



CHALMERS
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Who is liable in a two Master system?

Master's thesis in the Master's Programme

Nordic Master in Maritime Management

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CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2019
Report No. XXX.

MASTER'S THESIS

Who is liable in a two Master system?

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Technical report no. XXXX:XX

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Gothenburg, Sweden 2019

Abstract

The workload of the Master onboard vessels in short sea traffic is sometimes high and the area of responsibility is wide. Therefore, some ship owners have started to use two Masters onboard at the same time, in order to share the duties and responsibilities of the Master. If the Masters' responsibilities such as seaworthiness is divided between two persons within the same voyage, there might be situations where the liability is complicated. The maritime law is made for the traditional model with only one Master onboard. Routines and liability is of high importance within a two Master system. Different routines and different two Master systems will affect the liability to some extent.

Sammanfattning

Ombord på fartyg i linjetrafik är befälhavarens arbetsbörda stor och ansvarsområdet brett. Detta har medfört att vissa redare börjat använda sig av två befälhavare ombord samtidigt, för att dela på befälhavarens arbetsuppgifter och ansvar. När befälhavarens ansvar, så som ansvar för sjövärdigheten, delas mellan två personer under samma resa, riskerar det juridiska ansvaret att bli komplicerat. Dagens sjölag är konstruerad för den traditionella modellen med bara en befälhavare ombord. Rutiner och ansvarsfördelning är viktiga att beakta inom ett tvåbefälhavarsystem. Olika rutiner och olika tvåbefälhavarsystem påverkar det juridiska ansvaret i viss mån.

Keywords: Master, Captain, Liability, Responsibility, Command, Shipping, Vessel, Ship, Law, Maritime Code

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Abbreviations

COLREG	Convention on the International Regulations for Preventing Collisions at Sea, 1972 by IMO
Crew and the Safety Management	Finnish law: Act on Ships' Crews and the Safety Management of Ships 1687/2009
Criminal Code	The Criminal Code of Finland 1889/39
Decree on Manning of Ships	Government Decree on the Manning of Ships and Certification of Seafarers 2009/1797
IMO	International Maritime Organization, a UN organization.
ISM	International Safety Management Code, by IMO.
Maritime Code	Finnish Maritime Code 1994/674 = Scandinavian Maritime code = Swedish-, Danish-, Norwegian-Maritime Code
Seamen's Working Hours Act	Finnish law: Seamen's Working Hours Act 1976/296.
STCW	STCW 95. The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, by IMO.
Swedish Maritime Code	Sjölag (1994:1009)
Technical Safety and Safe Operation	Finnish law: Act on the Technical Safety and Safe Operation of Ships 1686/2009
Trafi	The Finnish Transport Safety Agency. From January 2019 TRAFICOM
IMDG	International Maritime Dangerous Goods Code
Minimum Safe Manning Certificate	Certificate issued by TRAFICOM (TRAFI), which states the minimum manning onboard a Finnish vessel.

1. Introduction

1.1 Background

The Master has the highest authority onboard and is responsible for the seaworthiness of the vessel (Falkanger, Bull, & Brautaset, 2011). Because the seaworthiness is a very wide definition, the range of the responsibilities of the Master is quite extensive. In addition to the responsibility of the seaworthiness, there are also several other responsibilities of a Master. The Maritime Code states some of the responsibilities and the duties of the Master onboard Scandinavian and Nordic vessels.

The workload will together with the responsibility affect the needed amount of Master's recourses. In the article "Befälhavaren – en multikunnig byråkrat" (Wihuri, 2014), the retired Master Mariner and shipping professional Paavo Wihuri writes that, the increasing workload and the increasing bureaucracy is a threat against the Master's capability to safely perform his normal Master's duties. Also, the Master Mariner and Captain Gunter Schultze, write in an article on Linked In, about the huge amount of management tasks belonging to the Master of today. Mr Schultze lists a long list with up to 23 areas of management tasks of a Master today (Schultze, Gunter, 2018). Mr Wihuri believes problems with overload of tasks belonging to the Master, are more common onboard vessels in short trade in the Baltic Sea, than onboard vessels in world wide traffic (Wihuri, 2014).

At the same time the workload of the Masters has increased, the rest hours of sea personnel are becoming more important. The authorities have today started to follow up the rest hour situation onboard the vessels (Wihuri, 2014). Onboard Finnish vessels the Masters minimum rest hours are stipulated in the Seamen's Working Hours Act. Similar regulations are found also internationally because the regulations regarding working hours and rest hours are stipulated in the STCW convention by the IMO. The workload of the Master is high and the area of responsibility is wide. An overall responsibility for navigation, participating in the navigation, leading of berthing operations, personnel management, safety related work and contacts with authorities and the shipping company, is only a part of all duties and responsibilities of a Master. All these duties and responsibilities combined with strict regulations of working hours, is a difficult combination for Masters onboard especially short sea vessels.

As a consequence, some ship owners have started to use two Masters onboard at the same time, in order to share the duties and responsibilities of the Master. For example, on the Helsinki-Tallinn-route the Finnish ship owner, Eckerö Line, decided to start using a two Master system onboard their

passenger ferries Nordlandia and Translandia in 2012. The reason was that the traffic was increased by adding more departures and arrivals and the available Master's resources was too small in order to arrange proper working hours of the Master onboard. (Rederi AB Eckerö, Ship management, 2015) (Jonasson, 2017). Another example of a shipping company which has decided to use a two Master system is Finnlines, which in 2014 started to use a two Master system onboard their passenger ferries on the Naantali – Långnäs – Kapellskär route. Also in this case the working hours of the Master was the main reason for changing to a two Master system. (Finnlines Ship Management, 2014).

Normally two Master solutions are specifically made for a single ship or a single line, like the two Master systems at Finnlines and at Eckerö Line, where each of the systems are made for the entire route and for the specific vessel (Rederi AB Eckerö, Ship management, 2015) (Finnlines Ship Management, 2014). There are different models on how the Master's workload is shared between two persons. On Finnish passenger ferries, there have been at least two main systems in use regarding dividing the Master's duties:

- Using two captains onboard where each of them are in command half of the day. This model has been used by Eckerö Line (Rederi AB Eckerö, Ship management, 2015)
- Use some of the other deck officers as Master for some hours of the day. This model is used by Finnlines (Finnlines Ship Management, 2014).

Most of these two Master systems are constructed for situations where delegating duties is inconvenient for some reason. Delegation has, by involved Masters been seen as unsuitable, especially in situations where typical Master's responsibilities have to be shifted to another person. The Master Mariner Claus Gerkman, works onboard two Finnish Ro-Pax vessels in liner traffic. In an interview in May 2017, Mr Gerkman told that there is a two Master system in use onboard these vessels because of the rest hours of the Masters. The Master's responsibilities of handling arrivals and departures were seen as inconvenient to delegate, therefore the ship owner decided to use a two Master system in order to fulfill the rest hour requirements of the Masters. (Gerkman, 2017).

1.2 Problem description

There are several advantages by using the "two Master system". The mental- and physical-workload of the Masters affects the quality of the work. If the workload is at a too high level among the crew, it will affect the safety onboard (Grech, Horberry, & Koester, 2008). By sharing the time of command,

the workload of the individual Master will be at a more convenient level and the working conditions of the Masters will be improved.

Two Master mariners, Mr Gerkman and Mr Jonasson, both with experience of working in a two Master system, listed uninterrupted rest of the Master as one of the advantages by using a two Master system (Jonasson, 2017) (Gerkman, 2017). The fatigue is involved in a third of all shipping accidents investigated by MAIB between 1994 and 2003 (Lytzhöft;Thorslund;Kircher;& Gillberg, 2007). The fact that a two Master system will provide the Masters with uninterrupted rest will positively affect the working conditions of the Masters by reducing the fatigue.

Also, the ship owner will receive some benefits of the two Master system. Overload of tasks, duties and responsibilities that belongs to the Master, will not limit the use of the vessel. The schedule of the vessel will not be restricted by the Masters' resources and can be made in order to optimize bunker economy or taking customers' needs into consideration. Mr Gerkman says that the two Master system onboard Finnlines vessels at the Naantali-Långnäs-Kapellskär-route (see Figure 1), has made the schedule planning more flexible. With two Masters onboard the rest hours of one single Master is not a restriction when the line operator plans the schedule (Gerkman, 2017).

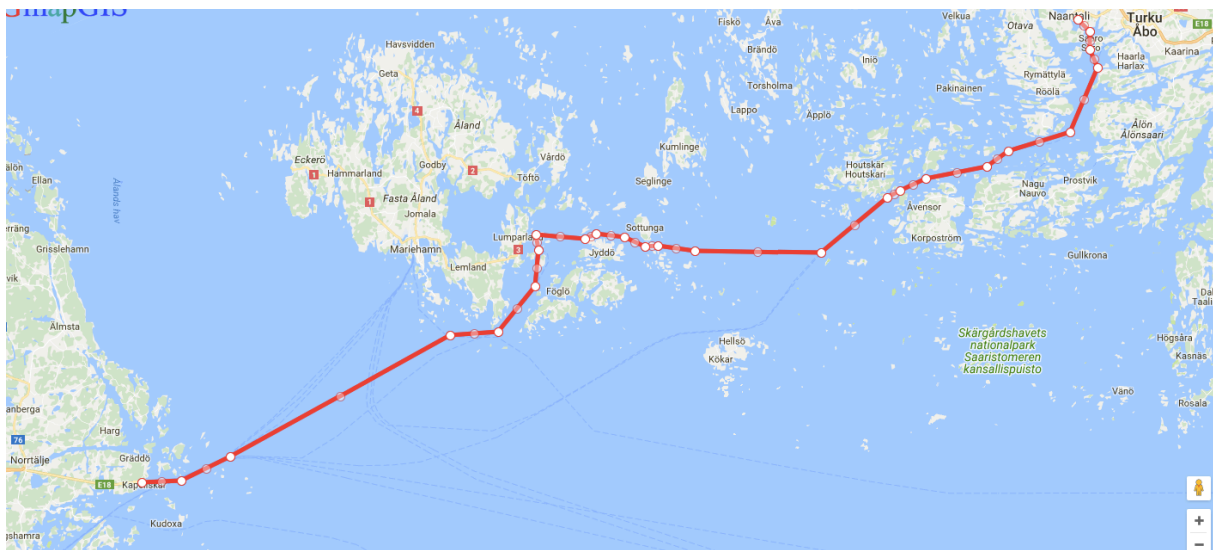


Figure 1, overview map of Finnlines Naantali-Långnäs-Kapellskär traffic. Source: Google Map and Finnlines

However, the two Master system can also have some negative aspects from a legal point of view. The maritime legislation and regulations are not formed with the phenomena of dual Masters serving onboard in mind. For example, the Maritime Code does not contain any single rules concerning shared command of a vessel.

The traditional Master's role with highest authority onboard will in the two Master system be shared between two persons. These two persons will share the responsibility of a Master. There are possible changes and problems with dividing responsibility and as a consequence also the liability, compared with the traditional model, where basically the entire responsibility for the ship operation is placed on one Master. If the Masters' responsibilities such as seaworthiness is divided between two persons within the same voyage, there might be situations where the question of liability is complicated (see figure 2). For example, in a case where Master 1 neglects his duties in ensuring that the ship is seaworthy and properly manned before the voyage. Because of this negligence there is an injured person onboard during the time of the command of Master 2. Who has the criminal liability of the injured person (see figure 2)? Also, the ship owner's role might be affected by new requirements of routines in share of the command onboard the vessel.

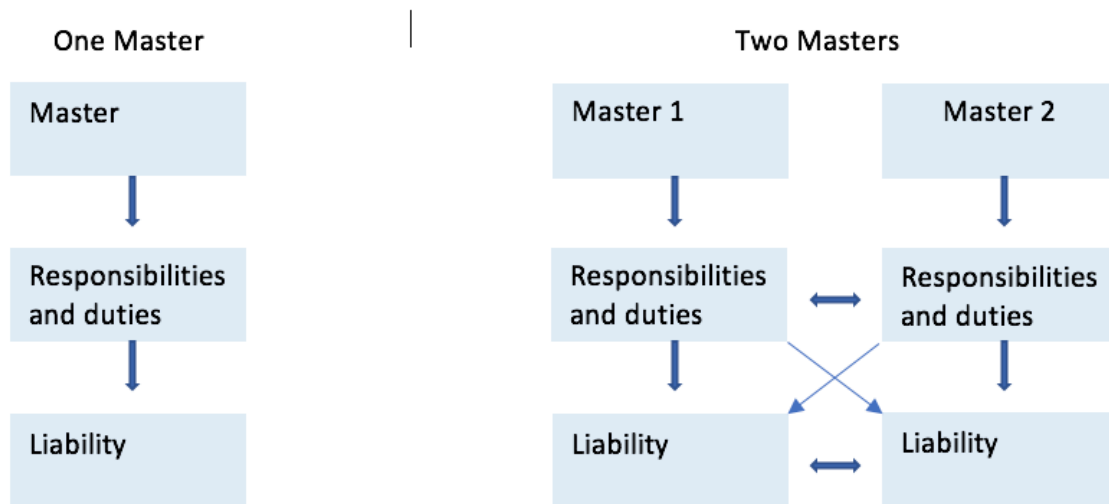


Figure 2, Duties, responsibilities and criminal liability of the Master onboard a one Master vessel vs a two Master vessel. Source: Own

There are situations where the Master possibly can be liable for injuries or damages caused by his/her decisions or negligence. The criminal liability of a Master regarding negligence or gross negligence in ensuring the seaworthiness of a vessel is according to the Maritime Code chapter 20 §1, up to two years in prison or minimum penalties. Also, negligence or gross negligence in arranging manning and watch keeping will according to Crew and the Safety Management law chapter 5 § 39 result in penalties to the liable Master. Because of these reasons the shared responsibility and liability between the two involved Masters is of high importance in a two Master system.

In addition to possible legal problems with the two Master system, we can assume all two Master systems will increase the manning cost to some extent. The negative impact of increased manning

costs has however most probably been taken into consideration by the ship owner. For example, in the two different two Master systems to be analysed in this Master's Thesis, the ship owner has made the decision to use a two Master system onboard some of their vessel (see 3.4.1 *Finnlines routines in their two Master system* and 3.4.2 *Eckerö Lines routines in their two Master system*). We can assume that the benefits the ship owner receives from the two Master system are higher than the negative impact by increased manning costs. The economical aspect of the two Master system will however be ignored in this Master's thesis.

1.3 Purpose

Although there are two Master systems in use onboard Finnish vessels, there are today no available studies on how the liability of the Masters is affected. Still in May 2019 there are no studies found in how a two Master system affect the liability of the Master, when making a search at google scholar. The legal framework and traditional routines are today not made for situations where there are two Masters onboard. The main purpose of this Master's thesis is to investigate how the Master's liability is affected by implementation of a two Master system onboard a vessel. With this Master's thesis, I'm going to find out and investigate some possible differences in liability between normal one Master ships and ships with two Masters.

1.4 Research questions

1. How does the two Master system affect the Masters' liability?
2. Who is liable for the seaworthiness of the ship if the responsibility of the seaworthiness has been shared by two Masters?
3. How does a two Master system affect the liability of Safe manning and Watch keeping arrangements?

1.5 Limitations

The Master's thesis will be limited to concern Finnish maritime law, Nordic ship owners and Nordic ships, where the two Master system is used. Three typical responsibilities of a Master will be investigated: the duty of making sure the ship is Seaworthy and maintained Seaworthy, the responsibility of Safe Manning and Watch keeping arrangements. The investigation will be based on how the two Master system affects the Masters' responsibility and liability regarding these selected duties of a Master.

2. Method

Today there are no known court cases where the two Master system is involved. Therefore, the problems in this Master's Thesis will be investigated by analysing two fictive cases. The cases will contain routines and facts from real ships (Rederi AB Eckerö, Ship management, 2015) (Finnlines Ship Management, 2014) and fictive problems related to the problem description of the Master's Thesis (see 1.2 *Problem description*). By analysing the legal problems in these cases the intention is to answer the questions regarding liability in a two Master system (see 1.4 *Research questions*).

A legal problem solving method (Lehrberg, 2014) will be used to analyse the legal problems in the cases. The cases will be constructed based on information from shipping companies (Finnlines Ship Management, 2014) (Rederi AB Eckerö, Ship management, 2015) and information from interviews with two Master mariners (Jonasson, 2017) (Gerkman, 2017) with experience of two Master systems.

2.1 My own experience from two Master systems

I have 8 years of experience from working in senior officer positions and in Master positions onboard several vessels in short sea traffic. Onboard five Finnish passenger ferries I have also experienced a system with two Masters sharing the command, the responsibility and the workload. In total, I have between year 2012 and year 2019 more than five years' experience from working as a Master in two different two Master systems. These two Master systems are also described in 3.4.1 *Finnlines routines in their two Master system* and 3.4.2 *Eckerö Lines routines in their two Master system*. In both two Master systems, I have experience from working both as Master 1 and as Master 2.

Although I will have advantages of my own experience of the topic, I know there are also problems involved. I can use my experience by having access to material from shipping companies and from vessels. There are also advantages in having own experience from working onboard vessels with similar conditions as in the fictive cases. When constructing the fictive cases I can easily apply received information from shipping companies and interviewed Masters, by using my own experience of similar working circumstances. However, I must not involve my own opinions and experiences as a part of the Theory- and the Analysis-part of the Master's Thesis. In the Theory part I need to be strict in using external sources in order to not write theory based on my own opinions and experiences. Regarding the Analysis I have no earlier experience of solving legal problems concerning the Master. I will use a strict method in legal problem solving. This will minimize all possibilities to use my own opinions and experiences in the analysis.

2.2 Legal Problem Solving

2.2.1 Background in Solving legal problems

A legal problem must be analysed by using a working method in order to find reliable answers to the problem (Lehrberg, 2014). According to Bert Lehrberg (Lehrberg, 2014), a legal problem has rarely a simple or single solution. Very often a legal problem is complicated and the answer is not absolutely stated in the law (Lehrberg, 2014).

In order to guide lawyers in solving legal problems, Bert Lehrberg (Lehrberg, 2014) has constructed a six-step method, also called "Praktisk Juridisk Metod". This working method is made to ensure that the person who solves legal problems will go through all necessary steps and avoid mistakes or misjudgements (Lehrberg, 2014). The book "Praktisk Juridisk Metod" by Lehrberg is one of the two most used books in legal problem solving among lawstudents in Sweden (Svensson, 2014).

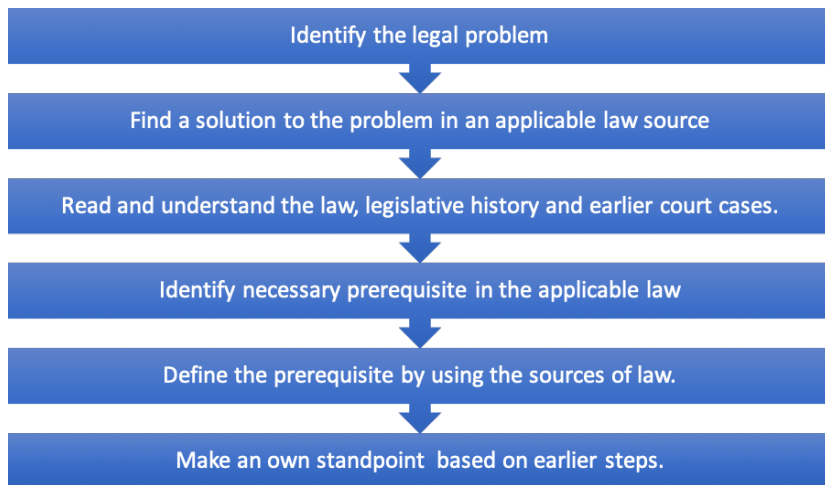
According to Eva-Maria Svensson, professor in legal science (University of Gothenburg, 2014), the legal problem solving method is widely seen as one method. Since there is not usually a chosen problem solving method in legal science, according to Svensson indicates that there is one obvious method, the "Praktisk Juridisk Metod" described by Lehrberg (Svensson, 2014).

Svensson is writing that a legal problem may have different results depending on what method is used to solve the problem. In the article Svensson also refers to Fredric Korling and Mauro Zamboni (Korling & Zamboni, 2013), the editors of Juridisk Metodlära, who also have been writing about the problem of the lack of different legal solving methods in Swedish literature (Svensson, 2014). Svensson refers to the forewords in "Juridisk Metodlära" from 2013 by Korling and Zamboni, where both editors are writing that they are missing literature to law students that is focusing on different methods and how different methods may be used in legal problem solving (Svensson, 2014).

It's obvious that there are today several methods in legal problem solving and the traditional method that has been defined by for example Bert Lehrberg and Ulf Bernitz is under challenge. Although there is some criticism regarding the Legal Problem Solving Method by Lehrberg, the method will be used in this Master's Thesis.

2.2.2 Bert Lehrbergs' six steps method

The first step in the six-step method by Lehrberg (Lehrberg, 2014), is to identify the legal problem, which means the problem solver must carefully recognize the legal problem and study necessary background information. When the legal problem is well known, the next step is to find a possible solution in any applicable law. Applicable law/laws and place of laws must be chosen. The third step is to read and decode the sources of law by using laws, law cases and preparatory works. When the law is well known, the fourth step is to identify necessary prerequisites in the chosen source of law, in order to evaluate if the rules are applicable or not. The fifth step is to analyse the meaning of the



prerequisites. In other words, how the prerequisites are meant to be used and what are the consequences of the fulfilled prerequisite. The last step is to make a standpoint of based on earlier steps, in order to present your solution to the legal problem (Lehrberg, 2014).

Figure 3, Six Step Method Source: (Lehrberg, 2014)

2.3 Applied method

The Six Step Method by Lehrberg (Lehrberg, 2014) will be used as a base for the applied method. Legal problems regarding ships with a two Master system in use are still very unknown and there are in January 2019 no identical court cases available from the Nordic countries (Stiftelsen Lovdata, 2019). Therefore, there is a need to use an adjusted method in this Master's Thesis (see *Figure 4, Applied method*)

At the first step, identify the legal problem (see 2.2.2 Bert Lehrbergs' six steps method) there will be built fictive circumstances onboard fictive vessels, based on real vessels and real routines. Onboard these fictive vessels, there will be a two Master system in use. There will be built two fictive cases, one based on Finnlines' routines in their two Master system (see 3.4.1 *Finnlines routines in their two Master system*) and one case based on Eckerö Lines' routines in their two Master system (see 3.4.2 *Eckerö Lines routines in their two Master system*). Both cases will contain accidents and chains of events before the accidents which involve both Masters onboard. Each of the cases will explain the legal

problems regarding the involved Masters. These legal problems will be the base of the analyses (see 4 *Analysis*).

Lehrbergs' step 2 to step 6 (see 2.2.2 *Bert Lehrbergs' six steps method*) will in the applied method be divided into two different parts: analysis of legal problems and assessment of the criminal liability. These two steps will be analyzed separately for each of the Masters in each case. The Finnish maritime legislation will be the source of law in these analyses. Nordic court cases related to legal problems in the cases will be used where it is applicable. However, none of the used court cases contain a two Master system but the legal problems of the Masters in these court cases are similar to the fictive legal problems in the fictive cases (see 3.3 *Court cases*).

Analysis of legal problems, the step 2 in the applied method, will contain: to find a solution in applicable law, to read and understand the law, to identify necessary prerequisite and to define the prerequisite. In this part the problems concerning each of the Masters will be analyzed separately.

In the assessment of the criminal liability, the step 3 in the applied method, the criminal liability of the Masters and possible punishments will be evaluated. This will be based on earlier steps in combination with available earlier court cases. Because of lack of identical court cases some problems must be solved based on the applied legal solving method without any analysis of earlier court cases.

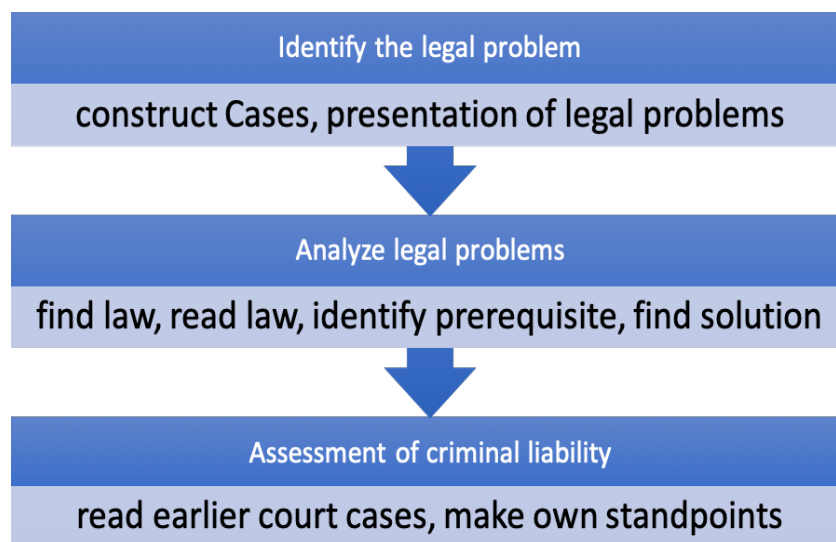


Figure 4, Applied method. Source: Own

3 Theory

Over the years there have been co-operations between countries in order to find common rules applying to shipping. An example of this is the Scandinavian Maritime Code of 1994, that is a result of co-operations between the Scandinavian countries and Finland (Falkanger;Bull;& Brautaset, 2011).

“The rules in the various codes are substantially the same, but not identical” (Falkanger;Bull;& Brautaset, 2011, s. 26).

Norwegian, Swedish and Danish and Finnish Maritime Code of 1994, contain similar rules regarding seaworthiness and duties of the Master. The structure of these rules is partly different in each of the countries’ Maritime Codes, but the content is almost identical. For example, both Finnish and Swedish Maritime Code explain the duties of the Master in chapter 6. In the Finnish Maritime code the Master’s duties regarding seaworthiness is explained in the same chapter, § 3, while the seaworthiness and the Master’s duties regarding seaworthiness, in Swedish Maritime Code is explained in chapter 1, §9 and 10. The wording is however almost identical in both Maritime Codes.

Also, international conventions by the UN organisation International Maritime Organisation, IMO, will affect the vessels. An IMO convention enters into force when a national Government implements the convention into its national law. Then the implemented convention is like any other national law (International Maritime Organisation, 2017). The most important international conventions are: SOLAS 74, ISM, Load Line Convention, STCW and COLREG (Falkanger;Bull;& Brautaset, 2011).



Figure 5, International conventions are adopted in national law and affect the Master via Finnish laws and regulations. Source: Own

Under international law, a flag state has jurisdiction over a ship when it's at high sea. Coastal states have to some level jurisdiction over foreign ships in their territorial waters. The range of jurisdiction is even wider in harbours or in coastal waters (Falkanger;Bull;& Brautaset, 2011). This means Finnish national laws (see figure 6) fully applies to Finnish vessels inside Finnish territorial waters and in Finnish harbours.



Figure 6, List of applicable Finnish national laws. Source: Own and (Finlex, 2019)

3.1. Responsibilities of the Master and the ship owner

3.1.1 Seaworthiness

Seaworthiness is a wide definition and contains many different parts, such as technical seaworthiness and seaworthiness related to the operation of the vessel (Falkanger; Bull; & Brautaset, 2011). The Maritime Code, chapter 6, §3, states that the Master is responsible for the seaworthiness of the vessel and the cargo. In addition to the safety of the vessel and the cargo, the Master is responsible for the seaworthiness regarding safety of human lives. Falkanger, & all 2011 is writing about the definition of seaworthiness by listing what is seen as unseaworthy:

“A ship is considered unseaworthy when, because of defects in hull, equipment, machinery or crewing or due to overloading or deficient loading or other grounds, it is in such a condition, that in consideration of the ships’ trade, the risk to human life associated with going to sea exceeds what is customary” (Falkanger; Bull; & Brautaset, 2011, s. 73)

Seaworthiness consists of both technical requirements and management requirements. The Maritime Cod, chapter 6 §3 states that:

“the Master shall prior to departure ensure the vessel is seaworthy in relation to the intended voyage and the time of the year, including properly manned and equipped, supplied with necessary provisions and stores, cargo spaces is in good condition and that the stability of the vessel is safe.”

Many of these requirements contain both technical requirements and management requirements. For example, the ship must be both constructed (technical) and maintained (management) in order to be suitable for the intended voyage. In the same way, the cargo spaces must be both constructed (technical) and well maintained (management and technical) in order to ensure the safe transport of the cargo. Routines and operational models will affect the management part of the seaworthiness but also partly the technical seaworthiness through maintenance routines. Ship construction and technical requirements will affect the technical seaworthiness. The requirements of seaworthiness are based on international law and conventions. SOLAS convention, ISM code, STCW convention, COLREG, MARPOL convention and ISPS code is all examples of international regulations that set up rules concerning seaworthiness of a vessel. These conventions will affect the Master via implementation in Scandinavian maritime law (Falkanger, Bull, & Brautaset, 2011) in this case via implementation in Finnish national laws.

The Master has the highest authority onboard and is responsible for the seaworthiness of the vessel (Falkanger, Bull, & Brautaset, 2011). Because the seaworthiness is a very wide definition, the range of

the responsibilities of the Master is quite extensive. While the Maritime Code chapter 6 §3, describes the main duties of the Master regarding seaworthiness, Finnish national laws Crew and the Safety Management 1687/2009 §9 and Decree on Manning of Ships 2009/1797 §6, is describing the Masters responsibilities in relation to seaworthiness at a more detailed level.

The requirements of technical seaworthiness are stated in the law, Technical Safety and Safe Operation 1686/2009. Also, international maritime legislation will set up rules and regulations related to seaworthiness which is affecting the responsibilities of the Master. Most of these international rules and regulations are however adopted in the Finnish maritime laws and affect the Master via the national laws. For example, the Technical Safety and Safe Operation chapter 2, §6 states:

“a vessel that belongs to the SOLAS area (all seagoing vessels over 500gt) shall meet the requirements of constructions, equipment’s and arrangements, that is stated in the SOLAS Convention”.

Although the Master’s responsibility is not mentioned in this law regarding technical safety and safe operation, the Master is according to the Maritime Code responsible for the seaworthiness of the vessel. Parts of the seaworthiness is described in detail in this law, which affect the total seaworthiness and further on the responsibility area of the Master.

The Maritime Code chapter 6, §3, states that:

“the Master is responsible ensuring the seaworthiness of the vessel prior to departure. During the voyage the Master is responsible to use his best endeavour to maintain the seaworthiness of the vessel”.

These statements of the Master’s responsibilities to ensure and maintain all parts of the seaworthiness of the vessel will be found in many places within the Scandinavian maritime legislation regarding safety and security of a vessel. For example, Crew and the Safety Management, §9, states the Masters responsibilities of ensuring the vessel is properly manned taking into account prevailing circumstances and §23 states that the Masters have a responsibility in maintaining adequate arrangements for safe watchkeeping taking into account prevailing circumstances.

According to Maritime Code, chapter 6, §3, the Master has an obligation to inform the Ship Owner if there are any failures or defects regarding the seaworthiness of the vessel:

“If there’s any faults regarding seaworthiness, which is not possible to reject directly, the Master must immediately inform the Ship Owner about the fault. If the ship owner is not willing to correct the fault, the Master is allowed to immediately vacate from his duty.”¹

This includes the Ship Owner when the Master informs about any failures or defects. It’s a responsibility of the Master to inform the ship owner, a Master is exposed to criminal liability if he neglects this duty to inform the ship owner. The fire accident of the Passenger Scandinavian star at 1990 is an example of this, where the Danish court found the Master guilty of neglecting his duties regarding informing the ship owner of defects regarding the seaworthiness of the vessel (ND-1993-74, 1993).

Ship Owners has obligations and responsibility in keeping the vessel seaworthy. The Ship Owner is responsible for the safety management system onboard (see: 3.1.4 Ship safety management and responsibility of the ship owner), taking care of the technical management, etc. In practise, many of the responsibilities of the Ship Owner is allocated to the Master of the vessel. It’s also stated in the Maritime Code, chapter 6, §9:

“that the Ship Owner or any other person may not prohibit or restrict possibilities of the Master to make his necessary decisions or actions that according to his experience is necessary regarding safety or human life’s at sea or in order to protect the marine environment”².

The accident with a fire onboard Scandinavian Star on the 7th of April 1990 is an example of an accident where the ship owner also is condemned because of violence of the ship owner’s duties stated in Maritime Code, chapter 6, §9. Both the Master and the Ship owner where condemned to punishments. (Stortingets granskingskommisjon for brannen på Scandinavian Star, 2017)

¹ Own translation from Maritime Code chapter 6, §9

² Own translation

3.1.2 Safe manning

In the Maritime Code, chapter 6 § 3, the Safe manning is already stated as one of the responsibilities of the Master regarding seaworthiness of the vessel. Manning of the vessel is however also one of the duties of the Ship Owner. The international STCW convention requires Ship Owners to ensure that all crew members have valid certificates and that the ship is manned according to the minimum safe manning certificate, that is issued by the flag state (Institute of Maritime Law, 2008). Also in the international ISM-code, the ship owner's responsibility is stated: "The company should ensure that each ship is manned with qualified, certificated and medically fit seafarers in accordance with national and international requirements" (Anderson, 2005). The minimum requirements of the ISM-code regarding manning are therefore the STCW requirements (Anderson, 2005).

The Finnish national law Crew and the Safety Management, chapter 2 § 9 states the responsibilities of the ship owner and Master regarding the manning of the vessel. According to chapter 2 § 9 of the Finnish law "Crew and the Safety Management", the ship owner shall ensure that: the ship has a manning certificate, the ship is manned according to the manning certificate, the crew has the required certificates and the crew is familiarized with their duties onboard the vessel. At the same time the Master is responsible for ensuring that the vessel is manned in a safe way according to actual circumstances. Furthermore, the Master is responsible for ensuring that the vessel is manned according to the manning certificate.

Except the manning requirements both STCW-convention and the national Finnish law states requirement of vessel specific training of crew members. The requirements of familiarisation are stated in the STCW-convention, chapter 6.3: "The Company should establish procedures to ensure that new personnel and personnel transferred to new assignments ...are given proper familiarisation..." (Institute of Maritime Law, 2008).

Crew and the Safety Management, chapter 4 § 39 states that the person who, by wilfulness or gross negligence, breaches the duties of safe manning of the vessel will be condemned to penalties³. This will affect both the Master and the Ship Owner if they make breaches against their duties in safe manning.

³ Own translation from "Lag om fartygspersonal och säkerhetsorganisation för fartyg" 2009/1687.

3.1.3 Watch keeping arrangements

The work onboard vessels is normally partly divided into shifts. These shifts are called watches. The most common watches are bridge watch at the navigational bridge and engine watch in the engine control room or in the engine room.

“The watch is described in the Dictionary of English Nautical Language: The duty shift on board ship or a portion of the crew assigned to work during a specific period of time on board ship” (MacKenzie, 2012).

Watchkeeping arrangement is closely connected to seaworthiness and safe manning. Although watchkeeping arrangements are not mentioned in the Maritime Code, there are connections to the chapter 6, paragraph 3 regarding seaworthiness of the vessel. The duty of the Master in keeping the vessel seaworthy includes proper manning in relation to the time of the year and the intended voyage. Proper manning is the minimum requirement in order to be able to arrange adequate watchkeeping onboard the vessel. Adequate watchkeeping could also be seen as a part of the seaworthiness of the vessel.

The navigational watch is considered to be a key shipboard operation which requires established procedures by the ISM-code (Anderson, 2005). According to the ISM-code the ship owner is recommended to include the bridge and engine room watch arrangements in the vessels SMS procedure manual. Also, special watch requirements in bad weather and in fog is recommended to be a part of the SMS procedure manual (Anderson, 2005). The ISM code states requirements and recommendations of the ship owner regarding watchkeeping arrangements for vessels.

According to the Crew and the Safety Management, chapter 2 § 23, the Ship Owner, the Master, the Chief Engineer and the whole watch personnel shall ensure the watch is safe and sufficient in relation to actual circumstances and the planned route of the vessel. The law also states, that the watch arrangements may not affect the watch personnel by fatigue. Regarding the STCW requirements, there is a reference to the instructions of watchkeeping arrangements by TRAFI, the Finnish Transport Safety Agency, where the STCW requirements are included.

There are detailed instructions regarding watchkeeping in the directive, Watchkeeping onboard vessels issued by the Finnish Transport Safety Agency, TRAFI. The instructions are based on the Finnish national law regarding sea personnel and safety organisation onboard but also STCW requirement and requirement of the COLREG are included. In the instructions, the responsibility of the Master, the Chief Engineer, the Ship owner and other watch personnel is stated according to national law. All

watchkeeping instructions such as watchkeeping at sea, watchkeeping in port, bridge watch, engine watch, lookout and cargo watch, are however described in details.

Also, the national Finnish law, Seamen's Working Hours Act 1976/296, chapter 4 §9a affect the watchkeeping arrangement in the sense that the rest hours are restricted. In the watchkeeping regulations in the Crew and the Safety Management, chapter 2 § 23, there are stated that the watchkeeping personnel may not be affected by fatigue. The law of working hours states the minimum requirements for rest hours, which is an important limit in watch arrangements onboard the vessels.

3.1.4 Ship safety management and responsibility of the ship owner

The goal of the ISM code is to have ship owners develop and document a culture of safety at all levels ashore and onboard vessels (Falkanger, Bull, & Brautaset, 2011). The ISM-code, requires all ship owners to define and document the responsibility, authority and interrelation of all personnel onboard and ashore. The ship owner is also responsible for keeping adequate resources and shore based support and to enable the designated person ashore (DPA) to carry out their functions (Anderson, 2005).

According to the ISM-code the Master is in highest command and no ship owner specific requirements in the ISM code override the authority of the Master. This is also stated in the Maritime Code, chapter 6 § 9, where the ship owner is not allowed to limit the authority of a Master regarding his possibilities to make decisions in safety related matters. The ISM-code however requires the ship owner to clearly define and document the Master's responsibility and at the same time in the ship management system (SMS) ensure the highest overriding authority of the Master (Anderson, 2005).

Table 1, Masters responsibility. Source: ISM-code

Master's responsibility and authority stated in the ISM Code:	
The Company should clearly define and document the Master's responsibility with regard to:	
1	Implementing the safety and environmental-protection policy of the Company;
2	Motivating the crew in the observation of that policy;
3	Issuing appropriate orders and instructions of that policy;
4	Verifying that specified requirements are observed; and
5	Reviewing the SMS and reporting its deficiencies to the shore-based management.

"The Company should ensure that the SMS operating on board the ship contains a clear statement emphasising the Master's authority. The Company should establish in the SMS that the Master has the

overriding authority and the responsibility to make decisions with respect to safety and pollution prevention and to request the Company's assistance as may be necessary" (Anderson, 2005).

This ISM-requirements regarding Master's responsibility is essential in a two Master system. It's obvious that routines of a two Master system should be included into the SMS-documentation in order to define the authority of the two Masters and in order to specify the routines of the two Master system.

What is central in the ISM-code is that the requirements of ship management are brought further than in other legislations. For example, a ship may according to the ISM requirements be seen as unseaworthy although the vessel is manned according to national laws and the STCW-convention. Such situations may occur if key personnel onboard have lack relevant knowledge or lack relevant experience (Anderson, 2005).

3.1.5 Vicarious liability of the ship owner

The vicarious liability is a form of strict liability where the ship owner is responsible for his employees' errors although the ship owner has not himself made any errors (Falkanger;Bull;& Brautaset, 2011). According to Maritime Code chapter 7 §1, the shipowner is liable for damages caused by the Master, by the crew, by the pilot or by anybody else in service of the shipowner. When the damage is caused through the operation of the ship the ship owner is liable, if the damage is caused by negligence of a person serving the ship owner. (Falkanger;Bull;& Brautaset, 2011).

Falkanger, Bull § Brautaset explain the background of the vicarious liability of the ship owner as follows:

"The immediate cause of damages in ship operation can often be traced to the Master and crew" (Falkanger;Bull;& Brautaset, 2011).

However, the damaged property or claimed compensation can be much higher than the lifetime earnings of a Master or a crew member, therefore the liability of the ship owner is in focus. "In practice, it is not very important whether the injured party can sue the Master or the crew because the chances of enforcing a potential judgement are slim. Naturally, the question of whether the ship owner is liable is of greater interest." (Falkanger;Bull;& Brautaset, 2011).

3.2 Criminal liability (Punishments)

The ship owner is liable for damage caused by his employees through the vicarious liability (Falkanger; Bull; & Brautaset, 2011). However, the Master still bears the criminal responsibility for his actions. In situations where the Master has not fulfilled his duties as a Master, he might be condemned to fines or prison.

3.2.1 Criminal liability seaworthiness

The Maritime Code, chapter 20 §1 states that the Master will be condemned to penalties or prison for maximum one year, if he because of negligence has went to sea with an unseaworthy ship, that has risked the lives of persons onboard. If the Master has done the same without risking human lives, he will be condemned to penalties or prison for maximum half a year.

Also, the Ship Owner will according to Maritime Code, chapter 20 §1 in the same situation be condemned to penalties or prison for maximum one year, if he has seduced the Master to go to sea with an unseaworthy ship or if he has been aware of the situation or if he would have been able to avoid the situation. If the Ship Owner has done the same without risking human lives, he will be condemned to penalties or prison for maximum half a year.

If the above explained actions regarding negligence of seaworthiness have resulted in injury of any person the perpetrator shall according to Maritime Code, chapter 20 §1 be condemned to up to two years in prison.

Technical Safety and Safe Operation, chapter 11, §90 states that a person, who by gross negligence breaches against the technical and safety requirements of the vessel shall be condemned to fines unless a more severe punishment is stated in any other law.

The punishment in Finnish maritime legislation for breaching the regulations and duties regarding seaworthiness may result in fines or up to two years in prison. In serious cases, there's however a significant risk of even more severe punishments stated by the Criminal Code. According to Maritime Code, chapter 20 §10 the Master might also have his certificates temporarily suspended if he is found incapable to act as Master on other vessels as a result of negligence of his duties regarding seaworthiness.

3.2.2 Criminal liability safe manning and Watchkeeping arrangements

Crew and the Safety Management, chapter 4 § 39, states that the person who, by wilfulness or gross negligence, breaches the duties of safe watch onboard the vessel or neglects the responsibilities of

keeping the vessel manned according to regulations, will be condemned to penalties. This will affect both the Master and the Ship Owner if they make breaches against their duties in safe manning or safe watchkeeping. Also, gross negligence in the duties in implementing the ISM-code and the safety management system will lead to penalties according to the law regarding sea personnel and safety organisation for vessels.

Breaches against duties regarding safe manning and watchkeeping will according to Finnish maritime legislation result in fines. However more serious cases will be covered by more severe punishments by the Criminal Code. The phrase:

“unless more severe punishments is provided elsewhere by law”

is included also in the Crew and the Safety Management, chapter 4 § 39 and will in serious cases activate the more severe punishments of the Criminal Code.

3.3 Court cases

3.3.1 Åbo hovrätt – ND-1990-74

In march 1987 the Finnish Ro-Ro vessel Karelia got a heavy list due to shifting cargo in heavy weather. The list was up to 55 degrees and the crew was abandoned to a life raft. In the life raft 6 persons died and one was badly injured. The Master and Chief Officer of the vessel are accused of negligence of their duties regarding seaworthiness. In addition, the Master is accused of causing the death of 6 persons and injury of one person (ND-1990-74, 1990).

The court found the cargo not properly secured in relation to the trade, time of the year and the expected weather conditions. Shifting cargo was the main reason of the accident. Regarding the death of 6 persons and the injury the reason turned out to be a mistake made by the Master. Before abandoning the ship the Master tried to stop the propeller from the emergency stop but he pressed the wrong button. The propeller was still running and caused later panic in the life raft. Persons in the life raft cut the canopy away and some jumped into the cold sea. All 6 persons died because of coldness. Also, the injury of one person happened due to panic in the life raft (ND-1990-74, 1990).

Because of negligence of the duties regarding seaworthiness the Master and Chief Officer were condemned to pay fines. The Master was condemned because negligence of his, in the Maritime Code stated duties, of ensuring the seaworthiness of the vessel. The Chief officer was condemned because of his role as supervisor of the cargo lashing (ND-1990-74, 1990).

Regarding the incrimination of causing the death of 6 persons and the injury of one person, the Master was acquitted. The court found the Master's mistake of pushing the wrong button as the main reason for both the six deaths and the injury of one person. However, because of the emergency and the stress, the Master cannot according to the court be condemned of causing the deaths or the injury. The decision of the court is based on the Criminal Code (ND-1990-74, 1990).

3.3.2 Kouvola hovrätt – ND-2012-82

In December 2011, the Isle of Man flagged vessel, Thor Liberty enters Finnish territorial water. The vessel arrives to Kotka in Finland and during loading explosives are found onboard, loaded in violation to the IMDG code. These explosives were loaded in the last harbour in Germany. (ND-2012-82, 2012)

Because the explosives onboard Thor Liberty were loaded in cardboard boxes, which is not allowed by the stowage rules in the IMDG code, the prosecutor considered the vessel unseaworthy regarding the cargo and the safety of the vessel and the crew. The Master and Chief officer are accused of negligence of their duties regarding seaworthiness. Both are accused based on Maritime Code chapter 20, §1 1mom, for causing an obvious danger to the lives of the crew members. (ND-2012-82, 2012).

The IMDG code is generally known among all deck officers and the court found it clear that both Chief Officer and Master are aware of about the IMDG regulations. Both Master and Chief officer confirm that they were aware of both IMDG regulations and that the loaded explosives are covered by the IMDG regulations. According to court it's obvious that Master and Chief officer have neglected their duties regarding seaworthiness. The loading operation has however happened in Germany onboard a foreign vessel. There's a question whether these persons according to Finnish court can be condemned or not (ND-2012-82, 2012).

Regarding the loading operation in Germany, the court found it impossible to condemn the Chief Officer for negligence of the seaworthy. This because the crime is committed outside the coverage of the Finnish law. Regarding the Master the situation is different. He is according to Maritime Code chapter 6, §3 responsible for the seaworthiness during the entire voyage. According to Maritime Code chapter 20, §1 it's punishable to use an unseaworthy ship. The Thor Liberty was inside Finnish territorial water in unseaworthy condition because of the cargo of explosives loaded in violation of the IMDG code. However, they discovered that the explosives involved did not cause an obvious danger to human lives onboard. Although the explosives were loaded in violation to the IMDG code, there's only a significant enhanced risk of an explosion, which means there is not involved any obvious danger to human lives. Therefore, also the Master was acquitted (ND-2012-82, 2012).

3.4 Presentations of some two Master systems

3.4.1 Finnlines routines in their two Master system

The Finnish ship owner Finnlines has experience from using two Master systems onboard their vessels. One of their experiences started in the summer season of 2014, when Finnlines used a two Master system onboard their vessels on the Naantali – Långnäs – Kapellskär route (Finnlines Ship Management, 2014). Because of the tight summer schedule, there was a need of a second Master in addition to the ordinary Master. By using two Masters onboard, Finnlines could arrange the Master's working hours and rest hours according to the requirements in the Seamen's Working Hours Act. Instead of using one extra ordinary Master, Finnlines started using their Line Pilots as Master for some hours during the night. During the whole summer season the command was shared between the ordinary Master and the line pilot onboard these Finnlines vessels. The ordinary Master was in command approximately 20 hours of the day and the line pilot approximately 4 hours per day. Finnlines has made routines and guidelines concerning the procedures in this two Master system (Appendix 1, Interviews). The objective of these procedures is to ensure that the hand over command is following good seamanship and is in accordance to applicable legislation (Finnlines Ship Management, 2014). This two Master system is still 2019 in use at the Naantali-Långnäs-Kapellskär route. In the following sections, the routines of Finnlines two Master system will be presented.

Finnlines has made written instructions of the routines in the two Master system at the Naantali-Långnäs-Kapellskär route (Finnlines Ship Management, 2014). These instructions are given as a separate document, distributed as an ISM circular to the vessel. The instructions are today only a SMS circular, not included to any SMS manual. According to these Finnlines procedures, the Line Pilot must in addition to the pilot certificate also have Masters' competency and the experience to act as Master (Finnlines Ship Management, 2014). It's important to inform the whole crew about the shared command, therefore the whole crew onboard the ship shall according to the instructions always be aware of who is in command (Finnlines Ship Management, 2014).

The handing over procedure is one of the most important parts of these instructions. Handing over command will be made according to a pre-agreed schedule between the Master and the Line Pilot (Finnlines Ship Management, 2014). This is all written in the logbook and the Master that is taking over command is always on the bridge at the moment of taking over the command. The change of command is confirmed in the logbook by both Masters and by the officer on watch. The Master that hands over the command might confirm this in advance by writing time and acknowledgement in the logbook. According to Finnlines' routines the seaworthiness must be determined by the Master before taking over the command. The type of seaworthiness is not defined in the instructions but there are

some further instructions regarding the actual status of the vessel: Before taking over command the overtaking Master shall consider the following voyage checklist parts “before departure” and “after departure”. He/she shall also be familiar with the passage plan and approve it. The status of propulsion, energy supply, safety and bridge equipment shall also be checked with the officer of the watch before taking over the command (Finnlines Ship Management, 2014).

Except daily routines in the two Master system there might be a need of routines in a situation that is not applicable to daily procedures. Therefore, Finnlines has added some instructions regarding this: During special circumstances the command can be agreed between the Masters in other ways than the pre-planned schedule if the both Masters are at the bridge at the time of the agreement (Finnlines Ship Management, 2014). If the overtaking Master for some reason is not able or willing to take over the command there are also instructions regarding this: The Master in command shall always be contacted if the overtaking Master is not taking over the command at the agreed time (Finnlines Ship Management, 2014).

3.4.2 Eckerö Lines routines in their two Master system

At the beginning of 2011 the Finnish ship owner Rederi AB Eckerö started to use a two Master system onboard the passenger ferry Nordlandia and the Ro-Pax vessel Translandia. Nordlandia and Translandia were both in Eckerö Lines traffic on the Helsinki-Tallinn route and these two Master systems were in use until the end of 2012. Onboard both vessels there were two Master systems with two Masters sharing the command of 12 hour periods each day (Rederi AB Eckerö, Ship management, 2015). According to the Master of m/v Nordlandia, Kjell Jonasson, the main reason why Rederi AB Eckerö decided to use a two Master system was increased traffic which required more Masters’ resources to avoid problems with the rest hours of the Masters (Jonasson, 2017). In this section the two Master system used at the m/v Nordlandia will be presented.

At the Nordlandia there were two Masters, sharing the command of 12 hour periods. The handover of command was at 06:00 and 18:00. Master 1 was in command 06:00-18:00 while Master 2 was in command 18:00-06:00. Both handovers were performed at sea during the voyage (Rederi AB Eckerö, Ship management, 2015). The handover 18:00 was according to K. Jonasson normally done in the Master’s office and information was exchanged between the two Masters. At 06:00 both of the Masters were usually off duty and the handover was agreed in advanced and performed without any physical handover routines. The Master 1, who took over the command at 06:00 got necessary information of the vessel’s status via the officer of the watch before the morning arrival to Helsinki.

The name of the Master and time of command were written in the ship's log book as a separate notice each day. (Jonasson, 2017).

Office duties were partly divided between Master 1 and Master 2 and both Masters had working time in office during day time. Although the office duties were divided, the cooperation between the two Masters was good. Normally, all important decisions were made together by the two Masters (Jonasson, 2017).

Instructions regarding designated duties of both Masters and officers were made in written form. These instructions were made onboard by the Masters and senior officers and approved by the shipping company (Rederi AB Eckerö, Ship management, 2015). Other practical routines of the two Master system such as handover procedures and responsibility, are not officially documented. These issues were according to Master K. Jonasson however carefully discussed both onboard and with the shipping company. All involved Masters, officers and personnel at the shipping company were involved and informed of the routines of the two Master system (Jonasson, 2017). The two Master system was not included as a part of the vessel's ISM system (Rederi AB Eckerö, Ship management, 2015).

4 Analysis

In this section two fictive cases from two “Two Master vessels” will be described. The legal problem in each case will be identified and the problems will be analysed by using the method described in

4.1 Analysis of case 1

The fictive situation onboard “Tallin Express” will be analysed. Routines from the two Master system used at Eckerö Line (3.4.2 *Eckerö Lines routines in their two Master system*) are the main source of routines used in the case 1. The criminal liability of each Master will be analysed separately.

4.1.1 Identify the legal problems

Onboard the Finnish ro-ro passenger ship “Tallinn Express” there is a two Master system in use where each of the two Masters are in command 12 hours per day. The Master duties are equally shared between the two Masters and the command of the vessel is always carried out in turns of 12 hours. The two Master system is identical to the two Master system of Eckerö Line, described in 3.4.2 *Eckerö Lines routines in their two Master system*. In the morning, the command is handed over at 06:00 and in the afternoon at 18:00. Both hand overs of command are performed at sea. m/v Tallinn Express is in regular traffic between Finland and Estonia, on the Helsinki-Tallinn route.

Tallinn Express is in harbour in Tallinn and Master 1 is in command during loading and preparation of the next voyage. This is the second voyage of the day and Tallinn Express has been in harbour since 12:00. The weather in Tallinn is windy, approximately 16m/s from the SW. Tallinn Express is an old fashioned passenger ferry of 162 meters and is much more sensitive to heavy sea than modern large passenger ferries.

The car deck is expected to be fully loaded by a mix of cars and lorries. Because of the schedule the Chief Officer asks the Master 1 if he can get permission to deviate from the cargo securing manual in order to depart on time. In normal weather conditions the Cargo securing Manual allows the lorries to be unlashed but in these weather conditions there’s a requirement of minimum 4 lashings per each lorry. Now Chief Officer asks permission from Master 1 to sail with unlashed lorries to be able to sail on time. Master 1 agrees to this deviation from the cargo securing manual, based on his earlier experience from the actual route of the ship. Master 1 considers the ship to be seaworthy and the departure is made at 16:30 under command of Master 1.

Master 1 took according to agreed routines over the command at 06:00 while Master 2 was still resting. Master 2 participated in the mooring operation as assistant to Master 1 at the arrival to Tallinn at 11:00. During the whole stay in Tallinn the Master 2 participated in a meeting ashore and joined the ship just before departure. Therefore, the Master 2 is fully unaware of the deviations from the cargo securing manual. However, Master 2 takes over the command 1,5 hours after departure. The handover of command was performed in the Masters' office as a routine task while the vessel was in the middle of the Gulf of Finland on her way to Helsinki. At the handover, Master 1 forgot to tell about the deviations from the cargo securing manual. The weather is still windy and the ship starts to move in the heavy sea when the vessel is not protected by Estonian shore anymore. At this moment, the Master 2 enters the bridge and is by the Officer of the Watch informed of the unlashed lorries on the car deck. Some minutes later the ship got heavy list to port and the ship is still rolling heavily. Master 2 managed to change course towards the wind in order to stop the rolling. Although the Master 1 handled quickly there were some damages to the cargo and the passengers. One passenger was badly injured due to falling loose objects in the restaurant at the time of the heavy list.

Later they discovered that a major cargo shift on the cargo decks, caused by insufficient securing of cargo, caused the vessel to list. Tallinn Express was inside Finnish territorial water at the time of the accident. Master 2 was in command during the cargo shift and the time of the injured passenger.

The report issued by Safety Investigation Authority concludes, that the root cause of the accident was insufficient lashing, not in accordance with the Cargo Securing Manual. According to the Maritime Code, chapter 6 §3, the Master is obliged to ensure the seaworthiness of the ship prior to departure. The Master is also during the voyage obliged to monitor and make sure the ship is kept in proper condition. The question is what is the criminal liability of each of the Masters. Master 1 has neglected his duties of ensuring the seaworthiness prior to departure but at the time of the accident Master 2 was in command. The situation is complicated due to the change of command at sea, in the middle of the chain of events. No maritime laws are taking the Two-Master system in consideration. Traditional principles regarding the Masters' liability must be applied to this extraordinary situation.

4.1.2 Analysis of legal problems concerning Master 1

Master 1 has agreed to deviations from the cargo securing manual. The requirements of the Cargo Securing Manual were in actual weather conditions 4 lashings per lorry and Master 1 agreed to using no lashings. The investigation board has found out that the main reason for both the cargo shift and the injury was the unlashed cargo.

Regarding seaworthiness prior to departure, the Maritime Code chapter 6, §3 states:

“the Master shall prior to departure ensure the vessel is seaworthy in relation to the intended voyage and the time of the year, including properly manned and equipped, supplied with necessary provisions and stores, cargo spaces is in good condition and that the stability of the vessel is safe.”

Master 1 has neglected his duties regarding ensuring the ship’s seaworthiness before the departure. He has agreed to using no lashing although the requirement was 4 lashings per cargo unit. The Master 1 has also failed in ensuring the seaworthiness in relation to the intended voyage and the actual weather conditions.

Maritime Code chapter 6, §3 states the responsibility of the Master during the voyage:

“During the voyage the Master is responsible to use his best endeavour to maintain the seaworthiness of the vessel”.

Master 1 was in command during the departure and during the first 1,5 hours of the voyage. Because the vessel was not loaded in accordance to the Cargo Securing Manual the vessel will be seen as unseaworthy regarding the cargo. Although Master 1 was fully aware about the situation he took no actions to lash the unsecured cargo in order to make the ship seaworthy. Neither did Master 1 interrupt the voyage or any other actions in order to ensure the seaworthiness of the vessel during the voyage. In this sense Master 1 also neglected his duties in maintaining the seaworthiness of the vessel.

In conclusion, there are at least two actions that can be criminalised (*Table 2*). Two of these are based on the responsibility of the Master stated in the Maritime Code, Chapter 6. These two actions are negligence of ensuring seaworthiness prior to departure and negligence of keeping the vessel seaworthy. The fact that the two first actions have resulted in bodily injury to one person, will activate the more severe punishments regarding these breaches.

Table 2. Criminal actions by Master 1. Source: Own

Criminal actions of Master 1	Place of law
Negligence in ensuring the seaworthiness of the ship prior to departure	Maritime Code, Chapter 6, §3, 1mom
Negligence in keeping the vessel seaworthy	Maritime Code, Chapter 6, §3, 2mom
Negligence in ensuring the seaworthiness which has caused personal injury to one passenger	Maritime Code, Chapter 6, §3, 1mom and 2mom in combination with: Maritime Code, Chapter 20, §20, 6mom

4.1.3 Assessment of the criminal liability of Master 1

Seaworthiness is a clearly stated responsibility of the Master. The responsibility and liability of the Master regarding seaworthiness is defined in the Maritime Code. In chapter 6 the responsibility is stated and liability for breaches against the responsibility in chapter 20.

The Maritime Code, chapter 20 §1 1mom states that the Master will be condemned to penalties or prison for maximum one year, if he because of negligence has gone to sea with an unseaworthy ship that has risked the lives of persons onboard. If the above explained actions regarding negligence of seaworthiness has resulted in injury of any person the perpetrator shall according to Maritime Code, chapter 20 §1 6mom, be condemned to up to two years in prison.

In 1990 the Master and a Chief Officer of m/v Karelia were condemned to pay fines because of negligence of ensuring the vessel is seaworthy and kept seaworthy (3.3.1 Åbo hovrätt – ND-1990-74). Like in the case 1, m/v Karelia got a severe cargo shift in heavy weather because of improper securing of the cargo on the car deck. Based on the result of this court case it's likely that Master 1 also will be condemned to penalties because of negligence of seaworthiness.

Karelia was later abandoned due to heavy list and because of a mistake by the Master of Karelia, there was panic in the life raft and several persons died as a result. The Master of Karelia was based on Criminal Code prosecuted for causing the deaths of these people. According to the court the main reason for the deaths of these people was however a mistake by the Master during the emergency situation. Therefore, the Master was proposed regarding the cause of death. Case 1 is regarding cause of injury of another person, similar to the Karelia case, where the Master was prosecuted for causing

the death of several persons. What is different in Case 1, is the fact that the negligence of Master 1 could be seen as the main reason of the injury of one person. The heavy list caused an object to fall on the person which caused an injury. Unsecured cargo was the direct cause of the cargo shift and the list. Master 1 had agreed to not lashing the lorries on the cardeck. In this Case, we will evaluate the criminal liability regarding bodily injury by using Maritime Code, chapter 20 §1, mom6 instead of Criminal Code. However, we can use the court case of Karelia as a reference in order to state that Master 1 most probably will be condemned to punishments due to causing bodily injury to another person.

Based on earlier court cases and the Maritime, Master 1 is likely to be condemned for negligence of seaworthiness which has caused a clear risk of human lives (See *Table 3. Penalties and actual places of law*). He will also likely be condemned for causing bodily injury to another person via Maritime Code chapter 20 §1 mom 6 to an extended penalty of up to 2 years because his negligence of seaworthiness has caused bodily injury to one passenger.

Table 3. Penalties and actual places of law. Source: Own

Place of law regarding criminal liability	Penalty
Maritime Code, chapter 20 §1, mom1 negligence of seaworthiness (included risk of human lives)	Fines or prison up to 1 year.
Maritime Code, chapter 20 §1, mom6 negligence of seaworthiness (caused injury or damage)	Fines or prison up to 2 years.

4.1.4 Analysis of legal problems concerning Master 2

Master 2 was not aware about the agreed exceptions from the cargo securing manual. Based on earlier experience and routines onboard Tallinn Express, Master 2 saw no reason to question the job of Master 1 regarding ensuring the Seaworthiness prior to departure.

Regarding seaworthiness prior to departure, the Maritime Code chapter 6, §3 states:

“the Master shall prior to departure ensure the vessel is seaworthy in relation to the intended voyage and the time of the year, including properly manned and equipped, supplied with necessary provisions and stores, cargo spaces is in good condition and that the stability of the vessel is safe.”

The negligence in ensuring the ship's seaworthiness before the departure, is the root cause of the accident. However, Master 2 was not in command at departure and was not able to affect the seaworthy prior departure. Master 1 has neglected his duties regarding ensuring the ship is seaworthy before the departure. Master 1 has agreed to using no lashing although the requirement was 4 lashings per cargo unit. Master 2 was not onboard at the time of preparing the ship for departure and he was not in command at the time. Regarding punishments for breaches of rules in Maritime Code chapter 6, §3, the Maritime Code chapter 20, §1 1mom contains a prerequisite regarding going to sea:

*"has a Master... **went to sea** with a vessel with such defects (related to seaworthiness)"*

Based on this the Master 2 is in this case not affected by the prior departure duties stated in Maritime Code chapter 6, §3 because he has not gone to sea, because that action was done by Master 1. However, the Master 2 has during the voyage responsibilities regarding the seaworthiness of the vessel. Maritime Code chapter 6, §3 states:

"During the voyage the Master is responsible to use his best endeavour to maintain the seaworthiness of the vessel".

Because of the unlashed cargo in relation to the actual weather conditions, the vessel is not seaworthy at the time when Master 2 is taking over the command. Master 2 is according to Maritime Code chapter 6, §3 obliged "to use his best endeavour to maintain the seaworthiness of the vessel". At the time of handover Master 2 however not investigated the actual state of seaworthiness because he was unaware of the situation until he entered the bridge. When the Master 2 became aware of the actual situation with unlashed cargo, he changed the course towards the wind in order to stop the rolling. This action fulfils at this moment the obligation of Master 2 in order to maintain the seaworthiness of the vessel. Master 2 was according to the Safety Investigation Authority acting correctly when he became aware of the situation. The time from taking over command until this action is however different. It's obvious that Master 2 could have been investigating the actual state of seaworthiness before taking over command. Master 2 is for a while having the command of the vessel, fully unaware of the lack of seaworthiness regarding securing of cargo.

Concluded there is at least one action that can be criminalised (*Table 4. Criminal actions by Master 2*). This is based on the responsibility of the Master regarding keeping the vessel seaworthy, stated in the Maritime Code, Chapter 6. The fact that the action has resulted in bodily injury to one person, might activate the more severe punishments regarding the breach.

Table 4. Criminal actions by Master 2. Source: Own

Criminal actions of Master 2	Place of law
Negligence in keeping the vessel seaworthy	Maritime Code, Chapter 6, §3, 2mom
Negligence regarding the seaworthiness which has caused personal injury of one passenger	Maritime Code, Chapter 6, §3, 2mom in combination with: Maritime Code, Chapter 20, §20, 6mom

4.1.5 Assessment of the criminal liability of Master 2

The Maritime Code, chapter 20 §1 3 mom states, that the Master will be condemned to penalties or prison for maximum 6 months, if he has neglected his duties regarding seaworthiness and the situation differs from the in mom 1 described situations. If the above explained actions regarding negligence of seaworthiness has resulted in injury of any person and the situation is a situation described in 3 mom or 4 mom action, the perpetrator shall according to Maritime Code, chapter 20 §1 6mom be condemned to maximum 1 year in prison.

In 2012 Kouvola Hovrätt (ND-2012-82, 2012) processed a case where a foreign ship had arrived to a Finnish port with a cargo of dangerous goods which were stowed in a dangerous way. The cargo was found loaded in violations to the international IMDG code, which is the international frame for stowage rules concerning dangerous goods onboard vessels. Both the Chief Officer and the Master of m/v Thor Liberty were accused. The Chief Officer was prosecuted for loading of dangerous goods in breach of the IMDG-code and the Master was accused of negligence of ensuring the seaworthiness of the vessel prior to departure and during the voyage. None of the Master and Chief Officer were sentenced because of several reasons (ND-2012-82, 2012). However, we can use this court case as reference due to several facts and findings of the court. The court could not condemn the Master for breaches against his duties in ensuring the seaworthiness at the time of loading in Germany, because the vessel and crew were non-Finnish and the loading happened outside Finnish territory. The court, however, found breaches against seaworthiness as a typical ongoing breach and found out that the breach is ongoing through the whole voyage from Germany to Finland. According to the court, the Master is responsible for the seaworthiness during the whole voyage as stated in Maritime Code chapter 6, §3:

“During the voyage the Master is responsible to use his best endeavour to maintain the seaworthiness of the vessel

The Master's responsibilities regarding seaworthiness prior to departure, stated Maritime Code chapter 6, §3 states:

"the Master shall prior to departure ensure the vessel is seaworthy in relation to the intended voyage and the time of the year, including properly manned and equipped, supplied with necessary provisions and stores, cargo spaces is in good condition and that the stability of the vessel is safe."

According to court the combination of these two places of law is making the breach against seaworthiness ongoing for the Master of m/v Thor Liberty. This means the Master of Tor Liberty was still breaching against these places of law when the vessels entered Finnish territorial waters. The court could however not find any obvious danger to human lives involved, therefore the Master was acquitted (ND-2012-82, 2012).

In our case the situation is different because the breach of seaworthiness has caused damages and one injury. Because all happened onboard a Finnish vessel, all parts of the breaches can be condemned by a Finnish court. Master 2 cannot likely be condemned for breaches against seaworthiness prior to departure because the prerequisite "prior departure" stated Maritime Code chapter 6, §3 is not fulfilled, the situation is the same for the punishments stated in Maritime Code chapter 20, §1 1mom where there is a prerequisite regarding "went to sea":

*"has a Master... **went to sea** with a vessel with such defects (related to seaworthiness)"*

However,, Master 2 he can be condemned for breaches against seaworthiness during the voyage, stated in Maritime Code chapter 6, §3. Because there's an injury involved the more serious punishment stated in Maritime Code, chapter 20 §1, mom6, might be used (see *Table 5. Penalties and actual places of law*). If the court will find Master 2 liable for breaches concerning seaworthiness during the voyage, he can based on Maritime Code chapter 6, §3 and chapter 20 §1, mom6, be condemned to fines or prison up to one year.

Table 5. Penalties and actual places of law. Source: Own

Place of law regarding criminal liability	Penalty
Maritime Code, chapter 20 §1, mom6 negligence of seaworthiness (caused injury or damage but no breaches against seaworthy prior departure)	Fines or prison up to 1 year.

4.2 Analysis of case 2

The fictive situation onboard “Sealink” will be analysed using the same method as in 4.1 Analysis of case 1. In this analysis routines from the two Master system used at Finnlines (*3.4.1 Finnlines routines in their two Master system*) are the main source of routines used in the case.

4.2.1 Identify the legal problems

The Finnish ro-ro passenger vessel “Sealink” uses a system where there is one Master (Master 1) that is in command 20 hours per day and the Line Pilot is in command as “Master 2” four hours per day. m/v Sealink is in regular traffic between Finland and Sweden, at the Turku-Långnäs-Kapellskär route. Master 1 is performing almost all normal Master’s duties except the operational Master’s duties during the four hours per day when Master 2 is in command. Sealink is a modern Ro-Pax vessel, 200 m long, passenger capacity 500 and 3000 lane meter cargo capacity.

Because of a sickness leave they were short on one ordinary seaman during a few days. Master 1 decided not to have a temporary ordinary seaman because the sickness leave was expected to last only a few days. Instead the watches of the Ordinary seamen and able seamen were arranged in a way that fulfils the requirements of watch arrangement and manning requirements at mooring stations. The rest hours of these seamen are however not in accordance to the minimum requirements of rest hours. Master 2 is aware of that they are one man short but is not aware of the watch arrangements that do not fulfill the requirements of minimum rest. The vessel however fulfils the requirements of the minimum safe manning certificate.

The vessel leaves Turku in the evening, at 22:00 and is to call Långnäs at 03:00. Master 1 has been in command since 06:00 in the morning. Master 2 is expected to take over the command of the vessel at 02:00, one hour before arrival to Långnäs.

At 02:00 Master 2 takes over the command of the vessel. According to normal routines he confirms in the ship’s logbook that the vessel is fully seaworthy at the time of taking over the command. However, the Master 2 is still not aware of the rest hour situation of the Ordinary Seamen and Able Seamen. At the time of taking over command two of the seamen have been working 4 days with daily breaches against the Finnish law of working hours at sea 1976/296, chapter 4 §9a.

At the mooring operation in Långnäs, during the time of command of Master 2 there is a serious injury of a crew member at forward mooring station. Later, the investigation board concludes that there

were several breaches against the rules of minimum rest hours onboard the ship because of negligence from Master 1. The injured crew member had during the last days before the accident been working long days and had breached the rules of rest hours several times. The report issued by Safety Investigation Authority concludes that fatigue of the crew members at the mooring station was the main reason for the injury.

The Master 2 has never worked with these working routines and was therefore not aware of the situation and had no practical possibility to affect the safety routines onboard. Master 1 was fully aware of the situation and he had agreed on these dangerous routines due to shortness of resources because of a sickness leave. Can Master 1 be responsible for an accident outside his time of command? If not, does Master 2 have an obligation to check everything that is made by Master 1? Can Master 2 perform all his duties and responsibilities regarding the command of the ship? What is the role of the ship owner regarding these routines in handing over the command of the vessel?

4.2.2 Analysis of legal problems concerning Master 1

When Master 1 decided to sail with one Ordinary Seaman short resulting in several rest hour violations. A vessel must according to Maritime Code be properly manned in order to be seaworthy. The following is stated in Maritime Code chapter 6 §3:

“the Master shall prior to departure ensure the vessel is seaworthy in relation to the intended voyage and the time of the year, including properly manned and equipped, supplied with necessary provisions and stores, cargo spaces is in good condition and that the stability of the vessel is safe.”

It's obvious that manning is one part of the seaworthiness. Working hours of the Ordinary seamen onboard were not possible to arrange without violations of minimum rest hours stipulated in Seamen's Working Hour Act 1976/296, chapter 4 §9a. Because of the regular schedule of m/v Sealink the need for personnel at watch keeping and other duties was well known already in advance. Based on these facts Master 1 neglected his duties in ensuring the seaworthiness of the vessel prior to departure because the m/v Sealink was not properly manned in relation to the intended voyage. The fact that the action has resulted in bodily injury to one person, might activate the more severe punishments regarding this breach. The question is however, if several violations of rest hours fulfils the requirements of an unseaworthy ship. In 3.1.1 Seaworthiness, the definition of an unseaworthy ship was described as: *“A ship is considered unseaworthy when, because of defects in hull, equipment, machinery or crewing or due to overloading or deficient loading or other grounds, it is in such a*

condition, that in consideration of the ships' trade, the risk to human life associated with going to sea exceeds what is customary" (Falkanger; Bull; & Brautaset, 2011, s. 73) In the case the safety of a few crew members was endangered but the safety and seaworthiness of the whole ship have not been affected by the violations of minimum rest hours of the Ordinary Seamen. The most convenient solution for the legal problem regarding Master 1 might not be using the responsibilities regarding seaworthiness stated in Maritime Code chapter 6 §3. Based on this description of an unseaworthy ship, the Maritime Code chapter 6 §3 regarding the Master's responsibilities of seaworthiness will be ignored in the rest of this analysis concerning the accident of m/v Sealink.

Master 1 has also neglected his responsibilities of the Master regarding manning and watch keeping arrangements, stated in Crew and Safety Management Act chapter 2 §9 and §23. Crew and Safety Management Act chapter 2 §9 mom 2 states:

"The Master shall ensure that the vessel is safely manned taking into account the prevailing circumstances..."

It's obvious that this place of law is closely connected to the seaworthiness prior to departure stated in Maritime Code chapter 6 §3. In the Safety Management Act these responsibilities are however not connected to duties prior to departure. Master 1 also neglected his duties regarding watchkeeping arrangements stated in Crew and Safety Management Act chapter 2 §23 mom 1:

"The owner, the Master, the chief engineer and the whole watchkeeping personnel shall ensure that watchkeeping arrangements are adequate for maintaining a safe watch or watches, taking into account the prevailing circumstances and conditions and the planned route of the ship"

Master 1 was familiar with the present route of the vessel and knew that the watch arrangements of the ordinary seamen were not possible to arrange without violating minimum rest hour regulations. This means that he neglected his duties regarding watchkeeping arrangements taking into account the planned route of the ship. The negligence in watchkeeping and manning made by Master 1, makes the Crew and Safety Management Act chapter 2 §9 and §23 very convenient.

Another very convenient law is the Seamen's Working Hour Act 1976/296. Seamen's Working Hour Act 1976/296, chapter 4 §9a mom1 that states:

"An employee shall be allowed a rest period of at least ten hours within each 24 hours and a rest period of at least 77 hours during each period of seven days."

Working hours of the injured Ordinary Seaman were not fulfilling these requirements of minimum rest, which caused a breach of the cited place of law. Seamen's Working Hour Act 1976/296, chapter 6 §23 states that:

“An employer or an employer’s representative who deliberately or out of carelessness violates this Act or rules... shall be sentenced to a fine for violating of the seamen’s working hours stipulations.”

As a Master, Master 1, is acting as the employer’s representative onboard. Master 1 was also the person who before the accident decided to ignore the rules regarding rest hours of the injured Ordinary Seaman. This means Master 1 is the person who has neglected the Act and rules of Seamen’s Working Hour.

Table 6 Criminal actions by Master 1. Source: Own

Criminal actions of Master 1	Place of law
Negligence in manning	Crew and Safety Management Act chapter 2 §9 mom 2
Negligence in Watchkeeping arrangements	Crew and Safety Management Act chapter 2 §23 mom 1
Negligence in rest hours	Seamen’s Working Hour Act 1976/296, chapter 4 §9a mom1 Seamen’s Working Hour Act 1976/296, chapter 6 §23

4.2.3 Assessment of the criminal liability of Master 1

The ship was not unseaworthy in that sense it would have been a clear risk to the human lives involved. The Maritime Code, chapter 20 §1 punishments because of breaches of duties regarding seaworthiness will not be appropriate for the solution of this case.

Crew and Safety Management Act chapter 5 §39 states punishments because of maritime offence. Both negligence regarding manning of the ship and negligence in watchkeeping arrangements are covered by the maritime offence. Concerning manning the Crew and Safety Management Act chapter 5 §39 mom 2 states:

“Anyone deliberately or by gross negligence... failing to comply with the responsibility set out in section... 9(1)... and that the ship is manned accordingly and safely when taking the prevailing circumstances into account”

And regarding watchkeeping arrangements the Crew and Safety Management Act chapter 5 §39 mom 6 states:

“Anyone deliberately or by gross negligence... infringing the obligation to set out in section 23 safeguard that a safe watch or safe watches are maintained on board”

The grade of the punishments regarding negligence in watchkeeping arrangements and manning are stated in Crew and Safety Management Act chapter 5 §39 mom 11:

“Shall be deemed for maritime offence to pay a fine, unless a more severe punishment is provided elsewhere by law”

This means both negligence in manning of the ship and negligence of watchkeeping arrangements will according to Crew and Safety Management Act chapter 5 §39 result in fines to Master 1. Based on this it's likely Master 1 will be condemned to fines because of his negligence in safe manning and safe watchkeeping.

Master 1 also breached to rules regarding minimum rest hours stated in Seamen's Working Hour Act 1976/296, chapter 4 §9a mom1. Seamen's Working Hour Act 1976/296, chapter 6 §23 stats:

“An employer or employer's representative who deliberately or out of carelessness violates this act or rules...shall be sentenced to a fine for violation of the seamen's working hours stipulations.”

As a Master, Master 1 acted as the employer's representative concerning the working hours of the injured ordinary seaman. Therefore, it's likely Master 1 will be condemned to fines for violation of the seamen's working hours stipulations.

There's no applicable maritime court case from the Nordic countries regarding a similar legal problem. Therefore, the solution is in this case only based on Finnish maritime legislation. Master 1 will probably be condemned to fines for all his negligence concerning sailing with one ordinary seaman short during several days "based on Finnish maritime legislation". What is of high importance is that the punishment would be much more serious if the vessel would be seen as unseaworthy because of the manning. It's also likely Master 1 would in the Criminal Code be condemned because of the injured crew member but in this analysis, the criminal code is ignored.

Table 7 Penalties and actual places of law. Source: Own

Place of law regarding criminal liability	Penalty
Crew and Safety Management Act chapter 5 §39 mom 2 and mom 11	Fines
Crew and Safety Management Act chapter 5 §39 mom 6 and mom 11	Fines
Seamen's Working Hour Act 1976/296, chapter 6 §23	Fines

4.2.4 Analysis of legal problems concerning Master 2

Master 2 was in command at the moment of the injury of the ordinary seaman at the forward mooring station. The mooring operation in Port of Långnäs was handled by Master 2, which was manoeuvring the ship and leading the whole operation from the bridge. At the mooring operation, there was nothing special except the injury of the ordinary seaman. Approximately 30 minutes before arrival to Långnäs, Master 2 took over the command according to earlier agreed routines. At the handover of command Master 2 confirmed in the log book that the vessel was seaworthy and that he took over the command from Master 1.

Already in, 4.2.3 *Assessment of the criminal liability of Master 1*, it's noted that the ship was not unseaworthy in that sense it would have been a clear risk for human lives involved. It's very unlikely that the court will find the ship unseaworthy because of the manning arrangements since the ship still fulfills the following: the safe manning certificate, the watch keeping arrangements and the required amount of crew members at arrivals and departures. The only breach is the working hours of the ordinary seamen, which also affect the quality of watch keeping arrangements.

Master 2 was aware of the reduced number of ordinary seamen. However, Master 2 was not aware of that the watch arrangements do not allow the ordinary seamen to fulfill their required minimum rest hours stated in Seamen's Working Hour Act 1976/296, chapter 4 §9a mom1. The situation is the same when coming to watchkeeping arrangements and manning. Master 2 was fully unaware of the fact about that the watchkeeping and manning were affected by fatigue due to lack of rest hours.

In order to evaluate a possible criminal liability of Master 2 the analyse of the same breaches, 4.2.2 *Analysis of legal problems concerning Master 1*, as for Master 1 can be used: the manning, the watchkeeping arrangements and the rules regarding rest hours. What is different compared to the situation with Master 1, is that Master 2 has not made any decisions regarding manning, watchkeeping and rest hours. All these decisions have been handled by Master 1 in the previous days and prior to departure from Turku.

Regarding manning Crew and Safety Management Act chapter 2 §9 mom 2 states:

“The Master shall ensure that the vessel is safely manned taking into account the prevailing circumstances...”

Master 2 is however working as a line pilot most of the time of the day and is not involved in manning prior departure from any of the end harbours. The only departure, where Master 2 is in command is the departure from Långnäs at night but there’s never any crew changes in this harbour. Because Master 2 acts as Master 4 hours a day he can possibly be affected by these duties regarding manning.

Also, the duties regarding watchkeeping arrangements have been neglected. The duties are stated in Crew and Safety Management Act chapter 2 §23 mom 1:

“The owner, the Master, the chief engineer and the whole watchkeeping personnel shall ensure that watchkeeping arrangements are adequate for maintaining a safe watch or watches, taking into account the prevailing circumstances and conditions and the planned route of the ship”

Master 2. is very familiar with the present route of the ship. Both as a Linepilot and as a Master, Master 2 is a part of the watch organization onboard. The planning of watches of the deck crew is however handled by the Chief Officer in cooperation with Master 1. Master 2 was aware of that there was changes made in the watch schedule but he was not aware of the exact arrangements and not aware of how the rest hours were affected by the changes. The negligence in watchkeeping and manning, makes the Crew and Safety Management Act chapter 2 §9 and §23 very convenient for the overall situation. The question is how Master 2 can be affected by this law.

Also, the Seamen’s Working Hour Act 1976/296 is of high importance. Seamen’s Working Hour Act 1976/296, chapter 4 §9a mom1 that states:

“An employee shall be allowed a rest period of at least ten hours within each 24 hours and a rest period of at least 77 hours during each period of seven days.”

Working hours of the injured Ordinary Seaman were not fulfilling these requirements of minimum rest which caused a breach of the cited place of law. Seamen's Working Hour Act 1976/296, chapter 6 §23 states that:

"An employer or an employer's representative who deliberately or out of carelessness violates this Act or rules... shall be sentenced to a fine for violating of the seamen's working hours stipulations."

As a Master, Master 2, is acting as the employer's representative onboard while he is in command. Master 2 was however not the person who before the accident decided to ignore the rules regarding rest hours of the injured Ordinary Seaman. This means Master 2 is in a special situation at the time of the accident. He is acting as Master and is in command but at the same time he has not handled the matters with the changed worktime at all.

Table 8, Possible criminal actions by Master 2. Source: Own

Possible criminal actions of Master 2	Place of law
Negligence in manning	Crew and Safety Management Act chapter 2 §9 mom 2
Negligence in Watchkeeping arrangements	Crew and Safety Management Act chapter 2 §23 mom 1
Negligence in rest hours	Seamen's Working Hour Act 1976/296, chapter 4 §9a mom1 Seamen's Working Hour Act 1976/296, chapter 6 §23

4.2.5 Assessment of the criminal liability of Master 2

What is different from the three earlier analyses, is that Master 2 is affected by legal problems only because of his position as Master, not because of his own actions or active negligence of his duties. If the case would contain negligence in the seaworthiness the situation would be more clear because Master 2 is as Master according to Maritime Code chapter 6, §3 responsible *for*:

"During the voyage... maintain the seaworthiness of the vessel "

Master 2 has also according to routines described in, 3.4.1 *Finnlines routines in their two Master system*, confirmed that the vessel was seaworthy during taking over the command before arrival to Långnäs. This means negligence in seaworthiness is always affecting the Master in command regardless of his own activity.

When it comes to the actual legal problems, negligence in manning, watchkeeping arrangements and minimum rest hours, the situation is different. The punishments for these breaches contain all prerequisites such as by gross negligence or deliberately. Regarding manning the Crew and Safety Management Act chapter 5 §39 mom 2 states:

“Anyone deliberately or by gross negligence... failing to comply with the responsibility set out in section... 9(1)... and that the ship is manned accordingly and safely when taking the prevailing circumstances into account”

And regarding watchkeeping arrangements the Crew and Safety Management Act chapter 5 §39 mom 6 states:

“Anyone deliberately or by gross negligence... infringing the obligation to set out in section 23 safeguard that a safe watch or safe watches are maintained on board”

And at least regarding rest hours, Seamen’s Working Hour Act 1976/296, chapter 6 §23 states:

“An employer or employer’s representative who deliberately or out of carelessness violates this act or rules...shall be sentenced to a fine for violation of the seamen’s working hours stipulations.”

Master 2 will not fulfill these prerequisites regarding deliberate action or by gross negligence. No similar court case is available but based on the Finnish laws, Crew and Safety Management Act and Seamen’s Working Hour Act, Master 2 will not be condemned to any punishments. This because Master 2 has not been involved in any of the decisions concerning the several days long decrease of the amount of the ordinary seamen because of a sickness leave. All these actions and negligence’s in the duties regarding manning, watchkeeping arrangements and planning of minimum rest hours, can be traced back to Master 1. Master 1 practically handles all daily Masters’ duties except the operational duties during 4 hours at night time.

5 Results

5.1 Liability regarding Seaworthiness

The Master is according to Maritime Code chapter 6, §3 responsible for ensuring the seaworthiness of the vessel prior departure. During the voyage the Master is according to Maritime Code chapter 6, §3, also responsible for maintaining the seaworthiness of the vessel. What is interesting are the differences between these two responsibilities. The first one contains a prerequisite “the Master...prior to departure”, which means this affects the Master in command at the departure (see *4.1.2 Analysis of legal problems concerning Master 1*). It also means, that the Master in command at the departure still can be liable to accidents because of negligence in seaworthiness prior to departure, even if the command during the accident already had been handed over to the next Master. This was the situation in case 1, where the command was changed to another Master before the time of the accident. The Master who, is in command during the accident will not be liable to negligence’s in seaworthiness prior to departure if he was not in command at the departure, because the prerequisite “prior departure” will not be fulfilled (see *4.1.5 Assessment of the criminal liability of Master 2*).

Regarding the second responsibility, to maintain the seaworthiness during the voyage, the situation is different. For example, Kouvola hovrätt has in the court case (ND-2012-82, 2012) noted that breaches against seaworthiness are a typical ongoing breach. If the vessel leaves the harbour in unseaworthy condition the breach against seaworthy will be ongoing if the vessel is not made seaworthy. This also means, that the breach will go on although the command has been handed over to the next Master (see *4.2.4 Analysis of legal problems concerning Master 2*). When a Master takes over the command of an unseaworthy vessel he will also be affected by the negligence of seaworthiness during the voyage. This was the situation in case 1 with Master 2, when he took over the command of the unseaworthy fictive m/v Tallinn Express (see *4.1.4 Analysis of legal problems concerning Master 2*).

The breaches against seaworthiness might affect both of the Masters in the two Master system. This because an unseaworthy ship is unseaworthy until it’s made seaworthy in combination with the responsibility of each Master to ensure and keep the vessel seaworthy. Maritime Code chapter 6, §3 states:

“During the voyage the Master is responsible to use his best endeavour to maintain the seaworthiness of the vessel”

A Master will regardless of the total amount of Masters involved always be responsible for the seaworthiness while he is in command (see 4.1.5 *Assessment of the criminal liability of Master 2*).

The Master in command at the departure will always be liable to negligence in seaworthiness prior to departure. The actual Master in command at the accident will not change the liability of the Master, who was in command at the departure. Maritime Code chapter 6, §3 describes the responsibility of the Master prior to departure and Maritime Code, chapter 20 §1 is clearly describing the liability of the Master, who was in command at the departure (see 4.1 *Analysis of case 1*).

Concluded the liability regarding seaworthiness is in a two Master system affected to some degree. A Master, who has made a departure with an unseaworthy ship, will be liable to an accident because of the unseaworthiness although the accident happens after the next Master has taken over the command. It's also important to notice that the Master is always responsible and liable to the seaworthiness during the voyage while he is in command. This means a Master, who at sea take over the command of an unseaworthy ship will possible be liable for negligence of seaworthiness during the voyage.

Table 8, Seaworthiness and liability in a two Master system. Source: 4.1 Analysis of case 1

<u>Criminal action by Master</u>	<u>Prerequisites</u>	<u>Liable Person</u>
Seaworthiness prior to departure	Duty of Master prior departure	The Master in command at Departure
Seaworthiness during voyage	No special prerequisite. All Master's duties while in command. An ongoing breach	Includes both of the Masters if the command is handed over while vessel is unseaworthy

5.2 Liability regarding Watchkeeping arrangements and Manning

Manning of the vessel is included in the Master's responsibility regarding manning in the Maritime Code chapter 6, §3 (see 3.1.1 *Seaworthiness* and 3.1.2 *Safe manning*). This means negligence in manning might affect the Masters in the same way as negligence of seaworthiness (see 5.1 *Liability regarding Seaworthiness*). This applies to situations where poor manning makes the vessel unseaworthy. In case 2 the situation was however different. The negligence regarding manning and watchkeeping arrangements was affecting the working hours and rest hours of some persons onboard but was not making the ship unseaworthy (see 4.2 *Analysis of case 2*).

In this section, the focus will be on such negligence in manning and watchkeeping arrangements, that do not affect the seaworthiness. Crew and Safety Management Act chapter 2 states the responsibilities of the Master regarding manning and watchkeeping arrangements (see 4.2.2 *Analysis of legal problems concerning Master 1*). What is interesting in a two Master system, is the fact that breaches against these responsibilities result in punishments with prerequisites included. These punishments are stated in the Crew and Safety Management Act chapter 5 §39, where there are prerequisites regarding deliberate action or gross negligence (see 4.2.5 *Assessment of the criminal liability of Master 2*). This means only the Master who has made actual breaches can be condemned to punishments. The Master in command will not be condemned to punishments because of negligence made by his colleague.

Working hours and minimum rest hours are closely connected to the requirements of watchkeeping arrangements. Seamen's Working Hour Act, chapter 4 states the minimum rest hours of the seamen onboard, while chapter 6 states the punishments for breaches of these rules. Seamen's Working Hour Act chapter 6 §23 states that the employer's representative, the Master, shall be condemned to fines for violating the seamen's working hours stipulations. Also, this punishment contains the prerequisite "*deliberately or out of carelessness*", which means only the Master who has made the actual negligence is affected by the punishments. This was the situation in Case 2, where Master 1 was found liable to his negligence of manning, watchkeeping arrangements and for violating the seamen's working hours stipulations although the actual injury because of this negligence happened at the time Master 2 was in command. At the same time Master 2 was found guiltless because all actions that could be criminalized were done by Master 1 and no punishments containing the prerequisites "*deliberately or out of carelessness*" could be applied to Master 2 (see 4.2 *Analysis of case 2*).

Table 9, Manning & Watchkeeping arrangements and liability in a two Master system. Source: 4.1 Analysis of case 1 and 4.2 Analysis of case 2.

<u>Criminal action by Master</u>	<u>Prerequisites</u>	<u>Liable Person</u>
Manning prior departure, affecting the seaworthiness	Duties of Master prior to departure	The Master in command at Departure
Manning during voyage, affecting the seaworthiness.	No special prerequisite. All Master's duties while in command. An ongoing breach	Includes both of the Masters if the command is handed over while vessel is unseaworthy
Manning (seaworthiness not affected)	deliberate action or gross negligence	Only the Master who has made the criminal action
Watchkeeping arrangements (seaworthiness not affected)	deliberate action or gross negligence	Only the Master who has made the criminal action
Working hours (seaworthiness not affected)	deliberately or out of carelessness	Only the Master who has made the criminal action

6 Discussions

During the writing process, I have gradually found out that the change in liability in a two Master system is much smaller than what was my own expectation. Each Master in the two Master system will in most situations be liable according to actual criminal actions. The Master who has made a criminal action will most probably be the only liable Master regardless of who is in command during the accident. Only if the next Master will take part of an ongoing criminal action, will he be affected by his colleagues' negligence. For example, if a Master takes over the command of an unseaworthy vessel at sea, he will automatically breach his duties regarding seaworthiness stated in Maritime Code chapter 6, §3 (see *4.1 Analysis of case 1*). In my analysis, I have analysed two cases, where basically only one of the Masters in each case has made a criminal action. In a situation where both Masters have made criminal actions which together lead to an accident, the share of liability would be more complicated. This could preferably be investigated more in another thesis.

Another finding I have made is that the routines might affect the clarity in liability more than the difference between a normal one Master system and a two Master system. In the ISM-code the ship owner is obligated to clearly define and document the Master's responsibility (see *3.1.4 Ship safety management and responsibility of the ship owner*). The ISM requirement of the ship owner, to define and document the Master's responsibility, is very close to the main problem of how to share responsibility and liability in a two Master system. If the routines and responsibilities of the Masters are well documented and implemented onboard a two Master vessel, the risk of complicated liability is low.

Based on only two case studies it looks like the type of two Master system also affects how the responsibility and liability is shared between the two Masters. The analysis was however not made for finding out these differences between different two Master systems. Another analyse of different two Master systems with focus on routines that could be a very interesting topic for a future thesis.

The liability is perhaps not the main issue for the Master onboard a vessel. Responsibility, routines and other daily routines are much more highlighted. During the writing process, I have however realized the importance of the liability onboard a two Master vessel. Every Master onboard a two Master vessel should be aware of how the responsibility is shared and how it affects the possible liability in a court case. Routines in the two Master system should be highlighted in order to avoid situations with complicated liability. Based on my own experience, discussions with colleagues and discussions within the topic of my Master thesis, very few Masters know how the two Master system will affect the liability in different situations.

7 Conclusions

The Finnish Maritime law, such as Maritime code, Crew and the Safety Management Act and Seamen's Working Hours Act, are based on the analysis (4.1 *Analysis of case 1* and 4.2 *Analysis of case 2*) been suitable for evaluating liability of Masters in a two Master system.

Regarding manning and watchkeeping arrangements the criminal liability is via the prerequisites "*deliberate action or gross negligence*" or "*deliberately or out of carelessness*" traced back to the actual person who has made the criminal action (see 5.2 *Liability regarding Watchkeeping arrangements and Manning*). This is the situation for those situations where manning and watchkeeping arrangements do not directly affect the seaworthiness of the vessel. The fact the liability is traced back to the person who has made the criminal action, makes it easy to evaluate the liability of each of the involved Masters in the two Master system. It also means the liability of the Master is the same regardless of the amount of Masters onboard. Regarding situations where manning and watch keeping arrangements affect the seaworthiness of the vessel, the liability will be the same as for other breaches of seaworthiness.

The liability of seaworthiness is more complicated. Regarding the Masters' duty to ensure the seaworthiness prior to departure, the criminal liability is traced back to the Master who has been in command at the departure (see 5.1 *Liability regarding Seaworthiness*). This means this part of the liability is the same regardless of the number of Masters onboard. The situation is however different when coming to the Master's responsibility to keep the vessel seaworthy. According to Maritime Code chapter 6, §3 the Master is during the voyage responsible to maintain the seaworthiness of the vessel. A Master, who takes over the command of an unseaworthy ship will be liable for negligence in keeping the vessel seaworthy (see 5.1 *Liability regarding Seaworthiness*). This means if Master 1 decides to depart with an unseaworthy vessel and Master 2 takes over the command of the unseaworthy vessel at sea, also Master 2 will be liable for breaches against his duty to keep the vessel seaworthy. Especially in a situation where Master 2 doesn't make immediate actions in order to make the ship seaworthy, Master 2 will be seen liable for breaches against his duties regarding seaworthiness. Master 2 will however not be liable to any duties prior to departure. Master 1 will be the only Master who is liable for breaches prior to departure (see 4.1 *Analysis of case 1*). Based on this fact, the seaworthiness is extremely important for all Masters involved in a two Master system. To evaluate the whole seaworthiness before taking over command at sea is important in order to minimize the risk of problems with complicated liability. In the case analysis (see 4.1 *Analysis of case 1* and 4.2 *Analysis of case 2*) the criminal liability has normally been traced back to the Master who has made the criminal action. The liability for criminal actions has in most situations concerned only the Master who made

the criminal action. This means the question of who is liable in a two Master system is quite simple (see 5.1 *Liability regarding Seaworthiness* and 5.2 *Liability regarding Watchkeeping arrangements and Manning*).

The Master who has made the criminal action will onboard a Two-Master vessel, still be liable for his or her actions, which is exactly the same as onboard a vessel with only one Master. In a two Master system, the difference compared with a one Master system, is basically the routines which contain regular changes of command and share of Masters' duties and responsibilities. These routines can naturally result in situations with complicated liability and possible even in situations with shared liability. The principle that a Master is liable for his or hers criminal actions has however not changed (see *Table 9, Masters liability, one Master vs. two Masters*). The only situation in the case analysis (see 4.1 *Analysis of case 1* and 4.2 *Analysis of case 2*) where the principles of liability in a two Master system are changed to some extent, was when the command at sea was handed over onboard a unseaworthy vessel.

Table 9, Masters liability, one Master vs. two Masters

<u>Master's Duty</u>	<u>Liability One</u> <u>Master vessel</u>	<u>Liability Two</u> <u>Master vessel</u>	<u>Differences</u> <u>in liability</u>	<u>Comments</u>
<u>Safe Manning</u> (not affecting seaworthiness)	<i>Master who has made the criminal action</i>	<i>Master who has made the criminal action</i>	<i>None</i>	<i>Shared responsibilities = shared liability. Liability principles unchanged</i>
<u>Watchkeeping Arrangements</u> (not affecting seaworthiness)	<i>Master who has made the criminal action</i>	<i>Master who has made the criminal action</i>	<i>None</i>	<i>Shared responsibilities = shared liability. Liability principles unchanged</i>
<u>Seaworthiness prior to departure</u>	<i>Master in command at departure</i>	<i>Master in command at departure</i>	<i>None</i>	<i>Only one Master can make the actual departure.</i>
<u>Seaworthiness during voyage</u>	<i>Master</i>	<i>Master in command</i>	<i>Might affect both Masters</i>	<i>Change of command at sea onboard an unseaworthy vessel makes both Masters liable</i>

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Appendix 1, Interviews

Interview with a Master Mariner working as Linepilot and Master 2.

The interview was performed on the 2nd of May 2017 with the Master Mariner, Claus Gerkman, working as experienced Linepilot and Master. He is working onboard Finnlines Ro-Pax vessels on the Naantali-Långnäs-Kapellskär-route. Mr Gerkman has experience in working in the Finnlines' two Master system since the start in 2014. He has been working as Linepilot/Master 2 most of the time but has also experience from working as Master 1. The interview has been carried out as a qualitative interview where the interviewed person has talked freely within the topic of the two Master system. Only a few initial questions were made during the whole interview.

Mr Gerkman has mostly positive experience of the two Master system onboard Finnlines vessels (described in 4.1.1). The two Master system is according to Gerkman a good tool to manage the working hours of the Masters. By handing over the command to the Line pilot the Master 1 is ensured good quality rest with low risk of having the rest interrupted by safety related Master duties. As a side advantage the Line pilots are getting more experience by taking over the command of the vessel (Gerkman, 2017).

The fact that almost all Master's duties are performed by Master 1, is according to Gerkman making the chain of information even more important. Especially Master 2, also called Linepilot/Master 2, needs to be updated with all relevant information regarding the seaworthiness, safety and other ship operations of the before taking over the command. In practise, it's according to Gerkman impossible for Master 2 to evaluate the whole seaworthiness before taking over the command. The only way to ensure the full seaworthiness of the ship before taking over the command, is to have an ongoing good communication between Master 1 and Master 2 (Gerkman, 2017).

The responsibility and liability is according to Gerkman clearly divided between the Masters by the change of command. Situations where information regarding for example safety, seaworthiness and manning, is not changed between the two Masters, is however negatively affecting the cleanliness regarding responsibilities and liabilities (Gerkman, 2017).

I asked Mr Gerkman why he thinks Finnlines has chosen a two Master system instead of delegating some manoeuvrings to the line pilot. One major reason is according to Gerkman, the fact that harbour manoeuvres traditionally is a Master's duty. The Master is normally expected to be present at the bridge during harbour manoeuvrings (Gerkman, 2017). Among the Master colleges there is a clear feel of responsibility regarding safety of harbour manoeuvres. Therefore, delegating has been found inconvenient. Also, the fact that handing over the command and the Masters responsibility result in

uninterrupted quality rest for the Master not in command is probably one reason for choosing a two Master system (Gerkman, 2017).

Interview with an experienced Master with experience from a two Master system.

The interview was made on the 17th of May 2017 by telephone, with the Master Mariner, Kjell Jonasson, working as experienced Master on Eckerö Lines passenger ferries. Today he is working onboard Eckerö Lines Passenger ferry Finlandia on the Helsinki-Tallinn-route. Mr Jonasson has earlier been working as Master onboard the passenger ferry Nordlandia and the ro-pax vessel Translandia on the same route. Onboard Nordlandia there was a two Master system in use with two Masters onboard sharing the command in 12 hour periods. Mr Jonasson was working several years as Master 1 in the two Master system onboard m/v Nordlandia. The interview has been carried out as a qualitative interview where the interviewed person has talked freely within the topic of the two Master system. Only a few initial questions were made during the whole interview.

The two Master system with two Masters onboard, sharing the command in 12 hour periods, is according to Kjell Jonasson optimal from a rest hour perspective. Normally, the Masters rest is interrupted in special situations but with the 12/12 two Master system the rest is almost never interrupted. During the time of the “12/12 two Master system” the Masters onboard m/v Nordlandia were always able to have enough rest to fulfil the rest hour requirements and to be well rested. Two Master recourses onboard is according to Mr Jonasson slightly more than the actual need of Master resources and is therefore one disadvantage by using this model of a two Master system. The share of responsibility is according to Jonasson quite clear because of strict share of the command in 12 hour periods. (Jonasson, 2017).

The reason for using a two Master system instead of delegating some is the fact that the Chief Officer was overloaded with duties and not able to handle more duties. Also, the experience of Chief officers and possible problems with a quick introduction of new Chief Officers was seen as too demanding in order to be able to delegate arrivals and departures to the Chief Officer. According to Mr Jonasson the shipping company also wanted to use a two Master system with two equal Masters sharing the command in 12 hour periods (Jonasson, 2017).