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Alternative Solutions for Pilot Organizations
-with safety perspective

Master of Science Thesis in the Nordic Master in Maritime Management Programme

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SUMMARY

The aim of this study is to find alternative ways to organize pilotage in Finland. There are two important changes under preparations right now. The one is a new Pilot Act and the other is the type of entire pilot organization. These two are interdependent but implemented, at least partly, by different institutions. There have been a lot of discussions on such issues as monopoly vs. competition or governmental vs. private. The focus has anyhow been on economics or legal matters.

The safety in pilotage has not been an issue in those discussions. One reason for this might be that decision makers need more information about safety.

Safety Management System is compulsory for ships and shipping companies internationally but not yet for pilot organisations.

Many pilot organizations have acknowledged the importance of Safety Management System and started to work on the issue.

In this study interviews were used as an essential method to get information on how various pilot organizations have arranged their safety related matters.

The interviewees were carefully chosen and include representatives from various types of pilot organizations.

When comparing how various pilot organizations are handling their safety matters it could be noticed that the private pilot organizations have been most active on this. The governmental pilot organizations are still preparing their systems but have not implemented those yet. The Finnish State Pilot Enterprise, Finnpilot, has not any Safety Management System.
Finnpilot's 'job satisfaction survey 2010' shows that employers are very disappointed with the senior management and they want to become governmental civil servants.

The private Dutch pilot company together with the European Maritime Pilots Organization (EMPA) has developed the 'International Standard for Pilot Organisations' (ISPO Code) which is a safety management system. The Dutch pilots have implemented the 'ISPO Code' into their organization and it is audited (outer audits) by Lloyds Register, which is a classification society.

Det Norske Veritas (DNV), which is another classification society, has also been active on safety management in pilotage and has introduced the 'Rules for Pilot Organisations'. These rules are presented as a part of this master thesis.

Keywords: Pilotage, Quality, Safety Management System

Table of Contents

1 Introduction

This is a study about pilot organizations. The reason why this research was performed is two fold. Right now, when writing this report, there are two reforms going on in Finland and both of these may influence on the quality of pilotage. The first one is the reform of the pilot organization and second is the reform of the Pilot Act.

The Ministry of Transport and Communications has assigned an earlier report on the needs for amendments to the pilotage Act and the pilotage arrangements (Ministry of Transport and Communications 2008). That report has been useful when tracing the various structures of pilot organizations. However the way how these various types of organizations work in practise, for example when looking from safety perspective, is not included in that earlier report. The Ministry of Transport and Communications has introduced also another report on pilotage; 'Alternative methods of opening pilotage services to competition' (Ministry of Transport and Communications 2009). This report has a focus more or less on competition.

The author of this master thesis is a master mariner and works as a pilot in Finland. He has also served as master on several vessels and almost five years as a principal lecturer in Ship Handling Simulation Centre.

When participating in a 'Quality Management' course at the 'Nordic Master in Maritime Management' program the author of this report realized that the 'Safety Management System', which is compulsory and internationally binding ships and shipping companies, could be transferred or applied to pilotage as well. This led to an idea of writing a master thesis on alternative ways to organize pilotage with emphasis on safety. After having a discussion with the teacher of the 'Quality Management' course about the topic he found it interesting and promised to supervise the work.

The Master Thesis project started by discussing with pilot colleagues and reading from different sources what had been said about the reforms of the Pilot Act and the pilot organization. Much of the earlier discussions were limited to confrontations such as monopoly vs. competition or private vs. governmental. The influences on the actual piloting and safety therein were more or less left out of the discussions.

The 'Safety Management System' is a sensitive issue. 'Safety', as such, is considered good and accepted widely among people, but when it occurs together with a concept of 'Management System' it sounds suspicious. It might sound bureaucratic, binding, demanding, blaming, laborious, expensive, exhausting, etc. Why all this work, although we have earlier managed to ride through the problems pretty well without any such system or management in safety?

The pilotage as an issue gets a lot of interest among actors in maritime business. The reason for the interest is the multitude of aspects which are based on economy, legal matters, management, strategy, safety, quality, logistics, human factors, intercultural communications, environmental matters

etc. These above mentioned subjects among others have been a part of the 'Nordic Master in Maritime Management' program in Chalmers University of Technology and these studies have been of great help when doing this project.

This master thesis takes a general look on pilot organizations in Europe. A more in dept view is taken from a limited number of pilot organizations. The selected organizations represent alternative ways to organize pilotage. These organizations are from Finland, Denmark, Norway and the Netherland. Sweden and Germany were also included when analysing the various pilot organisations.

The pilotage in Finland is in focus throughout this report. The prevailing pilot service-provider Finnpilot gets a lot of attention but also the other provider, Baltic Pilot, is presented. The Safety Management System in the Netherlands and the training and education arrangements in Norway are presented as examples and not as the only ways to organize these.

The reform of the Pilot Act and the reform of the pilot organization as well can be considered as great possibilities to improve the quality of pilotage in Finland.

This master thesis starts with an introduction chapter which consists of introduction, purpose of the research, limitation of the research and method. After this the study takes a look into pilot job as a profession. The liability of pilot is presented first and then how pilot job has changed throughout the years and finally taking a look at pilotage in future.
This is followed by a presentation on various types of pilot organizations and in which countries these types exist in reality.
The next presented issue is how the Safety Management is arranged in various pilot organizations. This was carried out by interviewing decision makers or authorities in selected countries with alternative organization structure. Also available documental material has been used to obtain information.
Although Risk management is a part of the Safety Management it is not handled in this research as a separate subject. However Risk Management relates to many issues discussed in this master thesis.
This study takes also a look on what influences the global recession had to various pilot organizations in their operation and further, regarding the Finnish pilot organisation, how the employees feel about the present system.

2010 was harder ice-winter than it has been during the recent years. The ships got difficulties to make their way through the ice in the Gulf of Finland. Almost all ships, bound for Finnish ports, had to use the archipelago fairway with pilot onboard. It is also easier and more efficient for the icebreakers to assist ships which are heading to a same and earlier defined spot before entering the archipelago. When all ships use exactly the same track the fairway stays better open for traffic in the archipelago. Also the islands around prevent fairway from moving or closing down. This is very useful way to arrange traffic in hard winter but it causes also many problems which must be arranged in a proper manner. A hard winter, such as last winter in 2010, do not occur every year and in fact there was no documentation in use from previous hard ice-winters to show how to make traffic running in a safe and efficient way in such conditions. The author of this master thesis had a vantage point to see how the pilot organization

managed with the traffic in these rarely occurring circumstances. Hard winter was one of the indicators when analysing the Finnish pilotage provider Finnpilot in action.

This research presents the existing types of the pilot organizations with an intention to be useful when seeking the best organization type for Finland and by presenting the potential organization alternatives maybe helping the law-makers to keep the doors open for those options in the new Pilot Act.

I would like to thank those who have participated in this study through the interviews and discussions. I would also like to thank the examiner of my study, Margareta Lützhöft and my supervisor Tor Charles Lund, for helping me to make this report.

I hope that this research would be helpful also in other countries than Finland when facing the need for a new Pilot Act or the reform of the entire pilot organization.

1.1 Background

1.1.1 In general

In Finland pilots were governmental civil servants until 2004 when the Finnish Maritime Administration was reorganized and pilotage was separated from it. A new, but still governmental organization, Finnish State Pilotage Enterprise was founded to take care of the pilotage.

Right now the possible privatization of the pilotage is a hot topic in Finland. The author's interest into the topic of this master thesis is based to a long service as a pilot, a teacher and a shipmaster. He started his pilot career 1.1.1988 at the Emäsalo pilot station east of Helsinki after serving as a shipmaster on several ships. After a couple years of service as a pilot at Emäsalo pilot station he got an opportunity to work as a principal lecturer at the Ship Manoeuvring Centre in Otaniemi near Helsinki and made the required pedagogical studies at the same time at the Vocational Teacher Education Unit of the HAMK University of Applied Sciences in Hämeenlinna.

The Ship Manoeuvring Centre was not only for teaching but also for research, which gave the author of this master thesis a good opportunity to learn a lot of theories on ship handling. During that time the owners of the Centre were the Ministry of Education, VTT Technical Research Centre of Finland and the Finnish Maritime Administration. An important part of the job, as the principal lecturer at the Ship Manoeuvring Centre, was to take care of the courses intended for pilots and during that time he learned to know by person almost all the pilots in Finland.

After about 5 years service as principal lecturer he returned back piloting and this time at Helsinki pilot station where he is still employed.

During the author's time as a pilot the pilotage has changed quite a lot. There were big changes, regarding pilot job, already during the time pilots were

governmental civil servants, but after the foundation of the Finnish State Pilotage Enterprise and separation from Finnish Maritime Administration the decrease in the synergies with other actors in shipping safety sector became more obvious. Besides the changes in pilot job the Pilot Act has been changed twice during that time as well.

Now the changes within pilotage are going on in Finland. The preparation of a new Pilot Act and the decision making about the type entire pilot organization is in progress. This master thesis is meant to be one tool to see the existing opportunities in order to find the best solutions when making decisions on these issues.

1.1.2 Case background

When exploring what has been said about pilot organizations by decision makers one could notice that the discussion has been intensive but at same time limited. For example, the widely and successively used type of pilot organization were pilots are acting as self-employed, have been left out of discussion. This type is still mentioned in the 'Report on the needs for amendments to the Pilot Act and the pilotage arrangements' by the Ministry of Transportation and Communication (Ministry of Transport and Communications 2008).

There are several ways to organize pilotage and also many different aspects to analyze how each organization operates. One indicator that has been used in this research is to find out how the different organization types handle the issue of 'safety management'. Another indicator to compare organizations is to study how different organization types have managed during the global recession. The third indicator here is the occurred hard winter; How Finnpilot managed through it and how it had prepared for it? Fourth indicator is how the people working at Finnpilot feel about the company.

1.2 Purpose of the research

The purpose of this research is to highlight the quality perspective in pilotage and especially how the safety in pilotage is arranged within various organization types.

The aim of this research is to find out what kind of organization types already exist in the European Union, especially in Northern Europe, and show their strengths, possible bottle-necks or weaknesses. This master thesis has an emphasis on the safety matters.

The aim of this study is divided into four different parts.
Firstly, the aim is to find out other alternatives to organize pilotage than the widely discussed totally free pilotage and the prevailing monopoly.
Secondly, the aim of this report is to be useful especially to the decision-makers, such as Members the Boards of pilot organizations (who are finally responsible for the strategy of an organization) and who are not necessarily familiar with the existing alternatives or pilotage as such.
Thirdly, maybe this report will help decision-makers, when seeking new and

suitable ways to organize pilotage.
Finally and hopefully, also others, who are involved with pilotage, can find this report interesting as well as useful.

The on going legislative reform to prepare a new 'Pilot Act' in Finland can affect on pilotage in various ways. The Act may also influence to the way how pilotage will be finally organized in Finland.

There are four research questions:

1. *How the pilotage can be organized (Strategies of pilotage)?*
(Governmental pilotage vs private pilotage or free competition vs. monopoly or mixtures of these)

2. *How the quality management of the pilot organization, and especially safety management, is or could be arranged?*
(Inner audits; inside pilot organization and outer audit; for example classification societies)

3. How do the possible ways to organize pilotage differ from each other?
(How does the organization type reflect on their way to arrange safety management?)

4. Are there any possibilities to combine pilot job with some other activities?
(Only piloting vs. doing also something else; Cooperating with VTS; In Harbour: acting as harbourmaster, inspector, shipping agent; Being involved with services such as tugboat, linesman etc; Inside pilot station: involved with activities such as pilot boat service, watch keeping; Fairway maintenance: taking care of fairway markings; Etc.).

1.3 Limitation of research

This report is mainly limited to show how various organization types influence on pilot job, although others aspects are also considered when found important. The quality and especially safety in pilotage is an important issue.

2 Methods

The methods I have used to find the right ways to organize pilotage are:

- Qualitative approach.
- Available documental material; earlier research, books, internet.
- Interviewing decision-makers or other stakeholders using semi-structured telephone, face-to-face interviews and use of e-mail.
- Participant observation.

The interviews were made mainly by telephone. Many of the interviews were recorded by a commercial Mprec-application (mprec.com). The application sent recordings directly to interviewer's e-mailbox from where the interviews were easy to replay, analyse and copy.
The interviews of decision makers and managers of different offices or companies, in Finland and also abroad, are an important part of this research.

The interviews have been mostly semi-structured (Robson 2008, p.75) and thus giving interviewees an opportunity to emphasize those aspects that they feel most important. The interviewees were carefully chosen and include representatives from various types of pilot organizations.

The methods to perform the interviews and discussions have varied from "face to face" (Robson 2008, p.73) to telephone interviews (Robson 2008, p.77). The telephone interviews are motivated because of the long distances between the interviewer and interviewees. There is usually relatively little resistance to being interviewed by comparison with other methods, such as asking them to complete questionnaires. The face to face situation gives you the opportunity to develop empathy with the interviewee, which can help in getting better and fuller responses and increase the chance that they will take the questions seriously. There are also some disadvantages regarding interviews. It can be difficult to keep 'on topic'. They can take up a lot of time, particularly if you have to travel. In that case the telephone interview is better compared to the face to face interview. Interviews usually need to be taped, followed by lengthy transcription and analysis. There chance that interviewees are likely to say what they think that interviewer wants to hear. The interviewer needs also good social skills to interview well. (Robson 2008, p.77-78)

In some occasions the interviewees have asked the interviewer to send them the semi-structured questions before the interviews to ensure better answers. E-mailing has been broadly and successfully used before, between or after the performed interviews to ensure the adequate handling of the subject.

When the author of this master thesis started his service as a pilot the pilots were governmental civil servants. He has also seen, from pilot's perspective, the change from governmental pilot organization to Finnish State Pilot Enterprise. Finnish State pilot organization is not yet a company and it is acting under the governmental ownership steering. The author has had and still has an excellent vantage point as a participant observer (Robson 2008, p.85) to monitor the operation of Finnish State Pilot Enterprise.

The Interviews were mostly semi-structured or sometimes almost unstructured. Telephone interviews were complemented by sending e-mails both ways.

Another method to carry out this project would have been to use a questionnaire. This would have made it possible to get larger sample of answers and the use of pre-coded answers would have simplified the task of analysis compared to interviews. With questionnaire it is not possible to into topics in depth, as long and complex questionnaires reduce response rates. (Robson 2008, p.81)
.This master thesis starts by handling the alternative types of pilot organizations in order to provide a wider perspective on the topic and later narrowing the handling to quality and safety management with various indicators.

Rick Wicks's 'Stylebook: Tips on Organization, Writing, and Formatting' was used to finalize the text of this master thesis (Wicks, Rick 2008).

2.1 Deciding the topic

This master thesis project started by discussing with pilot colleagues about the possible ways to organize pilotage. Also discussions with other professionals such as VTS-operators, Captains (including icebreaker captains) among others have encouraged continuing to work with this important and interesting subject. The topic has been so hot that the discussion, especially at the pilot station, has been going on even without author's input around this master thesis. These discussions have been very useful when seeking different aspects on the subject.

In the internet there have been many interesting articles, reports as well as forum discussions both in Finland and abroad.

Captain Diedrick Järnefelt's brand-new Master Thesis 'Possible Benefits of Competing Pilotage' at Chalmers University of Technology' gave some useful aspects on pilot organizations, although his work is mostly handling the competition of pilotage. This report also inspired the author of this master thesis to write about pilotage but now from safety perspective (Järnefelt 2009).

3 Framework: Pilot job as a profession

3.1 Liability of the pilot

Captain Tero Jokilehto, who is a Senior Specialist at Ministry of Transport and Communications, says in his interview, that liabilities regarding pilot job is an important issue when deciding whether to keep pilotage under governmental rule and ownership or not.

The Tort Liability Act according to the Finnish law says,

> *"The state and the municipalities shall not be liable in damages for injury or damage caused in maritime piloting." (Act 412/1974, Chapter 3, Section 7).*

This is true despite the fact that the state has a monopoly on pilotage on the fairways outside the harbor areas. Inside the harbor areas municipalities have also right to arrange pilotage if they want, otherwise the State arranges the pilotage instead.

Captain Joakim Håkans from Baltic Pilot Ltd asks in his interview: "Can it be worse than it is now, if looking from shipowners perspective? Those who have right to arrange pilotage are not liable at all."
Captain Håkans founded recently his new pilot company, Baltic Pilot Ltd, because he did not find any clear legal hindrance or barrier against private pilotage in Finland. Baltic Pilot Ltd had already started piloting but was shortly after asked to stop operating until the legal matters were solved thoroughly. The inquiry regarding this legal issue is still ongoing.

Captain Håkans claimed in his interview that pilot liability is not any problem at all and they have solved liabilities with If-Insurance Company. He says that it is

possible to limit the liabilities by an agreement to a certain amount of money and then it can be insured. He added that, for example, in London, the Galatea Underwriting Agencies Ltd offers 'Marine Pilots Liability Insurance' and also 'Marine Pilots Personal Accident Insurance'. The forms for these two can be easily found from Galatea's website: (http://www.galatea.uk.com/documents/GalateaPilots.pdf).

In Denmark both private and governmental pilotage exists side by side and the pilot liabilities have been solved there in a satisfactory way. The Maritime Law in Denmark is based to the Maritime Code which is almost the same in all Nordic countries, also in Finland. In the book the 'Scandinavian Maritime Law' by Falkanger & al, the Maritime Code is explained quite thoroughly. It feels rather unrealistic that it would not be possible to arrange liabilities in a proper way here in Finland as well (Falkanger & al. 2008).

The Scandinavian Maritime Law (Maritime Code, MC §151 [7:1]) states,

"The shipowner (reder) shall be liable to compensate damage caused in the service by a fault or negligence of the master, crew, pilot, tug or others performing work in the service of the ship."(Act 674/1994, Merilaki/Sjölag)

Finland is also a part of European Union and there are a lot of countries were pilotage is private and liabilities have been solved anyhow. The book, 'Southampton on shipping law', published by the Institute on Maritime Law, discusses in chapter 6 'The Liabilities of the Vessel' and more precisely in sub-chapter 7 Pilotage and says:

> *"(c) Liability for the faults of ships under pilotage*
>
> *Where a ship which is under command of a pilot causes damage the question can be raised on who would be responsible for the damage. The pilot himself, the owner as well as the authorizing harbor authority have to be considered.*
>
> *(i) Liability of the pilot*
>
> *Pilots are liable for acts of omissions which cause "loss, destruction or serious damage" or "personal injury or death" only where they act deliberately or under the influence of drugs or drink or their act or omission amounts to a breach or neglect of duty. In such circumstances fines or prison sentences may be the consequences for the pilot.*
>
> *The liability for damages caused by either ordinary negligence or any type of conduct causing minor damages is excluded. In addition the civil liability is limited to £1,000 plus the pilotage fee which can be up to a few thousand pounds for larger vessels and which varies between ports. The limits of liability available to the pilot are absolute, that is, there is no provisions under which the pilot may lose the right to limit his liability.*

The wording of the above described provisions is not restrictive and would arguably apply irrespective of whether pilotage is compulsory or not. (Institute of Maritime Law 2008, p.198)"

3.2 Pilot job in past

If we look back in history, pilotage was at first only one duty among others for the people who lived on the coast or in the archipelago to get their living and pay their taxes to the king. Later the pilot job became a real full time profession and it was inherited form a father to his son. When ships grew bigger and the equipments, which were used in navigation, got more sophisticated and the amount of groundings caused by pilots increased at same time, the need for education become apparent. At first the minimum requirement for pilots was set to Mate's certificate and finally 1971 to Captain's Certificate for new pilots. The required school education made an end to the tradition to transfer the pilot job from father to his son. (Leino-Kaukiainen P. & al. 1992)

To further improve pilot skills the 'Shiphandling course for pilots' was introduced 1986 in a new Ship Handling Simulation Centre at Otaniemi, Esbo. Practically all pilots in Finland participated in this course.

By the end of 1993 all the pilots had gone through this course and a new 'Advanced shiphandling course for pilots' was introduced and initiated. At that time the author of this master thesis served as a principal lecturer in the Ship Handling Simulation Centre and studied at same time pedagogy at Teacher's University in Hämeenlinna to achieve the required teacher's competency. His final thesis at the teacher's university handled the above mentioned 'Advanced ship handling course for pilots' and included a questionnaire, which was handed to course participants at end of course. According to the questionnaire pilots found it both useful and important to continue shiphandling courses on a regular basis. They acknowledged the need for continuity. (Kotilainen, Pentti 1994, p.27)

When the author of this research started his career as a pilot in 1988, pilots did many things that they don't do any more. They were watch keeping and assisted ships entering the pilot area and replied to their calls. They received ETA/ETD's (estimated time of arrival/departure) from ship agents regarding incoming and outgoing ships and kept lists and records over the traffic. The pilot in watch woke up the next pilot and also pilot boat drivers to go out to the incoming or outgoing ship.

Pilot duties also included fairway maintenance. They checked and repositioned minor fairway markings. Especially the wooden 'sticks' were after winter often moved or gone forever. Working with fairway maintenance was very useful for pilots in order to be better familiar with the fairways and also the water depths around the piloted area.

The governmental pilotage covered only the area outside the harbour. Pilotage inside the harbour area was usually done by the same pilot who made the sea-pilotage but now privately. Some harbours had also own harbour pilots. The new Pilot Act in 1998 extended the governmental pilotage to include also the

harbour areas. Also the newest Pilot Act (Act 940/2003) includes this extension and states:

> *Section 9 – Start and end of pilotage*
> *(1) Pilotage starts when the vessel leaves the berth or anchorage and ends at the vessel's entry into the harbour when the vessel has anchored or moored.*
> *(2) Otherwise, pilotage starts when the pilot has boarded the vessel and started the pilotage and ends when the pilot hands pilotage over to another pilot or has ended the pilotage.*
> *(3) The pilot can, by agreement with the master of the vessel, board the ship or leave the ship outside the pilot boarding point of the fairway if required by the weather or ice conditions. The Vessel Traffic Service must be notified of this.* (Act 940/2003)

As civil servants pilots were expected to help customers, when ever needed. Pilots also recorded and reported meteorological data to the Department of Meteorology.

3.3 Pilot job today

After the foundation of the Finnish State Pilot Enterprise and according to the new Pilot Act the pilot job was limited only to piloting. The fairway maintenance was thereon performed by a special department inside the Finnish Maritime Administration. For watch keeping purposes VTS (Vessel Traffic Service) department was founded and stayed as a part of the Finnish Maritime Administration. Finnpilot's Pilot Order Centre was founded to maintain the pilot order service.

After the foundation of the Finnpilot's Pilot Order Centre and VTS the facilities for watch keeping were step by step removed from the pilot stations. Although there is a lot of good with these new arrangements and offices, there are also matters that were criticised. For example the fact that Pilot Order Centre is not capable to work on VHF (very high frequency) frequencies and ships have to send their pilot requests by e-mail or by telephone. This is widely criticised by shipmasters as an unusual and unpleasant way to communicate. Also the informative role of the VTS has been questioned and it is expected to take a role as a co-ordinator in future. When pilots were still watch keeping they provided information about prevailing weather conditions, need of tugs, on what side and the height of the pilot ladder should be, how to make lee, etc. and ships could make their pilot orders and reports to pilot stations by VHF.

The reorganizations led to the foundation of Finnish State Pilot Enterprise, Finnpilot, and pilotage was also separated from the Finnish Maritime Administration. From the time of these reorganizations the continuous training of pilots at the Ship Handling Simulation Centre started to fade out.

During the recent years Finnpilot has utilized the Ship Handling Simulation Centre only to full fill the minimum requirements to keep pilot certificates valid. Especially on rarely used fairways where is not enough traffic for every certificate holder to practice in reality, simulator has been used instead. The

minimum requirement to keep certificate valid on a specific fairway is to go there two times back and forth each year either piloting or training on a ship or even in a simulator.

Safety management is a broad concept which cannot be fully handled in this master thesis. Training and education are vital parts of safety management and that it the reason why they are taken here as an example.

At the present time pilots in Finland are actually doing nothing else but piloting. One purpose of this master thesis is to find out how this issue is arranged in other countries and pilot organizations.

3.4 Pilot job in future

The pilot job included earlier many other functions along the actual piloting. A good question is could pilots do something else also in future.

In United Kingdom, particularly in smaller ports, progressively more pilots are taking a multi-purpose role, for instance as harbourmaster or assistant harbourmaster, in addition to their pilot duties (European Maritime Pilots' Association/UKMPA).

In the Netherland pilots are cooperating with VTS to some extent. In heavy weather conditions the pilotage is accomplished using so-called shore based pilotage. This is the more expensive way to perform the pilotage but still well motivated by safety reasons. Shore based pilotage requires two pilots. While one pilot gives radar assistance from ashore to the ship outside the breakwater, the other pilot assists the ship inside the breakwater as normal pilotage onboard the vessel (Loodswezen).

4 Results: Pilot organization types

In the 'Report on the needs for amendments to the Pilot Act and the pilotage arrangements', assigned by the Ministry of Transport and Communication, the pilot organizations in Europe are divided into four alternative types (Ministry of transport and communications 2008).

The first type of organization is where pilots are governmental civil servants. There were only four European countries were this type was used. They are Belgium, Greece, Norway and Sweden.

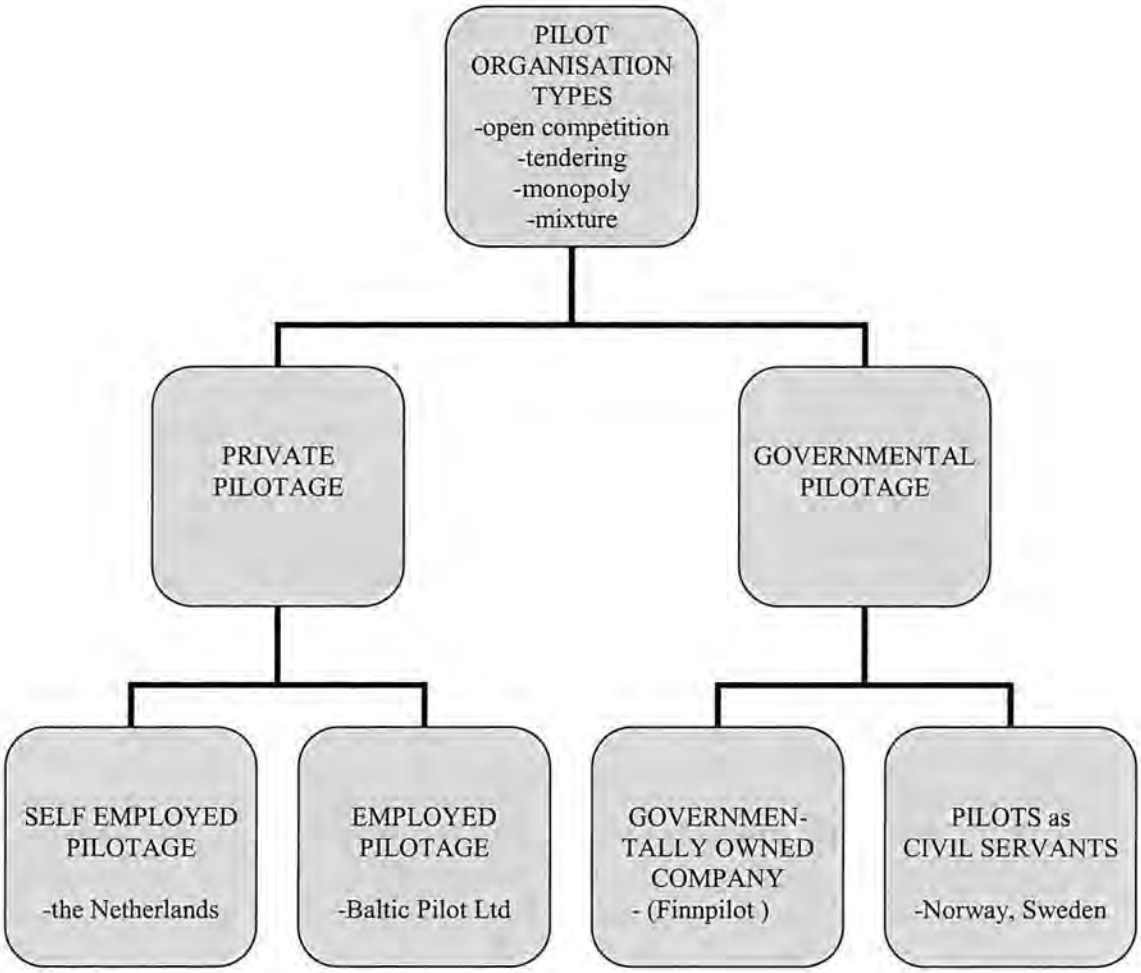
The second type is where pilots serve as employees in governmental or municipal company. This type is found in 6 countries, in United Kingdom, Portugal, Finland, Denmark, Turkey and Estonia.

The third type is where pilots serve as shareholders of 'Brotherhood Company' or corporation. This is the most common of all types and it is adapted by 11 countries. These countries are Bulgaria, United Kingdom, Spain, The Netherlands, Italy, Croatia, Malta, Poland, France, Germany and Slovenia.

The fourth type is private company where pilots serve as employees. This type

is found in 5 European countries. These countries are Belgium, Greece, Poland, Denmark and Turkey.

It should be notice that 6 countries have adapted two organization types at same time. (Ministry of Transport and Communications 2008)



4.1 Monopoly or competition

Monopoly or single actor model is the dominant way to arrange pilotage. State wide, or at lest areal, monopoly is the prevailing method. There are only few exemptions where competition is permitted. In Denmark competition is permitted but only to a limited extent. Diedrik Järnefelt's master thesis 'Possible Benefits of Competing Pilotage in Finland' deals with this topic extensively (Järnefelt 2009).

4.2 Governmental pilots (Civil servants)

In Sweden and Norway the pilotage is governmental and their pilots are civil servants. Captain Lennart Forsström from Swedish Maritime Administration said in his short interview that there has been a lot of discussions about other

alternatives to organize pilotage in Sweden but now for the time being the change is not topical but it is inevitable in the future.

In Norway the pilot training and education is arranged in an exemplary way. As civil servants the safety matters are very highly prioritized and this leads to allocation of resources into training and education.

Pilot Inspector Haldor Saether from Kystverket was interviewed in order to find out how the safety management is arranged in Norway.

4.3 Pilot enterprise (governmentally owned but not a company yet)

Finnish pilotage is based on this type of an organisation right now. After a long era as governmental civil servants, the pilot organisation was separated from the Maritime Administration in 2004 and Finnish State Pilotage Enterprise, Finnpilot, was founded (Act on the State Pilotage Enterprise (938/2003).

Finnpilot provides comprehensive pilot services in the Coastal regions and the Lake Saimaa region

Finnpilot as a 'State Enterprise' is a governmental actor with monopoly in pilotage and has governmental guarantees even against bankruptcy. This is stated in State Enterprise Act (1185/2002) Chapter 2 Section 6:

> *"**Responsibility of the State***
> *To the extent that a State Enterprise cannot fulfil its commitments, the State shall be responsible for them."*

The Board of Directors for Finnpilot steers and supervises Finnpilot's activities. The Board of Directors appoints the Managing Director and upper Management.The Managing Director of Finnpilot, Mr. Matti Pajula, emphasised in his interview, that decision making in Finnpilot is strictly led by the governmental ownership steering and Mr Pajula's job is to implement the 'owner's will' as it is pronounced and then report the success of the operation to the Board of Directors of Finnpilot, which will, according to this information, draw conclusions how to continue.

Finnpilot got a new Board of Directors in the beginning of 2010. This Board of Directors has only one member with experience about pilotage, Captain Hannu Lukkari, who is the Staff Representative of the Board and presently serving as a Chief Pilot in Kotka Pilot Station. One of the main reasons why the author of this research found it important to write this master thesis on pilot organisations, with special perspective on safety, is to introduce to the decision makers the existing possibilities to organise pilotage.

4.3.1 The values of Finnpilot

The values of Finnpilot are following (Finnpilot's website):

> "***Our operations are founded on the following values:***
>
> ***Safety***
> *Ensuring the protection of our environment, the safety of the vessel crews, and the functionality of the logistics chain.*
>
> ***Respect***
> *Respect for our own work and that of our partners, and mutual respect for all people*
>
> ***Co-operation***
> *Genuine and open interaction, and the development of personnel participation*
>
> ***Development***
> *Involved in aspects of change in areas such as legislation, traffic development, technology, innovation, and the development of competence and the organization"*

4.3.2 The job satisfaction survey

The realization of Finnpilot's values can be seen from the results of the job satisfaction surveys made between years 2006 and 2010. (Finnpilot 2010)

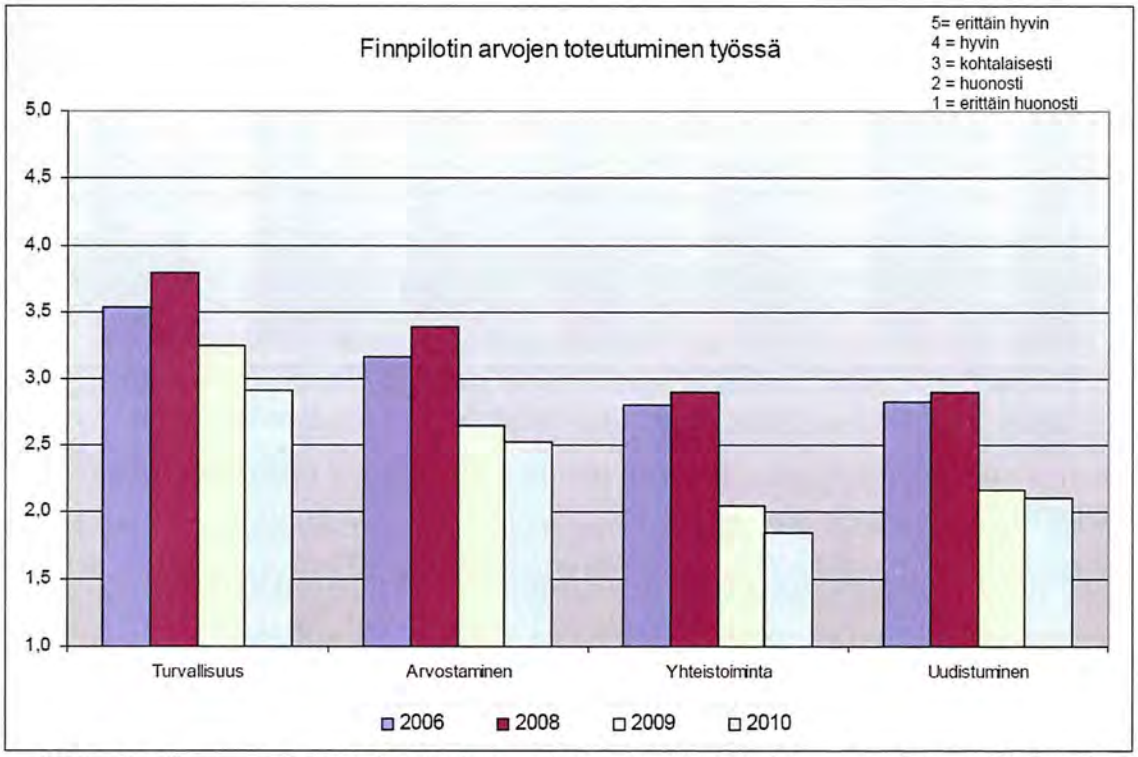
The Finnpilot's "job satisfaction survey" is published on Finnpilot's website, which is available only with password and username. The author of this master thesis wanted to make sure that it was ethically correct to use this data and asked Administrative Director Juha Ylä-Autio's permission for that. Mr. Ylä-Autio granted the permission to use the results of the job satisfaction survey except the so called 'open answers', where the employees had an opportunity to comment on the 'main questions'. Mr. Ylä-Autio explained that the job satisfaction survey is based on anonymity. It is not enough that the survey was sent in anonymously, because some questions may reveal persons identity anyhow.

Captain Hannu Lukkari, who is a Member of the Board, said that 'open answers' include a lot of important substance and it would be essential that at least the Board of Directors had an opportunity to read those comments. According to Mr. Lukkari it isn't unfortunately so in this case. Only few Members of the Board have an access to 'open answers'.

Here bellow is presented two important issues of the job satisfaction survey. First shows how Finnpilot has succeeded in the realization of its stated values at work. The second one shows the success in leadership and human relations.

The permitted part of the Finnpilot's job satisfaction survey is attached in the end of this master thesis (annex 1)

The realization of Finnpilot's values at work



Safety=Turvallisuus Respect=Arvostaminen Cooperation=Yhteistoiminta Development= Uudistuminen
5=very good 4=good 3=moderately 2=poorly 1= very poor

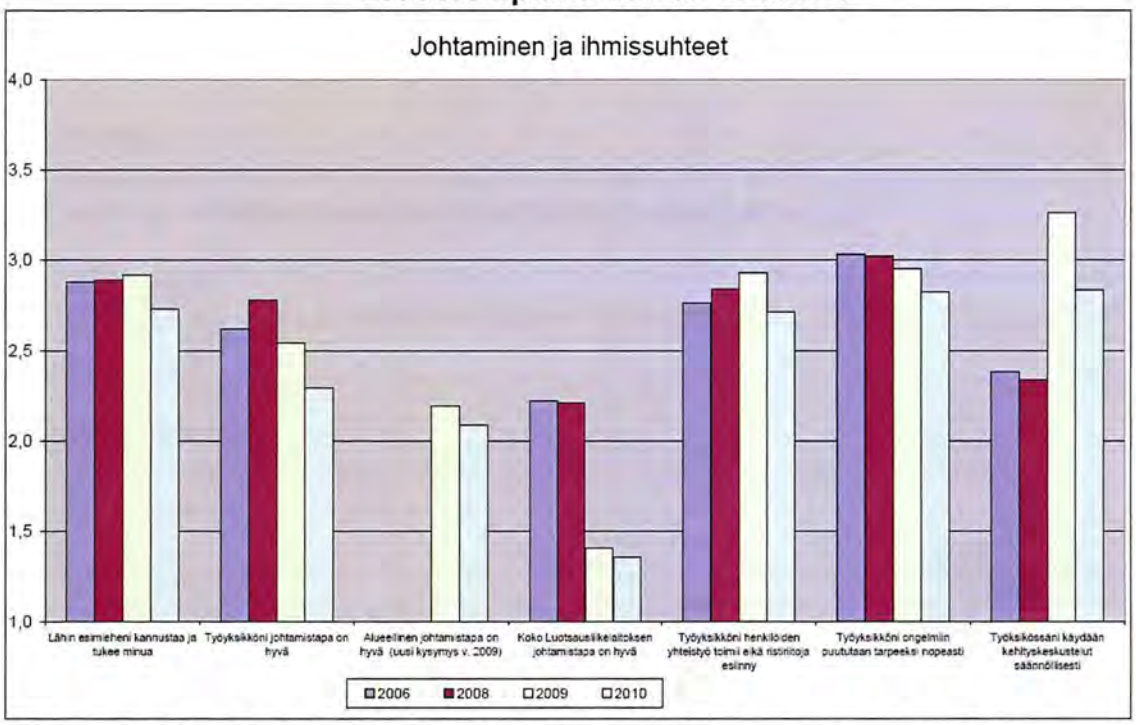
'Safety' scores between poor and moderate.

'Respect' scores between poor and moderate.

'Cooperation' got the least points, scoring between very poor and poor.

Development scored poor.

Leadership and human relations



Lähin esimieheni kannustaa ja tukee minua = My nearest boss encourages and supports me

Työyksikköni johtamistapa on hyvä = Governance of my working-unit is good

Alueellinen johtamistapa on hyvä (uusi kysymys 2009) = Regional governance is good

Koko luotsauslaitoksen johtamistapa on hyvä = Governance of whole Finnpilot is good

Työyksikköni henkilöiden yhteistyö toimii eikä ristiriitoja esiinny = In my working-unit peole are cooperating and no conflicts occur

Työyksikköni ongelmiin puututaan riittävän nopeasti = In my working-unit the problems are tackled quickly enough

Työyksikössäni käydään kehityskeskustelut säännöllisesti = In my working-unit development discussions take place regularily

The top management scored 1.3 (scale is from 1 to 4).

Regional management (district chief pilots) scored 2.1.

Station management (chief pilots) scored 2.3.

4.3.3 Finnpilot's Managing Director Matti Pajula's interview

When talking with Matti Pajula, the Managing Director of Finnpilot, about pilot organisations, he explanes that the organization types include ordinary pilot companies, brotherhood companies and governmental offices etc.
One factor that all have in common is that there is only one nationwide or areal actor and no competition exists. Denmark, where partial competition is allowed, is the only exception of this.

When asking Mr. Pajula what could be, in his opinion, the best possible way to organize pilotage in Finland he says: "It is already suggested in the law proposal. The planned organization is a single actor company without competition. This is presumably a good solution and it should be anyhow one actor model. This is especially important in a country like Finland with a multitude of small harbours and fairways together with relatively low number of pilotage into them. There is only a pair of exemptions. These are Helsinki and Kotka areas. The single actor model is the best way to carry out the service for this kind of pilot network. It enables the use of synergies arising from the use of personal, vehicles or other infrastructure and it also covers the entire service.
Here the situation is completely different than in a big port like Rotterdam or similar, where the traffic volume is the determinative factor. In Finland the determinative factor is that the service in general must be arranged despite of the low traffic volume."

About the relationship between pilotage and VTS Mr. Pajula says:" In my opinion the merge of VTS and pilotage is essential. Especially now, when the discussion of developing VTS is going on it is important to propose it. VTS and pilotage would match well together and form an actor to coordinate traffic on coastal sea areas. At this moment VTS acts mostly replying on traffic messages from ships and telling if there is any other traffic in the area but is not coordinating. This is obvious especially in the Gulf of Bothnia where pilots, icebreakers and harbours work together and pilots are acting as links between these groups."

About the choice of two alternatives, governmental vs. private if pilotage and VTS were put together, Mr. Pajula says:"In that case it would most likely be governmental. It is doubtful that any private organization would show their interest to build up a complete nationwide pilot organization. There is certainly interest on some ports but anyhow the service obligation remains on governmental actor. Already the law proposal assumes that there is only one actor and therefore it is reasonable that this actor covers both pilotage and VTS."

When asking Mr. Pajula's opinion on other types of pilot organizations, for example types where pilots are employees vs. pilots are employers or owners. Mr. Pajula bases his opinion on the law proposal:"The law proposal is based on one actor model. It would be totally different story if considering models including competition or other alternative types of organizations. What could it be? Nobody has been able to propose anything what it could be in practice. Therefore it is difficult to comment on that. If there were alternatives, then one has to consider how the pilot network could be arranged and how to guarantee

that the price level in pilotage remains the same as it is now and does not cause any upward pressure on prices. One important target for government, as a pilot service provider, is of course good quality in pilotage but also that it is cost-beneficial. These matters have to be considered first and because of this I have no clear opinion yet. The possible alternatives in question have to be determined and limited first. The Ministry of Transport and Communications is in favour of a company model with only one actor and which is 100% owned by government. Inside the Ministry there might be some different opinions also but the Department of General Affairs (Yleinen osato/Allmänna avdelningen), which is actually responsible for pilotage, has the above mentioned opinion."

In this type of an organization the government both owns the company 100% and controls its operation as well. When asking Mr. Pajula what he thinks about that he says: "Government controls also many other companies which are owned by the government. Good examples of these are Alko (a company with a monopoly on alcohol) and Finnavia. Right now it is planned that the Ministry of Transport and Communications continues to pursue owner control for pilotage so far. I don't know if there are any other plans to move owner control somewhere else in the future for example under the same supervisor as other governmental companies are."

Pilot corporate or brotherhood, where pilots are self-employed, is the most common type of organization in Europe including many important seafaring countries such as Germany, France, and the Netherlands etc. How this type of an organization suits to Finland? Mr. Pajula comments on this by saying: "In Germany there have been brotherhood companies for a long time. As far as I know in France they have an ordinary limited liability company (Ltd.). In the Netherlands the system has changed many times. There have been times when it was a governmental office (pilots acting as civil servants) and at times it has gone back and forth."

When asking what are the pros and cons with organizations where pilots are owners of the pilot company; Mr. Pajula replies: "I have not thought about it, because it has not been presented at any stage in the plans made by the Ministry. That is why there has not been any reason for me to think about it. Anyhow a lot of material has been gathered for the work group which is handling the new Pilot Act. The actual organization type was not an issue when they made a summary of the existing types. All countries were not included in the summary but all the existing types of organizations were. Pilots as owners of the pilot company have not been at any stage under considerations and the government owner has clearly announced that it is willing to have 100% of the shares of the pilot company in future. As long as the law-drafting is under way and the Parliament has not yet enacted the Law everything stays open. So far no preparations in that direction have been made or anyone asked our opinion about the issue. Instead of this a lot of preparations have been made to smoothly shift from State Pilotage Enterprise to a governmentally owned pilot company. The preparations started about three years ago when the Baltic Pilot was founded."
The global recession has struck heavily all countries. How the different organization types have reacted to the global recession? Finnpilot has dismissed and laid off its employees. No other pilot organization nearby has

been forced to do that. And when talking about influences towards the customers, those who did not dismiss or lay off had at least the same capacity of pilots and pilot boat drivers in use despite of the fall in traffic.
Mr. Pajula commented on that by saying: "Yes. Actually the dismissed persons were very few and most of them could go on pension instead of being unemployed. Neither in the Gulf of Finland no one was dismissed nor in the Archipelago Sea, or let's see, maybe one. The over capacity has mostly occurred in the Northern area were the traffic has dropped very drastically because of the recession and there was quiet even earlier. Lake Saimaa area has its own story. There the traffic dropped 60% and had quite a lot of over capacity. And there is no change in sight that could recover the traffic back to previous level. The reason for the decrease in traffic level in the Lake Saimaa area is structural. The made measures are based in the fact that the traffic has gone down and they are in line with the goals of the government owner. The way Finnpilot managed through the recession was a victory for us to avoid from more severe effects. It has helped, that I have several times repeated that we can not reduce people any more in order to safeguard the service. Actually there wasn't any problems fulfil the service obligation during the lay offs, except those temporary occasions when vacations, lay offs and sick leaves occurred at same time. But there were many bad coincidences and also inflexibility. It is natural that in those circumstances when lay offs were on people reacted emotionally."

Were pilots inflexible or flexible in their actions? They anyhow came to work if needed although having lay offs ahead of them. Mr. Pajula says: "No one returned from their lay offs but some of the lay off were withdrawn. It is not allowed to suspend the lay offs."

That means that some of the lay offs were cancelled and the employees returned back to work, right? Mr. Pajula was commenting this by saying: "Yes. There were some cases but only if the employee was willing to do that. No one was forced to do so."
When asking if Mr. Pajula felt that pilots wanted to extend a helping hand to manage with the traffic. Mr. Pajula commented this: "They were not extending any helping hands. Their lay offs were just cancelled and they got an opportunity to came back to work.

Mr. Pajula said earlier that he could feel some inflexibility among employees. If the employees voluntarily came back to work isn't it a sign of flexibility and good will instead of inflexibility?
Mr. Pajula said about this: "I meant that in the general level I noticed some inflexibility, for example in calculation of working hours. Now I don't talk about pilots but the whole organization. In calculation of working time occurred errors that were later corrected. The working times were in some occasions calculated so that resting time started before a single job was done. In these cases the calculation of working time was started immediately when the shift started and when the first actual job appeared the maximum uninterrupted working time was blamed to be exceeded. After all the time of lay offs was passed with rather small delays for ships. The service obligation was fulfilled with 99.6% accuracy."

How many times the service obligation was neglected?
"It is 99.6 percent."

How many times is that?
"I don't remember it by heart, because I don't have the paper with me."

Can you send me the figures later on?
"You can use these figures. In Lake Saimaa area it is 99.7%. Counted from 25 000 pilotage."

Do you have those figures somewhere?
"Yes, I do but I don't have them here now. The lay offs could have been avoided in negotiations by changing the vacation money to additional leave. The unions anyhow refused from this. After the negotiations the unions came out with a bid which included so many limitation that it wasn't any more giving the needed measure to avoid the lay offs."

What did these limitations include?
"There was Lake Saimaa area and something else, but anyhow the Board of Directors (Finnpilot) had already handled the issue. I contacted the Chairman of the Board and asked what he thought about the offer that unions had come out with. The answer was that the offered bid was not enough to avoid the lay offs. After the negotiations the Board of Directors made their decision as they always do with big and important issues. It is the Board of Directors that makes the decisions in big and important issues such as this"

How is the decision making in Finnpilot arranged now and what are the prospects for the future?
"The decision making about dismissals and lay offs are big and important issues so they are out of my reach and therefore it is always the Board that makes these decisions. The closer we go towards a limited liability company (Ltd.) then even the operational issues belong to those matters that the Board of Directors is deciding as well. The Board of Directors represents the government owner although in our case the owner is quite a lot in direct contacts with the managers of Finnpilot. That is much more than in an ordinary company with many owners. Finnpilot has only one owner and it is therefore natural that the owner is in direct contact with our managers. The decisions in Finnpilot are made according to the principals written in the Limited Liability Companies Act (Limited Liability Companies Act 624/2006). It is the Board of Directors that makes decisions in important matters."

Who is the one that draws conclusions about the prevailing situation in Finnpilot?
"It is the government owner who states the goals and objectives and our job in Finnpilot is to try to achieve the goals. Last year 2009 we did not have a chance to achieve the goals, because the traffic went down so much. The amount of pilotage decreased by 29% and the piloted miles went down more than 30%. We had not any chance to reach a positive result. The goal at first was to reach a result of one million Euro, but during the year it became clear that we had no change to reach that. This was also reported at early stage to the government owner and also directly to the Ministry of Transport and Communications."

Finnpilot has not made financial loss before the last year 2009 and there has been an agreement to give a part of the gained profit to the government. Now the Finnpilot's field personnel wonders the quick actions regarding dismissals and lay offs?
"The goals are set for each year separately. I kept the owner up to date and made them understand that we had no chance to reach the positive result but we did our best to get it as near positive as it was possible. In spite of all retrenchments we made a loss of 1.4 million Euro. Without the made retrenchments it was not possible to continue, because it is the government owner, through the Board of Directors, who decides what to do and how to continue. The managers in Finnpilot only carry out the tasks that the government owner and the Board of Directors have set to reach as the predetermined goals. The available measures to reach the goals are lay offs, changing the vacation money to additional leave and savings in personnel costs in addition to other savings. These other savings were first taken into use of course."

Is the service obligation more a target than a regulatory requirement?
"It is absolutely a target. If I have been blamed of something then it has been the too high service level. Perhaps not really blamed but I have been asked about it, because the service level has been 100% on the coastal stations during many years and without exceptions. This has raised a question of possible over quality in service. The service obligation is a target set by the Parliament. It comes from the Government and the Parliament approves it. It is in the Budget Book. It is not a regulatory requirement but a goal from the government owner. Authorities, such as the Board of Navigation or nowadays The Finnish Transport Agency, are not monitoring how our goals are met. The authorities are monitoring that we follow the rules and regulations and we have the valid and required certificates. They have nothing to do how we run the organization."

From what elements should the tariff in pilotage consist of? What do you think about subsidies, who should pay those if any?
"Are they needed at all? I think that the tariffs should be set so that they cover all the costs. Of course there must be an organization, which in our case is the government owner, to make clear that the tariffs are correctly set to a level which is not too high and therefore raise custom prices or too low either. In a governmentally owned organization the prices must be controlled as they are now by the Government Regulation. The tariffs have been the same all the time Finnpilot has existed and the owner has not been willing to check the tariffs in spite of several proposals from our side. It is clear that customers prefer this kind price policy with governmental control. It is important to ensure that the prices cover the costs. For example now, when the traffic has gone down a lot, there is a need to raise prices. There is certainly nobody who blames that prices are over dimensioned."

We have a big country with a lot of fairways. Do we have too many harbours?
"This is so sensitive issue that I don't want to comment on that. It is first of all a political issue and I might have an opinion on that but in an official interview like this I don't say anything."

If we imagine that we have a fairway that leads to a private harbour with only one factory which is located far away in the remote area. Could it be possible that the factory would participate in the significant costs of the pilotage?
"It is not possible because the prices are set by the Government Regulation. The price must be the same for all. The political starting point is that a governmentally owned organization with owner control produces the needed services to pre-set prices for all. In case the prices were wild and free it is another story, but it do not actually exist anywhere. Prices are always pre-set to be the same by the regulations."
In Sweden the harbours are divided into two categories, to strategic and non-strategic. This method is not however applied to pilotage yet. Could this kind of system make the above mentioned private factory owner participate in the costs of pilotage if the harbour was categorized as a non-strategic and the harbour would like to raise its service level in pilotage?
"I think that it isn't possible in Sweden to participate to the costs that way. The prices there are pre-set the same way as here in Finland and it is not possible to improve the service by paying extra. They have these two categories and I don't comment on their way to act but we here in Finland have acted differently. I don't know if it would help much. Maybe in the rarely used fairways at the remote areas the waiting times would be longer. In our organization the dimensioning factor isn't the traffic volume but the necessity to provide the service. Often the service to a quiet harbour is possible to arrange without delay and therefore it does not bring savings although waiting 12 hours. It is the same people that do the job anyhow.
What I have heard, and I believe in it as well, is that the cost of pilotage isn't so significant that it could influence to the existence of any harbour. Small industrial ports are often run by a factory or a group of companies and I think that the cost of pilotage makes so small portion of the shipping charges that it has not a big influence to the operation of any port."

Could you think that pilots had also some other tasks than just piloting if the traffic to a remote and specific port is low? That could be for example working for the private harbour as a harbourmaster or in some other jobs. What do you think about that?
"That is another story. Then the provider of the pilotage could outsource or buy a service from another party. This is again a matter of competition and I don't want to comment on the issue right now. This is because we should first wait and see what the legislator has to say and what the owner wishes. There is an abundance of options and of course it is possible to do that way in case the legislation and the owner's will are in accordance with this.

Haven't you the best opportunity of all to spotlight these options for the decision makers?
Yes, but these questions are settled in a higher level. I am a representative of Finnpilot which is a very important task, but I can not act against the owner's will. For example the pre-set target for the economic performance is something where I could have an unofficial opinion, but unlike an Executive Director in a Governmental Office, I cannot express my own opinions. I have to obey the owner and the Board of Directors. In these kinds of issues I can not act contrary to their will. The pre-set target for the economical performance is a good example of this. It comes from higher level decision makers and we just try to

fulfil it the best possible way and inform the success or failure as early as possible to the owner. The figures for the year 2009 are already clear but not audited yet. It is still open if the figures are acceptable for the owner or not. Anyhow we did not reach the target."

Who do you think should be heard when determining the tariffs? Do they hear you if you tell that there is a need for money?
We made a proposal to renew the tariffs in 2007 in order to make them cost-equivalent. The proposed method was to reduce the existing differences in correlation to the incurred costs regarding long and short pilotages. Now they are not correlating in the same way. The planning of the proposal was carried out in cooperation with the Ministry of Transport and Communications but after hearing the customers it was withdrawn. The proposal included a yearly check on the tariff. For example Finnavia, which is a governmentally owned company, has a yearly check. At that time we were making good profit and in addition to the increased flexibility in prices there was also a chance for reduction of tariffs. And now, during the recession, this flexibility with the yearly check in prevailing tariffs would be needed. At the moment there is a big political threshold to check the tariffs. And now there is a need to raise the tariffs, of course."

Pilotage is safety work. This issue includes many aspects and tasks for example, pilot's liability, route planning, pilot's rights regarding working and resting times and right to refuge from pilotage etc. We have legislation from Finland, EU and IMO. How are these structures implemented and adapted in Finnpilot?
"We follow all existing laws and regulations from authority just as they have been set. When preparing laws, such as the new pilot Act, we have proposed chances to Pilot Act for many years in good cooperation with Labour Unions. When the law is laid down, we have no measures to make it more flexible for us anymore."

Finnpilot is a safety organization. Do you thing that it is important to develop a Safety Management System for Finnpilot? What is our Safety Management policy?
"Yes, it is important. We have to obey all existing laws and we do that."

Do Finnpilot have Safety Management System that includes both inner and outer audits?
"No. It is not required."

Already many private pilot organizations, particularly those were pilots are self-employed, have adopted the Safety Management System as a vital part of their organization. Do you feel it important to build a system like this with inner and outer audits also for Finnpilot?
"It would certainly be good to have a system like that if it was possible. There is one thing above all that has stopped most of the progress around it almost for three years. That is the possibility for competition. The renewals of the legislation and other issues are interdependent. Now we are still waiting for the new Pilot Act. This is why everything is standing still."

Has Finnpilot tried to find out what kind of Safety Management Systems exists? For example, have you explored what EMPA or classification societies have achieved around this issue? Although pilotage has not any mandatory international requirement for safety management, like ISM for ships and shipping companies, there are already appropriate systems available.
"We have worked hard into that direction but we have to get first the Pilot Act ready and then the regulations. It has been very hard for us to wait for the new legislation for many years and this waiting has in a way hampered the entire pilotage. Fortunately service has not so far suffered from this but the whole development of Finnpilot has. It is not Finnpilot's fault that the legislation is delayed."

It has been possible to build up Safety Management System for a long time. For example Det Norske Veritas has offered these services more than ten years. Pilots in the Netherlands have adopted the ISPO Code which is audited by the Lloyds Register. Do you see any benefits that the outer audits could bring along?
"Yes, but first we must have a Quality Management System working and it is of course a big job. We had started that for a long time ago but it was necessary to change one person to another in order to get the project finally initiated.
In order to build up a Safety Management System you must first have a documented Quality Assurance System or equivalent. You can not make a Safety Management System without having a quality system in use. We do not have a Quality Assurance System yet, that is the problem."

Why don't we have a quality system?
"There are many factors involved. I just quoted to that in my previous comments, but now we are working on it again."

Do you see any obstacles or hindrance to introduce a Safety Management System for Finnpilot? There are no legal obstacles but of course it costs somewhat if, for example, the classification society comes with.
"I already said that we are working on it."

In case of an accident, where pilot is involved, what kind of action plan, pre-planned means or help Finnpilot offers to the pilot in that situation? Or is the pilot alone?

"Those matters are in good order. There are no problems with it. Our concept is functioning well."

If the ship has grounded and it is leaking oil then what kind of arrangements Finnpilot has made in order to utilise the pilot's skills and knowledge in that situation?
"We are back in the rescue organizations again and there is a specific legislation regarding rescue operations. Pilot organisation is not active in there."

Do Finnpilot have action plans for rescue operations?
No. It is Coast Guard that takes care of the rescue operations. Finnpilot don't even have an access to it. We just do our job."

Do you think it is all right to have skilful pilots and pilotboat drivers out from these rescue structures?
"That is another story. I don't necessarily agree with that at all but the Act on Rescue at Sea, that entered into force 3-4 years ago, simply left pilots out of it. According to this Act it is Coast Guard that coordinates the rescue operations and then all others are involved within the limits of their jobs. This means that also pilots are involved but only in the context of pilotage and not as a coordinating actor."

If something happens, isn't it the pilot who knows the best the situation? How to action? That is the question. Safety Management System would probably tell him how to action in that particular case.
"The legislation determines what to do. We can not influence on that and the legislation is from 2002."

It isn't taken a way from anybody if pilots were involved in and knew what to do. Or what do you think?
"There has not been any problem with this. We have acted well and acquired fame and glory. The grounding of M/T Propontis in the Gulf of Finland is a good example of this. In that case the authorities just hovered around and it was actually pilot organisation that made things running."

Was it the pilot organization or a single pilot that made the job?
"It was made in good cooperation with Neste Ltd, SYKE (Finland's environmental administration) and us. We were in telephone contact all the time and discussed what to do next and how. We sent one of our pilots onboard the M/T Propontis when the ship was still in the international waters. First the pilot acted as an Ice Adviser." Ice Adviser service is a consultative service pursued by a separate company were Finnpilot is a partner-owner. "Later on when the ship entered the Finnish territorial waters the same pilot acted as an ordinary pilot bringing the ship into the harbour. The Finnpilot's Director of Pilot Operation's was just then on leave and I had to take care of the operation from our side. The entire operation lasted two days and we were in telephone contacts to each other all the time.

It is good that this single incident went well. Today it would be desirable to have manuals and documents on these issues. This material would be very useful for new pilots to see how to act and also for older pilots to refresh their memories on less frequently used procedures. Do Finnpilot have these manuals and documents?
"We have the information where to contact and what is our role. All this comes clear for the new pilots on the Basic course for pilots."

When considering the education and training in Finnpilot, is there any system or continuity regarding these issues?
"Yes we have. We have the Basic course for pilots and also modules for the maintenance training."

What do those maintenance trainings include and where they can be found?
"It is Jarkko Saulio, the Service and Transport Director, and Chief Pilots at the pilot stations who take care of these issues. I don't do everything myself. Jarkko Saulio is principally responsible of these matters."

The social presence is important also for a safety actor as Finnpilot. Why didn't Finnpilot participate on the Baltic Action Plan Summit that was arranged in Finland?
"We would have been happy to participate if we were invited and contacted."

Finnpilot has been thrown out already from some structures. To keep the positions, wasn't it possible to Finnpilot to be active and contact the organizer of this event instead?
"It is the organizer that makes the contacts. There were also many other important organizations, such as the Maritime Administration, that was not invited. I don't know how the organizer selected those who were invited but maritime actors were not among them. At the same time there was the Ice Seminar in Tornio. This seminar has been arranged every second year and we were there among all other maritime actors. This seminar is one of the most important events about winter-shipping."

The participants on the Baltic Action Summits represented politically very important persons but not those who have the knowledge of maritime issues. Is that correct?
"Yes, that's absolutely so. The organizer didn't succeed in his job when choosing participants. This is what we wondered also in Tornio with the authorities. The organizer certainly wanted to get more publicity when inviting President Putin and other well-known persons. It is of course very important to have them invited but to leave out those who really are working with these issues was bad. We and also other maritime actors should have been invited too. That's my opinion."

Finland is geographically a large country with a lot harbours and just little traffic into them. Instead of having too large repertoire of fairways per pilot, which is spread out over a too large area, one alternative option could be to find him something else to do in addition to piloting. We have to think on the one hand what the maximum amount of fairways can be and how many miles one pilot can have, and on the other hand how large the area for one pilot can be. These considerations are important to keep pilotage professional. How do you feel about these aspects?
"We have to limit the amount of fairways per pilot and the geographical distances must also be limited. Pilots in the Archipelago Sea have quite a lot of fairways but we have managed to keep the amount of fairways still reasonable. A pilot must be a pilot and not a captain who finds his way to destination by using charts."

If you started to prepare the Safety Management System now, before the authorities and lawyers, then Finnpilot could influence on its contents. In that case Finnpilot could choose the best model from different options. If Finnpilot waits until the authorities with help of their lawyers come out with their model

then there is no options remaining. Wouldn't it be wise to start to prepare it now?
"Yes, but it is the economy that determines the operational boundaries in Finnpilot. First of all we need resources to run the basic service production. And then it is the economy that determines what resources we can use elsewhere. We don't have anymore, as the authorities have, an opportunity to get money for example from Parliament or so. All our money comes purely from the pilotage. Now pilot tariffs are too low. And the customers will hardly accept that the money that comes from pilot charges are used to build up a system that relates partly to rescue operations. There are already so many organizations for that."

Pilots and pilotboat drivers are placed at the outpost. Wouldn't it have sense to have these skilful actors named and taken into account in safety and security related organizations? It is not a question of money. It is more a question how to organize things. Pilots carry telephones in their pockets and Pilot Order Service and VTS could work as links there between. Why Finnpilot has not arranged this network?
"Finnpilot has a clear system that the sea-rescue organization knows."

There has occurred that even the authorities from naval base have not been aware of how to contact us in a case immediate help. This was also noticed on Finnpilot's web-pages awhile ago. How do you comment on that?

This is a single case. And the people seeking help was not using the correct routine. We are not the linking organization and our telephone numbers are not presented officially anywhere for this kind of purpose. The Coast Guard and other authorities are the right and official contacts in these cases."

Do you think that this is the right way to have it?
"I don't comment on that. It is written in the law this way."

How the relationship between pilotage and VTS should be arranged?
"I think that it would be good if they merged together. It does not matter if the organisation would be State Enterprise or governmentally owned company but a single actor and together we were a bigger marine actor that could coordinate both the commercial and the traffic sectors. The synergies especially in the traffic sector would be significant. The sea-rescue is an issue itself but it does not make sense to combine it together with this right now."

Are there any other actors that Finnpilot should merge with?
"These decisions were already made during the renewal of the Maritime Administration. My opinion was also asked but the decisions were made at higher level."

The Managing Director of Baltic Pilot Joakim Håkans has been very active regarding the organization change and the new Pilot Act. What is your opinion about his achievements with these issues?

"Yes. I have only been wandering how one actor is heard that widely. For example, a long time ago there were some discussions about opening Olkiluoto harbour for private pilotage. It would be fair to hear all parties except one."

During the last years there has not been other companies participating in the discussions on these matters except Captain Håkans from Baltic Pilot. But when talking about private pilotage, it isn't actually anything new in Finland. I think that during your time as a pilot in Helsinki the harbour pilotage was carried out privately by the governmental pilots as a sideline. Am I right?
"Yes, that's right."

Finland is a small country when talking about shipping and seafaring. All visions and conversations are welcome and needed. Do you have any vision or opinion to arrange pilotage in future?
"The government owner has expressed its intentions very clearly and that is the most probable option for Finnpilot in future.
The Transport and Communication Committee of the Parliament in Finland has a rather clear picture of the situation. Some persons, such as Lyly Rajala who shares Captain Håkans opinion on the issue, are opposing the general opinion. Mr. Rajala is, as he has often emphasized, the maritime expert of the Parliament. He has served for years as musician onboard passenger-ferries in Vasa."

The continuity in training and education along with the ideal of life long learning has faded out during the recent years in Finnpilot. Wouldn't it be important to bring it to life again?
"Yes. It is sad that the schools are not arranging any courses. The courses we have arranged have all been self-tailored and it is unfortunately not even possible to order courses from the schools."

4.4 Pilot companies

Even in Finland and not very long time ago there existed also private pilotage along with the governmental pilotage. It was called harbour pilotage. The governmental pilotage reached only to the border of the harbour area and pilotage inside the harbour was private. Harbours had right to grant permissions to serve as harbour pilot. Some harbours had their own pilots but mostly it was the governmental pilot who made both the harbour (private) and fairway (governmental) part of the pilotage.

4.4.1 Governmentally owned company

Matti Pajula, the Managing Director of Finnpilot, says that owner of Finnpilot has chosen this as the primary alternative to organize pilotage in Finland.
Mr. Pajula was interviewed in order to hear his views about the ongoing change of the organization structure and safety management in Finnpilot. Mr. Pajula says that Finnpilot starts to be mature to a change over from Finnish State Pilot Enterprise to a full-blooded governmental company. Finnpilot is already acting as if it was that already. The differences between the State Enterprise and a governmental company are explained earlier in chapter 3.2 Pilot Enterprise.

4.4.2 Private pilot companies

On the one hand private pilot companies include companies which are owned by pilots. In this case pilots are called self-employed pilots by European Maritime Pilots Association on their website (EMPA).
On the other hand private pilot companies include companies which are owned by investors, instead of being governmentally owned or pilot owned companies. In this case the pilots are called employed pilots by the European Maritime Pilots Association (EMPA)

4.4.3 Pilot companies owned by pilots (self-employed pilots)

According to the 'Report on the needs for amendments to the Pilotage Act and the pilotage arrangements' assigned by the Ministry of Transport and Communications this is the most common type of pilot organization (Ministry of Transport and Communications 2008). Good examples of these are Germany, the Netherlands and France etc. Mr. Tjeerd van der Voorn from the Nederlands Loodswezen B.V was interviewed in order to see how the safety management is arranged in their organization in the Netherlands.

4.4.4 Privately owned pilot companies (employed pilots)

Baltic Pilot is an example of this. This is an organization were pilots are employees of the private company. Mr. Joakim Håkans the Managing Director of Baltic Pilot Ltd. was interviewed in order to hear his opinion on pilot organizations.
Captain Håkans has participated very eagerly to the discussions about pilotage in various Medias.

4.4.5 Baltic Pilot's Managing Director Joakim Håkans's interview

How should the pilotage be arranged in Finland? What is your opinion?
"In a country like Finland with unequal harbours and fairways tendering could be the solution. A weakly profitable area could be bound together to a profitable one to form a unit. The party, in this case Finnpilot, which has the infrastructure ready, takes care of the service obligation. If some other company makes better offer to arrange service in the unit with a weakly profitable part and a well profitable part, then the first company would fall off.
If the competition is not an option for pilotage then the only acceptable way to arrange it is that pilots are civil servants.
This prevailing State Pilotage Enterprise with monopoly is the worst option of all organization types. The only criterion for its managers, in order to be rewarded with bonus, is the economical result. The pilot organization isn't developing and the customers are neglected when considering waiting times irrelevant."
The owner control does not work properly. The only requirement is that the longest allowed waiting time to get a pilot is two hours. When I asked from the Ministry of Transport and Communications why this requirement isn't always followed Mrs Kivimäki answered in her letter that this requirement is actually only a recommendation and it should be used as a benchmark."

How is the safety management arranged in Baltic Pilot?
"When we started the company we asked Paavo Wihuri the Safety Director of the Maritime Administration if the authorities had made anything to arranger safety management regarding pilotage, for example using ISM Code as a reference. Captain Wihuri said that they hadn't anything that could help us. We felt that the Safety Management System was important and decided to make it in our own together with classification society Det Norske Veritas (DNV). Our two pilots, Mr. Markku Soini and Mr. Kimmo Lehto, who both worked earlier for Finnpilot, were eagerly involved with and building up the System together with Erkki Tuokko from DNV. The Safety Management System is now ready for use but because we were prohibited to continue piloting, due to the lack of clarity in the interpretation of Pilot Act, we did not audit it yet. We were not getting any income from pilotage and therefore it didn't make sense to put the system running and thus causing costs."

How are the liabilities in Baltic Pilot arranged?
"The liabilities are no problems for us. And on the other hand isn't Finnpilot facing the same question if it becomes a company." In the chapter 3.1 Liability of the pilot, presents Captain Håkans answer to this question more precisely.

What do you think about the other types of pilot organizations?
"Brotherhood Company where pilots are owners together with some investor as a partner is good. For example in Denmark a stevedoring company is financing the pilot company and acting as a 'silent owner'. Those who are sceptical might say that this can cause a conflict of interest. But if we think about pilotage in Finland and the fact that the Ministry of Transport and Communications is both the owner and the supervisor of the pilot organization; Isn't that a really big conflict of interest?
The Brotherhood Company engages and encourages pilots also mentally to develop their own company in contrast to the faceless State Pilot Enterprise under the Ministry of Transport and Communications."

How should the pilotage tariffs be arranged?
"The areas should be tendered and the best offer tells the price of the pilotage. It should be the Finnish Transport Agency who makes the decision if the tariffs are the same in all areas or if the tariffs vary from one area to the other or if some areas cross-subsidizes others like it is now. This is very simple to arrange if there is will to do it."

So your opinion about subsidies is positive?
"If you have to maintain all the existing harbours, although they are too many, including icebreaker service and pilot service etc, you have to get money somewhere. The direct subsidies are the most sensible way to do this. By tendering the area it comes clear that the area is not economically profitable. If there is still will to maintain service in the area then there is a need to get money somewhere. That's how it is already today. It would be more transparent to use direct subsidies to tendered areas and the Finnish Transport Agency could have money just for that purpose. As we know the Lake Saimaa area is subsidized that way. This would work even in the open markets if we used areal tendering or had areal actors in general. Aland is a good example of this. There the income from pilotage is roughly 40-50 000 Euros per year. This is hardly

one man salary per year. Aland is full of Master Mariners who are working according to 'one on one off' system. The only ships that need pilot are the cruise ships in the summer and some occasional small ships. For this service there could be an own Brotherhood Company and arrange the transport service for example through the Finnish Lifeboat Institution.

So you think that it is wise to combine asks in some places?
"Yes it is. But it is important to arrange regular training and education to maintain the competency and skills."

How should the relationship between pilotage and VTS be arranged? What is your opinion on that?
VTS could have one free chair for hire to be used by commercial actors. This leaseholder could use VTS facilities and sell the available information that is needed to arrange pilot ordering, to areal pilot actors. This leaseholder could be for example a private company where all areal pilot actors are shareholders. It could be arranged also differently so that the areal pilot actor would pay for this pilot order service. This idea comes actually from Mr. Kari Kosonen who was that time Deputy Director for VTS-operations but is now Pilotage Director for Finnpilot. I think that his idea is good.

4.5 Mixture of organizations (Denmark, England)

In United Kingdom and Denmark for example you can find both governmental and private pilotage.

Mr. Ivar Svane from the governmental pilot organization, Danpilot, was interviewed in order to find out how the safety management is arranged in Denmark.

5 Results: Quality in pilotage

5.1 What is quality?

"Quality is conformance to requirements, not goodness". This is a definition that Philip B. Croby gives for quality in his book 'Quality is free'. A lot of companies have embraced the four 'Absolutes' Mr. Crosby defined in his book. The first 'Absolute' is the above mentioned: Quality has to be defined as conformance to requirements, not as goodness. The second Absolute: The system for causing quality is prevention, not appraisal. The third Absolute: The performance standard must be zero defects, not that it is close enough. Fourth Absolute: The measurement of quality is the Price of Non-conformance, not indices. (Crosby 1980).
The Absolute added today is: Fifth Absolute: The purpose of quality is to ensure customer success, not customer satisfaction (Philip Crosby Associates).

5.2 Safety management and pilotage

5.2.1. What is safety management?

When building up a Safety Management System for ships and shipping companies there is the International Safety Management Code 2002 (ISM Code) for this purpose. This is a mandatory code to provide an international standard for the safe management and operation of ships and for pollution prevention. (IMO)

What is the difference between the Quality Assurance System and the ISM Code? Dr Phil Anderson discusses about differences between these two management systems in his book saying: "It has been suggested by certain classification societies, and others, that a shipowner who fully implements the ISM Code is probably more than 80 percent compliant with ISO 9002. However this does not necessarily mean that a shipowner or shipmanager who is already accredited to ISO 9002 will be ISM Code compliant! Many shipowners have extended their safety management system to include the additional items in order to achieve the quality assurance accreditation – usually to ISO 9002. This quality management system will no doubt complement the safety management system and should also help the ship owner or shipmanager to improve the way his company is run as well as giving him a competitive edge in the market". (Anderson, Phil 2005 p.26)

One important difference between these types of management systems is that "Quality assurance (QA) is voluntary process which shows that the audited company or body performs to certain standards which the body it self sets. Its objective is to deliver a consistent service which meets the expectations of the customers". (Anderson, Phil 2005 p.26)

"Although it (QA) has become the industry norm in some sectors, such as chemical tanker shipping, where the operators can not obtain contracts without Quality Assurance Certification, there is no legal or insurance requirements for a shipowner to have a QA accreditation – it is entirely voluntary". (Anderson, Phil 2005 p.26)

"However, compliance with the ISM Code is quite different – it is a mandatory requirement. If a shipowner fails to comply there may be some serious legal and insurance implications, since the shipowner would be in breach of the law of his flag state and international law as well the law of the country the ship happens to be visiting. (Anderson, Phil 2005 p.26-27)

"The ISM code introduces a 'transparency' which is never existed previously, and this is particularly noticeable with regard to the 'Company' which will have been nominated and identified to be responsible for not only the operation of the ship but also the various responsibilities imposed by the Code. These responsibilities are very wide, ranging from leading the Safety Management System by clear and unambiguous demonstrations of support and commitment from the very top levels of management right through to recruitment and training policies and the development of plans for key shipboard operations. (Anderson, Phil 2005 p.30)

It is not only pilotage or shipping where you need safety management. Harald Mæhlum, who is responsible for four laboratories in which people are working on problems related to indoor climate, gas technology, hydrogen and freeze-drying of foodstuffs, says: "We want to get away from the cowboy mentality – and instead, put things on the table. This is the only way to avoid accidents."

In the course of the past few years there have been a number of 'near-accidents' in the laboratories. "For example, we had a one-and a-half tonne load that was being moved by fork-lift truck when one of its tyres suddenly burst," says Mæhlum. "Luckily, the load was only five centimetres off the floor, but it could jus as easily have been a metre high, which would have meant a very dangerous situation if it had tipped over. The technician who was driving the truck did not regard this as a near-miss that needed to be reported. But when we went back and looked at the cause we found that the truck had been poorly maintained, so we tightened up our routines. Some people try to make little of such occurrences, and say "but nothing actually happened". If we are to get rid of sloppiness and inadequate equipment, everything must be put on the table." (Sintef)
A good Safety Management System prevents the 'holes in cheese slices'-effect occurring. This means that less unexpected factors are met at same time. Professor James Reason explains this 'Swiss Cheese' model of incident occurrence in his book 'Managing the Risks of Organizational Accidents'. He says that the holes in the cheese slice represent a latent error or system failure waiting to happen. These could be human error, equipment failure, and so on. Each of these can be handled and prevented by proper training, supervision, maintenance and so on, but when these methods break down, the likelihood of serious event increases. When the holes in cheese slices line up, meaning that all the defences fail and an organisation's latent vulnerabilities are exposed, then an incident occurs. (Reason 1997)

5.2.2. Safety management in pilotage

There are no mandatory international regulations or standard for the safe management and operation of pilot organizations as there are for ships and shipping companies (ISM Code). Many pilot organizations have anyhow recognized the importance of the Safety Management System. The International Standard for Maritime Pilot Organizations (ISPO-Code) is intended to fill this gap although it is not yet legally required internationally. The pilot company in the Netherlands together with the European Maritime Pilots Association (EMPA) has developed this standard.
This is a new management standard in which the procedures and methods are clearly defined and controlled. The main objective is the care for the pilots' position and their organization in combination with the care for the safety and risk assessment.

The classification societies offer their services when building up the Safety Management Systems with outer and inner audits. For example pilot organization in the Netherlands has adapted the Safety Management System which is based on ISPO-code and audited by the Lloyds Register. The self-employed pilot organizations have been most active with their Safety Management Systems but also other types of pilot organizations have started to prepare their safety management.

When having a short discussion with Mr Paal Sandgren from the classification society Det Norske Veritas (DNV) in Helsinki, he told that DNV has introduced the 'Rules for Pilot Organisations' (Det Norske Veritas 1997).
These Rules are divided in two sections. The first section includes the

'Application and Certification'. The second section includes the 'General Requirements'. These rules resemble very much the ISM code for ships and shipping companies but are applied to pilot organisations.

In the foreword of Dr Phil Anderson book 'ISM CODE a practical guide to the legal and insurance implications' Mr William A. O'Neal the Secretary-General of the International Maritime Organization (IMO) says,

> *"The adoption of the International Safety Management Code is one of the most important developments in maritime safety of the last decade. Previously, IMO's attempts to improve shipping safety and to prevent pollution from ships had been largely directed at improving the hardware of shipping – for example, the construction of ships and their equipment. The ISM code, by comparison, concentrates on the way shipping companies are run.*
> *This is important, because we know that human factors account for most accidents at sea – and that many of them can ultimately be traced to management. The code will undoubtedly help to raise management standards and practises and thereby reduce accidents and save lives."* (Andersson, Phil, 2005)

This can be applied to also pilotage. Although there is not yet any legal obligation to build up a Safety Management System for pilots, as it is for ships and shipping companies, it is any way obvious that the System would guide us to think how to run pilotage. With a Safety Management System we could raise our management standards and practices in pilotage and reduce accidents and even safe lives. The classification societies are capable to help pilot organisations to build up this kind of quality management application. The Safety Management System with outer audits provides also transparency towards customers and other stakeholders. This means that pilot organization really renders quality service and this can be proved by the outer audits.

The Contents of Section 1 in DNV's "Rules for Pilot Organisations" is divides as follows,

Scope and Applications

This chapter states,

> *"Scope*
>
> *These rules stipulate requirements for Pilot Organisations to ensure safety, environmental protection and quality of pilotage operation. The objective is to ensure that the services offered and adequately defined, documented and contain clear objectives as to the safety, environmental protection, quality, carried out by qualified pilots and are evaluated and improved in line with market demands and experience"* (Det Norske Veritas. DNV 1997).

Safety, environmental protection and quality in pilotage are the main issues of these Rules. The objective of these Rules is to define how to do this.

Certification
The rules states, that Pilot Organisations which comply with the rules may receive a certificate for "Pilot Organisation". This certificate is valid for 5 years and if the periodical audits are satisfactory it may be renewed.

The Certification Principles includes the following,
- assessment of the documentation of the Management System
- implementation audit
- annual periodical audits for retention of certificate

Minimum requirements for a Pilot Organisation
Objectives as stated in the Management System are to, as a minimum:

- provide for safe practices during the whole pilotage operation, including pilot boat operation, embarkation, disembarkation and the pilotage of the ship
- establish safeguards against all identified risks
- continuously improve competence of pilots and administration staff ashore, including preparing for emergencies related to safety and environmental protection
- comply with national and local rules and regulations.

DNV's "Rules for Pilot Organisations can be found attached at the end of this master thesis (Annex 2)

5.2.3. Safety management and Finnpilot

Finnpilot has not so far adapted ISPO or any other Safety Management System with outer or inner audits.

Around 2005, the former Development Director, Doctor Minna-Kaarina Forsén came out with an initiative to establish a 'Safety Work Group' for Finnpilot. Two pilot members of this group, Matti Jerkkola and Kai Valtanen suggested Finnpilot to start working on the Safety Management System and said that they were willing to build up this system for Finnpilot. These pilots had earlier been building up Safety Management Systems for shipping companies and thus having the acquired knowledge and skills to do this job. Captain Kai Valtanen said that had been working in the company office about half a year, before becoming a pilot, just preparing Safety Management Systems for Finnlines. However Finnpilot denied paying these pilots what they felt reasonable for that comprehensive job they had offered to do. These pilots required one month's salary plus one week leave. Doctor Forsén informed them that Finnpilot's highest top managers were willing to offer around 1000 € each for the job. Later on Finnpilot informed that they were planning give the assignment of the Safety Management System to some student from maritime school to be accomplished as his bachelor's thesis. Nothing has been introduced so far and shortly after Doctor Forsén had left Finnpilot also the 'Safety Work Group' faded out.

Training and education is a part of Safety Management System. When the author of this master thesis served as a principal lecturer in the Ship Manoeuvring Centre there were two ship handling courses available for pilots. These were the 'basic course in ship handling for pilots' and the 'advanced

training courses for pilots'. After the advanced courses the pilots where asked to fill a questionnaire to get their opinion about the course. They were also asked if they found it useful to have more ship handling courses in future and what would be the best interval for the next courses. According to the questionnaire pilots found the courses very useful and the suitable interval for the following courses would be every second year (Kotilainen, Pentti 1994, p.25).

During the time the author of this research was teaching the Ship Handling Simulation Centre arranged also Bridge Resource Management Courses for pilots. However the ship handling courses as well as Bridge Resource Management courses faded out during the reorganization of the Finnish Maritime Administration in the middle of 1990. This was one or two years later the author of this master thesis had finished his job as a principal lecturer and had returned back to serve as a pilot in Helsinki pilot station.

5.3 Interviews abroad and safety management

Two of the main interviews from Finland, Finnpilot's Managing Director Matti Pajula's and Baltic Pilot's Managing Director Joakim Håkans', are presented in this master thesis separately and alone. This is because these interviews include a lot of clarifying information around pilot arrangements in Finland. The other important interviews from abroad, which include questions around safety management, are presented together question by question for easy reference. The persons interviewed were Pilot Inspector Haldor Saether from Kystverket in Norway, Chief Pilot Ivar Svane from DanPilot in Denmark and Mr. Tjeerd van der Voorn from the pilot company in the Netherlands.

Interview questions to pilot organizations abroad:

1. How is the Safety Management (System) with audits arranged in your country/organization?

Answer from Norway:
"The Norwegian Coastal Administration is at the moment developing a Safety (Quality) Management System for the pilot services in Norway. It is based on the ISO standard 9001 and 14001. At the moment the Administration has chosen not to let an extern organization certify the system. The documented system is divided into procedures, instructions, specifications, attachment and job descriptions. In addition the Administration has developed and implemented a web based non-conformity system. The Administration has not properly started with internal audits, but will commence with this during 2010."

Answer from Denmark:
"We do not have any Safety Management System in DanPilot, but we have studied and worked on the ISPO. Now we are only at a very beginning stage! We have been in contact with our Dutch colleagues and we will travel to the Netherlands in the end May and see and talk about ISPO with our Dutch colleagues in order to see how their system is working. We here in Denmark are expected to do something for the issue in 2010. Now I'm of course talking about DanPilot but as I know one of the private pilot companies has already a quality

system with safety management included in their operation. It is not ISPO system."

Answer from the Netherlands:
"We have implemented ISPO standards. And we have been very happy with our Safety Management System. Together with European Maritime Pilots Association (EMPA) we have developed this standard and it is actually the only standard that has been audited on pilotage in the Netherlands. It has not been done by the government or the local port authority but it is done in our case by the Lloyd's Register. We have made all procedures ourselves and then each year Lloyd's Register performs an external audit. They visit us and they examine pilots and they examine me and other staff. They ask all kind of things we have laid down into this quality standard ISPO. The internal audits each year are performed by former pilots or the active pilots as safety managers and after that we have outer audits by Lloyds Register. They will check that that we are really doing what we say and we do as it has been described in ISPO standards. We wanted to regulate ourselves before local government or EU Parliament or IMO regulate our business. I was in Denmark last week and spoke to the 'pilot people' there and gave a presentation over the ISPO and they were very interested about it. They realized its possibilities to protect themselves against competition by having this standard. Maybe in future we will be pleased to introduce our Safety Management System for your organization and tell something more about this standard as well.
In the Netherland we really believe in the standards of ISPO that we have developed together with EMPA. We think that we should open up our operation to the outer world, to the government, to the port authorities, to the customers. Because we are always telling that we are giving a high quality service without giving any evidence to prove it. We think that by joining and being ISPO certified you could really show to the outer world that you really give high quality service. What we hope and believe is that more organizations should join us in with ISPO standards. We are right now talking to the pilots in Liverpool and Edinburgh which will probably be certified this year. Ukrainian pilots, Belgian pilots and Danish pilots have shown their interest toward ISPO standards among many others. As soon as ISPO Code is going to be a strong code, nobody can go around this Code. Safety issues have been described in ISPO standards, but ISPO standards also make clear that you are continuously looking at and improving your service by monitoring and analysing all the things you are doing each year. We just believe in opening up."

2. What advantages, in your opinion, the present system in your country has when compared to other possibilities (private system: pilots are employees of a pilot company or pilots are owners of the pilot company; governmental system: pilots are civil servants or pilots are employees of governmentally owned company; monopoly vs. competition)**?**

Answer from Norway:
"The biggest advantage with governmental pilots in Norway is to ensure that there are pilots even at places with a low rate of traffic. If the pilotage has been based a private system my opinion is that no private companies would like to carry on a pilot service on such places because of the expenses vs. the earnings. The disadvantage with a governmental pilot service is the lack of

competition, but off course this also can be an advantage because then the profit will be a factor which disturbs the safety."

Answer from Denmark:
"We have a dual system in Denmark with both governmental pilots and private pilots. The difference between these two is that the governmental pilots have monopoly on transit pilotages in Danish waters from Skagen to Bornholm. The private pilots can also make the transit pilotages but it must start or end to a Danish port. The private pilots can start pilotage to all places when ever they want. But what we have seen is that private pilot companies are interested only on good and profitable areas. We have many small ports in Denmark but the private companies show no interest on those because there is no money. The governmental DanPilot has an obligation to arrange pilotage on those places in such cases. Also if a private pilot company has an area or port and says that, of some reasons, they cannot offer a pilot there, then the governmental pilot provider must have a pilot ready to do the job. Governmental pilots are acting here like a kind of back-up. Seen from DanPilots point of view the dual system does not bring along any advantages. There is nothing where DanPilot could compete with other pilot companies. The reason for that is the pre-set salary and pilot fee requirements. A Private pilot company can just make 5% lower offer than DanPilot and they'll get the job. This is a good example that there is no competition actually. The initial idea with the dual system and competition was to lower pilot fees."
Answer from the Netherlands:
"There are advantages in both governmental and private systems. We are privatized so we own our organization. However everything that we'll do has been laid down by law. We have a private organization but we work as a public body. But we work efficiently. When we were still governmental we had 800 pilots and we did around 100 000 vessel movements a year. Now we do the same vessel movements a year but we do it with 450 pilots. And if you look at the supporting company, 20 years ago we had 800 people personnel and now more or less 400. So we work more efficiently. There are no waiting or idle times anymore. We have done an efficiency improvement. That is good for the pilots who are shareholders of the company because they earn more money. It is good for the market, customers, shipowners, agents because they get better service. It is also good for the port authorities because we can almost guarantee them 24 hour access for example to the Port of Rotterdam. We are consistently looking for ways to improve our service. That is the good thing by having a privatized company in a public service. Downside of this is that government is always looking at and willing to introduce competition in our business. They say that it cannot be so that a private company is the only supplier of the service and acting as a kind of monopolist. This is because they think that we have an easy job and earning lot money. They are convinced with when we are delivering nice service but still they think that if there were competition the service level might still be better and costs may decrease. We are still quarrelling with government, port authorities and also with customers if competition should be introduced or not. We think that there should not be competition in services like pilotage because, instead of the fact that we earn money with it, it is not a commercial task but a public safety task. We should make clear that all vessels entering a Dutch port come in and go out without any damage to the vessel, people living around ports or any other kind of

damages. We are always looking for a balance in this as well. When comparing our private system to a governmental system. In governmental organization you do not have to discuss about money. If we look at the service that has been delivered by governmental organization we can see that there is no incentive to work efficiently. I'm anyhow quite sure that in countries with governmental pilot organization they work very hard trying to give their best service.

3. What would be the most suitable organization model for your country or how to improve the present system or is it good as it is now?

Answer from Norway:
"The most suitable organization model for Norway is a governmental pilot service but it could be improved by having a much clearer definition for who is the Competent Pilotage Authority and who is Pilotage Service Provider. In addition my opinion is that private companies should take care of the dispatching and the pilot boat service. The reason for this is that pilotage is an important task and shouldn't be influenced by the cost of the secondary tasks such as dispatching or pilot boat service. Today the cost of using pilots is also depending on the cost of the two other services. By privatizing the dispatching and the pilot boat service I think this can be made cheaper and even better."

Answer from Denmark:
"We are trying to convert DanPilot to a more modern organization. Right now we are trying to get new people in the company to take care of the human relation functions (HR) and things like that. This question is good but also political. There is a saying that they (politicians) are never going back. If something goes wrong or bad they just continue. Here in DanPilot we have anyhow noticed that young and new pilots after working 1.5 – 2 years in the private company are seeking job as governmental pilot at DanPilot."

Answer from the Netherlands:
"Pilots in the Netherlands are shareholders of the pilot company that works in the more or less monopolistic surroundings. That is the best way to work. We work very efficiently and try to deliver high level service at same time. We have talked with our customers and we have asked them what they think about us. We also try to exchange information about the service level of the pilotage. I think that our system is good for everybody like customers, port authorities and pilots as well. Because we are the only supplier for now, the Dutch government has placed competition authorities above us. So we have a kind of 'watch dog' that looks out that we do not overcharge our customers. We believe in this system. It is OK with us. We give transparency and really believe in this. Transparency is a very important factor. We have also a supporting company, so we are investing on our pilot vessels as well. That will give us some problems also. We are starting our newbuilding program this year or in the beginning of next year. We might be facing an investment of about 100 million Euros. That is quite a lot of money and we have to find investors for that. The shareholders, that is the pilots, capital has been invested there too. Each pilot in the Netherlands has to pay in some working capital to the organization as soon as he starts to work as a pilot with us. It is not without any risk but we think that the system is quite good. We want to keep our own more or less monopolistic

way of working. We just had this discussion with our customers and port authorities as well. If you look at our service at the moment it is all laid down in the Pilot Act. We should give a pilot to each vessel entering Dutch port within the normal ETA/ETD arrangements. If they are paying or not we always have to supply a pilot. When you get into competition, that is what we have talked with our customers and port authorities, and if the ship does not pay the new private pilot organization probably don't give her a pilot or will first serve customers who are paying on a regular basis and first after that she would be served. It is clear that you can introduce competition and safe probably something in the short run. But if we look at a vessel going to Rotterdam, you could maybe safe 100 or 500 Euros on a pilot voyage but then again you can not be sure that you always have a pilot available. I have been telling this to for example Maersk, K-line and other container companies and asking them how long the time they can lose in one trip around the world. They say that it normally takes from 60 to 90 days and there are only one or two days in spare for any problems. If we don't deliver a pilot at required time then the shipping company would probably lose its 'slot' times from the container terminal. Then he has to skip a port and to reallocate. If you skip Rotterdam and you go to Hamburg, then you have to get all the containers that had to go off in Rotterdam, from Hamburg to Rotterdam and all the containers that had to go onboard in Rotterdam, from Rotterdam to Hamburg. This will cost you a lot of money. We use to say to our customers and all port authorities; don't look at the cost from the initial service or service of the pilotage but look at the total cost of the logistic chain. If you have to get some cargo from one place of the world to another and look on the lower possible cost of the total logistic chain you might to have to pay 200 Euros more for pilots. Then you find some efficiency. You should look at the whole system not only parts of the logistical chain because otherwise it will get more expensive in the end. The system we have in the Netherlands is running well and everybody is happy with it. There is only one but. The Dutch competition authorities are looking at our service and our pricing policy. We do believe that the way they are monitoring our business is a little bit overdone. It could be somewhat less. But that's one of the question that we are discussing at the moment. We have had this system 2 years now and we probably can solve this matter as well."

4. How is the training and education arranged in your country/organization (simulator training, theory, continuity)**?**

Answer from Norway:
The training and education is arranged quite well in Norway.
Mr. Haldor Saether sent an excellent presentation about pilotage in Norway including education and training of pilots. The presentation had 49 pages so it cannot be attached as an appendix to this master thesis. Here are the main points of the pilot training in Norway picked from the presentation:
- Pilot training starts with an introduction course which last 1 week.
- The new pilot apprentice makes his own 'pilot lesson book' and get his own mentor.
- There are a compulsory number of trips the pilot apprentice has to do together with a certified pilot.
- The first theoretical and practical exams are taken after approximately five month training.

- There are theoretical and practical exams to get a pilot certificate for all fairways
- Approval on vessel sizes and types.
- It takes 3 years or more for a pilot to be certified in all areas connected to the pilotstation and all types of vessels.
- To keep the certificate valid it is required to carry out a certain number of pilotages within a limited period of time.
- Special training including Bridge Recourse Management (BRM), Shiphandling Simulator (SMS) phase1 & 2, Manned Ship Model Training, Use of tugboats, Use of escort tug, Use of anchor when manoeuvring, Special training for piloting VLCCs or other big vessels or oilrigs.
- ECDIS/AIS course using Maris ECDIS NP 900 installed in to the pilots personal computer.
- Helicopter boarding course.

Answer from Denmark:
"We are following resolution A.960 from IMO, with refreshment courses etc. including simulator training, lessons on different subjects on regular basis."

Answer from the Netherlands:
"I cannot explain this in detail because the subject is so comprehensive. These matters are laid down in the quality standards as well and in the ISPO standards are written down what we should do and how we should do in different cases. If you look at the pilot apprentice joining Dutch pilots he has been trained first for one year. This training includes a general Dutch part for about 6 weeks and then they will go to the region where they are going to work. If you look at the Rotterdam region, for example, there they have practical side of the training and also a theoretical part of the training. During that time they learn all specific port areas, vessel management etc. They also do more of less 200 voyages together with an experienced pilot and they have some coaching periods during this year as well and at the end they take exams in theoretical part but also in the practical part of the training. They actually do a number of voyages in and out and they are being examined from that. We train our pilots on a permanent basis. So pilots go back for general training each two years for a number of days. We train them new equipments, safety systems etc. The new pilots will start their career with smaller vessels and each time they make the next step or two steps we train them for that by giving them radar training, full mission simulator training and also training theoretical part. It is all done on a regular basis."

5. How is the aging taken into considerations with pilots in your country/organization (for example; how often medical certification must be renewed compared to younger pilots or is it the same as for younger pilots? Is there any discussion going on about retirement age)**?**

Answer from Norway:
"Pilots above 50 years of age must renew their medical certificate every year and pilots below 50 every second year."

Answer from Denmark:
"All pilots have to undergo medical certification every 2 year and it is the same for all pilots young and old. It is up to pilot self to keep him fit for the medical examination in order to get the required health certificate."

Answer from the Netherlands:
When looking at what is going on in the world. For example in the Netherlands people have to work normally up to 65 and there have been some discussions to raise it up to 67. We just saw that it isn't possible any more to continue the old way. We know that there are some pilots who need stop piloting at 55 but the others can go on working up to 60. Now we have opened the gate so that a pilot can retire at 55 but he can continue to 60 as well. The pensions are insured so if you choose to stop working at 55 but then you'll get lower pension. Normally Dutch pilots retire at 60. There has been some discussion to open the gate up to 62 or even 65. All pilots undergo medical certification at least every two years. By opening the gate to 60 we lost a severe discussion point and the reason for this is that now there is nobody who can say that all pilots retire at 55 and it is not normal because all other people have to work until 60 or 65."

What is the retirement age for pilots in your country/organization right now?

Answer from Norway:
"The retirement age for Norwegian pilots is normally 65 year of age but there is a discussion going on to lower the retirement age."

Answer from Denmark:
"Pilots can retire at 60 years, however they can continue until 67. We can say that the normal retiring age is between 63 and 65."

Answer from the Netherlands:
"Until 2 years ago it was 55 but that was still a thing that we inherited from the time pilots were civil servants. But now you can continue up to 60 if you want."

6. Have pilots in your country been laid up or has the occurred dismissals due to the global recession?
Last year, in 2009, under the global recession, all pilots in Finland were laid off (from 4 to 8 weeks depending on pilot area) and 11 pilots got fired. Due to the lay-offs and dismissals many ships had to wait more than 2 hours longer than the time that pilot was ordered for. Two hours is the maximum 'service obligation limit' for Finnpilot in Finland.

Answer from Norway:
"No pilots in Norway have been laid up but we have taken in fewer pilot apprentices than it was planned before."

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Answer from Denmark:
"None was laid off and there were no dismissals either. Some pilots retired voluntarily during the recession. They were not forced to retire and it was their own decision. Although the traffic has gone down we still have all and same pilots working. Of course we are waiting that traffic goes up again. It takes quite

a long time to get a new pilot. In Denmark it takes 2 years and 3 months to get a full pilot license. "

Answer from the Netherlands:
"No. We are private and we cannot do that. Pilots are shareholders of the company. We cannot use lay-offs or fire pilots. We can only fire personnel but then if we do that or hired fewer pilots it is clear that it is not possible to train a pilot in a few months when needed. It takes 6 to 10 years for a pilot to become fully licensed. We have not fired anybody and we have not had any lay offs but we have just been less busy. With fewer vessels pilots have worked less and also earned less money during the last year."

Have ships been forced to wait for pilot in your country/organization due to the global recession (longer than the possible "service obligation" or otherwise)**?**

Answer from Norway:
"No, they have not."

Answer from Denmark:
"No, they have not. We are using a kind of time windows in pilot ordering. For sea-pilots ships must give first 18 hours notice then 12 hours then 6 hours and finally 4 hours notice beforehand. If this is followed we have a just in time service in Denmark. If the pilot order is for example 1400 then the pilot is onboard 1400. Last year 2009 we were on time 98.6%. "

Answer from the Netherlands:
"No. We hadn't any vessels waiting because all our pilots have been available all the time. As soon as the vessel came we got it in and got it out."

How the service level is guarantied in your country/organization (Do you have any "service obligation")**?**

Answer from Norway:
"A vessel shall normally get a pilot within an hour of the time the pilot is ordered for. This service requires that the pilot has been ordered at least 24 hours in advance."

Answer from Denmark:
"To offer pilot 'just in time' is what we are trying to do."

Answer from the Netherlands:
"Depending on the port we have different regulations on departure times and arrival times. For example in Rotterdam it is 2 hours for arrivals and 3 hours for departures. We are always too early. We are always there in time. That is no problem for us. There are no fines for the pilot organization but there are fines for the vessel if we have to wait too long. Before the vessel leaves it can be charged with very small amount money. It is hardly anything. The Dutch competition authority, when looking at our services, says that we are delivering too much service because by the law we should deliver a pilot within 2 hours and in average we deliver in an hour and a half. They say this is too quick. We

say that there are no customers or port authorities complaining that we deliver better service."

7. Is pilotage making any financial profit or loss in your country/organization?
What are the influences in case when gaining profits trough the pilotage (Do the whole profit stay inside the pilot organization?)**?**

Answer from Denmark:
"We are a non-profit organization. However we have made a loss of about 100 million Danish crones over the last two years. That is about 50 million per year. There are a couple of reasons for the losses. One reason is the change of the system in pilot wages about 3 years ago. According to the new regulations the pilots get paid also for the overtime they make. Another reason is political. 7-10 years ago it was blamed that pilot fees were too high and they should be taken down to a minimum. They said that if the pilot fees were lowered the number of pilotages would consequently rise. These assumptions lead to the fact that pilot fees were not raised for many years. Last year 2009 we made a plan for next ten years in order to get rid of the losses in future. Last October 2009 all the pilot fees were raised by about 19%."

Answer from the Netherlands:
"We have a system where all pilots are shareholders so they don't actually get any salary. They just get their share of the profit. There can be very bad years when pilots make 20 000 Euros a year and that's his 'salary'. But in a good years he can earn 100 000 Euros as well. In the Netherlands we invoice, let's say, 100 million Euros a year. And when all costs of the supporting company have been deducted the rest is being divided by 450 pilots as shareholders and that's their income. The gained profit can be less or more depending on the economical situation and the success of the port Rotterdam or Amsterdam. Last year pilots were not happy with their earnings. This is easy to understand because they did not earn so much but in a good year they earn more again. Our system allows pilots to choose themselves how many pilots they have working in their regional group. Now there are about 400 to 450 pilots and they get a share of, let's say, 50 000 Euros. If they were only 200 pilots their share would be 100 000 Euros. There is of course the macro side of the whole where the economical situation plays an important role. It states how many vessels you get and you can hardly steer on that. But by deciding how many pilots you've got to do the job gives you a small thing to steer your own share and profit for each year."

What are the influences in case when making loss through the pilotage?

Answer from Norway:
"The pilotage service in Norway shall be non profitable. This is decided by the government. It means that the income normally shall cover the costs only. In years when the costs have been higher than the income the loss has to be paid back the next year(s). On the other hand, it the income has been higher than the occurred costs then the increase of the fees will be lower than the expected cost for the next year."

Answer from Denmark:
"No profit no loss is our goal."

Answer from the Netherlands:
"We'll always make profit but in a bad year the pilot's share of the profit gives less money."

8. Does the pilot job include also something else but piloting (related to VTS, fairway maintenance, watch keeping etc.)**?**

Answer from Norway:
"Normally not, but in some cases some of the pilots are engaged in administrative work, e.g. developing standards and rules."

Answer from Denmark:
"Generally speaking they are not. However in Denmark we have a lot of small areas and one pilot, in each of these areas, is to some extent engaged to make the needed management and administration there. Otherwise it is only piloting that pilots do in DanPilot. "

Answer from the Netherlands:
In Rotterdam pilots and the local VTS-operators are cooperating although this doesn't belong to our core businesses. We also give consultancy in case our expertise is required. Anyhow, the money we get from these other activities is nothing compared to the big money we earn from the pilotage of sea-going ships."

9. Is pilotage an attractive profession in your country?
Is it easy to recruit pilots?

Answer from Norway:
"Yes, pilotage is an attractive profession in Norway due to its status. They work about 20 weeks per year plus some overtime. The salary is also good. An average pilot salary in Norway is about 100.000 Euro per year."

Until now it has bee relatively easy to recruit pilots, but we have noticed that during the recent years it has been more difficult than it was before. The reason for this is probably the general lack of navigators all over the world."

Answer from Denmark:
"I think that pilot is an attractive job in Denmark. Pilots have good salaries and that is certainly one reason why pilot job is considered attractive.
Is it easy to recruit pilots in Denmark? Yes it is still easy to recruit, but I think that in 5-8 years there will be a shortage of applicants."

Answer from the Netherlands:
"Our pilots say that they have an attractive job, because you have a system where you are still at home on a regular basis with your family and your social network. It is also a well-paid job when comparing to Dutch standards. On the

other hand we have got problems to find new pilots. The new pilots must have Master's Licence, minimum of 2 to 3 years practice at sea and he must be Dutch citizen. There are not hardly any youngsters going to sea anymore or going to higher nautical college. That is the problem we are facing right now. We need in 2011 15 pilots or apprentices who want to become a pilot. We have perhaps 20 candidates which are suitable for these jobs. So we have to choose these 15 guys out of those 20 candidates. It would be better if there were 100 candidates instead. Right now we are starting a program and investing money in recruiting or getting more youngsters to go to nautical college. We have also spent money to provide Dutch youngsters an opportunity to sail all around the world and maybe getting them interested to become a pilot later on. What we have found is that some of the guys who go to higher nautical collage and then to sea never think of becoming a pilot. They are not just thinking about it. We have also noticed that youngsters leaving higher nautical college just don't want to go to sea anymore. The reason for this is the outlook of being a sailor for next 30-40 years far away from home and social networks. What we want to do is to help them see this from another perspective. After becoming a sailor for few years they can get a chance to be a pilot and this way getting their family and social network near them again. Hopefully this new perspective encourages young people to go to nautical college and more of them starts sailing again and maybe becoming a pilot later."

10. How are the working times arranged in your country/organization (working days/free days and maximum working hours without rest)**?**

Answer from Norway:
"The watch rotations are a little bit different depending on the place where the pilots are stationed, but normally the maximum work period is not more than 14 - 18 days and it is followed by 3 or more weeks off. In Norway, the pilots are working 20 weeks per year. During 24 hours on watch the pilots are not allowed to work more then 12 hours including the travelling time between the missions. One of the resting periods must be at least 8 hours."

Answer from Denmark:
"Pilots have 153 working days per year plus 12 on standby. Maximum working hours per day are 13 hours. A pilot can have maximum 3 nights per shift and the following night will be rest. Night time is time between 2200-0600 hours and if pilot works more than 3 hours within that time window it is counted as one night. Maximum time outside 'own bed' is 96 hours. This rule is made mostly for seapilots. When a pilot goes for example from Skagen to Bornholm and back from Bornholm to Skagen he can do only 96 hours. After that the pilot must have one rest period at his home address." On long voyages there can be two pilots onboard at same time."

Answer from the Netherlands:
"Pilots are all shareholders and we just say that all vessels that come to Dutch ports have to be piloted and pilots discuss amongst themselves how they run the system and with how many pilots. In some parts of the Netherlands they have week on and week off. However there are several kinds of systems but as soon as you are on duty there are no shifts. They just call you when the ship requires a pilot and it is your turn. For example if the pilot starts with his first call

at 6 o'clock in the morning and he works about 8 to 12 hours depending on how many vessels there are and if there isn't any vessels for him he will be sent home and getting at least the minimum time of rest which is 8 to 12 hours. After that he is at the bottom of the list again and he can be called to work. You don't have a week long night shifts or evening shifts or morning shifts. We have 100 000 vessel movements a year in the Netherlands and we have to get all vessels in and out with 400-450 pilots. And how this is arranged is decided by pilots themselves."

11. How are the liabilities, regarding pilot job, solved in your country/organization?

Answer from Denmark:
"We have insurance for each pilot. The requirement for the insurance is written in the new Pilot Act. Also the private pilots must have insurance according to the Act."

Answer from the Netherlands:
Liabilities have been laid down in the Pilot Act. Pilots are only liable in case of gross negligence or if something have been done on purpose. This was also true during the time when pilots still were civil servants and it was not changed after the privatization of pilotage. We had this discussion about pilot liabilities with the P&I club in London last year as well. They said that of course we can be liable but then the shipowner has to pay for each pilot trip for example into the Port of Rotterdam, instead of 5000 Euros, 80 000 or even 90 000 Euros because P&I Club has to reinsure the involved risks when piloting crude oil in a big taker or dangerous liquids in a chemical tanker. All shipowners have insured themselves in P&I Clubs for a year around service covering all risks and this is certainly the cheapest and smoothest way to have it."

5.4 Recession and pilotage

How to compare existing organizations in action? How do they manage? The ongoing recession is certainly one indicator to show how it has influenced in pilotage.

During 2009, due to the recession, 11 pilots of Finnpilot were dismissed and all pilots and pilot boat drivers were laid off from 4 weeks to 8 weeks depending on the pilot area. Some of the intended laid offs were later cancelled in order to manage with the traffic. Finnpilot has a so called 'service obligation' (palveluvelvoite), which means that ships must get a pilot within 2 hours from the time pilot was ordered. In normal conditions ships have got their pilots according to their pilot orders but in 2009, due to dismissals and laid offs, about 200 ships had to wait to get a pilot and in 97 cases the 'service obligation' was not fulfilled.

Finnpilot is, in the reach of this research, the only pilot organization in Northern Europe, which has dismissed and/or laid off its pilots during the recession, and it is the only organization where the pilot service was negatively influenced by the shortage of pilots and pilot cutter-drivers due to these actions.

In pilot organizations were pilots are self-employed, like in Holland, the income to pilot company went down but no dismissals or lay offs occurred. Because there were no dismissals or layoffs ships got pilots as before the recession.

The governmental pilot organizations, where pilots are civil servants, did not fire or lay off anybody. In Denmark the governmental pilot company has made loss at least during the last two years. In Norway they didn't recruit pilots as many as was planned before.

In Finland shortly after the dismissals of 11 pilots a new pilot was recruited 1.4.2010 at age of 50 after serving roughly 18 last years in the office. The new pilot served earlier as Director of Pilot Operations in Finnpilot but was dismissed from that position. In Norway the highest age to get a pilot job is 38 years. In the Netherlands the pilots can decide about the new recruitments. In Finland pilots are not asked any more. Before the Finnpilot was founded pilots were consulted regarding new recruitments. In Norway and Denmark the amount of pilots has been successively regulated beforehand without a need to fire pilots.

5.5 Hard winter and pilotage

During this ongoing winter (2010) the lack of Safety Management System within Finnpilot became again very evident. Due to harder ice-conditions than we have experienced in recent years the ships were advised by the Maritime Administration to use the 9 meters archipelago fairway with pilot onboard when heading to or leaving the ports in the Gulf of Finland. The author of this master thesis had an excellent vantage point to see how Finnpilot together with other actor managed in this infrequent situation. The author served as a pilot and made observations at same time as a participant observer through out this special season.

Although a hard winter, like this we had in 2010, does not occur every year it anyhow just doesn't appear overnight. There was time enough for Finnpilot to plan and prepare for the winter and also train and consult with other stakeholders like VTS operators, icebreaker crews and harbour operators.

The Ship Handling Simulation Centre offers excellent facilities for training and planning the operating procedures together with all stakeholders. These procedures and agreements could include, for example, meeting places for ships navigating in the ice-channel, speed recommendations or limits in various places of the fairway, reporting routines, working routines with ice-breakers, precautions with tankers in the ice-channel, the recommended maximum size of vessel piloted in ice-channel. This opportunity to utilize Simulation Centre for briefing and training with other stakeholders was not used.

A good example how the benefits of the Ship Handling Simulation Centre can be utilizes was the project to define the operational rules for the new Vuosaari fairway in Helsinki. The Finnish Maritime Administration arranged and formed a work group for that project. The group consisted of VTS-operators, ship masters, harbour representatives and pilots. The author of this master thesis was one of the pilot representatives in this working group. The project was started in the summer 2007 lasted about one year. During that time the author

was also updating and upgrading his old Master Mariner's Degree, from 1980, and made his Bachelor's Thesis, 'Vuosaari Fairway - a Project on Traffic Arrangement', about this project (Kotilainen, Pentti 2008). During the project it became obvious how important it is, in spite of excellent facilities like simulators and professional participants in the work group, to have a skill full and enthusiastic project manager to reach top results. And we really had it. Captain Sanna Sonninen from Finnish Maritime Administration made really things running. This kind of management would be very favourable also for Finnpilot.

When the winter traffic started a lot of important question were open. Where to meet safely with ships that are heading in opposite directions? What are the routines with VTS and icebreakers? There is a lot to remember even for the old pilots who have experienced ice-winter piloting in the preceding years but there are many new pilots who have not experienced ice-winter at all. If Finnpilot had adapted the Safety Management System into its operation these trainings and documentations certainly would have been included to it.

Already in the beginning of this rear season VTS noticed the lack of coordination and lack in the information flow from icebreakers to VTS-operations. Icebreaker captains blamed to suffer from uncontrolled queries. There were too many calls about same matters. There was uncertainty in the use of icebreakers when sending a pilot onboard or taking him off after the pilotage. It seemed also be unclear about the cost of this service. The limitations to traffic in archipelago came into force couple of days after opening the fairway. These limitations included restrictions regarding tanker and passenger ship ice-channel navigation in the archipelago.

6 Analysis and Discussion

How the pilotage can be organized in future?

Monopoly is the prevailing, widely used and mostly desired method to arrange pilotage within the reach of this research. There are only few exceptions that prefer competition. One of these is naturally Baltic Pilot which is trying to enter the market. Mr. Joakim Håkans from Baltic Pilot said also in his interview that if competition is not accepted then pilots should be civil servants. Mr. Håkans saw also the brotherhood companies as potential alternatives to pilot organisations in Finland. He emphasized that working for the own company is a motivating and encouraging factor.

Finnpilot's Managing Director Matti Pajula says that it is owners will to have a governmentally owned company in Finland in future.

Pilot inspector Haldor Saether from Norway says that the biggest advantage with governmental pilots is to ensure that there are pilots available at places with a low rate of traffic.

The representative from Danish governmental pilot organisation Danpilot Mr. Ivar Svane shares his opinion with Mr. Saether form Norway by saying that the system where pilots are civil servants is the best. Now they have a dual system in Denmark with both governmental pilots and private pilots. Mr. Svane says, in

his interview, that they have no real possibility to compete and he doesn't see any advantages in the dual system. He adds that the new pilots in private pilot companies often, after one and a half or two years service as private pilots, are seeking job as governmental pilots.

The representative of Dutch pilotage company Mr. Tjeerd van der Voorn says that their company is very efficient compared to the times when the pilots in the Netherlands still were civil servants. Pilots are very motivated and happy with system. Mr. van der Voorn says that they have a private organization but they work as a public body. It is very essential to have a monopoly to in order to guarantee the service.

According to the 'job satisfaction survey' the most desirable way to organize pilotage in Finland was the so-called 'Office model' by getting about 70% of the votes of people working in Finnpilot. This means that they highly prefer to become governmental civil servants again. The 'Single operator model', accepting monopoly, got about 22% of the votes. The "Free competition" got about 5%. "Something else" option got about 3%. These results indicate that people are very disappointed with the prevailing system and that is one reason why they want to go back to civil servants.

Newspaper 'Taloussanomat' made a survey comparing the wage growth in Finland from 2001 to 2008. This survey included 250 different professions. The results stated that within health sector (doctors and nurses) and among stevedores the wage rates had increased most, from 40% up to 49.9%. Pilots were the worst group in this comparison with 9.5% decrease in the growth rate (Taloussanomat).

The job satisfaction reflects certainly and directly to safety. And the declining reputation reflects to the recruitments in future. Already now it is difficult to get new pilots to some pilot stations, for example to Lake Saimaa area or northern part of Bay of Bothnia.

Even at the previously most attractive pilot stations, such as Helsinki, it has occurred that the newly chosen pilot has after a second thought turned on his heels without taken the offered job. The job satisfaction survey made in 2010 shows the same downward trend when asking if Finnpilot is an attractive employer.

What could be the best type of pilot organization? The private Dutch system is effective and progressive and pilots, customers and port authorities as well are happy. But on the other hand in the Netherlands there is a lot of traffic and not so many fairways or ports either if compared to Finland. The organizations where pilots are civil servants are maybe not as effective or progressive as private companies but these organizations can guarantee the service to all places and both customers and pilots are happy. Finland has with Denmark, Norway and Sweden much in common when looking at their geometry, economical or social structures. Pilots in all these countries are civil servants at least partly (Denmark). Also the overwhelming majority in Finnpilot, according the 'job satisfaction survey', wants to become civil servants.

To change Finnpilot to governmental company is not an attractive option for pilots. In addition to this, pilots and also others, in the service of Finnpilot, are particularly disappointed on its senior managers. Since the foundation many excellent senior managers, and also other people, have left Finnpilot voluntarily or even been fired. For example two Financial Directors, the Development Director, the Public Relations Manager have left their jobs since the foundation of Finnpilot and the Director of Pilot operations was fired last spring 2009. I would say that they have been too many. Only the two highest senior managers are still continuing in their posts since the foundation of Finnpilot. The greatest dissatisfaction, according to the 'job satisfaction survey', has been directed against the senior managers and this has happened already several years in a row.

How the quality management of the pilotage organization, and especially safety management, could be arranged in future?

In the Netherland the pilot organisations has implemented the International Safety Standard for Pilot Organizations (ISPO) as a base for their Safety Management System. The ISPO Code is made by Dutch pilots together with the European Maritime Pilots association (EMPA). The outer audits in the Netherlands are performed by Lloyds Register which is a classification society. The Safety Management System in the Netherlands has attracted much of interest among the European pilot organizations and ever wider.
In Norway their preparations for Safety Management system is going on but they have however decided not to let any external third party to make the outer audit. The reason might be pilot's special role as a civil servant.
Also another classification society, Det Norske Veritas (DNV), has been active with the issue. They have introduced the "Rules for Pilot Organisations". These rules are attached in the end of this master thesis in order to show what a Safety Management System includes (appendix 2). These Rules also defines the minimum requirements for DNV's Safety Management System. Baltic Pilot consulted DNV when building up their Safety Management system.

There are several places to get information and help to build up a Safety Management System for the pilot organisation in Finland. Mr. Tjeerd van der Voorn from the Netherlands was in Denmark a short while ago to tell Danish pilots about their Safety Management System and he kindly offered to come and present their system also for Finnpilot's decision makers if they are interested. Author of this master thesis contacted Finnpilot's new Pilot Director Kari Kosonen telling him about that opportunity to get Mr. van der Voorn even to Finland. Now at least the senior managers in Finnpilot have the contact information to those who knows how to do it. The Safety Management Systems based on the ISPO standard is already in operation in Europe. The helping hand when building up Safety Management System in Finland is not far away.

In his interview the Managing Director Matti Pajula named at least three reasons why Finnpilot has not a Safety Management System yet. He explained that the first reason is that Finnpilot needs first a Quality Assurance (QA) System before it is possible to create a Safety Management System. This is not true. QA's are voluntarily given promises towards customers. These two Quality Systems are independent systems and the one does not preclude building up

the other.

Mr. Pajula says that the second reason why Finnpilot has not a Safety Management System is economical.

The third reason was a wrong person as senior manager carrying out the task. According Mr. Pajula he was responsible for the development of the Safety Management System but was fired later form his job. Mr. Pajula emphasized that now the problem is solved and a new person is in charge.

Conclusions from Mr. Pajula's comments on reasons why Finnpilot has not Safety Management System yet are as follows. Firstly the senior managers have a need of knowledge and information regarding the System.
Secondly the tariff on pilot-dues has been the same since 1999. This gives an indication of lacking long term planning.
Thirdly, although it is the Board of Directors that names and dismisses senior managers of Finnpilot, it is first of all the Managing Director who informs and communicates with the Board of Directors and he is the closest man to see how senior managers are doing in the organization. It is amazing that the incapability of one key person pops up all of a sudden after many years of service. There is one question that rises above others. Is this man the only person to blame or was he actually the right person to be blamed at all?

There were two capable pilots, with a lot of experience in safety management, who offered to prepare a safety management system for Finnpilot very cheaply. The senior managers of Finnpilot denied to accept this offer and informed that they were planning give the assignment of the safety management system to some student from maritime school that could make it as his bachelor's thesis.
These comments and expressions of opinion from senior managers are reflecting ignorance of safety management system and they have caused that Finnpilot has not that System yet. Without a Safety Management System Finnpilot is lacking transparency towards customers, authority and even its owners.

How do the possible ways to organize pilotage differ from each other?

Safety management
It is only private pilot organizations, in the reach of this research, which have already adopted a Safety Management System for Pilots. The Dutch pilot organizations have their System working and Baltic Pilot in Finland has their system available and ready.

The governmental pilot organizations are coming a little bit after the private organizations, but they are already taking their firsts steps to build up Safety Management Systems. In Norway they are right now building up their own System. The governmental DanPilot in Denmark had invited representatives from Dutch pilot company to give a presentation about ISPO standard and this spring in 2010 the representatives from DanPilot are invited to the Netherlands to see how the System is working there in practice.

Finnpilot has got a new Pilotage Director and hopefully gets also a new start to

build up the Safety Management System.

Training and Education
Training and education is an important part of a Quality Assurance System and also the Safety Management System. In the Netherland training and education are included in their both quality systems. In Denmark they are following also resolution A.980 from IMO with refreshment courses etc. including simulator training and lessons on different subjects. In Norway they have quite comprehensive education and training program. Safety Management System would certainly be the key factor regarding the continuity in training and education also in Finland.

Aging and retirement
It is very common in most of the countries that pilots have to renew their medical certification every second year. In Norway the aging is taken into consideration so that pilots over 50 years have to renew their medical certificate every year.

The lowest retirement age, that is 55, is in the Netherlands. Nowadays they have a time window from 55 years to 60 years for pilots to retire. The longer you work the more money you get when retired. Usually the Dutch pilots retire at the age of 60. In the Netherlands there have been discussions about widening the window even further to 62 or even to 65. In Norway the pilots will retire at age of 65. It is the highest of all within the reach of this research. Recently there have been some discussions in order to lower the retirement age in Norway. In Denmark there is a time window for retirement from 60 to 67 years. In Finland there are still pilots who can retire at age 55 but the new pilots have the general retirement age which is 63. This is one question that has to be solved somehow in near future. Finnpilot has not been active on this issue.

Recession and service obligation
Finnpilot was the only pilot organization, within the reach of this research, that due to the recession had to lay off and even fire its pilots. Some of the intended laid offs were later cancelled in order to manage with the traffic. This gives an indication that the laid offs were over dimensioned. In Norway they took in less pilot apprentices than planned in advance. In Denmark they say that it is important to wait until the traffic goes up again. It takes for a pilot 2 years and 3 months to get a full pilot licence in Denmark. In the Netherlands it is not possible to fire or lay off pilots because they are the owners of the company and it takes from 6 to 10 years for a pilot to become fully licensed.

Finland was the only country where ships had to wait longer than normally to get a pilot because of the lay offs and dismissals. Captain Hannu Lukkari, who is a Member of the Board of Directors, gave the following figures: Altogether 197 ships had to wait for some period of time to get a pilot during the time when the layoffs and dismissals were on. 98 ships did not get the pilot within 2 hours. The layoffs lasted from spring 2009 to the end of the year. In previous years these figures have been as follows 2005: 14 ships, 2006: 12 ships, 2007: 7 ships, 2008: 14 ships.

In Finland the pilot provider Finnpilot has two hours so called 'service

obligation'. It means that a ship must get a pilot within two hour from the time of pilot order. The service obligation is anyhow more or less indicative and is not legally binding. In Norway vessels normally get pilot within an hour of the time the pilot is ordered. This requires however that the pilot has been ordered at least 24 hours in advance. In Denmark they try to offer pilot 'just in time'. In the Netherlands the competition authority is saying that the pilot company is delivering too much service because by the law they should deliver pilot within two hours and in average they deliver in an hour and a half.

In Finland it was the customers and the pilots who had to pay for the recession. The senior managers of Finnpilot were not laid off during to the recession. They only changed their vacation money to additional leave.

This recession in 2009 was global and hit certainly hard all pilot organizations. In Finland it was the first time in history when pilots were dismissed or laid off and who knows when the same happens again.

Profits and losses

DanPilot is a non-profit organization and during the last two years they have made a loss of about 50 million Danish crones per year. They have analyzed the reasons for the losses thoroughly and made a plan for the next ten years in order to get rid of the losses. Last October 2009 all the pilot fees were raised by about 19%. No profit no loss is the goal in DanPilot.

In the Netherlands all pilots are shareholders so instead of salary they get their share of the profit. There is always a profit and it is depending on the economical situation or success of the main ports. This is the macro side. It states how many ships you get and you can hardly steer on that. But by deciding how many pilots you've got to do the job gives you a small thing to steer your own share and profit for each year.

In 2009 Finnpilot made loss first time since it was founded and that led directly to lay-offs, dismissals and also caused that ships had to wait more than normally. These actions were made though the government gives its guarantees that Finnpilot can not be forced to bankruptcy. All other years, except 2009, Finnpilot has made profit but according an agreement Finnpilot gave out a part of the gained profit to the government. This money was not returned back now when it was needed.

Pilot job's attractiveness and recruitment

In Norway pilotage is an attractive profession. Pilots work about 20 weeks per year plus some overtime and the salary is about 100 000 Euros a year. Until now it has bee relatively easy to recruit pilots. However during the recent years it has been more difficult than it was before. The reason for this is probably the general lack of navigators all over the world.

Pilot job is an attractive job in Denmark. Job inside the governmental DanPilot is more popular than private. Pilots have good salaries and that is certainly one reason why pilot job is considered as attractive.
It is still easy to recruit pilots in Denmark, but in 5-8 years there might be shortage of applicants.

In the Netherlands a job as a pilot is also attractive because you have a system where you are still at home at regular basis with your family and your social network. They are paid well and you can influence on your earnings. It is getting more difficult to recruit pilots now and the reason for this is that the youngsters don't want to go to sea anymore. Dutch pilot company has started a program to recruit new pilots and also investing money to encourage youngsters to go to nautical college or to sea in order to become pilots later on.

Results of Finnpilot's job satisfaction survey in 2010:
What could be the reason for the declining trend and bad figures regarding the realization of Finnpilot's values at work?
From the scales you can see that Finnpilot was rather unsuccessful to meet its stated values already from the beginning of its foundation and the trend has been declining thereafter.
Even the 'safety' has a falling trend and its score in 2010 has dropped between poor and moderate (slightly under moderate). Safety is the only product that Finnpilot is making and selling.

All the other named values; respect, cooperation and development had also falling trends and the scores were not good at all. 'Respect' scored between poor and moderate, 'Cooperation' scored between very poor and poor (well under poor). 'Development' scored between poor and moderate (almost poor).
.
The 'job satisfaction surveys' show clearly the lack of trust and confidence towards the senior managers and their way the run Finnpilot.

Finnpilot is going towards the authoritarian leadership although there are lots of unused resources, for example in skilful pilots, in hand. There are more and more leaders and 'bosses' which are 'planning' behind the doors or keeping their meetings. This was not usual in the past. It is a phenomenon that has come along with Finnpilot. The transparency and the transfer of information are poor. This can clearly be seen from the 'job satisfaction survey's' scores for communication and the flow of information towards employees.

The response rate of "job satisfaction survey" among the employees in the Finnpilot's Pilot Order Centre has dropped dramatically from the survey made in 2008 (about 70%) compared to latest survey in 2010 (about 30%). When asking what the reason for the low response rate was, answer was that they are lacking possibilities to participate in the development of their work. Another reason increasing frustration among operators in the Pilot Order Centre was the invention of new 'bosses' without much actual power to make decisions. These 'bosses' are acting like buffers between Finnpilot's senior managers and operators in the Pilot Order Centre. It is easy to understand that a small group, like the operators of Finnpilot's Pilot Order Centre, can loose their trust to participate and influence on things by answering to 'job satisfaction survey' after so many years of trying.

Bigger groups, such as pilots and pilot boat drivers, still believe in their opportunities to influence on decision making. They feel it especially important now in front of the possible change of the entire pilot organisation as well as the new Pilot Act.

After reviewing the job satisfaction survey the new Board of Director's decided to hire a consultant to solve problems.

Working times

In Norway normally the maximum work periods on is not more then 14 - 18 days and it is followed by 3 or more of weeks off. Pilots work 20 weeks per year. During 24 hours on watch the pilots are not allowed to work more then 12 hours including the travelling time between the missions. One of the resting periods must be at least 8 hours.

In Denmark pilots have 153 working days per year plus 12 on standby. Maximum working hours per day are 13 hours. A pilot can have maximum 3 nights per shift and the following night will be rest. Night time is time between 2200-0600 hours and if pilot works more than 3 hours within that time window it is counted as one night. Maximum time outside 'own bed' is 96 hours. This rule is made mostly for sea pilots. When a pilot goes for example from Skagen to Bornholm and back from Bornholm to Skagen you can do only 96 hours. After that the pilot must have one rest period at his home address." On long voyages there can be two pilots onboard at same time.

In the Netherlands pilots are all shareholders and they discuss among themselves how they want run the system and with how many pilots. The Dutch pilot company has 100 000 vessel movements a year and they have to get all vessels in and out with 400-450 pilots. How this is arranged is decided by pilots themselves.

In Finland pilots work one week and then they have one off. The consecutive working hours may not exceed 16 hours. This means that in Finland we have by far the longest possible working hours.

Pilot liabilities

In Denmark each pilot has insurance. It is written down in a new Pilot Act. Also the private pilots must have insurance according to the Act.

In the Netherlands liabilities have been laid down in the Pilot Act. Pilots are only liable in case of gross negligence or if something have been done on purpose. All shipowners have insured themselves in P&I Clubs for year around for all risks and this is certainly the cheapest and smoothest way to have it.

In Finland Finnpilot is sheltered against pilot liabilities by the law but its does not give shelter to shipowners. The private Baltic Pilot was able to arrange its pilot liabilities with an insurance company, so it must be possible for others as well.

The previous examples show, that the liability of the pilot is an important issue, but it has been solved in all types of pilot organizations. Therefore it can certainly be solved in Finland as well.

Are there any possibilities to combine pilot job with some other activities in future?

Only in few cases pilots were doing something else but piloting.
In Denmark and Norway few pilots had administrational tasks in addition to piloting. The Rotterdam pilots in the Netherlands work together with VTS occasionally. In England, especially in small places, pilots had additional tasks such as harbourmaster etc. and this is getting more common there.

In general we can say that at present pilots in most of the countries are only piloting. It seems that the other tasks are rear and they have only been increasing at some smaller places in England.

These two examples of extensions to job structure have occurred in countries like United Kingdom and the Netherlands where the private pilotage is accepted. One could ask, if private pilotage is rather opportunity than danger to the pilotage in future.

7 Conclusions

Pilotage is an essential part of the maritime safety structure and needs a Safety Management System with both inner and outer audits. This requires anyhow that both the pilot administration and the pilots in the field accept the facts above and work hard to make the system operational.
Safety management isn't actually a new invention. In sports you can also find such systems. For example in boxing you have referee inside the ring acting as a kind of inner auditor and then there are from 3 to 5 judges outside the ring acting as outer auditors. There are three ways to win or loose. Victory or defeat is achieved if the opponent is knocked out and unable to get up before the referee counts to ten (sinking ship or total loss). The second way to win or loose is that the opponent is deemed too injured to continue (non conformities and hazardous occurrences). If there is no stoppage of the fight before an agreed number of rounds, the winner is determined by the judges' scorecards. Before the fight the boxers must be well trained and also properly certified.
Boxing is a disciplined sport compared to street fighters without any rules. We all know what happens to street fighters. They have no chance because there are no rules or audition. It is not desirable that a pilot organization shares their destiny. It is better to stand on a safe side and have Safety Management System.

What are the advantages of the Safety Management System in pilotage? First of all it introduces a transparency. By having a Safety Management System (SMS) the pilot organization can say that they render quality service and also prove this true through the outer audits.
Another new thing with Safety Management System is that it identifies pilot organization be responsible for the leading of the Safety Management System by clear demonstrations of support and commitment from the top level of management. These responsibilities include also recruitment and training policies and the development of plans for key shipboard operations.

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Another new thing with Safety Management System is that it identifies pilot organization be responsible for the leading of the Safety Management System by clear demonstrations of support and commitment from the top level of management. These responsibilities include also recruitment and training policies and the development of plans for key shipboard operations.

Both the transparency and the commitment from the top level of management regarding safety management are clear weaknesses in Finnpilot. The reason for this is most likely the ignorance of the safety management among the top management.
Two pilots, who were familiar with safety management, offered many years ago to do the Safety Management System for Finnpilot but they were rejected by the top management.

It is time to get rid of the 'cowboy mentality', where 'tough guys' handle problems without preliminary planning. Pilotage is a dynamic process with multitude of factors involved. There is not too much time or resources when something unexpected occur and even less of these when unexpected factors are many and occur at same time. Many of those factors can be solved and controlled in advance before the actual piloting.
A good Safety Management System prevents the 'holes in cheese slices'-effect occurring. This means that less unexpected factors are met at same time.

This study has revealed the need to increase awareness and knowledge among Finnpilot's senior managers. The Nordic Master in Maritime Management exam at the Chalmers University of Technology can be recommended to the Managers of Finnpilot. This education includes and enlightens many important and essential subjects for leaders such as strategy, safety management, economy, maritime law, environment, human factors, and intercultural communications etc.
Before these Nordic Master in Maritime Management (Master of Science) studies the author of this master thesis upgraded his previous Master Mariner examination from College level to University (Bachelor) level in Kotka. It was also rewarding. There were about 24 students who started with that education, including a lot of authorities from the Maritime Administration and many of them were high-level senior officials. The requirement for a university degree is one important reason why governmental officials attended into this education. Unfortunately the author has been so far the only one who has graduated from this education. This education would have also been useful for Finnpilot Managers with College Master Mariner background. The Education included for example safety management, environmental law, advanced English and Swedish etc.
These two possibilities to study offer also an opportunity and skills to build up networks with other stakeholders in the same branch and even abroad.

The long lasting descending trend regarding Finnpilot's 'job satisfaction survey' reveals that neither the senior managers nor the Board of Directors has been able to make a change on it. At present situation one can ask if the prevailing structure of management is the best possible or even satisfactory.

7.1. Future researches

We certainly need strategy and planning in pilotage especially here in the Baltic Sea, which is getting more and more crowded. In addition, to the increasing traffic, the fact that the Baltic Sea is rather young and closed sea makes it even more vulnerable. In Finland we have one of the most beautiful coastlines with archipelago but at same time the fairways might be the most difficult to

navigate. Even these facts make the Safety Management System with both inner and outer audits important. To build up a Safety Management System for pilotage is an important project for the future in Finland.

The relationship and cooperation between the pilot organisation and the VTS or even with other maritime actors is an important issue to be considered and discussed. Deeper cooperation between pilots and VTS could make for example the shore based pilotage possible in some cases and also improve VTS's role as a maritime coordinator.

Risk Management is a part of safety management and an important topic for future researches as well.

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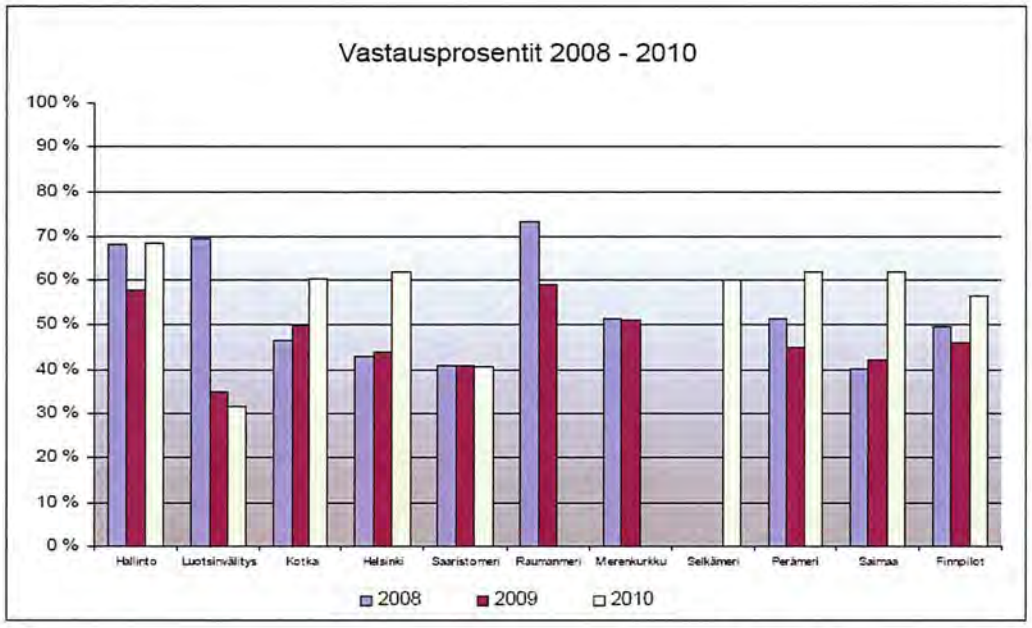
Appendix

Appendix 1:"Job satisfaction survey". Työtyytyväisyyskysely. Finnpilot 2010.
Appendix 2: "Rules for Pilot Organisations" Det Norske Veritas 1997.

Finnpilot
Job satisfaction survey 2010

4 = totally agree
3 = partly agree
2 = partly disagree
1 = totally disagree

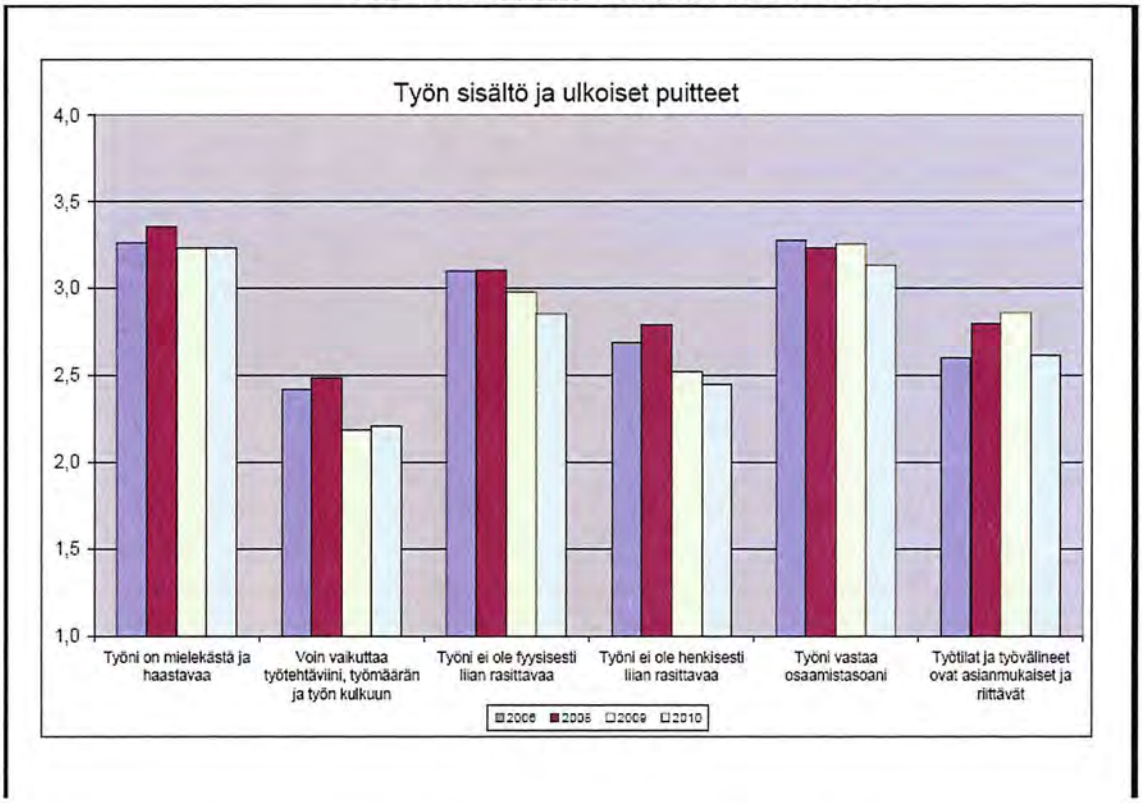
Response rate 2008 – 2010



Hallinto = Adminstration
Luotsinvälitys = Pilot Order Centre
Kotka
Helsinki
Saaristomeri = Archipelago Sea
Raumanmeri = Sea of Rauma
Merenkurkku = Quark
Selkämeri = Bothnian Sea (southern part of Gulf of Bothnia)
Perämeri = Gulf of Bothnia (northern part)
Lake Saimaa
Finnpilot

2009 Quark and Sea of Rauma were merged and Bothnian Sea Area was founded

Job content and external framework



Työ on mielekästä ja haastavaa = Job is meaningful and challenging

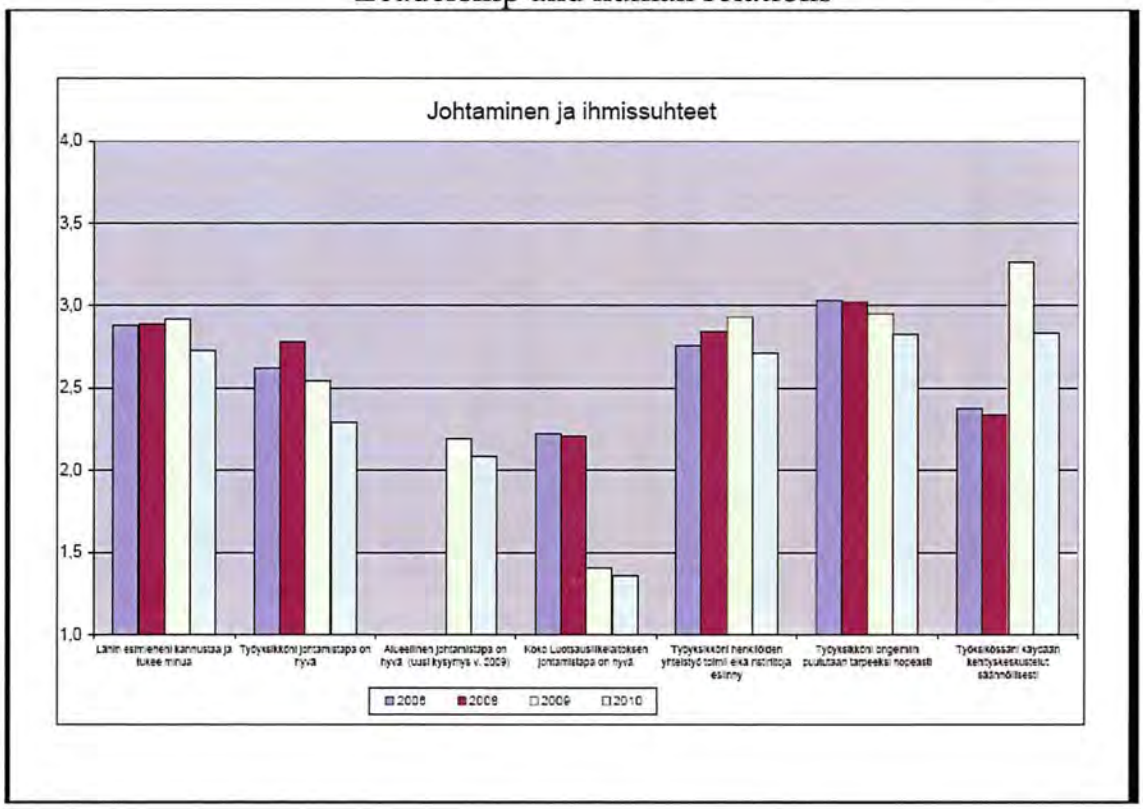
Voin vaikuttaa työtehtäväviini, työmäärän ja työn kulkuun = I can influlence my work, workload and workflow

Työni ei ole fyysisesti liian rasittavaa = My work is not physically too hard

Työni vastaa osaamistasoani = My work corresponds to my skills

Työtilat ja työvälineet ovat asianmukaiset ja riittävät = Working- places and tools are appropriate and adequate

Leadership and human relations



Lähin esimieheni kannustaa ja tukee minua = My nearest boss encourages and supports me =

Työyksikköni johtamistapa on hyvä = Governance of my working-unit is good

Alueellinen johtamistapa on hyvä (uusi kysymys 2009) = Regional governance is good

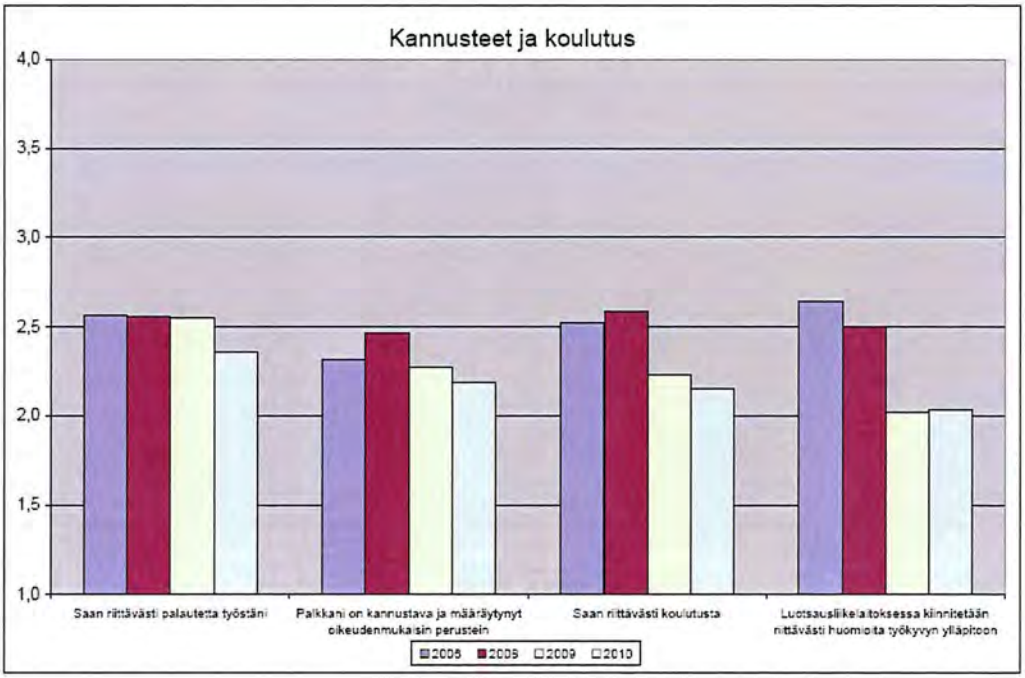
Koko luotsauslaitoksen johtamistapa on hyvä = Governance of whole Finnpilot is good

Työyksikköni henkilöiden yhteistyö toimii eikä ristiriitoja esiinny = In my working-unit peole co-operates and no conflicts occur

Työyksikköni ongelmiin puututaan riittävän nopeasti = In my working-unit the problems are tackled quickly enough

Työyksikössäni käydään kehityskeskustelut säännöllisesti = In my working-unit development discussions take place regularily

Incentives and training



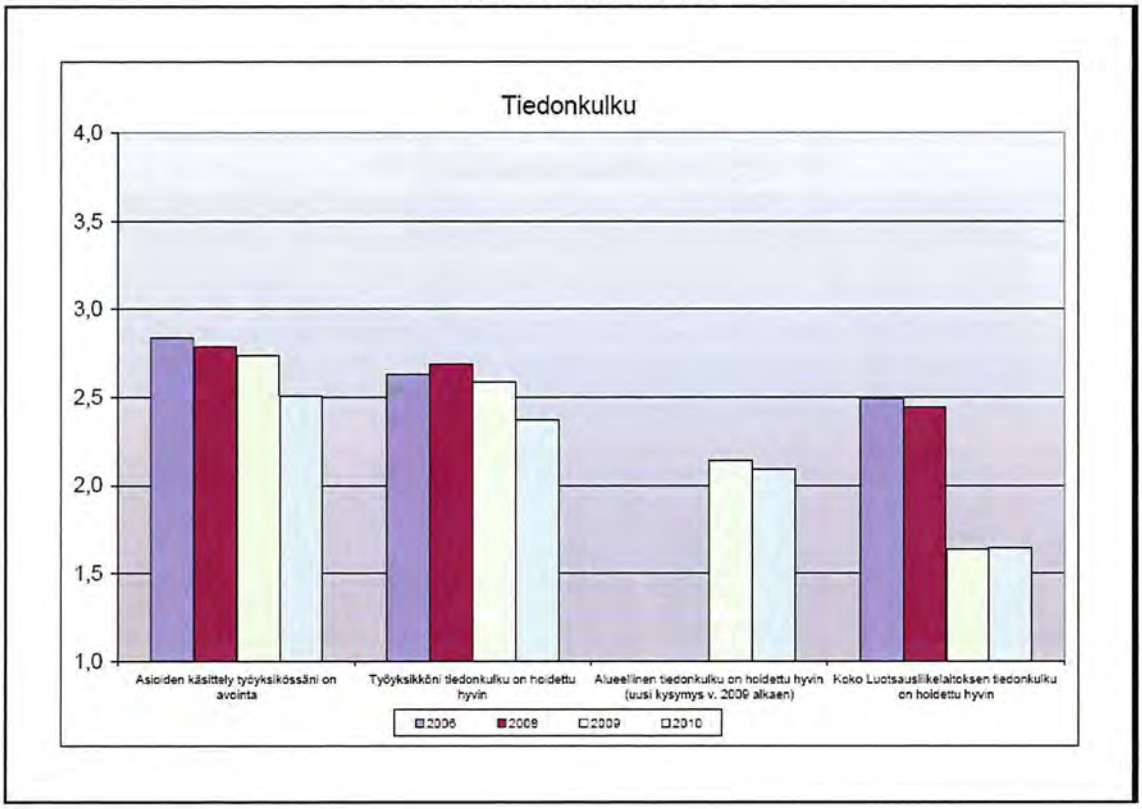
Saan riittävästi palautetta työstäni = I get enough feedback on my work

Palkkani on kannustava ja määräytynyt oikeudenmukaisin perustein = My salary is incentive and is determined on fair basis

Saan riittävästi koulutusta = I have enough training

Luotsausliikelaitoksessa kiinnitetään riittävästi huomiota työkyvyn ylläpitoon = Finnpilot devotes adequately attention to the maintenance of work ability

The flow of information



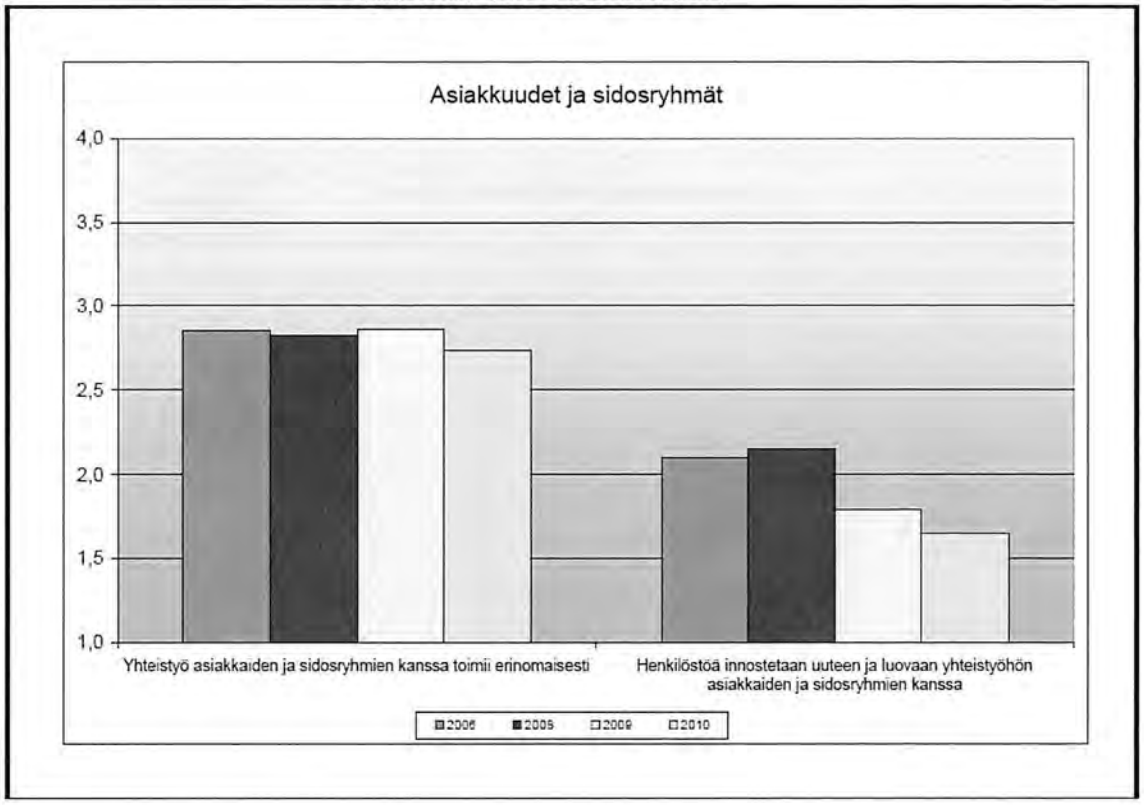
Asioiden käsittely työyksikössäni on avointa =

Työyksikössäni tiedonkulku on hoidettu hyvin= In my working-unit the flow of information is done well

Alueellinen tiedonkulku on hoidettu hyvin (uusi kysymys 2009) = The regional flow of information is done well

Koko luotsausliikelaitosen tiedonkulku on hoidettu hyvin = The flow of information of whole Finnpilot is done well.

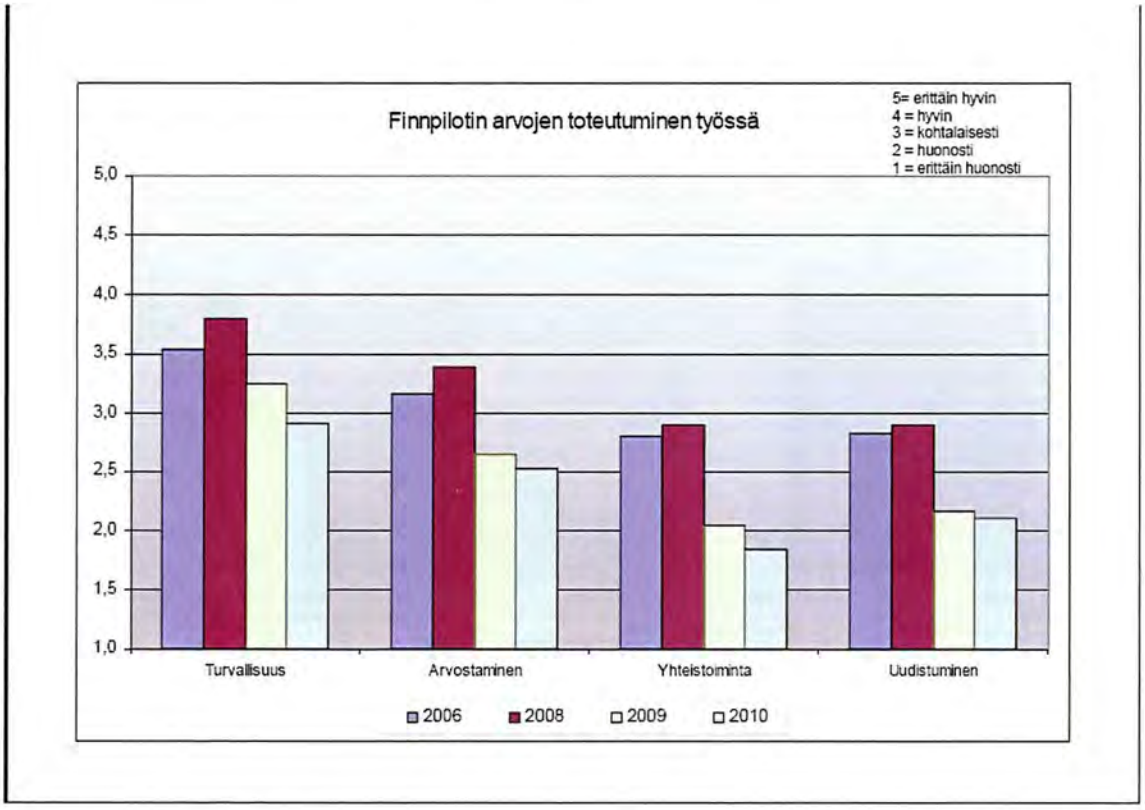
Clientele and stakeholders



Yhteistyö asiakkaiden ja sidosryhmien kanssa toimii erinomaisesti = Cooperation with customers and stakeholders is exellent

Henkilöstöä innostetaan uuteen ja luovaan yhteistyöhön asiakkaiden ja sidosryhmien kanssa = Staff is encouraged in new and creative collaboration with customers and stakeholders

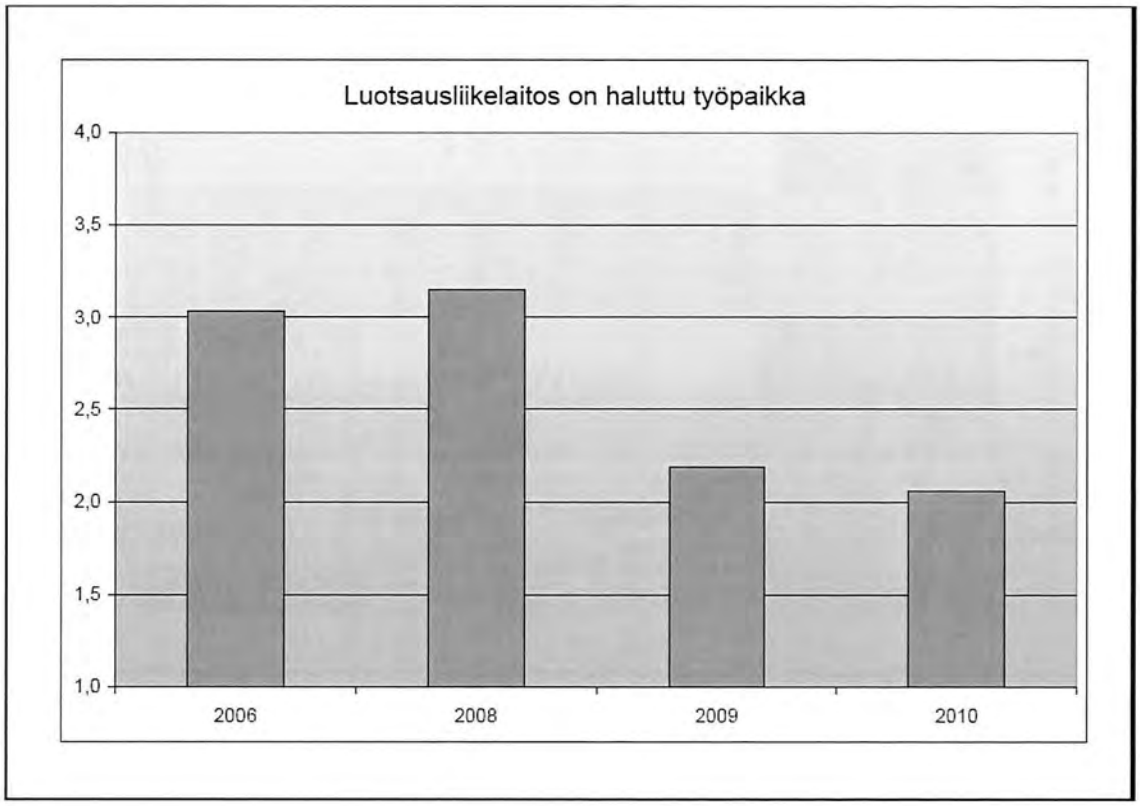
Implementation of Finnpilot's values at work



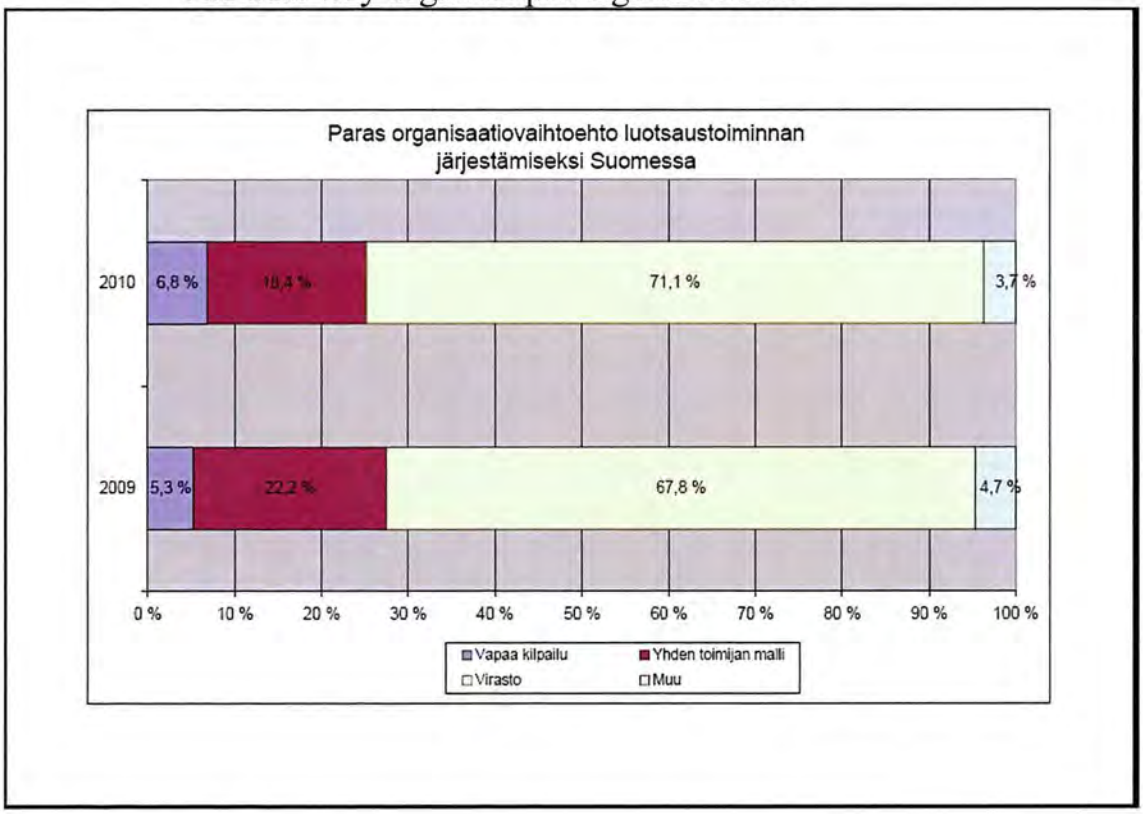
5= erittäin hyvin = very well
4= hyvin = well
3= kohtalaisesti = moderately
2= huonosti = poorly
1= eritäin huonosti = very poorly

Turvallisuus = Safety
Arvostaminen = Respect
Yhteistoiminta = Collaboration
Uudistuminen = Development

Finnpilot is a desired job provider



The best way organize pilotage in Finland



Vapaa kilpailu = Free competition

Yhden toimijan malli = Single operator model

Virasto = Governmental Office

Muu = Something else

RULES FOR PILOT ORGANISATIONS

JULY 1997

SECTIONS PAGE

DET NORSKE VERITAS
Veritasveien 1, N-1322 Høvik, Norway Tel.: +47 67 57 99 00 Fax: +47 67 57 99 11

Det Norske Veritas is a free-standing, autonomous and independent Foundation with the object of safeguarding life, property and the environment at sea and ashore.

Det Norske Veritas AS, a fully owned subsidiary Society of the Foundation, undertakes classification and certification and secures the quality of ships, mobile offshore units and fixed offshore installations, facilities and systems, and carries out research in connection with these functions. Moreover, the Society, provided its integrity is not impaired, may perform assignments which utilize its knowledge or which contribute to develop knowledge that will be required for the performance of these assignments.

The Foundation was established in 1978 as a direct continuation of the association Det Norske Veritas which was established in 1864.

This new rule booklet was approved by the Board in June 1997.

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7.07.2000

CONTENTS

SECTION 1
APPLICATION AND CERTIFICATION

Contents

A. Scope and Application

A 100 Scope

101 These rules stipulate requirements for Pilot Organisations to ensure safety, environmental protection and quality of the pilotage operation. The objective is to ensure that the services offered are adequately defined, documented and contain clear objectives as to the safety, environmental protection, quality, carried out by qualified pilots and are evaluated and improved in line with market demands and experience.

102 The Pilot Organisation may include company objectives exceeding, and in addition to those covered in these rules.

103 The Pilot Organisation is to comply with additional mandatory requirements which are not covered by these rules.

A 200 Application

201 These rules are applicable to all Pilot Organisations offering pilotage services.

B. Certification

B 100 Certificates

101 Pilot Organisations which comply with the requirements of these rules may receive a certificate for "Pilot Organisation".

102 The "Pilot Organisation" certificate will be given a validity of 5 years. Provided that the results from periodical audits are satisfactory, the certificate may be renewed.

C. Certification Principles

C 100 General

101 The certification will include:

— assessment of the documentation of the Management System
— implementation audit
— annual periodical audits for retention of certificate.

C 200 Assessment of the documented management system

201 An assessment of the documented Management System is performed in order to verify compliance with the requirements in these rules, and if applicable, additional company requirements and trade specific requirements. Corrective actions are to be taken to possible non-conformities.

C 300 Implementation audit

301 An implementation audit is performed to verify compliance between the documented system and the implemented system.

302 Possible non-conformities will be reported in writing to the Pilot Organisation's management, or its representative. Corrective actions are to be taken to possible non-conformities. When the corrective actions are agreed upon, implemented and closed out - certification will be recommended.

C 400 Periodical audits for retention of certificate

401 Periodical audits are carried out according to established procedures to ensure that the system is being maintained in a satisfactory manner during the period of validity. Frequency and the audit programme will be established with the Pilot Organisation on the basis of a minimum of one audit per year.

402 Possible non-conformities will be reported in writing to the Pilot Organisation's management, or its representative. Corrective actions are to be taken to possible non-conformities. When the corrective actions are agreed upon, implemented and closed out - certification will be maintained.

D. Definitions

D 100 General

101 *Pilot Organisation:* An organisation, or its representative, providing pilotage services to ships and other parties requesting their services. Such services could be, but not limited to:

— deep sea pilotage
— coastal pilotage - assisting ships between local pilotage areas
— sea pilotage, conducting ships from sea to port and vice versa
— inner or river, canal and docking pilots, handling vessels in rivers, ports and harbours.

102 *Pilot:* A person carrying out pilotage duties, and who holds an appropriate pilotage certificate or licence issued by competent authority.

103 *Finding:* Used to denote a statement issued by DNV of non-compliance with the requirements of these rules.

104 *Non-Conformity Category 1 (Major):* Total absence of a required rule element/function or a group of Category 2 Non-Conformities within same element.

105 *Non-Conformity Category 2 (Minor):* An isolated deficiency of implementation of a rule requirement or control.

106 *Comment:* Proposals or suggestions for improvement of the quality system (the Pilot Organisation is free to follow the comment, or select other solutions).

E. Minimum Requirements for a Pilot Organisation

E 100 General

101 Objectives as stated in the Management System are to, as a minimum:

- provide for safe practices during the whole pilotage operation, including pilot boat operation, embarkation, disembarkation and the pilotage of the ship
- establish safeguards against all identified risks
- continuously improve competence of pilots and administration staff ashore, including preparing for emergencies related to safety and environmental protection
- comply with national and local rules and regulations.

SECTION 2
GENERAL REQUIREMENTS

Contents

A. Management Responsibility

A 100 Policy

101 The Pilot Organisation's management is to define and document its policy and objectives for, and commitment to safety, environmental protection and quality. The policy is to be relevant to the Pilot Organisation's objectives and expectations and requirements from external parties.

Guidance note:

External requirements could be, but not limited to:

— national regulations
— international regulations
— relevant standards and guidelines
— customer requirements - short and long term.

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102 The Pilot Organisation is to ensure that this policy is understood, implemented and maintained at all levels of its organisation.

Guidance note:

The policy is to be signed by the head of the organisation as an indication of commitment from the top level.

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A 200 The duty of the pilot

201 The duty of the pilot is to be defined and documented.

Guidance note:

The pilot should have a clear understanding that he is onboard the vessel to provide a service by assisting the Master in communication, navigation and manoeuvring of the vessel.

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A 300 Code of conduct

301 The Pilot Organisation is to establish procedures for Code of Conduct for it's pilots.

Guidance note:

The pilot should try to create good working relations with the master and his bridge team. A positive attitude enhances communication which is vital for effective resource management.

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A 400 Co-ordination of safety, environmental protection and quality

401 The Pilot Organisation's management is to appoint a member of its organisation (Management Representative) who, irrespective of other responsibilities, is to have defined authority for monitoring the safety, environmental protection and the quality aspects of the pilotage services. The representative is to have defined authority for:

— ensuring that a documented Management System is established, implemented and maintained in accordance with these rules
— monitoring of the safety, environmental protection and quality aspects of pilotage and to ensure that adequate resources and shore based support are applied, as required
— reporting on the performance of the Management System to the Pilot Organisation's management for review and as a basis for improvement of the Management System
— when performing these functions, the Management Representative (MR) is to be independent of any other functions or activity in the organisation, unless this is impractical due to the size and structure of the organisation.

402 The Management Representative, or other dedicated person with relevant background and experience shall participate in at least one calibration audit with the pilot station's pilots.

A 500 Management review

501 The Pilot Organisation's management is to review the Management System at defined intervals sufficient to ensure its continuing suitability and effectiveness in satisfying the requirements of these rules. Records of such reviews are to be maintained.

Guidance note:

The management is to review the system at least once a year to ensure its continuing suitability and effectiveness. Such reviews are to be carried out by appropriate members of the Pilot Orga-

nisation or by competent personnel from outside the Pilot Organisation as decided on by the management.

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B. The Management System

B 100 The documented management system

101 The Pilot Organisation is to establish, document and maintain a Management System as a means of ensuring that services conform to internal and external requirements. The organisation is to prepare a manual system covering the requirement(s) of these rules. The documented system is to include or make reference to system procedures and outline the structure of the documentation used in the Management System.

Guidance note:

Generally, a manual system consists of:

- a main manual (or section) including the organisation's policy and objectives and a brief description of the Management System
- documented procedures. Documented procedures may make reference to work instructions, checklists or guidelines that define how an activity is performed
- checklists and forms.

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B 200 Documented procedures

201 Documented procedures are to be consistent with the requirements of these rules, mandatory requirements and the organisation's stated policy and objectives.

B 300 Implementation

301 The Pilot Organisation is to define how the Management System and it's procedures will be implemented.

B 400 Planning

401 The Pilot Organisation is to define and document how the requirements for safety, environmental protection and quality will be met in order to satisfy future demand and requirement(s) from internal and external parties.

Guidance note:

Future demand can be based on:

- accidents/incidents
- traffic volume (past and present)
- customer demands/complaints
- new national and international regulations.

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C. Document and Data Control

C 100 General

101 The Pilot Organisation is to establish, document and maintain a Management System as a means of ensuring that pilotage operations conform to specified requirements. A manual or manual system is to be prepared covering and including all activities which may affect the safety, environmental protection and quality.

Guidance note:

For those Pilot Organisations who operate in waters covered by a Vessel Traffic System (VTS), documented procedures are to be established covering communication procedures with the VTS centre, or others as seen necessary.

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102 The Management System is to include or make reference to procedures affecting the overall safety, including emergency situations, environmental protection and quality of pilotage operations and outline the structure of the documentation used in the Management System. The following is to be included:

- documented procedures consistent with the requirements of these rules as well as the Pilot Organisation's stated objectives and policies
- a description on how to effectively implement the Management System and its documented procedures
- the Pilot Organisation is to define and describe all relevant activities in meeting the specified requirements for development, maintenance and updating of the Management System.

Guidance note:

This could be, but not limited to:

- procedures for the day to day operation
- procedures for operations defined as critical, i.e.:
  - poor weather conditions
  - poor visibility
  - extreme wind or current conditions
  - large ships entering for the first time
  - other non-standard operations where safety margins are small
  - new ship types with restricted manoeuvrability
- checklists
- standard form(s)
- standard guidelines and/or standards
- emergency situations.

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C 200 Document and data control procedures

201 The Pilot Organisation is to establish and maintain documented procedures to control all documents and data related to the requirements of these rules.

202 The documents and data are to be reviewed and approved for adequacy by authorised personnel prior to issue. A master list or equivalent document control procedure identifying the current revision status of documents is to be established and readily available to preclude the use of invalid and/or obsolete documents and data. The control is as a minimum to ensure that:

- pertinent issues of appropriate documents/data are available at all relevant locations
- invalid and/or obsolete documents/data are promptly removed from all points of issue or use, or otherwise assured against unintended use
- changes to documents and data are to be reviewed and approved by the same functions that performed the original review and approval, unless specifically designated otherwise
- up-to-date documents are available as necessary to meet requirements.

Guidance note:

At least one full set of manuals should be placed so that they are accessible for everyone in the organisation.

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203 Arrangements are also to include:

- clear identification of which information is controlled
- clear responsibility for its upkeep
- ensuring those who need to know the content of documents or data can have access to them.

C 300 Records

301 The Pilot Organisation is to establish and maintain documented procedures for identification, collection, indexing, access, filing, storage, maintenance and disposition of records. Records are to be maintained in order to verify that procedures are followed and are according to the Pilot Organisation's requirements.

Guidance note:

Details may include but not be limited to:

- personnel records containing previous experience, education, evaluation forms and additional courses
- sailing routes
- ship particulars
- ship handling characteristics
- issued PECs (Pilotage Exemption Certificates)
- violated PECs (Pilotage Exemption Certificates)
- Hazmat cargoes (regular calls)
- passage plans (master copies)

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302 Retention times for records are to be defined and documented.

D. Use of External Services and Products

D 100 General

101 The Pilot Organisation is to establish and maintain documented procedures to ensure that purchased services and products conforms to specified requirements.

102 The Pilot Organisation is to maintain records of approved sub-contractors and these records are to be regularly updated. The organisation is to clearly state who has the responsibility and authority to order specified services and materials.

103 Approved sub-contractors may be limited to services and products which have influence on safety, environmental protection and quality.

Guidance note:

This could be, but not limited to:

- safety equipment for the pilot
- personal navigation equipment.

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E. Operational Control

E 100 Planning and preparation phase

101 The Pilot Organisation is to establish and maintain documented procedures for administration and verification of the pilotage planning and preparation phase.

102 The Pilot Organisation is to set a minimum notification time in order to allow the pilot sufficient preparation time for the pilotage. In addition notification procedures in emergency situations shall be described.

103 If relevant, when a vessel enters the pilotage area for the first time, information regarding ship's particulars (draft fore and aft, air draft, engine(s), thruster(s), rudder(s) and manoeuvring characteristics) is to be made known to the pilot station and presented to the pilot prior to boarding the ship. Ship's handling characteristics are to consist of documented zigzag tests, turning circles and other relevant manoeuvring characteristics available.

Guidance note:

a) The Pilot Organisation should keep up to date records of all vessels using it's services. These records should include ship's particulars and characteristics like:
   - maximum draft
   - air draft
   - type and size of engine
   - type of propulsion
   - thruster(s)
   - size and type of rudder
   - manoeuvring characteristics
   - a possibility for pilots to include personal experiences from piloting that particular vessel
   - recommended number of tugs, depending on which port of call in the area
   - length and beam
   - PEC (Pilotage Exemption Certificate)
   - pilot transfer equipment.

   This information can be obtained from the vessel or it's agent.

b) It should be required by the Pilot Organisation that a "Pilotage Passage Plan" simply named the "Passage Plan" to be designed and established. This form, which could be considered as a checklist for the pilot, should provide a basis for the pilot's briefing of the Master/Bridge team and give relevant information regarding local conditions such as:
   - tide
   - weather forecast
   - tug boat positions
   - name, type and bollard pull of tugs
   - name of berth
   - depth and heading of berth
   - intended manoeuvre
   - mooring sequence
   - name of pilot(s)
   - speed regulations
   - areas with draft restrictions
   - passing/meeting procedures
   - communication procedures.

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104 The Pilot Organisation should where possible, establish pre-defined pilotage routes for both in-and out-bound traffic. Where only one way traffic is allowed this is to be clearly stated. All pilotage routes are to be identified by name or number and include courses, waypoints and turning radii.

105 If relevant, the Pilot Organisation is to inform the ship before the pilot boards regarding the route where the pilot intends to navigate the ship, thus shortening the time used for briefing onboard.

106 The Pilot Organisation is to ensure that it's pilots are able to handle all types of vessels requiring pilotage assistance. The Pilot Organisation is to make it known that vessels requiring special attention due to their size, draft or manoeuvring characteristics must notify the Pilot Organisation well in advance so that pilots may receive updating or special training - if relevant or necessary.

107 The Pilot Organisation is to define and document minimum rest periods for its pilots. This is to be in accordance with national requirements.

E 200 Pilot embarkation and disembarkation

201 The Pilot Organisation is to ensure that embarkation and disembarkation takes place under controlled conditions and according to documented procedures, ensuring safe pilot embarkation and disembarkation.

Guidance note:

a) The pilot should board the vessel at a designated boarding area located well away from hazards.

b) If possible, when ordered to an in-bound ship, the pilot should embark early enough to be able to carry out the prescribed information exchange with the Master/Bridge team.

c) Pilot ladder arrangements should be according to IMPA/EMPA rules.

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E 300 Operation phase

301 The Pilot Organisation is to establish procedures for planning and documenting the actual pilotage operation.

Guidance note:

a) The intended route, which should be known by the master/bridge team in due time before the pilot embarks, should preferably be plotted in the ship's chart, thereby

providing means for continuous monitoring of the progress of the vessel. Additional ship specific information not provided by the Pilot Organisation such as "no go" areas, clearing bearings etc. should be added to the route plan by Master/Bridge team. Ships equipped with an ECDIS may display the intended route on this equipment.

b) The pilot should request a pilot-card if not presented with one or if it has not been faxed in advance. He should also be shown the wheelhouse poster and the manoeuvring booklet on request.

c) If practical, the pilot should not start the pilotage operation before completion of briefing the Master/Bridge team. A briefing should include, but not be limited to:

— intended route
— possible anchorage
— possible difficulties due to tide and weather conditions
— where meeting/overtaking should be avoided or not permitted
— position of making fast/letting go of tugs
— intended manoeuvre when berthing/unberthing
— explain if necessary, the Pilotage Concept.

d) The Master should be requested to sign the "Passage Plan" sheet confirming that he has been sufficiently informed regarding local conditions and that he agrees to the route suggested by the pilot.

e) If not required by local rules/regulations to berth the vessel the pilot should ask the Master if he wants to do the berthing/unberthing operation himself, which should be agreed upon during the briefing session. If the Master wants to do the berthing/unberthing operation himself, the pilot should assist him with advice.

f) After briefing the Master/Bridge team, the pilot should request "challenges" from the Master/Bridge team in case of any doubt about the actions taken by the pilot or if a difference in the agreed concept arises. (Challenge in this context means questioning assumptions and actions, not the person, in which a positive response is the norm).

g) If relevant, the pilot should continuously brief the Master/Bridge team during the pilotage about expected traffic conditions and other relevant issues.

h) The pilot should always keep the Master/Bridge team informed about any course and speed changes. This is particularly important when the vessel is steered by autopilot and the pilot is operating the auto-pilot himself.

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302 When two or more pilots are engaged in a pilotage operation, it must always be clear to the Master/Bridge team which pilot has the conduct of the navigation.

303 Where a change of pilots takes place the relieving pilot is to brief the Master/Bridge team using his Pilotage Concept.

304 Any hand over between pilots is to take place on the Bridge of the vessel and include agreed procedures for briefing. The briefing is to include the Master/Bridge team.

305 The Pilot Organisation is to agree upon a common pattern for communicating with tugs. This communication pattern is to be explained to the Master/Bridge team.

F. Pilot Vessels

F 100 General

101 If the responsibility for the pilot vessels lies with the Pilot Organisation maintenance requirements for the vessels must be defined and documented.

102 The responsibility for maintaining the pilot vessels is to be defined.

F 200 Training

201 If relevant, training of crew serving onboard pilot vessels shall be defined and documented.

202 Crew serving onboard pilot vessels shall establish programmes for realistic drills and exercises in order to prepare for emergency situations. The execution of such drills shall be documented.

G. Complaints

G 100 General

101 The Pilot Organisation is to define, document and implement procedures for handling complaints.

102 The responsibility for handling complaints is to be defined.

H. Vessel Traffic Control System

H 100 General

101 For Pilot Organisations operating in an area covered by a Vessel Traffic System (VTS) it is required that communication procedures are established for communicating with the VTS centre.

Guidance note:

The Pilot Organisation should establish documented communication procedures to be used between the pilot and the VTS centre.

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I. Verification of Services

I 100 General

101 The Pilot Organisation is to establish and maintain documented procedures for control activities in order to verify that specified requirements for the services provided are met. The required verification and the records to be established, are to be detailed in the Management System.

Guidance note:

Pilots are usually engaged to conduct the navigation in confined waters and to facilitate port approach, communication, berthing and unberthing. Their knowledge may include:

— local navigational knowledge
— expertise in ship handling
— understanding of local traffic
— ability to anticipate effects of tide, currents and wind
— expertise in use of local tugs
— expertise in communication with port authorities, other traffic, coast guard, VTS and others.

Verification in this context means that for example the Master signs and confirms on the pilotage bill that he has received the assistance required.

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J. Non-Conformities, Accidents and Hazardous Occurrences

J 100 General

101 The documented Management System is to include procedures for ensuring that non-conformities, accidents and hazardous situations are reported to the Pilot Organisation

and to the extent applicable also to the authorities and to the customer. Investigation and analysis is to be performed with the objective of improving quality, safety and pollution prevention.

J 200 Corrective action

201 The Pilot Organisation is to establish procedures for the implementation of corrective action(s).

K. Internal Safety and Quality Audits

K 100 General

101 The management is to carry out internal safety and quality audits to verify the implementation of the Management System and to determine the effectiveness of the system.

102 The audits and follow-up actions are to be carried out in accordance with documented procedures.

103 The results of the audits are to be brought to the attention of personnel having responsibility of the area audited. The management personnel responsible for the area audited is to take timely corrective actions on the deficiencies found during the audit.

104 The audits are preferably to be carried out by personnel not directly involved in the area audited.

K 200 Audit plan

201 The audit plan is to cover the following items:

- the specific area and activity to be audited
- the qualifications of personnel carrying the audit
- the basis for carrying out the audit (e.g. organisational changes, customer complaints, serious accidents/ incidents and new regulations)
- procedures for reporting non-conformities and recommendations.

K 300 Audit findings and follow-up

301 Audit findings, conclusions and recommendations are to be submitted in documentary form for consideration by appropriate members of company management.

302 The following items are to be covered in the reporting and follow-up of audit findings:

- factual evidence of non-compliance or deficiencies and possible reasons for such deficiencies
- appropriate corrective actions
- implementation and effectiveness or corrective actions suggested in previous audits.

303 Records of such audits are to be maintained.

L. Recruitment and Training

L 100 General

101 The Pilot Organisation is to implement procedures to verify the following when recruiting new pilots:

- background
- education
- experience
- qualifications.

All training of pilots, should as a minimum follow national requirements.

Guidance note:

When recruiting new pilots the Pilot Organisation should ensure that candidates are proficient in the English language.

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102 The Pilot Organisation is to establish and maintain a system for identification of training needs for employees.

103 The Pilot Organisation is to establish and maintain a system, ensuring that training activities are planned - in order to meet present and future demands.

Guidance note:

Training requirements could include, but not be limited to:

a) Where a pilot in cases of absence (more than 6 months) from duty is lacking experience in the pilotage area, the Pilot Organisation should satisfy itself that the pilot regains familiarity with the area on his return.

b) In order to ensure the continuous proficiency of pilots and updating of their knowledge, the Pilot Organisation should ensure that pilots are continually updated, as required.

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M. Emergency Preparedness

M 100 General

101 The Pilot Organisation is to establish procedures to identify, describe and respond to potential emergency situations.

Guidance note:

Co-operation between the Pilot Organisation and other responsible maritime parties should be encouraged.

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102 The Pilot Organisation is to establish programmes for realistic drills and exercises in order to prepare for emergency situations.

Guidance note:

Accidents could be but not limited to:

- accidents due to poor pilot ladders
- helicopter accidents
- ship accidents:
  - grounding
  - collision
  - fire
- pollution accidents
- power failure
- steering gear failure.

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103 Communication procedures for reporting and communication with authorities, next of kin, media, customers and other relevant parties are to be established.

104 Instructions are to exist to ensure that the pilot follows the vessel's safety scheme/programme should an emergency arise during the pilotage.