

# CHALMERS



## Inspection of working hours

How National Port State Control in the Baltic Region control working hours

*Bachelor's Thesis in the Shipping and Logistics Programme*

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Gothenburg, Sweden, [2012]  
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## **Inspection of working hours**

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## **SUMMARY/ABSTRACT**

Work and rest hours are a hot topic at the moment, recent research has shown that the hours on watch has a significant effect on the fatigue among the seafarers, and that tired seafarers cause more accidents. This report aims to find out how the control of the working hours onboard ships are conducted in the EU-countries surrounding the Baltic Sea and what differences there are between the various countries. The report finds that there are similarities as to how the different countries perform the inspections due to that all countries follow the guidelines established by the Paris MoU organization.

**Keywords:** Port State Control, Working hours, STCW, MLC, Paris MoU, Fatigue

## **SAMMANFATTNING**

I dagsläget så är arbetstider till sjöss ett intressant ämne, nyligen genomförd forskning visar att den tid som sjömännen går vakt har en stor inverkan på tröttheten och att trötta sjömän orsakar flera olyckor. Den här rapporten undersöker hur de olika EU länderna i Östersjöregionen gör för att undersöka arbetstiden ombord och vilka skillnader det finns mellan de olika ländernas metoder. Rapporten har kommit fram till att det finns likheter mellan hur de olika länderna utför sina arbetstidskontroller vilket beror på att de olika länderna följer riktlinjerna för hur dessa kontroller skall utföras uppsatta av Paris MoU organisationen.

**Nyckelord:** Port State Control, Arbetstid, STCW, MLC, Paris MoU, Trötthet

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## **ABBREVIATIONS**

EU – European Union

IMO – International Maritime Organization

STCW Convention – The Seafarers’ Training, Certification and Watchkeeping, issued by IMO

ILO – International Labour Organization

MLC – Maritime Labour Convention, issued by the ILO

PSC – Port State Controls

PSCO – Port State Control Officer

Paris MoU – The Paris Memorandum of Understanding on Port State Control

KSS – Karolinska Sleepiness Scale

PVT – Psychomotor Vigilance Task

EMSA – European Maritime Safety Agency



# INTRODUCTION

## General

In basically all fields on the job market today there are a discussion about working hours, how much one person is allowed to work and how many rest hours are the minimum. The shipping industry is different from most other employments because it is an around-the-clock business, the ship do not stop sailing because it is night time. Therefore the shipping industry has its own regulations to regulate the working and rest hours onboard the vessels.

The purpose of this report is to find how the different EU-countries surrounding the Baltic Sea attempts to inspect and control how the working- and rest- hour-convention and regulations are obeyed onboard the ships. The report is created within the pan-European project MONALISA with the purpose to be able to control the working hours and fatigue onboard vessels.

Port State Control is the inspection of foreign ship carried out by the country of the port. These inspections control, if the ship complies with current international regulations on safety, pollution prevention and the seafarers' working and living conditions. Ships that do not comply with the regulations can be fined and detained in port. In Europe most of the countries are members of the Paris Memorandum of Understanding (Paris MOU) where the countries have agreed to carry out inspections on ships calling at their ports. (Paris MoU Principles, 2010)

This report focuses on an important area where recent research has shown that fatigue is a severe problem onboard. Many of the major accidents at sea have been the result of tired watchkeepers. The Project Horizon, where Chalmers University was a participant, showed that during their simulations there where evidence that about 50 % of the participants fell asleep on the bridge during watches. This is generally due to long working hours and a lack of sleep. Recent studies have indicated that the amount of hours on watch or hours worked onboard ships are one of the main reasons of fatigue among the seafarers which lead to dangerous situations and accidents. (Horizon, 2012)

## Purpose and delimitations

The report aims to find out what is different between the way that the EU-countries surrounding the Baltic Sea performs inspections of working hours onboard the ships in the region. This to determine what can be improved and if there are any technical solutions that can simplify the inspection and controls.

## Outline

This report first contains a background to the problem researched. This also contains a summary of the organizations and regulations involved in work and rest hours at sea. Then there is a section on the recent research regarding how fatigue affects watchkeeping officers. The section following describes how the result in this study was obtained. Last in the report are the results and the conclusion on how working hours are controlled onboard ships by the Port State Control administrations in the Baltic region.

## **BACKGROUND REGARDING THE PROJECT**

### **Background**

The MONALISA project is a project that aims to give a concrete contribution to the safe, efficient and environmentally friendly maritime transport. This is done through these four different activities,

1. Dynamic and Proactive route planning, this aims to develop a new model in route planning where each vessels pre-planned route will be visible for traffic centres ashore and also other vessels. The estimated optimal route will be agreed on between captains and onshore traffic centres. The route will be based on information about wind and wave, currents and sea ice conditions. This will optimize fuel consumption as well as reduce traffic congestion.
2. Verification systems for officer certification, this is a concept model for an automatic verification system for the officers' certificates and their time on watch. The officers' certificates will be checked automatically against an onshore database via a maritime ID-card. This system will ensure correct competence onboard as well as prevent fatigue.
3. Quality assurance of hydrographic data, this activity is to ensure the accuracy of the hydrographic data in the Baltic Sea. The re-surveying will be conducted using modern quality assed methods to ensure the data presented in existing nautical charts and publications.
4. Global sharing of maritime information, this activity aims to develop a functional demonstrator system with the goal of extending regional sharing of maritime information to a global scale.

As a part of the MONALISA projects activity number two, this report aims to conduct a study of how the different countries surrounding the Baltic Sea inspects the working hours among the seamen onboard ships.

It will try to assess the difficulties regarding the reported hours and actually worked hours. The report also aims to assess which priority the inspection of working hours have related to other inspections made onboard the vessels during the Port State Controls. (Sjöfartsverket, 2010)

### **STCW-Convention**

The Seafarers' Training, Certification and Watchkeeping (STCW) Code are the IMO's regulation regarding all personnel onboard the vessels. It contains various rules from the kind of training the seamen should have to work on certain vessels to working hours on watch. The latest revisions to the STCW-code are the so called Manila-amendments agreed by the IMO-countries in Manila in 2010. The amendments have begun to apply as of 1 January 2012. The major changes in the Manila amendments were the new rest hour regulation. The new rest requirements are stricter than those currently in force. The major changes to the former requirements are the following:

- The minimum amount of rest in any seven day period is increased from 70 hours to 77 hours.
- Seafarers must always have 10 hours rest in any 24-hour period with no exceptions, except during an emergency. The hours of rest may be divided into no more than two periods; one which shall be at least 6 hours in length and the interval between shall not exceed 14 hours.
- It is now mandatory to maintain records of each individual seafarer's rest hours, which may be inspected during Port State Control inspections. The records of the daily hours of rest shall

be kept in the working language of the ship and in English, each seafarer shall receive a copy of their records which shall be endorsed by the master or authorized person onboard; and

- The rest hour limits now apply to most seafarers on board, including masters, not only watchkeepers as had previously been the case. (IMO, 2011)

On the 14th of September 2011 the European Commission issued a directive to the European Parliament that the STCW convention should be integrated with the EU law. This ensures that the STCW convention is integrated with the national laws in the member states. The directive will enter into force on 1 July 2012. (EU, 2011)

### **MLC, the ILO convention**

The International Labour Organization has regulations for the seafarers work on ships. These regulations are retained in the Maritime Labour Convention (MLC), which latest amendment is from 2006. This convention contains regulations regarding the seafarers' rights and obligations against the ship-owners and also the obligations the ship-owner and flag state has against the seafarer.

The MLC regulation regarding working hours state that the maximum hours of work shall not exceed 14 hours in any 24-hour period and 72 hours in any seven day period; Or that the minimum hours of rest shall be not less than 77 hours in any seven day period and ten hours in any 24-hour period.

The MLC also regulates that musters, fire-fighting and lifeboat-drills and drills prescribed in national laws and regulations shall be conducted in a manner that minimizes disturbance of rest periods and does not induce fatigue in the seafarers'. (ILO, 2006)

The seafarers' daily hours of work of daily hours of rest shall be kept in standard format according to ILO guidelines or in a standard format prepared by the ILO. This is to ensure that the record can be monitored of compliance with the regulation by the competent authority. The record shall be in the working language onboard and in English. The MLC will enter into force when it has been ratified by at least 30 member States with a total share in the world gross tonnage of ships of 33 percent. At the time of writing (May 2012) 25 member states, which holds a total share of 56 percent of the world fleet, have ratified the convention (ILO, 2012). The Council of the European Union has issued a directive to the member states to ratify the MLC which when completed will put the MLC into force (EU, 2006).

### **Paris MoU**

The organization responsible for that the countries perform Port State Controls is called the Paris Memorandum of Understanding. This organization combines the reports from all member states into statistics and publishes them with which have been the most common discrepancies against the regulations. It was started the 1<sup>st</sup> July 1982 as a successor to previous MoUs to control that the regulations such as Marpol and STCW was followed on the vessels in the region. Today they have also issues Guidelines on how the Port State Control Officers are supposed to perform an inspection of work and rest hours as well as other types of inspections. (Paris MoU, History, 2010)

## HOW DO WORKING HOURS AFFECT FATIGUE?

Project Horizon was a project involving eleven academic institutions and shipping industry organisations with the aim of delivering realistic data to achieve a better understanding of the way sleepiness levels are affected by Watchkeeping patterns.

Many of the recent accidents at sea, from the Exxon Valdez disaster in 1989 to the grounding of the Shen Neng 1 on the Barrier Reef in April 2010, can be attributed to fatigue among the seafarers' in general and watchkeepers in particular.

Project Horizon's research was based on rigorous scientific principles involving use of engine, deck and cargo handling simulators to create realistic seven-day simulated voyage scenarios for the participating officers. A total of 90 different volunteer officers with appropriated qualifications and well experienced from Europe, Africa and Asia were engaged to perform the simulated voyages. During the test the volunteers lived a life as close to a shipboard life as possible.

The two most common watchkeeping patterns are six hours on, six hours off or four hours on, eight hours off. The simulations in Project Horizon aimed to examine the effects of both these two watchkeeping patterns. The study also involved interrupted off-watch periods to simulate real-life conditions, such as port calls, drills and emergencies.

The time spent "working" during the week-long simulations were 64 hours for those on 4-on/8-off and 90 hours for those on 6-on/6-off (including interrupted off-watch periods). All participants were asked to keep: a sleep diary filled in on waking up, a wake diary completed during the off-watch while awake and a work diary completed during the watch. In the watch diary the participants indicated how they felt using the Karolinska Sleepiness Scale (KSS) at various significant points during the voyage. (Horizon, 2012)

### *Project Horizon Result*

In all four watchkeeping sub-groups (6/6 and 4/8 at Chalmers University in Gothenburg and 6/6 deck and engineers at Warsash Maritime Academy in Southampton) there was evidence of full sleep. The incidents of sleep mainly occurred during night and early morning watches. Incidents of microsleep were detected among 40% of those on watch between 0000-0400 in the 4/8 watch, among 45% of those on watch between 0000-0600 in the 6/6 watch and around 40% of those on watch during 0600-1200 on 6/6 watch.

One of the main indicators that fatigue is dangerous is the fact that watchkeepers fell asleep on the bridge. In all groups the participants reported high levels of subjective sleepiness on the KSS-scale, close to the danger levels for car drivers.

Psychomotor Vigilance Task (PVT) reaction time tests carried out at both the start and the finish of each watch showed clear evidence of decline. The slowest reaction times were found on the end of night watches and among the watchkeepers on 6/6-patterns. These tests show that sleepiness and fatigue have a significant impact on the performance of the watchkeepers. (Horizon, 2012)

## Method

The aim of this report is to gather information about how the countries surrounding the Baltic Sea perform inspections of the working hour's onboard ships.

The method for the gathering of this information could be to participate in the inspections in the different countries as a bystander, only to observe. The negative aspects with that kind of method is that the inspector may not be performing the inspection as he would when not observed, and that it is very time consuming with the travels to the different countries.

The information could also be gathered through a questionnaire sent to the different authorities. This has the advantage that all participants get the same questions to answer and therefore the same information is given. However this method needs a high response rate from the participants which is not easy to achieve, also with a questionnaire there are no certain way to ensure the seriousness of the answers.

The methods that were chosen for this report were to perform interviews with the inspectors via mainly telephone and to some extent e-mail. This is a time efficient way of gathering the information. Though it has the same disadvantages as observing the inspections on site, this because it is the inspectors that give the information of how they perform their work and the perceived behaviour may not be the actual behaviour.(Robson, 2007)

### *Procedure*

The method for this report has mostly been interviews via telephone and E-mail, and in some cases follow-up questions on telephone, with the persons in charge of the inspections in the named EU-countries. The interviews where performed in a semi-structural way where the questions were given to the interviewee beforehand. This to help them find what kind of information is required and to ensure that the interviewee get the correct question.(Breakwell et al., 1995)

To obtain the contacts for the interviews we made contact with various Port agencies in the chosen countries, through the contacts with the agencies we were able to obtain contact information to the administrations that performs the Port state controls and through initial phone calls were able to come into contact with the person in charge of the operations.

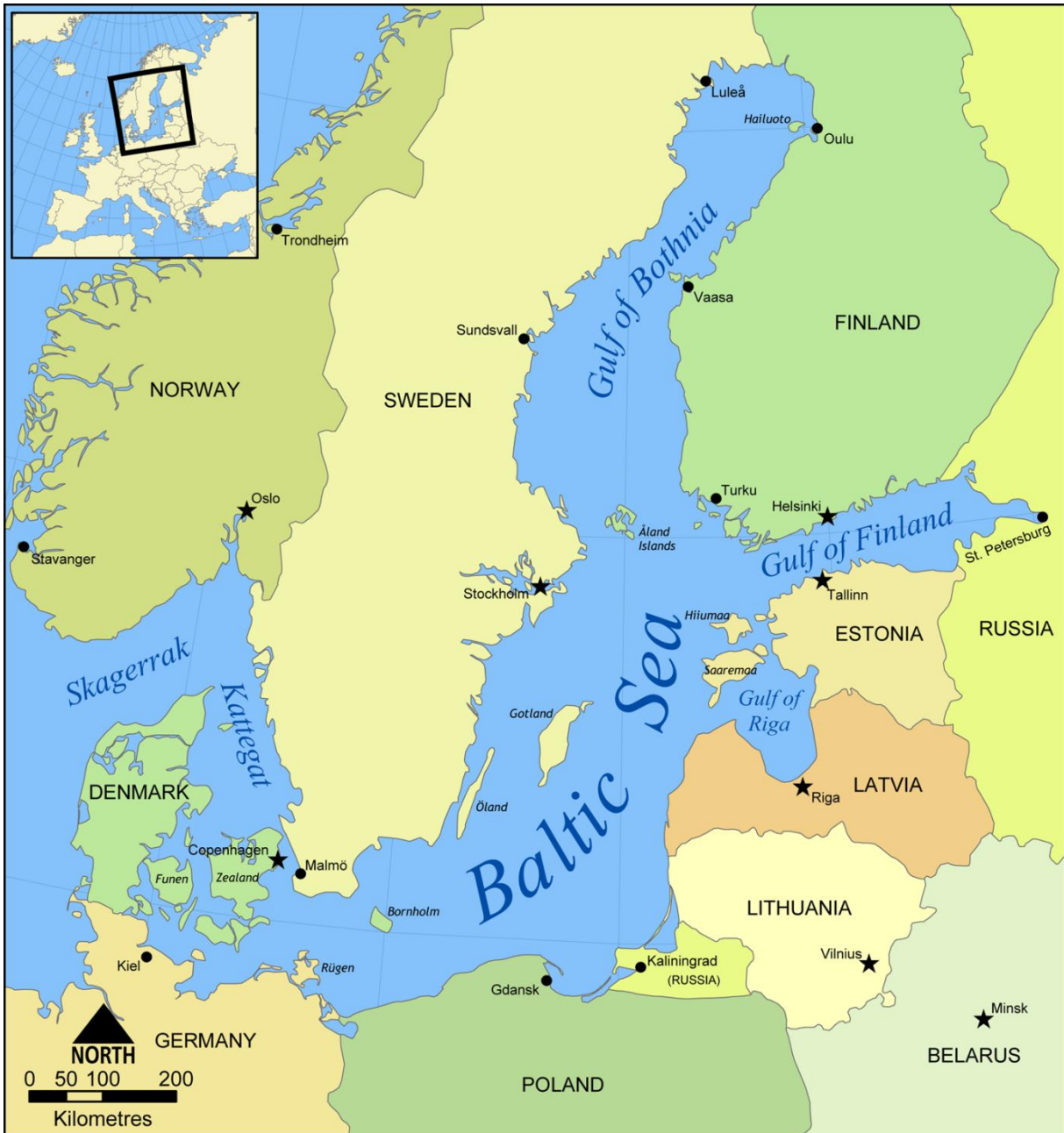
The interviewees were able to choose between a telephone interviews or only answer the questions via e-mail. One of the interviews has been performed via telephone whereas the other has been responses to the questionnaire that was sent out

The countries that have been involved in this study are:

With the respective administration that performs the Port State Control

Finland,	TraFi
Estonia,	Veeteede Amet / Estonian Maritime Administration
Latvia,	Maritime Administration of Latvia, Maritime Safety Inspectorate
Lithuania,	Lithuanian Maritime Safety Administration
Poland	Urząd Morski Gdynia
Germany,	Bg-verkehr
Denmark	Søfartsstyrelsen, Centre for Ships

Only countries that are members of the European Union have been involved in this study. The following map (figure 1) shows the Baltic Sea and the countries locations.



**Figure 1** Map of the countries surrounding the Baltic Sea. (Image from Wikipedia, 2012)



### *Method discussion*

To perform interviews through telephone it is required that both parties in the interview agree to talk. Many of the interviews performed during this report have been through e-mail since the responding party has had little time to do interviews via telephone. This has had an impact on the result in such a manner that any follow-up questions have to be taken at a later date and therefore may not be following the same chain of thought as the first time. (Robson, 2007)

There has been a response from five countries of the seven that has received the questions or has been approached for an interview regarding the subject. The two remaining countries may have been able to respond more thoroughly if there had been more time available during the course of this study. In order to get some response from them a summary of the findings were sent to Denmark and Finland, which yielded a response from Finland.

## **RESULTS**

The following sections are a display of the results obtained in this study of how the different EU-countries perform Port State Controls of working and rest hours on vessels.

### **INSPECTION OF WORKING HOURS**

#### *Introduction*

The ILO, International Labour Organization, has assembled the "Guidelines for Port State Control officers". These guidelines insure that the inspections on the ships are more or less the same regardless of which port state that performs the inspection. The guidelines include all forms of inspection according to the MLC, Maritime Labour Convention, it also includes the control of work and rest hours for the seafarers' and what the PSCO, Port State Control officers, should be aware of. (ILO, 2009)

The guidelines also contain what sources the PSCOs should search in for information regarding the working hours and examples of deficiencies that may occur. The guidelines also include examples of reasons for which ship could be detained or fined for violation of the MLC. Repeated non-compliance with the work and rest hour regulations in MLC are considered to be a reason for detaining a vessel. In the guidelines there are included factors that the PSCO should take in to account when possibly accepting a vessels rectification plan to come to terms with the vessels breaches of regulations, one of these factors is if the working hours onboard the ship are in compliance with the MLC. (ILO, 2009)

#### *Paris MoU*

The Paris MoU have also issued Guidelines on the Inspection of Hours of Work/Rest, these guidelines are to some extent similar to the ILO guidelines. However these guidelines do give the PSCOs a more detailed description on how to perform the inspection and in which section of the regulation the violation is found. The Paris MOU Guidelines also takes up other conventions to which the PSCOs should look for breaches of regulations, for example the STCW-Convention. Paris MoU Guidelines also attempts to give the PSCOs a brief understanding of why it is the important part regarding all possible discrepancies related to in the document.<sup>1</sup>

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<sup>1</sup> Personal communication with Dan Sarenus, Swedish Transportstyrelsen, 2012-04-24

The following sections contain a summary of the answers given by the different Port State Control administrations, the full answers given by all countries can be found in Appendix II. The questions submitted to the administrations can be found in Appendix I.

### *Germany*

In Germany the Port State Control (PSC) is performed by the Berufsgenossenschaft für Transport und Verkehrswirtschaft (BG-Verkehr) under the authority of the Federal ministry for Transport in Germany. All Port State Control Officers (PSCO) are former technical or nautical officers holding licenses of competence for Masters or Chief Engineer.

The working and resting hours onboard the ships are controlled during the PSC. All crewmembers working hour sheets are controlled and there are no problem finding time sheets of worked hours on the ships. The PSCOs being experienced seamen they know that records of working hours may not be entirely accurate and the method of checking the accuracy of the information is to compare the time sheets to Deck and Engine logbooks. This deeper control will only be done if there are any complaints or if the PSCOs get a strong indication that something is not accurate. Often the PSCOs will not make any deeper control of the working hour records if there are no explicit complaints because the control is bound to be extremely complicated and any inaccuracy does not render any major consequences. Maybe the control is even harmful to the seafarer. Often the seafarers themselves do not want the PSCOs to investigate the working hours as they will probably suffer disadvantages.

In recent years there has not been any specific focus on the inspection of Work- and rest hours in Germany, once the MLC will enter into force hopefully there might be a greater emphasis on these controls. Today the inspections of working hours are not prioritized as opposed to all the other inspections that the PSC is supposed to perform on the vessels.

In the control that the BG-verkehr performs in German ports they have found that on Coasters that are operating with a 2-watch-system (6 hours on and 6 hours off) at least the master and first mate are not able to comply with the working hours regulation after the 6<sup>th</sup> day at the very latest, in most inspections much earlier, sometime even the seamen are in violation of the regulation. Also they have found that on every ship with long coastal passages, such as the river passage from Antwerp then the coastal voyage to Hamburg with its long river passage, the Master will have to be on the bridge. Then in port the master has to deal with authorities plus maybe PSC, company representatives, vetting on a tanker and such. On a voyage like that maybe the junior officers and the seamen are able to comply with the regulation to a certain extent.

For a novice trying to control the working hours on ships the German PSC suggests that one should expect to spend a lot of time on the task and that on certain ships one is bound to find discrepancies of the regulations.

### *Poland*

In Poland the Port State Controls (PSC) is performed by the Maritime Office which under the authority of the Polish Ministry of Transport, Construction and Maritime Economy. The Port State Control Officers (PSCO) in Poland has licensees as Master, Chief Engineer or in Ship Construction. All PSCOs additionally will have to complete one year trainee program from Paris MOU. The PSCOs generally has no problem with finding information about the working hours during controls, all ships are required to maintain a Record of daily hours of rest. The PSCOs will also control if the Table of Working Arrangement has been posted and if the records there are being correctly maintained.

The accuracy of the work hour records can be controlled by comparing it to the Watchkeeping logbook and Engine logbook. The control is only performed if there is doubt that the records are not correct. The inspection of working hours is performed in every PSC but not prioritized over any other inspections, however when PSCOs notice or suspect fatigue among the seamen the inspection of rest hours is more detailed. The Polish government has not had any specific focus on control of working hours.

The Polish PSCOs have found that small vessels (under 3000 gross tonnage) with limited number of crew members have problems to comply with the rest hours required by the international conventions. On larger vessels with more crew and officers the PSCOs have not detected any problems to comply with the conventions.

According to the Polish PSC a novice trying to control the working hours onboard a ship should check the crew list, a short crew list might indicate that the ship operates on a 6/6 system, which could indicate that there are breaches of the conventions. Also the novice should try to compare the personal rest hour sheets with the entries in the ships log books, also be aware of the fact that the conventions may allow some exemptions to the rest hours on special occasions. Every crewmember should be in possession of a copy of his rest hour sheet, signed by himself and the Master or person authorized by the Master.

### *Latvia*

The Port State Controls (PSC) in Latvia is performed by the Maritime Safety Inspectorate which is a subsidiary of the Maritime Administration of Latvia. All Port State Control Officers (PSCO) are in compliance with Paris MOU requirements.

The inspection of working hours is part of every inspection that the PSC performs in Latvia. All PSCOs control the records of working hours and compare them to logbooks and watch schedules. One of the main tasks for the PSCOs is to verify if the records are believable and if they meet the regulation requirements. During the inspection attention is paid to the condition of the seafarer to check for and avoid any excessive fatigue. The task of checking the accuracy of the records is very different between ships, if it is a ship that maintains a high level of security the records can be more easily trusted. The PSCOs however quite often find records that have been obviously falsified on-board the vessels. Inspection of work and rest hours is part of every inspection and is not prioritized over any other inspections. The Latvian government has not had any specific focus on the control of work and rest hours.

PSC in Latvia have found that small coasters with a 2-watch-system (6 on/6off) are often in violation of the regulations of work and rest hours, regardless of the flag.

For a novice trying to control working hours on ships the Latvian PSC recommend that the person should learn to control and analyse information from various sources, such as the ships log books, watch schedules, AIS and ORB part I and II for example and then put this information against the records of work and rest hours.

### *Lithuania*

The Lithuanian Maritime Safety Administration is the authority in charge of performing the Port State Controls (PSC) in Lithuania. These inspections are authorized by the Lithuanian law on Maritime Safety, and performed by order from the Minister of Transport and communications. All Port State Control Officers (PSCO) meet the Paris MOU qualification requirements and all have a rank of Master,

Chief Mate or Chief Engineer or Second Engineer. They are also trained and evaluated by European Maritime Safety Agency (EMSA).

The PSCOs follow the Paris MOU guidelines for obtaining the information regarding work- and rest-hours on the vessels. They control the crewmembers' personal records of rest hours and check them against the entries in the ships log books. PSCOs also interview the crewmembers regarding the work and rest hours onboard the ship. There are no difficulties finding information about the work and rest hours as all ships are required by the conventions to maintain the records onboard. Through comparing the ships log books to the individual crewmember's personal records the PSCOs can find if there are any discrepancies between the documents, if that is the case the PSCOs interview the crewmembers to address the problem.

The inspection of work and rest hours is part of every inspection that the PSC performs and it is not prioritized over any other inspection. However if the PSCOs find any problems regarding the working hours of the vessel then a more detailed inspection is performed.

The vessels that the PSC has found that are the biggest problems when in regard to the work and rest-hours regulations are small ships that have a limited number of crewmembers onboard.

### *Estonia*

Estonian Port State Controls (PSC) is performed by the Estonian Maritime Administration, under authorization from the Estonian government following the Maritime Safety Act. The Port State Control Officers (PSCO) all has qualifications according to the European directive, at the moment all PSCOs are former Masters or Chief Engineers.

The inspections of working hours in Estonia are performed in following with the Paris MOU Guidelines and the ILO Guidelines. All seamen carry a personal book of work and rest which is signed by the Master and the Seaman. These timesheets are inspected by the PSCOs and some are controlled against the ships logbooks. If any discrepancies are found then the PSCO broadens the inspection and controls all the personnel onboard the ship. But primarily the intention is to trust recorded information.

Estonian PSCOs inspect Human Elements in each inspection and working hours is a part of that inspection. It is not prioritized over any other inspections made on the ship. However if there are any discrepancies found with any of the crewmembers time sheet then the PSCO performs a deeper inspection of the working hours of all of the crewmembers. The Estonian Government has not had any own focus on working hour inspection but there has been a focus on the subject from Paris MOU in the past and the Estonian administration follows the Paris MOU suggestions.

The statistics from the Estonian inspections cannot determine that there are any specific ships that are often in violation of the regulations regarding working hours. Non-compliance with work hour regulation is not in the top ten positions of found discrepancies by Estonian PSC.

For a novice the Estonian PSC would recommend that the person is qualified for the task and then to walk alongside an experienced PSCO to learn the different ways to countercheck information and how to perform an inspection, and the so called "tricks of the trade."

### *Finland*

The Finnish Port State Control administration responded that the summary and discussion given in this report represented the way PSCs are performed in Finland and they had nothing further to add.

*Denmark*

The Danish Port State Control administration did not reply before this study's deadline.

## **SUMMARY AND DISCUSSION**

There are many similarities between how the different countries perform the inspection of the work and rest hours of the seafarers. Mainly this is because all countries follow the Paris MOU- and the ILO-guidelines of how to perform the inspection. Controlling the seafarer's personal book of work and rest and then comparing it to the watch schedule and deck- and engine logbooks.

The similarities is also a result from the fact that all Port State Control Officers must follow the regulation of the Paris MOU, they also have similar qualifications and they all participate in a training programs held by European Maritime Safety Agency (EMSA) and also attend a renewal course every five years.

There are however some differences, not in the manner that the authorities claim they perform the inspections, however there are a difference in how extensive the inspection of working and rest hours is. Some of the countries only perform back checks on a sample of the seafarers and if they discovery any discrepancies there they control all crew on the ships. Some of the countries however perform control on every crewmember extensively from the start. However the countries that perform extensive controls on every crewmember do generally not find more seafarers in violation than the countries that only perform control on a sample of the crew.

The different PSC administrations generally have no problems obtaining information regarding the work and rest hour on the vessels. Some have experienced difficulties with the Masters not keeping records of rest hours because he feels he is not part of the crew. The most time consuming part of the rest hour inspection is the control of the time sheets against the ships log books and watch schedules to control if the records kept are reasonable.

The claim from all countries that has responded to this study is that the violation of the STCW and MLC conventions regulations about working and rest hours on vessels is that it is a relatively small problem; the ships that are in violation can be easily identified and properly handled.

The vessels that are mainly in non-compliance are small coasters that operate with a 2-watch-system (6 hours on watch and 6 hours off watch), these are also the type of watch-program that in the Horizon-project was the system that caused the most fatigue among the officers on watch. It was in this group that there was evidence of around 40-45 % of the participants that fell asleep on the bridge during watch (Horizon, 2012). This may indicate a need to prioritize these inspections. However, an inspection of work hours is only part of the solution.

## CONCLUSIONS

- All countries involved in the study follow the Paris MOU and ILO Guidelines for how to perform an inspection of work and rest hours.
- The major differences between the different inspections are how detailed the initial inspection of the seafarers personal rest book are.
- Breaches of the regulations are according to responses relatively small in all the interviewed countries.
- Vessels that most often occur in the statistics regarding violation of the regulations are small coasters operating with a 2-watch-system
- The inspection of rest hours is performed as part of every inspection the PSCs execute. It is not prioritized over any of the other inspections as well as not prioritized less than any of the other inspections

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## **APPENDIX I**

### *Questions:*

Who performs the inspections onboard the vessels? What are their qualifications?

Which government authorizes the inspections?

Who has delegated the port state control to your organization?

How is the compliance to the working hour regulations controlled onboard the vessels?

How difficult is it to find information about the working hours performed onboard?

How accurate can you trust these records to be?

Any controls made on the information to check its accuracy?

How prioritized is the inspection of working hours opposed to other inspections made onboard?

What would be your recommendation be to a novice trying to control working hours onboard a ship?

Has there been any focus on “working and rest”-hour controls from your organization?

Are there any certain types of ships or flags that often are in violation of the regulations of working hours?



## APPENDIX II

These are the complete answers from the Port State Control administrations in the asked countries.

### *Germany*

**1. Who performs the inspections onboard the vessels? What are their qualifications?**

Foreign ships: port state control officers

All PSCOs are either former technical or nautical officers holding master's or chief engineer's licences of competence.

German ships: Amt für Arbeitsschutz - agency for occupational health and safety

This is a Federal State Authority in Hamburg, Lower Saxony, etc

**2. Which government authorizes the inspections?**

PSC: Federal Ministry for Transport

Inspections of German ships: Ministry of the federal state concerned

**3. Who has delegated the port state control to your organization?**

Federal Ministry of Transport in Bonn

**4. How is the compliance to the working hour regulations controlled onboard the vessels?**

If it is controlled at all during PSC, the crewmembers' time sheets (working hour sheets) will be checked.

If German ships are checked by the Authority, they perform very detailed and accurate counts and checks.

**5. How difficult is it to find information about the working hours performed onboard?**

There will always be timesheets because the crewmembers have to fill them to get any overtime payment.

**6. How accurate can you trust these records to be?**

Very often it is difficult to tell. Being former seafarers ourselves we know that it is very often difficult to keep to the regulations. If there are not explicit complaints, the tendency very often is: better don't touch it, as it is bound to be extremely difficult, and even if you find inaccuracies - what can you do? Maybe it is even harmful to the seafarer. Very often, seafarers would not want you to dig too much into the matter because they will probably suffer disadvantages.

**7. Any controls made on the information to check its accuracy?**

The only way to check the accuracy of the timesheets would be to compare them with the deck and/or engine logbook. This would only be done if there are complaints or strong indications that something is wrong.

**8. How prioritized is the inspection of working hours opposed to other inspections made onboard?**

So far, not at all, as there are more and more other things to check. Once the MLC will enter into force there might be (hopefully) a greater emphasis on this matter. But even now everybody is wondering how on earth you are supposed to perform all the checks you will be expected to do.

**9. What would your recommendation be to a novice trying to control working hours**

**onboard a ship?**

Expect to spend a lot of time for it, and on certain ship types you are bound to find breaches of the regulations.

**10. Has there been any focus on "working and rest" - hour controls from your organization?**

So far, not explicitly. But in 2004 there was a Concentrated Inspection Campaign on Working and Living Conditions carried out in the Paris MoU region, and Working Hours were one part in it.

**11. Are there any certain types of ships that often are in violation of the regulations of working hours?**

On coasters with a 2-watch-system (6 hrs on, 6 hrs off) at least the master and the mate will not be able to comply with the regulations after the 6<sup>th</sup> day at the latest (mostly much earlier). Maybe the ratings as well.

On every type of ship the master cannot comply with the regulations on long coastal passages, e. g. Antwerp with long river passage, then coastal passage to Hamburg with long river passage during which the master has to be on the bridge. Maybe as a highlight there will follow a Kiel Canal passage. And in port the master has to deal with authorities plus maybe PSC, company representatives, vetting on a tanker and so on. The junior officers and the ratings might manage to keep to the regulations to a certain extent.

*Poland*

**Who performs the inspections onboard the vessels? What are their qualifications?**

Port State Control Officers - in Poland only person with master's licence, Ch. Eng's licence, Eng ship's construction licence or any person with degree of ENG or Master of Science with completed PSCO course can be PSC Officer, additionally with one year training as Flag State Control Officer or trainee of Port State Control Officer trained in international regulations by EMSA and Paris MoU on New entrant and many other seminars.

**Which government authorizes the inspections?**

Polish Government

**Who has delegated the port state control to your organization?**

Port State Control is a subject to Maritime Office, which is subject to Ministry of Transport, Construction and Maritime Economy.

**How is the compliance to the working hour regulations controlled onboard the vessels?**

Generally speaking:

- on small vessels mainly under 3000GT with limited number of the crew there is a problem to fulfil rest hours required by the international conventions.
- on bigger vessels with more officer and crew on board, no problem

**How difficult is it to find information about the working hours performed onboard?**

There is no problem to find it, because every ship shall maintain Records of daily hours of rest (STCW Part A Ch. VIII/1 and ILO 180 incorporate by Protocol 1996 to the Convention ILO 147) Port State Control Officer may check ship to see if the Table of Working Arrangement has been posted and records are being kept.

**How accurate can you trust these records to be?**

"Trust but check if in doubt"

Standard procedure is to compare records of rest hours of watchkeeping personnel with entries in logbook.

**How prioritized is the inspection of working hours opposed to other inspections made onboard?**

Inspection of the rest hours and Table of working arrangement is performed during every inspection with the same priority as other inspected fields. When noticed fatigue of the crew during inspection, inspection of rest hours is more detailed.

**What would be your recommendation be to a novice trying to control working hours onboard a ship?**

- check Crew List, when noticed that Crew List is very short, only master + 1 duty nav.off, or only Ch.Eng + 1 duty Eng or motorman, watch arrangement should be checked. System 6/6 hours for two duty off on the bridge is in contravention to STCW - min 6 hrs of the rest is not guaranteed for duty off., every officer to take over the watch must be on the bridge 10 min minimum before to adjust sight and familiarize with navigational situation.
- compare individual rest hours sheets with entries in log book, many times you can find discrepancy.
- parties to the convention may allow exception- check that exception from weekly rest period not allowed for more than two consecutive weeks(STCW section A-VIII/1/9)
- check regulation 5 of section A-VII/1 STCW - watch schedule to be posted where is easily accessible.
- check in the logbook's entries if lookout is present on the bridge when vessel is at sea(rule 5 of Colreg 72 and STCW section A-VII/2/14,15 - the officer in charge of nav.watch may be sole lookout in daylight only under special condition mentioned in STCW section A-VIII/2/16
- every crew member should be in possession of copy of the rest hours sheet signed by himself, and master or person authorized by master.

**Has there been any focus on “working and rest”-hour controls from your organization?**

No

**Are there any certain types of ships or flags that often are in violation of the regulations of working hours?**

Small vessels with limited number of the crew members fly under different flags are mainly in violation of regulation due to short crew list, as I explained in question above.

*Latvia*

**Who performs the inspections onboard the vessels? What are their qualifications?**

FSC inspections of Latvian ships and PSC inspections of foreign ships calling Latvian ports are carried out by Ship control inspectors of Maritime Safety inspectorate of Maritime Administration of Latvia. Qualifications of Ship control inspectors are in compliance with requirements of Paris MoU and Directive 2009/16/EC

**Which government authorizes the inspections?**

FSC inspections of Latvian ships and PSC inspections of foreign ships calling Latvian ports are authorized by the government of the Republic of Latvia

**Who has delegated the port state control to your organization?**

Port State Control functions are delegated to the Maritime Administration of Latvia by the clause 6(8) of the Latvian “Maritime Administration and Marine Safety Law” of 31.10.2002 as amended.

**How is the compliance to the working hour regulations controlled onboard the vessels?**

Part of every FSC and PSC inspection is the check how requirements regarding rest and working hours are complied with. The inspector inspect the records of working hours, compare them with log book, drill records, watch schedule etc. The main task for inspectors is to verify that these records are believable and meet the appropriate requirements. During the inspection attention is paid to conditions of seafarers to avoid excessive fatigue.

**How difficult is it to find information about the working hours performed onboard?**

This depends on many factors. Every case is quite various. In cases when the safety culture onboard the ship is maintained on a high level it is quite easily to find the required information, and this information is reliable enough. However quite often obviously falsified records could be found on board.

**How accurate can you trust these records to be?**

The records of work / rest hours should be recorded accordingly to MSC Circular 1014, appendix 3. The model format sets the accuracy half an hour for recording work or rest periods.

**Any controls made on the information to check its accuracy?**

Yes. Mostly we oppose the records of work / rest hours against the information stated in various ship log books

**How prioritized is the inspection of working hours opposed to other inspections made onboard?**

The overall control of the records of work / rest hours is included in the routine scope of the each Flag State or Port State Control inspection.

**What would be your recommendation be to a novice trying to control working hours onboard a ship?**

It is necessary to analyse information from various sources: ship log book, engine log book, ORB part I and II, watch schedules, AIS, agents, etc. and set this information against the records of work/rest hours.

**Has there been any focus on “working and rest”-hour controls from your organization?**

The main focus is to ensure that work / rest hours of all crew members complies to applicable requirements.

**Are there any certain types of ships or flags that often are in violation of the regulations of working hours?**

Small coasters; ships with two watch (6 hours watch / 6 hours rest) system.

*Lithuania*

**Who performs the inspections onboard the vessels? What are their qualifications?**

Inspections on board the vessels performed by inspectors with certain requirements for their qualification.

**Qualification requirements for flag State inspectors:**

- inspector must have higher university education and marine rank of master or chief mate on ships of 500 GT and more in accordance with STCW regulation II/2 and seagoing service certificate attesting the person's service in a capacity of an officer on such ships for a period of not less than 5 years, or
- must have higher university education and marine rank of chief engineer officer or second engineer officer on ships of 3000 kW propulsion power and more in accordance with STCW regulation III/2 and seagoing service certificate attesting the person's service in a capacity of an officer on such ships for a period of not less than 5 years, or
- must have higher university education as a naval architect, mechanical engineer or an engineer related to the maritime fields and seagoing service certificate attesting the person's service on board in such capacity for a period of not less than 5 years, or
- must have higher university education and experience of not less than 5 years in public administration institution in position related to maritime safety enforcement and have properly trained and qualified as ship safety inspector,
- must know the state language and maritime terminology in English,

- must know the requirements of national and international legal acts on flag State control and procedures of its performance,
- must have experience of inspecting ships flying Lithuanian flag under the guidance of experienced officer of not less than 6 month

Qualification requirements are prescribed by the Order No. 241 of the Minister of Transport and Communications (recast have been made by the Order No 3-23, adopted by the Minister of Transport and Communications on 10 January 2011)

**Qualification requirements for port State inspectors:**

- inspector must have experience as a flag State inspector of not less than 1 year,
- must have the ability to communicate orally and in writing with seafarers of foreign ships in English, know maritime terminology in English,
- must know the requirements of national and international legal acts on port State control and procedures of its performance,
- must have practical experience as port State inspector and inspections of not less than 25 foreign ships must be carried out by him/her,
- must have practical experience working with data bases “THETIS” and “Equasis”,
- must complete introductory course for port State inspectors according to the program approved by European Maritime Safety Agency (EMSA)

Port State inspector is assessed every five years. During these five years inspector has:

To perform not less than 10 ships’ inspections under procedures of Paris MoU every year;

To pass knowledge renewal courses arranged by EMSA at least once;

To attend seminars and refresher courses arranged by Paris MoU;

To pass not less than 2 exams according to Paris MoU remote training modules;

To collect not less than 30 credits according to Paris MoU harmonized procedure for qualifying inspectors.

**Which government authorizes the inspections?**

Inspections are regulated and authorized by the Law of the Republic of Lithuania, adopted by the Parliament of the Republic of Lithuania, as well as by the Order of the Minister of Transport and Communications concerning the approval of the Regulations on flag State control on ships registered in the Seagoing Ships Register of the Republic of Lithuania in the seaports of the Republic of Lithuania and seaports of the foreign states, adopted on 15 January 2004, as amended and by the Order No. 3-23 concerning the approval of the Rules of carrying out Port State Control of ships, registered abroad, in Lithuanian Sea Ports, adopted on 8 January 2004, as amended, and other legal acts.

**Who has delegated the port state control to your organization?**

See also question above. The activity on port state control is delegated to the Lithuanian Maritime Safety Administration by the Law of the Republic of Lithuania on Maritime Safety, adopted by Parliament. EU directive 2009/16/EC is implemented by Order of the Minister of the Transport and Communication. And since Lithuania is also member of the Paris MoU procedures of the Paris MoU are followed.

**How is the compliance to the working hour regulations controlled onboard the vessels?**

Working hours onboard ships are regulated by Code of Labour, adopted by Parliament, and Resolution adopted by Government. Working time on board ships also regulated by collective agreements. During ships inspection is checked entries in ships log books, records hours of rest for each crew member, also crew members are interviewed regarding work and rest hours. For foreign flag ships Paris MoU instruction “Guidelines on the Inspection of Hours of Work/Rest” used.

**How difficult is it to find information about the working hours performed onboard?**

There are no any difficulties to find information regarding work or rest hour. If no entries were finding on board inspected vessel - it means non compliance with applicable requirements.

**How accurate can you trust these records to be? / Any controls made on the information to check its accuracy?**

Comparing entries in ships log book with records hours of rest for each crew member we can find out is there any discrepancy between those two documents. In case of necessity port state control officer can interview crew members.

**How prioritized is the inspection of working hours opposed to other inspections made onboard?**

Inspection of working hours is included in initial ships inspection. If during initial ships inspection port state control officer find some problems regarding rest hours, then more detailed inspection is carried out.

**Are there any certain types of ships or flags that often are in violation of the regulations of working hours?**

The biggest problem regarding rest hours we can find on small ships with limited number of crew members on board the ship. Usually it doesn't depend on ships flag.

*Estonia*

Interview performed through telephone.

**Who performs the inspections onboard the vessels? What are their qualifications?**

Inspections performed by Port State Control Officers, qualifications with European directive, at the moment all are former captains or Ch. Eng.

**Which government authorizes the inspections?**

**Who has delegated the port state control to your organization?**

Estonian Maritime Administration, following Maritime Safety Act.

**How is the compliance to the working hour regulations controlled onboard the vessels?**

Following Paris MOU Guidelines, ILO, and convention 147

**How difficult is it to find information about the working hours performed onboard?**

Not difficult, all personnel carries book of work and rest, past records printed out and signed, current month still on computer. Main difficulty is that Captains do not keep record of his work and rest hours, believes he is exempted.

**How accurate can you trust these records to be?**

Primary is to trust recorded information. Also perform back check with ship logbook and engine logbook.

**Any controls made on the information to check its accuracy?**

Follow guidelines to discover discrepancies, if found broaden inspection, more detailed, check all crew.

**How prioritized is the inspection of working hours opposed to other inspections made onboard?**

It is one part of the inspection, under human elements. If there are discrepancies found then deeper inspection. Working hour control is part of every inspection

**What would be your recommendation to a novice trying to control working hours onboard a ship?**

If it is new personnel, best advice is to know the conventions that you are controlling. Then to be trained by experienced PSCO, to learn "tricks of the trade", learn ways to countercheck information and perform inspections alongside experienced personnel.

**Has there been any focus on "working and rest"-hour controls from your organization?**

Not by the VTA on their own suggestion regarding foreign ships. There has been focus on work and rest hours from Paris MOU in the past. The VTA follow Paris MOU focuses but do not set any own targets.

**Are there any certain types of ships or flags that often are in violation of the regulations of working hours?**

Estonian statistics cannot determine that any specific types of ship or flag are in more violation than others. Non-compliance with work hours is not in the top 10 list of discrepancies. Not a serious problem in this region.