wrongful application of a dominant cause principle, as accentuated in KONG HARALD.

¹²⁵ RANA FRAKT/ROBAS Ibid.

¹²⁶ Grönfors (1972) p. 360.

¹²⁷ Ringdal op. cit. p. 385 and ND-1973-135 SAA TOR NORMANDIA.

4.4.4 Applicability and Relevance to Autonomous Ships

In terms of relevance to autonomous vessels, I want to highlight two single collision liability cases. These are interesting due to fault being established on part of the failure to properly maintain the vessel.

In ND-1979-1-NCA MYREVÆRING, a new built ship was returning from a final test-voyage when the reverse gear overheated, and which following led to a collision with a moored ship. The erroneous installation of the gear (insufficient cooling) was the identified as cause to the collision, and the ship yard was found solely liable for the collision.

In NAVION HISPANIA op. cit. there was no fault on the FPSO (at the time of collision stationary and unmanned), and as such the question was whether or not there was fault on the side of shuttle tanker “Navion Hispania”. The Court found that a combination of both contaminated fuel, inadequate maintenance, and a failure to take human control when the autonomous system failed was the main causes of the collision – all attributable to faults within the sphere of responsibility of the ship owner. Navion Hispania was consequently found to be solely liable for the collision.

This has two main practical takeaways applicable to autonomous operation: Erroneous installation of equipment, as well as the failure to take human control over the vessel when operating on a higher LOA degree can reportedly lead to establishing fault, provided there is a causal link to the inducement of the collision.

4.5 Zero Fault Collisions

4.5.1 General Observations

Next, when the Courts are faced with a collision where there is no blame attached to either side, each ship will bear its own costs. In these cases, the collision is commonly attributable to the weather, or sudden accidental engine failure, without fault being attached to any of the involved ships.

In legal theory there has been a tradition to distinguish between two sub-types of zero fault collision; namely *uninformed collisions* and *causal collisions*.¹²⁸

¹²⁸ Evje (2016) § 162

*Uninformed zero fault collisions*¹²⁹ are identified as collisions where the both parties involved fails to fulfil the burden of proof, in terms of not being able to prove that the collision is not a direct consequence of that party's own fault/negligence¹³⁰ – including those the shipowner is vicariously liable for cf. MC § 151. When this is the case, the Court has ruled mutual acquittal as no fault can be established on either side.

*Causal zero fault collisions*¹³¹ is identified as collisions caused by events outside the sphere of influence of both parties, and as such no blame can be established on either side. Typically, this involves so-called *causal accidents* – where an integral engine part fails – causing the ship to be unable to come to a full stop. This was for example the case in ND-1971-36-NSC MARNA HEPSØ, where a splint in the gear linkage between the bridge and the engine room fell out, and as such hindered the ship to engage its reverse gear. This caused the ship to collide with multiple ships moored at a quay. No fault was found committed by the owner or the crew, and as such it was an “unavoidable” accident leading to the acquittal of the ship owner.

The table below illustrates the reported cases of zero fault collisions:

Table 4: Zero Fault Collisions 1918 - 2018

Period	Zero Fault Collisions				Total	p.a.
	<i>Causal</i>		<i>Uninformed</i>	...		
	<i>weather</i>	<i>system failure</i>	<i>no negligence established</i>	...		
1918 - 1928	1	0	1	1	3	0,3
1928 - 1972	8	6	7	0	21	0,5
1973 - 1981	2	2	2	0	6	0,8
1982 - 1991	0	2	0	0	2	0,2
1992 - 2001	0	0	2	0	2	0,2
2002 - 2011	0	0	3	0	3	0,3
2012 - 2018	0	0	1	0	1	0,2
Total	11	10	16	1	38	0,4
~ %	29 %	26 %	42 %	3 %		

Looking at the tendencies, it is clear that the *causal* zero fault collision cases have become rarer and rarer. *Uninformed* zero fault collisions however, seems to be the norm. Other grounds for not establishing fault has not been observed since the 1920s,

¹²⁹ ND 1979-1-NCA MYSEVÆRING/DRIFTIG, ND 1977-128-NCC HAVSTEIN, ND-1974-451-NCC FILIA, ND-1973-1-NCC, ND-1957-211-NCC

¹³⁰ Falkanger op. cit. p. 271.

¹³¹ ND-1980-277-NCC, ND-1971-36-NSC MARNA HEPSØ, ND-1994-59-DCC LOMUR/ØRE-SUND, ND-1945-177-DCC, ND-1951-423-NCC, ND-1963-318-NCA, ND-1972-235-NCA, ND-1973-1-NCC.

most prominently in ND-1925-241 NCC. Here, fault was established, but due to Finnish law at the time excusing errors made by a compulsory pilot, liability could not be imposed and each ship had to bear its own costs.

One example of an uninformed zero liability collision is found in ND-1994-59-DCC LOMUR / ØRESUND.¹³² In this judgement by the Danish Admiralty and Commercial High Court, the Court found that no negligence had been exhibited on part of two ferries inbound for Copenhagen. The cause of the collision had been the natural phenomenon occurring between the two ships when M/S Øresund overtook M/S Lomur. The vortex that materialised during the overtaking essentially sucked the vessels together – leading to a collision. Perhaps one could also identify this as an example of a causal (weather) collision – but these has been wholly absent since the 1970s – possibly due to the extensive cover for these accidents under marine insurance.

4.5.2 Applicability and Relevance to Autonomous Ships

In terms of zero fault collisions concerning system failure, I have identified three particularly interesting cases, in addition to the aforementioned MARNA HEPSØ.¹³³

Here it can be established that accidental system failure is a broad term, but it encompasses at least substantive mechanical failures, such as gear linkage failure¹³⁴, various electrical failures concerning steering controllers, including burned-out relays¹³⁵, and even malfunctioning autopilots¹³⁶.

In ND-1972-451-NCC FILIA, a tanker collided with another vessel due to a relay burning shut in the steering controller, causing a collision with another ship. The tanker was able to prove that there had not been negligence in terms of maintenance, and the Court acquitted the tanker on these grounds. The Court nonetheless demonstrated doubt in its evaluation, and stated in this regard that the tanker perhaps could be blamed for not attempting to avoid the collision when the risk for collision materialised itself.

In ND-1990-362-NCA ODDTUN, two freighters collided while both were operated by autopilot. The cause was a sudden failure (the Court used the word “blackout”) of

¹³² See also ND-1997-1 SCA STENA GERMANICA, ND-1975-175-DCC QUEEN OF THE WAVES, ND-1976-384-DSC JYTTE MARGRETE, ND-2010-294-DCC and ND-2002-327-NCA (prosecution).

¹³³ See also ND-1945-177 DCC, ND-1951-423-NCC, ND-1963-318-NCA, ND-1972-235-NCA and ND-1973-1-NCC UTVIK SENIOR.

¹³⁴ MARNA HEPSØ op. cit.

¹³⁵ ND-1974-451-NCC FILIA and ND-1990-116-DCC LIBAS.

¹³⁶ ND-1990-362-NCA ODDTUN, and to a certain extent ND-2013-201-NCA NAVION HISPANIA.

the autopilot operating M/S Oddtun, which consequently caused the ship to weave hard to port and collide with another vessel. The Court found that this was an “unfortunate accident”, and that that “an unexpected and unforeseeable technical failure of the autopilot that no one can be blamed for” had occurred. Even though the autopilot system was old, and had previously exhibited irregular navigation patterns, it was sufficiently maintained considering the circumstances and area of navigation.

Finally, in ND-1990-116-DCC LIBAS, a berthing F/B Libas rammed a moored ship due to sudden failure in the ship’s electrical system, causing the steering controller to malfunction. The ship owner had carried out all necessary maintenance, and as no negligence had been exhibited on part of the berthing ship, F/B Libas was acquitted.

A common line in these judgements is that through the application of § 162, one excuses non-maintenance related system failures. This is not surprising, as the fault requirement is not fulfilled. However, the Court now seems to emphasise if there was time for deliberation after the risk for collision materialises - which was accentuated in the case concerning the appeal of the above LIBAS-case. Here the Danish Supreme Court in ND-1994-17-DSC overruled the evaluation concerning the possibility to avoid collision, with the final result of establishing fault.¹³⁷

In all zero fault cases however, there has evidently been a *de facto* requirement that no human error has been a contributing factor to the collision. If the ship is in compliance with the applicable regulations – and no negligence or causation can be attributed the Master and crew – the ship owner will thus be limited to bear his own loss.

This is in contrast to other maritime jurisdictions, and among legal scholars this judicial doctrine is coined somewhat of a Scandinavian rarity. In U.K., German and U.S. law for example, collisions caused by failure of the vessel’s engine or mooring would be presumed to be the fault of the shipowner.¹³⁸ In the opposite direction, see French law.¹³⁹

Nonetheless, it is evident that the number of zero fault collisions is declining. From 0,5 collisions every year on average in the midst of the century – to about 0,2 in the present day – suggesting that the Courts are inclined to allocate fault in one way or the other – in so-called *fractional fault collisions*.

¹³⁷ In ND-1994-17-DSC LIBAS the Supreme Court found that by the time F/B LIBAS should have had discovered that the steering controller was malfunctioning, it was still time to avoid the collision.

¹³⁸ Selvig op. cit. p. 24.

¹³⁹ See French Transport Code article L5131-1 et seq.

4.6 Fractional Fault Collisions

4.6.1 General Observations

Fractional fault collisions can be divided into two types, *precise fractions* and *general fractions*. Precise fractions are allocations where one of the ships only is allocated a small portion of the fault – typically between 10 to 20 %. As the table below illustrates, specific fractions were common in the 1920s and 1930s, but now are less frequent. In the last 10 years, specific fractions have been wholly absent.¹⁴⁰

In this regard, it seems like the later judgements to an increasingly degree is polarizing the allocation of fault. In some cases, it excuses minor faults entirely – but in others allocates substantial blame to it. There is therefore no precise apportionment of the fault, as opposed to earlier times, and general fractions¹⁴¹ now seems to be the norm in the fractional allocation of fault.¹⁴²

Table 5: Fractional Fault Collisions 1918 - 2018

Period	Fractional Fault Collisions								Tot.	Avg
	90/10	87,5/12,5	82,2/17,8	80/20	75/25	66/33	60/40	...		
1918 - 1927	0	1	0	0	2	5	1	0	9	1,0
1928 - 1972	3	0	0	2	18	14	2	6	45	1,0
1973 - 1981	0	0	0	2	0	1	0	0	3	0,4
1982 - 1991	0	0	0	1	2	0	0	0	3	0,3
1992 - 2001	0	0	1	1	3	1	1	0	7	0,7
2002 - 2011	0	0	0	0	0	0	0	0	0	0,0
2012 - 2018	0	0	0	0	0	0	0	0	0	0,0
Total	3	1	1	6	25	21	4	6	67	0,7
~ %	4 %	1 %	1 %	9 %	37 %	31 %	6 %	9 %		

The alternative to this development would be that Court attach fault to even minor deviations from the standard of conduct or care. This is tied to the evaluation of fault of the reaction of the vessel that is least at fault – and concurrently an assessment aiming to establish whether or not that vessel could have done anything to either avoid the situation or limit the damages by acting differently.

This is called an *aversion assessment*¹⁴³, and in older cases, slow reaction, unassertiveness and deficient lookout on part of the privileged ship would often led to a small

¹⁴⁰ See Table 2.

¹⁴¹ Evje op. cit. § 161

¹⁴² Grönfors op. cit. p. 360.

¹⁴³ Ringdal op. cit. p. 382.

allocation of fault on part of the privileged vessel. Ringdal argued that there was a trend towards that contributory faults committed in collisions would either be excused entirely, or weighted so heavily in terms of the fault evaluation, that they resulted in an 50/50 allocation.¹⁴⁴

Ringdal's argument must however be adjusted slightly. Looking at the cases included in ND the last fifty years, the tendency observed is correctly that the *precise fractional fault liability* is becoming less common¹⁴⁵, but that the *general fractional fault liability* still are being imposed by the courts. Only from 1990 I have identified four 75/25 judgements¹⁴⁶, one 60/40 judgement¹⁴⁷, one 80/20 judgement¹⁴⁸ and one 66/33 judgement.¹⁴⁹ Since 1990, fractional fault collisions stands for about 40 % of all collision cases – hardly a decline compared with 20 % in the period from 1927 to 1972.

There is thus no reason to believe that the Courts are more inclined to allocate fault more definitively, in terms of 100/0, 50/50 and 0/0, when taking the statistical data into consideration.¹⁵⁰ One can rather observe that the Courts are still imposing fault on a wide fractional scale, but that it has become more consistent in its allocation - usually in fractions of 80/20, 75/25, 66/33 or 60/40.

This is also apparent looking at the factual circumstance in each case, which more or less corresponds to the fault imposed. Concerning the 80/20 allocation, this usually tied to one of the vessel insufficiently attempting to avoid the collision when the risk has materialised. See for example ND-1973-135 SAA TOR NORMANDIA, where the privileged vessel could have engaged its reverse engines sooner to avoid collision, but failed to do so.¹⁵¹

Also the 75/25 allocation encompasses the failure of the privileged vessel to avoid the collision, but at this level it is usually tied to the negligent behaviour *prior* to the collision materialising itself, such as insufficient lookout or failure to systematic use navigational aids when the situation calls for it. Thus, it is the failure to observe and detect

¹⁴⁴ Ibid.

¹⁴⁵ ND-1999-293-NCA COLOR VIKTIG: fault allocation of 82,2 / 17,8 essentially meant that both sides had to carry their own costs.

¹⁴⁶ ND-1991-96-DCC KRISTINE SØBYE, ND-1994-64-DCC ØRESUND, ND-2000-306-NCC CORONA and ND-2000-515-NSC MURMAN.

¹⁴⁷ ND-1995-115-DCC TREKRONER.

¹⁴⁸ ND-1999-432-NCC TAREHAV.

¹⁴⁹ ND-2000-157-NCA RISHOLM.

¹⁵⁰ In the opposite direction: Ringdal op. cit. p. 384.

¹⁵¹ See also ND-1974-307-NCC SKIENSFJORD (collision without contact), ND-1984-439-NCC SEAKITTIE and ND-1999-432-NCC TAREHAV.

the risk for a collision that is often considered negligent under this allocation, and typically in situations involving fog. This was for example the case in both ND-2000-515-NSC MURMAN and ND-1983-251-NCC CANTUARIA.¹⁵²

For the 66/33 allocation, this is typically imposed when the privileged vessel have done nothing to avoid the collision, i.e. holding its course until impact.¹⁵³ In a recent case, ND-2001-254-NCA RISHOLM, both vessels was in violation of COLREG Rule 5 (lookout), but one of the ships had actually spotted the other one at an earlier point of time the same night. This ship was therefore more at fault for not sufficiently tracking the whereabouts of the other vessel, and thus avoiding the collision. The privileged vessel did not detect the incoming ferry until the collision happened.

Lastly, and in terms of 60/40 allocations, there is not sufficient data to indicate any correlating facts.¹⁵⁴

In any case, a common denominator for all the fractional fault collisions is evidently the failure of being aware of the vessel's surroundings, as well as inadequate action when a collision is imminent.

4.6.2 Applicability and Relevance to Autonomous Ships

In terms of applicability of the factual circumstances to autonomous vessel collisions, there is little of immediate transfer value. There are however some factual takeaways, concerning negligence tied to the use of radar. The Court has in the aforementioned judgements established fault on part of vessels misusing or failing to use its radar. Applying this as an analogy to autonomous vessel operation, one could quickly imagine that autonomous vessels with advanced spatial awareness systems are from a fault perspective obliged to use the technology available - if this could have avoided a collision. Wrongful use will probably also be of the same concern. This is however not limited to autonomous vessel operation, but also newer vessels equipped with advanced awareness technologies.

¹⁵² See also ND-1919-313-NSC ALWINA, ND-1922-170-DSC LOLY JENSEN, ND-1991-96-DCC KRISTINE SØBYE, ND-1994-64-DCC ØRESUND and ND-2000-306-NCC CORONA.

¹⁵³ ND-1973-113-DSC ALMAZ, ND-1925-177-NSC, ND-1927-321-NSC and ND-1927-7-NSC ONYX.

¹⁵⁴ TREKRONER Ibid.

4.7 Common Fault Collisions

4.7.1 General Observations

Common fault collisions are collisions in which there can be established equal fault on each side, or, there is no reason for allocating fault in any definitive manner, cf. § 161 (2).

The distribution the last one-hundred years is illustrated below:

Table 6: Common Fault Collisions 1918 - 2018

Period	Common Fault Collisions				Total	Avg
	<i>Moving ships, equal allocation of fault</i>	<i>Standstill ship, equal allocation of fault</i>	<i>No allocation of fault warranted</i>	...		
1918 - 1927	6	1	2	0	9	1,0
1928 - 1972	-	-	-	-	34	0,8
1973 - 1981	1	1	0	0	2	0,3
1982 - 1991	2	0	0	0	2	0,2
1992 - 2001	1	1	0	0	2	0,2
2002 - 2011	0	0	0	0	-	0,0
2012 - 2018	1	0	0	0	1	0,2
Total	4	2	0	0	7	

It is not easy to identify any clear trends following the assessment of the common fault judgements on account of the sparse data. The general observation is that this allocation is applicable to situations where both ships could have avoided the collision, and the existence of significantly better alternative actions for both sides.

In the 1920s, fog was a common denominator,¹⁵⁵ while in later years negligent navigation on both sides has often resulted in the same allocation.¹⁵⁶

In addition to this the Courts have also been imposing 50/50 allocations in two special Supreme Court cases, one Finnish concerning a drunk Master,¹⁵⁷ and one Icelandic concerning pilot error.¹⁵⁸ Not taking these judgements into consideration, there has only been one case (RANA FRAKT) since 1985. Perhaps this is evidence to that the Courts now tends to allocate fault in one way or another – alternatively that these cases tend to be settled in between the hull insurers.

¹⁵⁵ ND-1920-369-NSC SKAL / RAN, ND-1922-90-NCA KRONPRINS OLAV / CUBA and ND-1927-417-NCC TENNESSEE / EK.

¹⁵⁶ ND-2014-104-NCA RANA FRAKT / ROBAS, ND-1984-36 FCC, ND-1983-343 NAA, ND-1972-222-NCA HJALMAR / LAUKHOLM and ND-1972-248-NCA RINGO / HERØYTRÁL

¹⁵⁷ ND-1994-237 FSC

¹⁵⁸ ND-1994-45 ISC

4.8 General Findings and the Evaluation of Fault

In the above I have pointed to several trends and patterns in case law. It is clear that ship-to-ship collision cases remains very fact dependent – something that is evident on account of the wide array of fault allocations in recent years. However, even though the Court is at liberty to take into consideration a magnitude of elements in the evaluation of fault, there are clear commonalities between the different allocations. In order to understand how the Court arrives at these results – I will in the following attempt to dissect and identify the elements of the evaluation of fault.

5 Elements of the Evaluation of Fault

5.1 Source of Law and Point of Departure

As mentioned, Chapter 8 contains little instructions in terms of the evaluation of fault.

It is therefore applicable law¹⁵⁹ that one must supplement § 161 with ordinary tort law, and as such, the question of fault must be addressed as the question of negligence under the ordinary evaluation of fault. A Norwegian Court of Appeal stated for example in ND-2014-104-NCA RANA FRAKT / ROBAS, that § 161 “expresses an ordinary tortious evaluation of fault”. As such, legal theory and cases strictly speaking outside the sphere of maritime law is also of relevance.

As the general evaluation of fault is largely based on tortious case law, and its elements is developed through a combination of jurisprudence and legal theory.¹⁶⁰ The evaluation of fault concerning ship-to-ship collisions may therefore vary slightly from other areas of law.

The starting point will thus be to establish “whether a party’s act or failure to act, which has caused the collision, can be considered reasonable in the light of what could be expected from a normally intelligent and insightful person in such situation”¹⁶¹.

The key requirement is thus that the ship owner, or anyone he is vicariously liable for,¹⁶² have exhibited negligent behaviour. According to Lødrup (2009)¹⁶³ it is the deviation from attentive, careful and responsible behaviour – i.e. the misconduct and negligence - that triggers liability.

In ordinary tort law, one distinguishes between wilful misconduct, gross negligence and simple negligence, but in the scope of maritime collisions this division has as illustrated above been less clear. Simple negligence is sufficient in order for the Court to impose liability¹⁶⁴, but this will naturally be subject to a comprehensive assessment of the individual circumstances of each case. As mentioned in the previous section, collisions cases tend to lead to a holistic and “at large” evaluation – and distinguishing the different elements of the evaluation is not always easy.¹⁶⁵

¹⁵⁹ Falkanger op. cit. p 277.

¹⁶⁰ Kjelland (2016) p. 31-32.

¹⁶¹ Falkanger op. cit. p. 277.

¹⁶² MC § 151

¹⁶³ Lødrup (2009) p. 133.

¹⁶⁴ Kjelland op. cit. p. 112 and Lødrup op. cit. p. 127.

¹⁶⁵ See also Wilhelmsen et al. (2017) p. 206-207 regarding marine insurance.

Elaborating on the negligent behaviour itself, this can be both *positive* and *negative* actions, in the way that failure to act can be just as negligent as acting wrongfully. The question of fault is thus a general question of whether or not the ship owner should have acted *differently* – or according to Nygaard¹⁶⁶ – whether or not the ship owner should have identified and subsequently reacted to the risk for damage. These two questions thus constitute the test in which the actions or non-actions of the ship owner can be measured against.

5.2 Burden of Proof and Causality

5.2.1 Conditional Causality

An integral requirement to establish fault is that there is sufficient causality between the collision (that is, the actual *damage* caused by the collision) and the action of the ship owner or his subjects. Ordinary principles of tort are applicable to this – and thus the starting point is the *doctrine of conditional causality* as accentuated in RT-1992-64. The principles establish that there is sufficient causality between an action and a collision if the action (or non-action) is conditional for the occurrence of the collision. Less substantive and contributory actions and elements can thus be omitted from the evaluation.

The doctrine was recently applied in the NAVION HISPANIA judgement,¹⁶⁷ and it is in legal theory considered applicable law.¹⁶⁸ In this regard it is interesting to consider the evolvement of the dominant cause principle as mentioned earlier,¹⁶⁹ as it is incompatible with the established doctrine of conditional causality. Lødrup, for example, states inter alia in his book on tort law that “today, it can safely be established that using a dominating cause as the starting point is incorrect”¹⁷⁰ This reference was also made by the Court in NAVION HISPANIA. As such, the conditional causality principle is the point of departure in assessing maritime collisions.

¹⁶⁶ Nygaard (2007) p. 174.

¹⁶⁷ LG-2012-77280 p. 15.

¹⁶⁸ Lødrup (2005) p. 255-256.

¹⁶⁹ See Section 4.4.3.

¹⁷⁰ Lødrup (2005) p. 263.

5.2.2 Burden of Proof

In terms of the burden of proof, the point of departure is that the injured ship owner has the burden of proving that no fault was exhibited on part of himself or someone he is responsible for under § 151.

However, in collisions where one ship is at a standstill, or otherwise not at fault, the burden of proof is to a certain extent reversed. The Norwegian Supreme Court stated in *MARNA HEPSØ* that "it must be for the tortfeasor to prove that the collision was due to the fact that reversing machinery failed at the crucial moment and that this was not due to fault or negligence from any of his crew." ^{171 172}

In practice, a reverse burden means that there is presumption of fault on part of the tortfeasor. It is therefore natural to ask if this warranted by Chapter 8, even though the convention's general point of departure is that the applicable burden of proof in the respective national law should be followed.¹⁷³

The Collision Convention contains a general principle of that "[a]ll legal presumptions of fault in regard to liability for collision are abolished", cf. article 6, 2. paragraph. Looking further at article 2 (1) of the same convention, it is also clear that in the case of doubt concerning the cause and fault of the collision, each party bears its own costs. This is also explicitly applicable "notwithstanding the fact that the vessel [or vessels] may be at anchor (or otherwise made fast) at the time of casualty".¹⁷⁴ A convention compliant interpretation of § 162 therefore suggests that a presumption of fault through a reversed burden of proof is not warranted.

Comparing the above to the *MARNA HEPSØ* judgment an important nuance is however accentuated. Selvig, for example, argues that the "reversed" burden of proof in this case goes clear of the prohibition, on the account that the starting point of the assessment is tied to the simple presumption that the ship which collides with a moored ship has exhibited some kind of fault.¹⁷⁵

¹⁷¹ *MARNA HEPSØ* op. cit. p. 39.

¹⁷² See also Selvig op. cit. p. 23 with reference to ND 1927-310-NSC *ERLING JARL*, ND-1970-247-NCC *ORDINAT* and ND-1973-1-NCC *UTVIK SENIOR*.

¹⁷³ Collision Convention art. 10

¹⁷⁴ Collision Convention art. 2 (2)

¹⁷⁵ Selvig op. cit. p. 24.

In other words, in cases concerning reverse engine and system failure, the question is rather if the failure could have been avoided had the ship owner acted differently. It is thus not a presumption of fault under the scope of the Collision Convention, as one simply assumes that the privileged vessel has acted diligently. In the final analysis, both vessels have to prove their innocence – and the reverse burden of proof is not identified as featured in the maritime ship-to-ship collision liability regime.

5.3 On the Subjective and Objective Elements of the Evaluation

Looking further at the elements, Falkanger states that the assessment of fault itself “is objective, and that subjective elements in the evaluation normally is discarded”¹⁷⁶. This statement I believe must be supplemented slightly. There are both subjective and objective elements in the evaluation of fault in collisions, but the starting point is agreeably objective, commonly described as “what reasonably can be expected by an insightful and sensible person”¹⁷⁷.

However, the assessment contains both subjective and objective elements. Even though it is clear that the standard of conduct is to be established on the basis of an “insightful and sensible person”¹⁷⁸, the standard of care must at the same time be “adjusted to reflect the function of the tortfeasor”,¹⁷⁹ as also was accentuated in RANA FRAKT.¹⁸⁰

In collisions, there will almost always be a specific function tied to the tortfeasor, and as such, the point of departure is not merely objective. Seldom is the tortfeasor the ship owner itself, i.e. someone in the senior management, but rather a person encompassed by § 151. One is therefore faced with an *independent* evaluation of fault – with both subjective and objective elements. Objective in the sense that one establishes the same standard of conduct for navigation at sea¹⁸¹, but also subjective in terms of the standard of care being adjusted to what reasonably can be expected by the particular Master and crew, in light of the individual function and association at large with the ship. It is here of central importance what contextual knowledge the Master and crew have had prior

¹⁷⁶ Falkanger op. cit.

¹⁷⁷ LA- 2015-158699

¹⁷⁸ Kjelland op. cit. p. 87 and Lødrup op. cit. p. 155.

¹⁷⁹ LA 2015-158699

¹⁸⁰ ND-2014-104-NCA

¹⁸¹ Convention on the International Reg. for Preventing Collisions at Sea (1972) cf. FOR-1975-12-01-5

to the collision, and in what degree they could be expected to identify the risk materialising.¹⁸²

The standard of conduct is thus mainly objective, while the standard of care is mainly subjective. These nonetheless agreeably interlinked.

5.4 Standard of Conduct and Standard of Care

5.4.1 Standard of Conduct

The standard of conduct is at sea particularly objective as it is to a large extent codified in the COLREGs. The importance of the COLREGs in the evaluation of fault is stated repetitively in judgements and theory.¹⁸³ In the aforementioned RANA FRAKT, the Court specified that “it is important, but not essential, whether the parties have been in compliance with the COLREGs”.¹⁸⁴ In ND-2000-515-NSC MURMAN the Norwegian Supreme Court stated that “[t]he COLREGs are central concerning the establishment of fault”.¹⁸⁵ Looking at the numbers, it is also evident that a COLREG infringement was the basis for fault in 45 % of the judgements between 1990-2018.¹⁸⁶

It is thus evident that the main objective element in the evaluation of fault is linked to the prescribed and stipulated standard of conduct, which in ship-to-ship collisions is regulated by the COLREGs. These will thus be instrumental in terms of establishing the standard of conduct to be expected of the ship owner’s subjects.

The COLREGs are applicable to all vessels sailing the open seas, and all adjoining navigable bodies of waters, cf. Rule 1a.

Even though the current COLREGs emerged in the 1970s, general collision regulations have been a feature of the Maritime Code since its inception in 1893¹⁸⁷, and is generally a field subjected to extensive international collaboration throughout the years. As such, the evaluations of fault concerning collision regulations predating 1975 is still of relevance.

Looking at the Courts’ assessment of the COLREGs, it is evident that the rules are subject to an ordinary interpretation of its wording. The COLREGs international and

¹⁸² Nygaard op. cit. p. 179.

¹⁸³ Falkanger op. cit. p. 278.

¹⁸⁴ ND-2014-104 p. 3.

¹⁸⁵ RT-2001-1172 p. 1178. (a.k.a. ND-2000-515-NSC MURMAN)

¹⁸⁶ See Annex I.

¹⁸⁷ Norwegian Maritime Code of 1893 § 370.

universal applicability also makes it a prerequisite that exemptions, or special national rules concerning navigation, must be expressly stipulated by law, cf. Rule 1 b) and c). Other local customs, written or not, are thus dismissed. See in this regard ND-2000-515-NSC MURMAN on page 523. In this judgement it is also clear that the Master's wrongful interpretation of the COLREGs also is irrelevant.

The comprehensiveness and objectiveness of the COLREGs makes its especially suitable for autonomous vessels operation. The COLREGS regulates situations logically, often in *valid argument forms*, and as such it is possible to operationalize autonomously. If the ship adheres to the COLREGs, it will most likely pass the Court's objective test. From the scarce practice we have concerning autonomous systems¹⁸⁸ it is however clear that the challenge not necessarily is the violation of the COLREGs, but the system malfunction and the subsequent reaction of the Master and crew.

In general, these sudden system failures do not lead to liability on the precondition the one could not have averted it though reasonable measures.¹⁸⁹ In NAVION HISPANIA, the establishment of fault was tied to the failure of the crew to act following the system malfunction— and as such whether there was time for deliberation and alternative action before the collision was imminent. The Court stated that three minutes was enough time in order to assess and avoid the situation, even though it was chaotic at the bridge.

Should an autonomous vessel suffer a system failure during a voyage, it is thus of central importance that the Master and crew do everything necessary to avoid the collision. If they do, and the system maintenance is non-negligent – the vessel may escape fault.

5.4.2 Duty to Avoid Collision

In terms of the standard of conduct, COLREG Rule 17 stipulates that the privileged vessel is to hold its course - but take action to avoid collision as soon as it becomes apparent that the incoming vessel is not taking appropriate action.¹⁹⁰ Together with Rule 8, concerning the actions to be taken to avoid collisions, it constitutes the firm principle of avoiding collision, even on the part of the privileged vessel.

In the cases where the privileged vessel has stood its course until impact, it has almost exclusively been at fault¹⁹¹. If there is any degree of uncertainty, the vessel is to slow

¹⁸⁸ ND-1990-362-NCA ODDTUN and NAVION HISPANIA op. cit.

¹⁸⁹ Ibid. p. 392.

¹⁹⁰ FOR-1975-12-01-5 op. cit. Part 2 Section II.

¹⁹¹ Ringdal op. cit. with reference to ND-1942-142 FSC where the right of way was so clear that the privileged vessel didn't have to do anything.

down or otherwise get an adequate overview of the situation. See for example MUR-MAN op. cit., where the privileged vessel had to bear 25 % of the damage.

This was also the case in ND-2005-503-DCC LILLE TANJA. Which also must be viewed in connection with that the sailboat could do little to avoid the collision due to its limited manoeuvrability. In this assessment the subjective elements are accentuated.

5.4.3 Standard of Care

In terms of the objective elements of the evaluation of fault, it should therefore be clear that in retrospect, with an abundance of information and knowledge, one can always find alternative actions which would avoid the collision. This is where the subjective elements of the evaluation come in, and where the standard of care and standard of conduct seems to intersect. The question the Court asks itself is whether a diligent *colleague* would act in a similar situation, i.e. one must adjust the expectations according to the function of the Master and crew.

This is of relevance to autonomous vessels, as even though the ship is operating at LOA six and above, the Master and crew will be obliged to oversee and take action should the system malfunction. See for example the NAVION HISPANIA judgement, where the Court stated that:

“[The DP system] should have been disengaged at an earlier point of time. If the crew present at the bridge had taken manual control over the vessel [...] the collision would not have happened”.¹⁹²

It reportedly took three minutes from the risk of collision materialised, until the autonomous system was disengaged – at which point in time the collision was inevitable.

What can be expected by the crew members in this situation however, is subject to an individual assessment. In the above case, the crew was involved in petroleum activities, and the Court stated that they took into consideration the “strict standard of care that must be imposed on the professionals involved in the situation”.¹⁹³

One must here take into consideration the special high risk involved when transferring and transporting petroleum in bulk. The standard of care could however according to Nygaard also go the other way, and become less strict.¹⁹⁴ He argues that when a certain role is imposed on the tortfeasor, one cannot impose as strict of a standard of care as

¹⁹² LG-2012-77280 p. 14.

¹⁹³ Ibid. p. 15.

¹⁹⁴ Nygaard op. cit. p. 213.

one normally would with an experienced professional. In his words can a “lack of qualifications or experience in the particular field be somewhat excusable”, and that this is especially relevant in situations where the tortfeasor cannot get away from his role, or if the role otherwise is imposed on him.

Kjelland also argues along these lines, and states that it is of relevance to the evaluation of fault whether or not the tortfeasor have had to act on the basis of a necessity or from his own discretion.¹⁹⁵ This is also apparent in the fractional fault collisions, where the standard of care is noticeably more tolerant on part of the privileged vessel. When faced with a potential collision, the privileged vessel will in most cases bear a lower portion of the damages, even though the evasive action was negligent, and even a prerequisite for the collision.¹⁹⁶

This is however a knife that cuts both ways. In ND-1995-282-NCA VEABAS the Court stated that “even though it is not a direct cause of collision, it is an element in the evaluation of fault that [the first mate] wasn’t familiar with the manoeuvring capabilities of the ship”¹⁹⁷ Here, the fact that the ship owner had placed an unskilled person in charge of the navigation of the ship was considered negligent itself.

It is thus clear that the standard of care is to a certain extent subjective in terms of the Master and crew. But what about the vessel? It is clear that an Ultra Large Crude Carrier at 550,000 DWT is significantly slower to manoeuvre than a 50,000 DWT dry bulk vessel. This is solved, inter alia, in COLREGs Rule 2, which stipulates that consideration must be taken to the inherent limits of manoeuvrability of the vessel. It is therefore not impossible that a privileged vessel under the COLREGs is at fault.

This was for example the case in ND-1967-180-NSC INGERFIRE / GLORIA where the Court mentioned this principle in relation to a collision between a sailboat and a ship¹⁹⁸. The engine-powered ship had the opportunity to manoeuvre and avoid collision, and should have taken this into account regardless of having the right of way.

Also in ODDTUN op. cit., the Court stated that the evaluation concerning whether the maintenance was diligent inter alia depended on the availability of technical support in the trading area trafficked by the vessel.¹⁹⁹

There is however a boundary. The inherent limits to the manoeuvrability is not excused if it has a causal link to the collision. This is for example accentuated in ND-1954-

¹⁹⁵ Kjelland op. cit. p. 111.

¹⁹⁶ See Annex I.

¹⁹⁷ ND-1995-282-NCA VEBAS p. 3.

¹⁹⁸ ND-1934-28 DCC.

¹⁹⁹ ND-1990-362-NCA ODDTUN (last three paragraphs).

121-NCA, where the tortfeasor claimed it was necessary for his vessel to hold a certain “navigational speed” while the ship was sailing through heavy fog. The Court stated that proper navigation could be ensured otherwise, and that it was not considered a safe speed.

There are therefore evidently subjective elements present, and which the evaluation of fault to some degree adjusts to. It is also apparent that what is acceptable for one ship can be subject to criticism on another.²⁰⁰ It would not necessarily be negligent of an autonomous vessel with a highly advanced situation awareness system to go for full speed through heavy fog – but for an ordinary container vessel with limited vision this could be culpable.

5.5 Potential for Damage

Next, the assessment of the potential damage of the action or non-action is central.²⁰¹ This can be defined as the aggregate probability that damage will occur, combined with the possible magnitude of the damage. It is therefore not the actual occurred damage that is subject for the evaluation, but the actual *risk* the action or non-action resulted in. The probability for damage will furthermore be established based on either statistical probability, or common consideration linked to common experience within the specific field.²⁰² These are often very general, and the margin of discretion is thus wide.²⁰³

In terms of the possible magnitude of the damage, this depends on (1) what kind of damage is at risk, and (2) the degree and extent of damage.²⁰⁴ It is only natural that one conducts a stricter evaluation when Master and crew are faced with a damage potential amounting to several hundred million euros in comparison with a few thousand. It should however be stressed that the mere monetary value is not necessarily relevant,²⁰⁵ and in ship-to-ship collisions the potential for damage to environment or personnel has been known to sharpen the evaluation in this regard.²⁰⁶ Loss of life is for example also especially grave.²⁰⁷

²⁰⁰ In the same direction: Ringdal op. cit. p. 391.

²⁰¹ Lødrup (2009) p. 141 and Kjelland op. cit. p. 96.

²⁰² Kjelland op. cit. p. 96.

²⁰³ Selvig op. cit. p. 414 and MURMAN op. cit.

²⁰⁴ Kjønstad (2005) p. 97.

²⁰⁵ Nygaard op. cit. p. 189.

²⁰⁶ NAVION HISPANIA op. cit. p. 18.

²⁰⁷ Nygaard op. cit. p. 189.

In *NAVION HISPANIA* the Court stated that:

*“[even] though the consequences in the particular case did not result in damage to any persons or the environment, the outcome could easily be far more serious if the transfer of the crude oil had commenced”.*²⁰⁸

Here, the probability of the damage occurring was low, but the magnitude of damage, should it occur, was significant. The judgement therefore expresses that if there is potential for environmental or personnel damage, the standard of care will be stricter.

This principle was also to some extent accentuated in *MURMAN*, where the potential for damage when steaming at speed in heavy fog in the Barents Sea was considered so great that it was “clearly negligent”.²⁰⁹

The damage potential of an action or non-action will naturally be different from case to case, but the larger the potential for damage, the higher the standard of care and conduct becomes.

5.6 Visibility of Risk

The *visibility of the risk* is another important element in the evaluation, and ties in with the potential for damage.²¹⁰

This entails that the Master and crew either understood, or should have understood, that there existed a risk for damage - and for that reason should have acted otherwise.²¹¹

From this, one can deduce that the minimum requirement for imposing fault is that there must have been a possibility for the tortfeasor to understand that his actions or non-actions involved some risk.²¹² It is thus not possible to impose fault if the tortfeasor did not have the possibility to foresee that the action had any negative damage-inducing consequences.²¹³ For the Master and crew to be at fault for not acting differently, there must thus have existed some kind of incitement to react, in terms of the apparent risk arising out of the action or non-action.

Whether an autonomous system in itself can “foresee” is more of a philosophical question than a legal. In any case it is the Master and crew’s actions which is subjected to the evaluation.

²⁰⁸ *NAVION HISPANIA* Ibid.

²⁰⁹ *MURMAN* op. cit. p. 1187.

²¹⁰ Kjelland op. cit. p. 101, Lødrup op. cit. p. 144.

²¹¹ Lødrup Ibid.

²¹² Nygaard op. cit. p. 210.

²¹³ Kjelland op. cit. p. 101.

One case where the knowledge requirement was accentuated is ND-1973-348-NSC UTHAUG, which strictly speaking was not a *ship-to-ship* collision, but is interesting in terms of the evaluation of fault nonetheless. Here, a submerged submarine collided with a trawl at 40-meter depth due to the sound propagation equipment not detecting the trawl. The question assessed by the Court was if the crew had acted negligently in relying on the submarine's hydrophone to detect the trawl in the water.

The majority of the Supreme Court found that there could not be established fault on part of the crew, as they acted on the assumption that "any use of a trawl by an already observed vessel, would be detected and conveyed via the hydrophone, bringing certain knowledge about its whereabouts".²¹⁴ It was central in the evaluation that this was the common belief among experts as well, and that there thus were no reasons for the crew to doubt the information received through the hydrophone.²¹⁵ The Court further laid emphasis on the fact that "other submarine commanders would not have reached another conclusion, and most likely act in the same manner", and that the crew "as they assessed the situation" had been acting soundly and diligently.

Even though the navigation of the submarine itself entailed significant potential for damage when passing the trawler with the extended trawl, the risk was not visible for the crew of the submarine. There was thus no negligence. The UTHAUG judgement thus illustrates the requirement that the potential for damage is somewhat visible for the tortfeasor.

Considerations, however, must also be taken to knowledge acquired from previous collisions. In ND-1975-70-NCA ULA, concerning another submerged submarine colliding with a trawl only a few years after the UTHAUG case, the Court found that it should be apparent that trawls cannot with sufficient certainty be expected to be detected by submarine's sound propagation equipment – referencing the UTHAUG case. The submarine was therefore at fault, as they relied on equipment that foreseeably not necessarily could identify fishing trawls.

This judgement also illustrates the objective assessment that must be the starting point when assessing the visibility of the risk. Here, emphasis was put on the *general experience* with such equipment in terms of what could be expected of it, as well as how

²¹⁴ RT-1973-1364 p. 1368.

²¹⁵ Ibid. p. 1369.

other persons performing the same functions would assess the situation. Thus, the visibility must be assessed from an objective point of view on the time of the casualty, but adjusting to the situation at large.²¹⁶

Variations in the foreseeability is also of relevance to the evaluation of fault, especially in terms of whether the crew member should have acted differently or not.²¹⁷ The more visible the potential for damage is, the greater is the encouragement to act in a way that reduces the potential for damage to an acceptable level.²¹⁸

Finally, the UTHAUG situation can also be turned around. Sometimes a ship runs aground due to an evasive manoeuvre, because it misconceives the situation and believe a collision is imminent while in reality this is not the case.²¹⁹ The point of departure is still what the Master or crew “had or should have had knowledge about”,²²⁰ and whether the situational misconception is rightful or not will depend on what knowledge the tortfeasor *should* have had. Also, whether or not he should have *obtained* such knowledge will impact the result of the evaluation.²²¹

5.7 Alternative Actions

5.7.1 Risk for Damage vs. Potential for Damage

The final element in the evaluation of fault, is whether or not the shipowner has exhibited negligence in terms of not acting differently. A requirement to escape fault is thus that the tortfeasor could not have avoided or reduced the damage by acting differently – through an so-called *alternative action*.²²² The scope here is not *arm-chair assessments* – it must actually have been possible, considering the circumstances at the time, to carry out the action. The alternative action must thus have been viable and realistic²²³, and less dangerous and damaging than the action originally carried out.²²⁴

²¹⁶ ND-1981-152-NCA KYA p. 155: “The Supreme Court is in the UTHAUG judgment unusual fundamental in terms of expression, and there is no argument against its precedence that the verdict was passed with a 3/2 majority”.

²¹⁷ Kjelland op. cit. p. 103.

²¹⁸ Ibid.

²¹⁹ Inter alia ND-1997-1 SCA STENA GERMANICA.

²²⁰ Lødrup op. cit. p. 147.

²²¹ Lødrup op. cit. p. 145

²²² Kjelland op. cit. p. 104, Nygaard op. cit. p. 193 and Lødrup op. cit.

²²³ Nygaard op. cit. p. 192.

²²⁴ Nygaard op. cit. p. 281.

In some cases, there might not exist any realistic alternative actions, for example when faced with a sudden system failure and a collision is imminent. In these cases, where the ship owner couldn't have acted any differently, the Court thus cannot impose fault. However, it may still be negligent of the ship owner to put himself in a situation where any alternative actions are eliminated²²⁵, which is the case when the shipowner is negligent through the lack of maintenance.²²⁶

In this regard it seems natural that when the ship owner activates autonomous navigation, he limits the available alternative actions on his part. He is therefore dependent on the navigation system – and in case of a collision the alternative actions will be measured against the decision to either engage – or not to disengage. A central question in this regard is also if there exists a discrepancy in what a Master and crew would do if in manual control of the ship.

Furthermore, if there existed one or more alternative actions that could avoid or reduce the damage, the question is which one of the actions should have been chosen by the tortfeasor.²²⁷ As mentioned above, the action's potential damage and risk visibility will give the ship owner guidance in terms of acting differently. The greater the risk is, the greater the demand of the Master and crew acting carefully is. If the risk is low, but the potential for damage is large, the Master and crew should choose the alternative which minimizes the risk for the damage to occur.

5.7.2 Sacrifices and Time for Deliberation

Whether or not the tortfeasor should have chosen an alternative action, also depends on what sacrifices the tortfeasor must make.²²⁸ This is particularly relevant when the ship owner is faced with the option of either ramming a vessel, or to go hard to starboard and ground the vessel on the riverbank.

In the aforementioned VEABAS-judgement this was the case, where a cruise ship grounded in an attempt to avoid a collision with a fishing vessel. The Court used *inter alia* the fishing vessel's failure to attempt to contact the other over VHF to establish

²²⁵ Lødrup op. cit. p. 148.

²²⁶ See ND-1995-365-NCA WEST ALPHA and NAVION HISPANIA op. cit.

²²⁷ Kjelland op. cit. p. 107.

²²⁸ Kjønstad op. cit. p. 99-100.

fault, stating that this could with little effort be done and would this way most likely avoid the collision.²²⁹

In the evaluation concerning what alternative action can be expected of the Master and crew, emphasis must be placed on how difficult and time consuming the alternative action would be, as well as what danger the alternative action represents. The greater sacrifice/risk the ship is exposed to, the harder will it be to establish fault for not carrying out the alternative action.²³⁰

Similarly will an alternative action that is feasible and easy to carry out be assessed, and will thus weight in the direction of that it should have been chosen.²³¹ If there is a risk for the loss of life, the threshold for what the tortfeasor is expected to sacrifice is also higher.²³²

Time for deliberation, as mentioned earlier, is also an element in this evaluation cf. § 161, and is also clear from the preparatory works to the Torts Act § 2-1.²³³ Here it is clear that decisions taken in situations of distress, such as when trying to avoid an imminent collision, should not always be evaluated strictly in terms of the alternative actions. If there was no time for deliberation, this shall be reflected in the assessment of fault.

In NAVION HISPANIA op. cit., time was an instrumental factor in the assessment of whether or not there was any alternative actions that could be taken by the crew.

5.7.3 Multiple Alternative Actions

Another question arises when the tortfeasor is faced with multiple alternative actions, all high risk and potential for significant damage. This situation is illustrated by Jakobsen (2017) regarding the unprofessional salvor's liability. She identified that in ND-1995-374-NSC KONG SIGURD the Courts were faced with this question.²³⁴ Here, a ship was on collision course with two other ships in a storm reaching hurricane levels.

²²⁹ ND-1995-282-NCA VEBAS p. 2.

²³⁰ Jakobsen (2017) p. 28.

²³¹ Nygaard op. cit. p. 200.

²³² Kjelland op. cit. p. 108.

²³³ As referenced by the Supreme Court in RT-2011-911 para. 28.

²³⁴ Also mentioned in LH-2015-25686.

The Master on-board KONG SIGURD was faced with three options; ramming the vessel TANKAR, attempt to navigate between TANKAR and SKRAV, or to stop its engines, risking either to collide with SKARV or drift ashore.²³⁵

KONG SIGURD chose to attempt navigation between TANKAR and SKARV²³⁶, as this gave the crew on-board KONG SIGURD a possibility to retain control over the vessel to the last possible moment, something that “contained a potential to avoid collision”²³⁷. The crew in this situation thus had the choice between carrying out the manoeuvre that was most likely to avoid collision, or to cede control over the ship to the elements. The Court stated that, “[i]n reality, this is no choice”²³⁸, and did not establish any fault on part of the shipowner.²³⁹

Jakobsen interprets this to the extent that it is not negligent to choose the alternative with the least risk. Even though the alternative exhibits a significant potential for damage, it must be viewed in comparison with the other alternatives. In the above case, as the second alternative posed the least risk and included some probability for avoiding collision, the act was not considered negligent.²⁴⁰

This seems to be correct. Even though an act in itself sanctions a certain behaviour, it must be viewed in comparison with other alternatives and the situation at large, and the least reckless action should be taken. If the alternative action involves less risk compared to the actual tortious act, this will imply that negligence must be established.

5.8 Internal Priority of the Elements in the Evaluation

The final evaluation will be a combination of the above, with the goal of establishing whether or not the ship owner has exhibited negligence. The evaluation will vary greatly from case to case – depending on the individual factual circumstances.²⁴¹ Emphasis will however be put on the alternative actions – and the time for deliberation in choosing one of them. It however tends to combine all elements into one holistic evaluation, and it is thus difficult to reach a precise conclusion concerning the internal priority of the elements.²⁴²

²³⁵ RT-1955-1055 p. 1059 and Jakobsen op. cit. p. 29.

²³⁶ Involving “significant risk”.

²³⁷ RT-1955-1055 Ibid.

²³⁸ Ibid. p. 1066 with reference to the Court of Appeal.

²³⁹ Jakobsen op. cit. p. 30

²⁴⁰ Jakobsen Ibid.

²⁴¹ Lødrup op. cit. p. 136.

²⁴² See also RT-2005-17144 para. 25.

6 Summary

Liability in a ship-to-ship collision subject to Norwegian law can only be imposed if the tortfeasor has exhibited fault. As strict liability in no circumstances can be applied, collision liability is subject to the establishment of fault following a holistic assessment. Supplementing with ordinary tort law principles, in combination with an analysis of the last one-hundred years of maritime collision cases, it is however possible to identify a framework of evaluation which is presented herein.

As there is a demand for legal research pertaining the liability of autonomous vessels, special attention has been given to collisions involving autonomous operation. The main observations are tripartite. Firstly, autonomous vessel operation can be categorised on a scale from 1-10 (LOA), where the ratio between the actual and available level of autonomy can be determinative for the assessment. Secondly, there is a special duty to take manual control in case of system failure. Thirdly, the autonomous ship owner may escape liability following system failure if both maintenance and care has been non-negligent.

The result of the allocation of fault furthermore determines the collision type. In order of observed frequency in the period 1918-2018, these are; *single fault collisions*, *fractional fault collisions*, *common fault collisions* and *zero fault collisions*. Multiple trends were also observed, inter alia, that the annual average of referred collision cases has decreased from *four p.a.* at the beginning of the century, to $\frac{1}{2}$ *p.a.* today.

The analysis also raised questions with philosophical dimensions, such as whether or not an autonomous navigation system itself can exhibit fault. In this regard the solution must be that the subject of evaluation remains the ship owner or anyone for whom he is responsible. By engaging autonomous navigation at a higher LOA, the tortfeasor limits the option for alternative action, and as such accepts the potential risk autonomous navigation entails. In an evaluation of fault, the actions of the autonomous navigation system will be compared to a human equivalent, and as an extension of the Master's actions. It is furthermore argued that the evaluation has both objective and subjective elements, distinguishable through the standards of conduct and care.

Finally, a wrongful application of the Maritime Code § 161 was identified. Lower Norwegian Courts have in this regard since 2006 misinterpreted a previous Supreme Court judgment to the extent that § 161 warrants the imposition of single fault liability even when fault is established on the part of both ships. A more elegant solution in line with applicable law is proposed.

7 Abbreviations

DCA	Danish Court of Appeal
DCC	Danish Court of First Instance
DSC	Danish Supreme Court
DAA	Danish Arbitration Award
DP	Dynamic Positioning
FCA	Finnish Court of Appeal
FCC	Finnish Court of First Instance
FSC	Finnish Supreme Court
HR	Norwegian Supreme Court
IMO	International Maritime Organization
ISC	Icelandic Supreme Court
LOA	Level of Autonomy
MC	Norwegian Maritime Code (1994)
NCA	Norwegian Court of Appeal
NCC	Norwegian Court of First Instance
NSC	Norwegian Supreme Court
NAA	Norwegian Arbitration Award
ND	Nordiske Domme
SCA	Swedish Court of Appeal
SCC	Swedish Court of First Instance
SSC	Swedish Supreme Court
SAA	Swedish Arbitration Award

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ND-1918-563-NSC HERA

ND-1918-66-NSC GJØVIK

ND-1919-313-NSC ALWINA

ND-1919-469-SSC MIMOSA

ND-1920-202-NSC SIRIUS

ND-1920-209-NSC FREIKOLL

ND-1920-225-SSC VEGA

ND-1920-369-NSC SKAL/RAN

ND-1920-460-DCA
ND-1921-145-NCC OSCAR II
ND-1921-257-NSC
ND-1921-401-NSC
ND-1921-451-NSC VÅRBLOMSTEN
ND-1921-581-NSC
ND-1922-113-NSC
ND-1922-170-DSC LOLY JENSEN
ND-1922-458-SSC IDA
ND-1922-503-NCC
ND-1922-81-NSC
ND-1922-90-NSC KRONPRINS OLAV/CUBA
ND-1922-97-NSC RONDANDE
ND-1923-469-NCC
ND-1924-113 ELSA
ND-1924-339-NSC ANAKONDA
ND-1924-475-NSC LILLEFJORD
ND-1925-177-NSC
ND-1925-241-NCC
ND-1925-353-DCC SKAGERAK/KENTUCKY
ND-1925-49-NSC DRONNINGEN
ND-1926-161-NSC KONG OLAF
ND-1926-511-DCC
ND-1927-302-DSC
ND-1927-310-NSC ERLING JARL
ND-1927-321-NSC
ND-1927-417-NCC TENNESSEE / EK
ND-1927-7-NSC ONYX
ND-1927-81-NSC NADDODD
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ND-1931-257-DSC
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ND-1938-265-DCC
ND-1938-373-DCC

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ND-1943-249-NCC
ND-1945-177-DCC
ND-1946-49-SSC
ND-1947-321-NCC
ND-1948-183-NSC
ND-1949-202-DCA
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ND-1951-423-NCC
ND-1952-320-NSC
ND-1954-121-NCA
ND-1954-65-NSC
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ND-1964-144-NCC
ND-1964-28-DSC
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ND-1969-445-NCA
ND-1971-36-NSC MARNA HEPSØ
ND-1972-222-NCA HJALMAR / LAUKHOLM
ND-1972-235-NCA
ND-1972-248-NCA RINGO / HERØYTRÅL
ND-1972-338-SCA COORANGA
ND-1972-378-NCC
ND-1973-113-DSC ALMAZ

ND-1973-135-SAA TOR NORMANDIA
ND-1973-1-NCC UTVIK SENIOR
ND-1974-307-NCC SKIENSFJORD
ND-1974-451-NCC FILIA
ND-1975-175-DCC QUEEN OF THE WAVES
ND-1975-25-NCA ELGO
ND-1975-366-NCC HAUGSNES
ND-1975-70-NCA ULA
ND-1976-143-NCA SKÅRHOLM
ND-1976-384-DSC JYTTE MARGRETHE
ND-1977-128-NCC HAVSTEIN
ND-1977-98-NCC
ND-1978-16-SSC
ND-1979-1-NCA MYSEVÆRING (DRIFTIG)
ND-1979-96-NCC ANDFJORD
ND-1980-261-NCC MIDTNATSOL
ND-1980-74-SAA
ND-1980-277-NCA
ND-1983-251-NCC CANTUARIA
ND-1983-343-NAA
ND-1984-36-FCC
ND-1984-439-NCC SEAKITTIE
ND-1984-446-DCC SUNDBUSSERNE
ND-1984-60-DCA
ND-1986-15-SCA BOHUS
ND-1986-282-NCC SKUDENES
ND-1986-79-NSC NORDNORGE
ND-1990-116-DCC LIBAS
ND-1990-362-NCA ODDTUN
ND-1991-96-DCC KRISTINE SØBYE
ND-1994-237-FSC
ND-1994-45-ISC BAKKAFOSS
ND-1994-47-DSC LIBAS
ND-1994-59-DCC LOMUR / ØRESUND
ND-1994-64-DCC ØRESUND
ND-1995-115-DCC TREKRONER
ND-1995-282-NCA VEABAS
ND-1995-365-NCA WEST ALPHA
ND-1996-59-SAA WASA
ND-1996-73-FSC

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ND-1998-414-NCA VAREN
ND-1999-293-NCA COLOR VIKING
ND-1999-301-NCA VITIN
ND-1999-402-DCA
ND-1999-432-NCC TAREHAV
ND-2000-306-NCC CORONA
ND-2000-515-NSC MURMAN SOUTHELLA
ND-2001-254-NCA RISHOLM
ND-2002-210-NCA SAVA LAKE
ND-2002-327-NCA
ND-2003-361-NAA SJOAKRAFT
ND-2005-503-DCC LILLE TANJA
ND-2005-592-DCC CALYPSO
ND-2006-417-NCA KONG HARALD
ND-2006-558-DCC FJORD NORWAY
ND-2008-252-NCA TOR, MÆRDØ, PELLÆRN
ND-2010-294-DCC A.B.
ND-2012-59-FCA GEULBORG
ND-2013-1-SSC
ND-2013-201-NCA NAVION HISPANIA
ND-2014-104-NCA RANA FRAKT / ROBAS
ND-2014-65-FCC BIRKA CARRIER

9 ANNEX I

Ship-to-Ship Collision Cases 1918 – 1927 (NDS)

Ship-to-Ship Collision Cases 1972 – 2018 (NDS)

Case data from the period 1927 – 1972 is based on Ringdal, F. (1973). *Skyldvurderingen i skipskollisjonssaker*. Arkiv for Sjørett 1970-1972 Bind 12. Oslo. and is not contained in the dataset below. See Table 2 above for aggregate numbers 1918-2018.

COLLISION TYPES: 1= moving 2=standstill 3=no contact

#	CASE REF #	COL TYPE	FAULT	FACTS	FAULT / NEGLIGENCE	COURT	VESSEL NAME
1	ND-1918-113	1	100/0	tåke	sjøveisregler, fart	SSC	TAMMERFORS
2	ND-1918-122	1	66/33	ingen lanterne, begge medvirket	sjøveiseregler, signal	SSC	
3	ND-1918-218	1	100/0	feil side av led	sjøveisregler, vikeplikt	NSC	TRIP
4	ND-1918-497	1	50/50	feil side av led	sjøveisregler, vikeplikt, uaktsom un- namanøver	NSC	
5	ND-1918-54	1	100/0	Ferge bakker inn i kryssende skip	så skip, burde ha skjønt	NCC (Oslo)	-
6	ND-1918-563	2	0/0	ankret opp i led, lys blendet, så ikke ankerlanterne	ingen	NSC	HERA
7	ND-1918-66	1	66/33	tåke	sjøveisregler, fart	NSC	GJØVIK
8	ND-1919-313	1	75/25	møteulykke, feil unnamanøver	sjøveisregler, vikeplikt, uaktsom un- namanøver	NSC	ALWINA
9	ND-1919-469	2	100/0	ga full maskin etter minefelt, traff ventende skip	fart, burde ha skjønt	SSC	MIMOSA
10	ND-1920-202	1	100/0	ga ikke signal om kursendring i havn	sjøveisregler, signal	NSC	SIRIUS
11	ND-1920-209	2	100/0	misfortolket ankerlanterner, for- satt i fart	fart, burde ha skjønt	NSC	FREIKOLL
12	ND-1920-225	1	100/0	møteulykke, ga ikke signal om unnamanøver	sjøveiseregler, signal	SSC	VEGA
13	ND-1920-369	1	50/50	tåke	Sjøveisregler, signal, utkikk, fart, vikeplikt	NSC	SKAL/RAN

14	ND-1920-460	1	50/50	fortøyet for nærme	burde ha vist,	DCA (Østre)	
15	ND-1921-145	2	50/50	lekter fortøyet noe utenfor tilhørende skip, Oscar II kolliderer under tillegging	burde ikke ha ligget så langt "ute", Oscar kunne ha manøvrert rundt	NCC (Oslo)	OSCAR II
16	ND-1921-257	1	-	Lanterne ikke i tråd med forskrift	sjøveiseregler, skipper burde ha vist, signal	NSC	
17	ND-1921-451	1	-	feil navigering ved unnamanøver	sjøveiseregler,	NSC	VÅRBLOMSTEN
18	ND-1921-581	1	100/0	burde skjont det var seilskip forann, vikeplikt,	sjøveiseregler, vikeplikt (medvirkende signalfeil unskyldt)	NSC	
19	ND-1922-113	1	50/50	feil navigering ved unnamanøver	sjøveisregler, vikeplikt, fart	NSC	
20	ND-1922-170	1	75/25	feil navigering natt (krig) uten lanterner	sjøveiseregler, vikeplikt, (begge uten lanterner)	DSC	LOLY JENSEN
21	ND-1922-458	1	100/0	feil navigering, ventet ikke selv ved signal	sjøveiseregler, signalmottak, fart, vikeplikt	SSC	IDA
22	ND-1922-503	2	0/100	Feil signal ved oppankring (signal: i fart)	sjøveiseregler, signal - påseiler: ingen uaktsomhet	NCC (Bergen)	
23	ND-1922-81	2	100/0	slepetau ryker	burde ha planlagt bedre, burde ha skjont	NSC	
24	ND-1922-90	1	50/50	tåke	sjøveiseregler, ikke støtte for fordeling	NSC	KRONPRINS OLAV/CUBA
25	ND-1922-97	1	100/0	motgående fartøy vek ikke	sjøveiseregler, vikeplikt	NSC	RONDANDE
26	ND-1923-469	2	100/0	Fortøying slites	Fortøyet skip til ulovlig bøye, flyttet uten reders kunnskap, menburde ha visst	NCC (Bergen)	
27	ND-1924-113	1	60/40	feil navigering	sjøveiseregler,		ELSA
28	ND-1924-339	2	0/0	vær / storm - skip driver i havn	ingen	NSC	ANAKONDA
29	ND-1924-475	1	100/0	skip på slep driver inn i annet skip i havneanløp	slepebåt hadde ledelsen, burde ha handlet anderledes	NSC	LILLEFJORD
30	ND-1925-177	1	66/33	vikeplikt,, gjorde ikke unnamanøver	sjøveiseregler, vikeplikt, gjorde ikke unnamanøver	NSC	

31	ND-1925-241	1	0/0	tvangslos uaktsom	ingen, finsk lov unnskylder tvangslosfeil	NCC (Oslo)	
32	ND-1925-353	1	50/50	-	begge sider, ingen grunn til spesiell fordeling	DCC (SøHa)	SKAGERAK/KENTUCKY
33	ND-1925-49	2	100/0	treffer oppankret skip i havn	sjøveisregler, fart	NSC	DRONNINGEN
34	ND-1926-161	1	100/0	feil navigering, men annet skip (ARENDAL) kunne ha sakket farten - unnskyldt	sjøveiseregler, vikeplikt	NSC	KONG OLAF
35	ND-1926-511	1	87,5/12,5	feil navigering	ubegrunnet kursendring, men annet skip burde reagert	DCC (SøHa)	
36	ND-1927-302	1	50/50	fart, feil navigasjon og unnamanøver	feil unnamanvør, skulle ha sett og avpasset fart	DSC	
37	ND-1927-310	2	100/0	svikt i reverseringsmaskin	reder kan ikke bevise at manskapet ikke var uaktsomme - sansynnlige vedlikeholdsfeil noen dager før	HR. Norge	ERLING JARL
38	ND-1927-321	1	66/33	feil på begge sider	størst feil på ene side, 2/3 fordeling	NSC	
39	ND-1927-417	1	50/50	tåke, krysset led	krysset led, men annet skip stanset ikke ved tåkesignal	NCC (Oslo)	TENNESSEE / EK
40	ND-1927-7	1	66/33	feil navigering	ubegrunnet kursendring, men annet skip burde reagert	NSC	ONYX
41	ND-1927-81	1	100/0	feil navigering	ubegrunnet kursendring, men annet skip burde reagert	NSC	NADDODD
42	ND-1972-222	1	50/50	feil navigering	begge sider, feil unnamanøver	NCA (Hålo)	HJALMAR / LAUKHOLM
43	ND-1972-248	1	50/50	feil manøvrering	sjøveisregler	NCA (Frost)	RINGO / HERØYTRÅL
44	ND-1972-338	2	0/0	vær, storm	ingen	SCA (Göte)	COORANGA
45	ND-1972-378	2	0/0	vær, storm	ingen	NCC (Oslo)	

46	ND-1973-1	2	0/0	reverseringsmotor svikter	ingen,	NCC (Senja)	UTVIK SENIOR
47	ND-1973-113	1	66/33	møtekollisjon, vikeplikt	sjøveiregler, vikeplikt (medvirkende: intet gjort for å avverge)	DSC	ALMAZ
48	ND-1973-135	1	80/20	kollisjon med fiskefartøy, natt	burde vist større forsiktighet, medvirkning: kunne ha bakket opp	SAA	TOR NORMAN-DIA
49	ND-1974-307	3	80/20	prøvd å unngå sammenstøt	unnamanøver uaktsom, men ingen signal fra den andre båt fremkalte unnamanøver	NCC (Bergen)	SKIENSFJORD
50	ND-1974-451	2	0/0	elektrisk feil, relé brenner seg fast	ingen, dog nevnt at det noe burde gjøres for å hindre påseiling når dette var klart forstående	NCC (Asker/Bærum)	FILIA
51	ND-1975-175	3	0/0	bølger fra hydrofoillbår skader lystyacht i havn	ingen	DCC (SøHa)	QUEEN OF THE WAVES
52	ND-1975-25	1	100/0	feil navigerer ved innhenting	sjøveiseregler, vikeplikt (medvirkende feil utkikk bakover ikke tillagt vekt).	NCA (Hålo)	ELGO
53	ND-1975-366	2	100/0	forlating av oppankret skip, skader andre skip	motor i gang, fortying ryker, skader andre båter	NCC (Bergen)	HAUGSNES
54	ND-1975-70	1	100/0	ubåt så ikke fisketråler	burde ha handlet anderledes	NCA (Eidsva)	ULA
55	ND-1976-143	1	100/0	navigerte over slepetau, slep sank	burda ha forstått at bår var under slep	NCA (Gula)	SKÅRHOLM
56	ND-1976-384	1	0/0	lossing til sjøs førte til sammenstøt mellom to skip.	Ikke funnet noen feil på den ene side, den andre side da uaktsom alene	DSC	JYTTE MARGRETHE
57	ND-1977-128	2	100/0	svikt i reversmotor	dårlig vedlikehold	NCC (Bergen)	HAVSTEIN
58	ND-1977-98	1	100/0	tåke, navigasjonsfeil	sjøveiseregler, ikke plottet radar	NCC (Haugesund)	MS
59	ND-1978-16	1	100/0	kollisjon med båt	burde ha handlet anderledes	SSC	
60	ND-1979-1	1	100/0	reverseringsmaskineri svikter	feilinstallasjon	NCA (Frost)	MYSEVÆRING (DRIFTIG)

61	ND-1979-96	1	100/0	feil navigering	sjøveiseregler, vikeplikt	NCC (Karmsund)	ANDFJORD
62	ND-1980-261	2	100/0	svikt i reverseringsmaskin	kunne ikke bevise at det ikke hadde vært uaktsomhet	NCC (Tana)	MIDTNATSOL
63	ND-1980-74	2	0/100	påseilet båt uten lys	uaktsom å ikke ha lys i en slik led - motorbåt som kolliderte i fart ikke uaktsom.	SAA	
64	ND-1983-251	1	75/25	tåke, radarfeil	sjøveiseregler, fart, radarbruk (medvirket: kursendring og radarfeil)	NCC (Bergen)	CANTUARIA
65	ND-1983-343	2	50/50	natt, så ikke båt i høyfart ved havn (passbåt + kutter)	signal, fart: oppankret uten ankerlys og for stor fart	NAA	
66	ND-1984-36	1	50/50	kystvakt og fritidsbåt støter sammen		FCC (Åland)	
67	ND-1984-439	1	80/20	feil side av led, utkikk medvirkende	sjøveiseregler, vikeplikt, utkikk medvirkende	NCC (Sunnmøre)	SEAKITTIE
68	ND-1984-446	1	100/0	-	-	DCC (SøHa)	SUNDBUSSERNE
69	ND-1984-60	2	0/100	driver i trafikert led	avslått motor i trafikert led, uten utkikk	DCA (Vestre)	
70	ND-1986-15	2	100/0	feil navigering	navigering	SCA (Vastra)	BOHUS
71	ND-1986-282	2	100/0	svik i reverseringsystem, dårlig utrustning/design	utrusting, revers kunne bare betjenes hydraulisk fra styhus, ingen redundant løsning.	NCC (Karmsund)	SKUDENES
72	ND-1986-79	1	100/0	feil navigering	sjøveiseregler, vikeplikt (medvirkende: intet signal ved kursendring)	NSC	NORDNORGE
73	ND-1990-116	2	0/0	svikt i elektrisk system	ingen	DCC (SøHa)	LIBAS
74	ND-1990-362	1	0/0	svik i autopilot	ingen	NCA (Frost)	ODDTUN

75	ND-1991-96	1	75/25	feil navigering	sjøveiseregler, fart, vikeplikt	DCC (SøHa)	KRISTINE SØBYE
76	ND-1994-237	1	50/50	alkohol	alkohol	FSC	
77	ND-1994-45	2	50/50	ikke plass ved havnemunning grunnet havnens egne båter	havnens los medvirket til skaden, da han viste båtene lå der	ISC	BAKKAFØSS
78	ND-1994-47	2	100/0	svik i styringssystem	burde ha skjønt styringssystem ikke virket og handlet anderledes da det var mulig å hindre sammenstøtet	DSC	LIBAS
79	ND-1994-59	1	0/0	to skip på parallellkurs kolliderer i Øresund.	Ingen, sugningseffekten som opstod mellom skipene var skyld i kollisjonen.	DCC (SøHa)	LOMUR / ØRESUND
80	ND-1994-64	1	75/25	tåke, høy fart, ikke systematisk bruk av radar	sjøveiseregler, fart, radar, ingen unnamanøver	DCC (SøHa)	ØRESUND
81	ND-1995-115	1	60/40	passering,	trafikert område: ferge ikke oppmerksom, fiskebåt ikke oppmerksom	DCC (SøHa)	TREKRONER
82	ND-1995-282	3	100/0	feilmåvring av fiskebåt, cruiseship grunnstøtte	ukjent i farvann, ikke VHF kontakt, feil fart og korrigering gjorde at båt skar ut mot venstre.	NCA (Gula)	VEABAS
83	ND-1995-365	1	100/0	feilmanøvrering av ankerbåt	Ankertauebåt uaksom - burde handlet anderledes	NCA (Gula)	WEST ALPHA
84	ND-1996-59	1	100/0	regatta, kryssing, lystfartøy	uaksom	SAA	WASA
85	ND-1996-73	1	100/0	slepebåt kolliderte med fast merke - slepet traff slepebåt	feilnavigering	FSC	
86	ND-1997-1	3	0/0	grunnet støtet når unnamanøver, stena, gjøteborg	ingen	SCA (Vastra)	STENA GERMANICA
87	ND-1998-414	3	100/0	fortøyning av båt til båt førte til havari av begge	fortøyet og kraftoverføring uaktsomt, burde ha visst	NCA (Hålo)	VAREN
88	ND-1999-293	1	82,2/17,8	dårlig sikt, ikke avklart kurs	sjøveiseregler, fart, medvirket: burde ha avklart situasjonen	NCA (Gula)	COLOR VIKING
89	ND-1999-301	1	100/0	brøt vikeplikt, ikke medansvar selv om ingen unnamanøver	sjøveiseregler vikeplikt	NCA (Gula)	VITIN

90	ND-1999-402	2	100/0	vær, lystbbåt, fortlyning slet i havn	fortøyning, burde ha sett at den kunne slites	DCA (Østre)	
91	ND-1999-432	1	80/20	tåke	sjøveiseregler, fart, feil poisisojnstolkning	NCC (Sunnfjord)	TAREHAV
92	ND-2000-306	1	75/25	havn, tananger, 3 skip	skulle ha handlet anderledes	NCC (Jæren)	CORONA
93	ND-2000-515	1	75/25	Murman, tåke, ND-1999-326, (avtalt brøk, hvis skyldfordeling)	sjøveiseregler, fart, uaksom navigasjon	NSC	MURMAN SOUTHELLA
94	ND-2001-254	1	66/33	kryssende kurs	sjøveisregler, vikeplikt, utkikk, (utkikk også medvirkende)	NCA (Hålo)	RISHOLM
95	ND-2002-210	1	100/0	tåke, kryssende kurs	sjøveisregler, kursendring uaktsom	NCA (Gula)	SAVA LAKE
96	ND-2002-327	1	0/0	natt,	ingen, hastighet på 17 knop ok i åpent farvann	NCA (Agder)	lystbåt
97	ND-2003-361	1	100/0	lekter på slep mot seilbåt.	skulle ha handlet anderledes	NAA	SJOAKRAFT
98	ND-2005- 503	1	100/0	uten lys og for stor fart,	sjøveisregler, signal, fart, medvirkende: ingen unnamanøver (men seilbåt)	DCC (SøHa)	LILLE TANJA
99	ND-2005-592	2	100/0	vær, skip kolliderte i oppankret skip når ankerne viklet seg	kunne brukt mer motorkraft for å unngå kollisjon	DCC (SøHa)	CALYPSO
100	ND-2006-417	1	100/0	Stein Fighter	sjøveisregler, fart	NCA (Gula)	KONG HARALD
101	ND-2006-558	1	100/0	buksérbåt i klem mellom kai og skip ved avgang.	Ikke vist tilstrekkelig aktsomhet ifbm. avgangen	DCC (SøHa)	FJORD NORWAY
102	ND-2008-252	3	0/0	Isflak, Arendal	ingen	NCA (Agder)	TOR, MÆRDØ, PELLÆRN
103	ND-2010-294	3	0/0	storebælt ikke snevert løp, ingen årssaksammenheng mellom navigering og grunnstøting	ingen	DCC (SøHa)	A.B.
104	ND-2012-59	1	100/0	natt, isled, navigering	feil navigering	FCA (Åbo)	GEULBORG
105	ND-2012-77585 (LB)	3	0/0	isskade på lystbåt, isbryter stevnet	ingen	NCA (Borga)	EMIL, JELØEN
106	ND-2013-1	2	100/0	vær, lystbåt slet seg	fortøyning, burde ha sett at den kunne slites	SSC	lystbåt
107	ND-2013-201	3	100/0	Navion Hispania	vedlikehold, rutiner	NCA (Gula)	NAVION HISPANIA
108	ND-2014-104	1	50/50	se dom,	sjøveiseregler,	NCA (Gula)	RANA FRAKT og ROBAS
109	ND-2014-65	1	100/0	skip torndet inn i akterenden på annet skip	sjøveisregler, vikeplikt, fart, uvetting sjømannskap,	FCC (Helsinki)	BIRKA CARRIER
