YRKESHÖGSKOLAN
NOVIA

Constructing a safety management system based on the ISM-code

Case Oy Yxpila Hinaus-Bogsering Ab

Janne Marttila

Examensarbete för sjökapten (YH)-examen

Utbildning i sjöfart

Åbo 2019

EXAMENSARBETE

Författare: Janne Marttila
Utbildning och ort: Utbildning i sjöfart - Åbo
Inriktningsalternativ/Fördjupning: Sjökapten
Handledare: Peter Björkroth

Titel: Constructing a Safety Management System based on the ISM-code

---

Datum 22.03.2019 Sidantal 10 Bilagor 1

Abstrakt

Detta examensarbete har jag gjort som uppdrag för Oy Yxpila Hinaus-Bogsering Ab; ett företag som erbjuder hamnbogserings- och isbrytningstjänster. Syftet med denna avhandling var att utveckla och underhålla ett säkerhetsledningssystem som passar för företagets behov.

Innan detta arbete hade företaget inget säkerhetsledningssystem i bruk, vilket är ganska vanligt i finsk inrikessjöfart. I denna avhandling används en produktorienterad strategi. Den är konstruerat genom att kombinera teori och praktik samt erfarenhet i vardagsarbetet inom företaget. Materialet består av intervjuer, egna professionella observationer, IMO-riktlinjer och företagsdokument. Arbetet genomfördes under det dagliga arbetet i företaget, så att en omfattande bild av organisationens dagliga rutiner kunde bildas. Oy Yxpila Hinaus-Bogsering Ab tog systemet i bruk början av året 2018 och den lever vidare som ett ständigt utvecklande system.

Språk: Engelska Nyckelord: ISM, SMS, Bogserbåt

OPINNÄYTETYÖ

Tekijä: Janne Marttila
Koulutus ja paikkakunta: Merenkulku - Turku
Suuntautumisvaihtoehto: Merikapteeni
Ohjaaja(t): Peter Björkroth

Nimike: Constructing a Safety Management System based on the ISM-code

---

Päivämäärä 22.03.2019 Sivumäärä 10 Liitteet 1

Tiivistelmä

Tämän opinnäytetyön tilaajana toimii Oy Yxpila Hinaus-Bogsering Ab; Kokkolasta kotoisin oleva yritys, joka tarjoaa satamahinaus ja jäänmurtopalveluja. Tämän työn tarkoitus oli kehittää turvallisuusjohtamisjärjestelmä, joka on räätälöity asiakkaan tarpeiden mukaan. Ennen työn aloittamista, yhtiössä ei ollut käytössä minkäänlaista turvallisuus järjestelmää, mikä on melko yleistä kotimaanliikenteessä toimivissa varustamoissa. Tämä opinnäytetyö on toteutettu tapaustutkimuksena, jossa on käytetty pohjana konstruktiivista tutkimusotetta ja tutkimuskohteesta koottua aineistoa. Materiaali koostuu haastatteluista, omista havainnoista, IMO:n määräyksistä ja yhtiön dokumenteista. Työ suoritettiin normaalin päivittäisen työn ohella, jotta voitiin muodostaa kattava kuva yhtiön päivittäisistä rutiineista. Turvallisuusjohtamisjärjestelmä otettiin yhtiössä käyttöön alkuvuodesta 2018 ja toimii jatkuvasti kehittyvänä järjestelmänä osana yhtiön turvallisuusorganisaatiota.

Kieli: Englanti Avainsanat: ISM, SMS, Hinaaja

BACHELOR'S THESIS

Author: Janne Marttila
Degree Programme: Degree Programme in Maritime Management - Turku
Specialization: Bachelor in Maritime Management
Supervisor(s): Peter Björkroth

Title: Constructing a Safety Management System based on the ISM-code

---

Date 22.03.2019 Number of pages 10 Appendices 1

Abstract

This thesis was commissioned by Oy Yxpila Hinaus-Bogsering Ab; a company engaged in harbor towage and icebreaking services. The purpose of this thesis was to establish, develop and maintain a safety management system (later SMS) and safety culture to suit the company's needs.

Prior to this research, the company had not implemented any kind of safety management system which is quite common in the Finnish domestic shipping business.

This thesis uses a case-oriented approach and is constructed by combining a product-oriented theory and case data. The data consists of interviews, own professional observations, IMO-guidelines and company documents.

The work was carried out during day to day work in the company, so that a comprehensive picture of the organization's daily routines could be established.

The SMS was implemented by the company in early 2018 and lives on as a constantly developing system.

Language: English Key words: ISM, SMS, Tugboat

Index

1 Introduction

1.1 The purpose of this thesis

The purpose of the International Safety Management Code is to provide an international standard for the safe management and operation of ships and for pollution prevention. The purpose of this thesis was to establish, develop and maintain a safety management system (later SMS) and safety culture to suit the company's needs.

Prior to this research, the company had not implemented any kind of safety management system which is quite common in the Finnish domestic shipping business. Although the company operating procedures were already quite similar to procedures described in the SMS.

The operation of harbor tugs and other maritime vessels require a certain precision and comprehensive understanding of safety aspects and risks involved. When discussing safety related matters in a company meeting, there rose a need to create a safety management system for the company. I worked in the company as a captain at the time and was assigned to produce such a system. The safety management system was to be tailored according to the needs of the company and that gave me a good frame for the final product.

1.2 Research question

This thesis has a product-oriented approach with a commissioner from the maritime field. The research aims to find an answer to the research question to offer the company insight and helpful guidance. The research question for this thesis is "How to build a constantly improving safety culture for the company?".

1.3 International Safety Management Code

The Code's origins go back to the late 1980s, when there was mounting concern about poor management standards in shipping. Investigations into accidents revealed major errors on the part of management, and in 1987 the IMO Assembly adopted resolution A.596 (15),

which called upon the Maritime Safety Committee to develop guidelines concerning shore-based management to ensure the safe operation of ro-ro passenger ferries. (IMO)

The Code establishes safety-management objectives and requires a safety management system (SMS) to be established by "the Company", which is defined as the owner or any other organization or person, such as the manager or bareboat charterer, who has assumed responsibility for operating the ship and who, on assuming such responsibility, has agreed to take over all duties and responsibility imposed by the Code. (IMO)

The Company is then required to establish and implement a policy for achieving these objectives. This includes providing the necessary resources and shore-based support. (IMO)

Every company is expected "to designate a person or persons ashore having direct access to the highest level of management" in order to provide a link between the company an those on board. (IMO)

The procedures required by the Code should be documented and compiled in a Safety Management Manual, a copy of which should be kept on board. (IMO)

I got the assignment of constructing an ISM-code based safety management system (later SMS) for the harbor towing company Oy Yxpila Hinaus-Bogsering Ab based in Kokkola. I have worked as a tugboat captain in the company for 7 years and felt that I am experienced enough to take on the challenge. Addressing safety matters requires a comprehensive understanding of the vessels and their operation.

Oy Yxpila Hinaus-Bogsering Ab is a company engaged in harbor towage and icebreaking services. The company is responsible for the crewing and technical management of all the vessels in the YH-B fleet. YH-B is committed to provide their services with the highest standards with regards on quality, security, safety and environmental criteria. To achieve these goals, the company shall provide an efficient and safe working place for their employees.

The safety management system (SMS) is a document that outlines the policies and standard procedures for quality, safety, security and environmental issues to assure safe and efficient operation.

The SMS is a working progress, with the aim for constantly improving the system. The input and feedback of the entire organization is crucial for constantly improving the company's operation.

The standard procedures outlined in the SMS do not cover every situation and shall therefor be used as guidelines for operation. All employees are personally responsible for complying with the rules and regulations that apply.

2 Case – Oy Yxpila Hinaus-Bogsering Ab

Oy Yxpila Hinaus-Bogsering Ab is a company based in the Port of Kokkola. They offer harbor towage and icebreaking services in the Bay of Bothnia, primarily focusing on the ports of Kokkola, Kalajoki and Pietarsaari. The company was established originally in 1981 and was acquired by the current owners in 1997. For a long time, it was a relatively small business, consisting only of a handful of workers and two tugs.

The expansion started in 2007 when a new tug "Aries" was acquired from Singapore. The new tug was of the ASD-type and drastically improved the company's ability to operate. The fleet grew on regular intervals and today consists of 6 vessels in two ports.

The following vessels are covered in the SMS:

Name	Owner	Call sign	IMO number	GT	Flag	SMC
Aquila	Oy YH-B Ab	OJSQ	9253686	188	FIN	XXXX
Aries	Oy YH-B Ab	OJMK	9154892	298	FIN	XXXX
Cetus	Oy YH-B Ab	OJNZ	7407568	179	FIN	XXXX
Draco	Oy YH-B Ab	OJRW	9280794	193	FIN	XXXX
Orion	Oy YH-B Ab	OJGI	7368580	378	FIN	XXXX
Taurus	Oy YH-B Ab	OJRL	9261190	188	FIN	XXXX

Figure 1. Vessel list

The increase in the number of vessels also demanded hiring more manpower and thus making it a more complex organization to manage. This created the need for the development of a Safety management system for the company. The company's aim was of

course to audit the management system with the authorities to improve their appeal to potential customers.

3 Methodology and data

This case study is constructed by combining the requirements of the ISM-code and the preferences of the client. The thesis produces a solution to ISM-code requirements for the fleet in the company in question. A case study focuses only the case and the results are not to be applied as such in other cases. A case study analyses e.g. a certain company or an occasion, it concentrates on the starting point, the data available from the setting and provides the results applicable only in the setting in the very case. (Saaranen-Kauppinen & Puusniekka. 2006).

The data was collected by using company documentation, by interviews of the company staff and personnel from the Finnish transport agency TraFi as well as data based on my own professional competence, observations, experiences and field notes as a working tugboat captain. English was selected as the language for the SMS due to a multinational crew.

The methodology in this thesis is based on a constructive approach. It means that the research aims at constructing a final product, which in this case is the safety management system in question. The construction process requires 1) a problem to be solved, 2) data which is applied to 3) literature and 4) a practical solution which is tested. The final product is the answer to the research problem. (Lukka 2001).

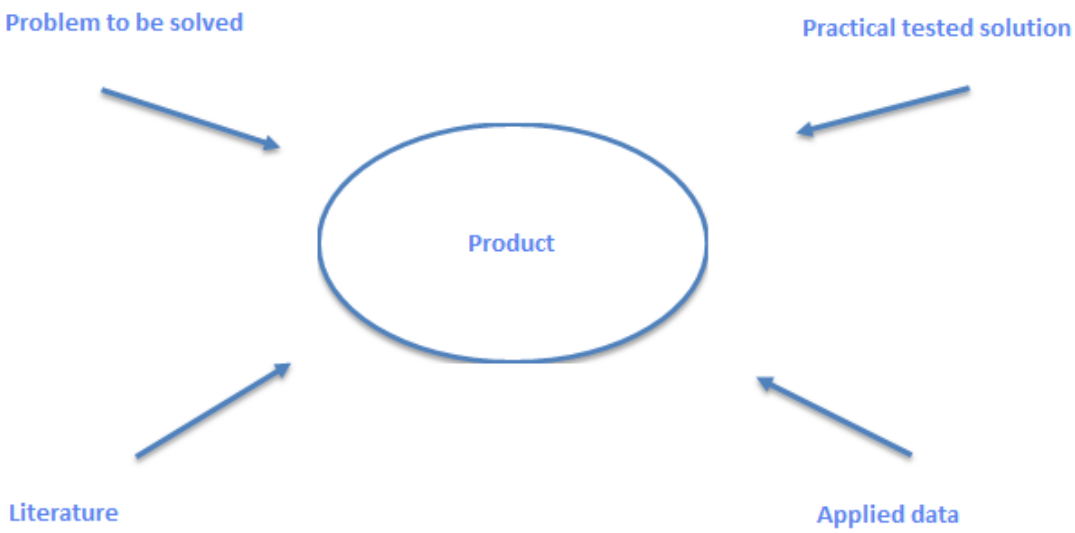

Figure 2. Methodology

I found a relevant research problem, which was the practical need for a safety manual. There was a company which required the manual. I acquainted myself with the international safety management code and the requirements. I created a system of producing the manual and I carried through the construction process. I had it tested in real life situations in the company fleet and finally wrote a report of the process. The safety management system makes the final product.

3.1 Outlining the product

I started out by getting familiar with the requirements for a safety management system set by the IMO and the local authorities. I scrolled through some manuals made for some larger companies and concluded that my manual did not have to be of that comprehensive scale, but rather to be tailored to the needs of the company and their business model. Keeping in mind the IMO requirements I started mapping out the headlines to be included in my work and presented my results to the company management and my colleagues. I made adjustments according to the feedback I got and the structure for the manual started to form itself. (Group meeting 07.08.2017)

As I got the headlines in order, I started my research. I discussed the company policies with the management and used my own knowledge to draft out the emergency and the onboard

procedures and consulted my colleagues for input. We had numerous sessions during the project to cover all perspectives and make improvements as my work progressed. My goal was to get all the necessary information fitted in clear a compact package that could be read and digested with ease. I myself worked as a captain in the company at the time, with a total experience of 7 years. This has given me a solid knowledge of the company's operating procedures. My work progressed to a point of near completion and I consulted the Finnish Transport Agency (TraFi) to get input from real experts in the matter. They gave me valuable feedback and information, which I included in my work. (TraFi interview 23.11.2017)

4 Safety Management System

The company's aim was of course also to get the management system audited by the Finnish authorities and thus improve their appeal to potential customers as an ISM certified company. All the vessels owned by the company are less than 500 by gross tonnage, which means that a safety management system as per the ISM-code guidelines is not required. As my research progressed, it came to my knowledge that it is not even possible to audit a safety management system like this due to the lack legislation. The existing legislation concerns vessel greater the 500 GT. This was an unfortunate setback for the project of course, but as the company's aim was to build a safety culture to improve overall safety and management, so there was still a goal to achieve. (TraFi interview 23.11.2017)

The final product consists of sections as follows:

- **Company policies** - This section discusses the policies the company has established. Which include Health & Safety, Environmental, Drug & Alcohol and Smoking policies.

- **Designated persons –** This section contains the information of the company DPA (Designated Person Ashore).

- **Company responsibilities & authority** - This section describes the responsibilities and ownership within the company.

- **Master's responsibilities & authority** – This section describes the responsibilities and authority carried by the master.

- **Resources & personnel** – This section discusses Education & Training, Familiarization, Crewing, Working-hours and Working language.

- **Shipboard operations** – This section is probably the most comprehensive. It describes several shipboard operations, including: Risk assessment, Safe navigation & Voyage planning, Vessel at sea, Lifting operations, Ship handling, Mooring, Bunkering, Walkway conditions, Waste management, Personal protective equipment, Engine procedures and Dry docking.

- **Emergency procedures** – This section consists of two main sections which are: Office emergency response procedures and Onboard emergency procedures. The latter contains topics as follows: Abandon ship procedure, Man over board procedure, Collision procedure, Grounding procedure, Serious injury procedure and Engine failure procedure.

- **Drills** – The drills described in this section include: Man over board, Abandon ship, Fire and Towing safety.

- **Reports & analysis** – This section describes the use of the reporting and improvement system developed by the company.

- **Maintenance** – This section contains the company maintenance policy.

- **Documentation** – This section describes the documents and checklist which are in use in the company.

- **Forms & checklists**

These parts form a consistency with each part as important as the next.

5 Conclusions

The towing company Oy Yxpila Hinaus-Bogsering Ab ordered this product from me in the summer of 2017. My work was finished in late 2017 and was received well within the company. The final product was handed over to the client in early 2018 implemented in to use after a briefing of the personnel. (Final meeting 07.12.2017)

In my opinion it would have been reasonable that the SMS would have been audited by the authorities. Harbor towing is a dangerous branch in the shipping business and the supervision of safety matters limit only to the annual surveys. There is no supervision regarding the safety and management procedures on these smaller vessels, as the current legislation does not require so. I hope that discussion over tugboat safety will increase in the coming years and that these aspects will receive more attention.

This project has been a great opportunity for me to expand my knowledge of the safety aspects in shipping as well as the safety cultures in shipping companies. The challenge of this project was to fit all the necessary aspects in a compact and easily digested package without compromising the content. It is important that the manual is clearly readable, and every person will easily find and understand the information they are looking for. Safety onboard is for the best interest of all employees. I believe that I succeeded quite well with this task.

6 References

Literature

IMO ISM Code and Guidelines on Implementation of the ISM Code http://www.imo.org/en/ourwork/humanelement/safetymanagement/pages/ismcode.aspx. Accessed 14 February 2019.

Lukka, Kari 2001. Konstruktiivinen tutkimusote. www.metodix.com. Menetelmäartitikkelit. https://metodix.fi/2014/05/19/lukka-konstruktiivinen-tutkimusote/ Accessed 11 March 2019.

Anita Saaranen-Kauppinen & Anna Puusniekka. 2006. KvaliMOTV - Menetelmäopetuksen tietovaranto. Tampere: Yhteiskuntatieteellinen tietoarkisto. http://www.fsd.uta.fi/menetelmaopetus/>. Accessed 14 March 2019.

Interviews and other data

Group meeting 07.08.2017, 4 persons present

Group meeting 20.09.2017, 3 persons present

TraFi interview 23.11.2017 2 inspectors present

Final meeting 07.12.2017 3 persons present

Personal professional field notes, observations and experiences

Figures

7 Appendices

Oy Yxpila Hinaus-Bogsering Ab Safety Management System included as a separate document (32 pages).