Polarworthiness and Co-operation – Efficient education of risk management for arctic environment

Peter Ivar Sandell, Senior lecturer of Maritime and Commercial law

Satakunta University of Applied Sciences, peter.sandell@samk.fi, Suojantie 2, 26100 Rauma, Finland.

Abstract The Polar Code enters into force and the Maritime Academies and Maritime Universities have a task to train the seafarers and company management facing the implementation into the vessels practice and company practice. The subject of the article is to examine the changes brought by the Polar Code that influence the environmental risk management. The International Maritime Organization IMO is to update the SOLAS, MARPOL and STCW Conventions, to take account of the specific features of the Polar Regions. These updates will take effect at the beginning of 2017. At the beginning of the article there is a short description of Polar Code key issues, as well as a brief explanation of the existing regulation in the Arctic regions from environmental protection point of view.

The effects of the Polar Code were investigated by the term polarworthiness. When the vessels move in region where polar code is effected, new rules will require ships of different things, and their importance to ship's seaworthiness is described in this article in relation to environmental risk management.

Teaching these new issues has potential for co-operation between Maritime Universities. Polar Code implementation is an important issue not just northern shipping companies, but also all companies which consider the use of northern route from Asian markets to Europe in the future.

Maritime Universities can do research and co-operate with the companies already present in the Arctic environment. The co-operation between Universities and companies can and will be used to provide in depth study courses, which can be delivered also to other Maritime Universities through student exchange and seminars. Building a course module for environmental risk management for ice operations will be presented - Company representatives have taken their Master of Maritime Management degree and produced parts of in-depth study course in Arctic Shipping Management based on their research together with Satakunta University of Applied Sciences. The topics presented as examples are STS-operations in the arctic environment, oil pollution response planning in the arctic and DP ice management. The model of using the Master of Maritime Management student´s expertise in creation of new knowledge and use of the alumni organisation in teaching the specialised courses will be presented.

Keywords: Maritime education and training (MET), Polarworthiness, Polar Code, risk management, environmental risk assessment, environmental liability, methods of learning, safety and security, student exchange and co-operation.

1. Introduction

The IMO Polar Code enters into force creating new standard of seaworthiness for Arctic Shipping.

The new code sets the standards of seaworthiness in the Polar context. Implications for maritime contracting (risk management and risk sharing) in the polar environment needs to be addressed by the shipowner´s and their masters. The International Maritime Organization IMO is to update the SOLAS, MARPOL and STCW Conventions, to take account of the specific features of the Polar Regions. These updates will take effect at the beginning of 2017. Polar Code is not an own Convention, but it updates SOLAS, MARPOL and STCW conventions [1].
2. Polar Code raises standards of seaworthiness in the Polar Context

The effects of the Polar Code were investigated by the term polarworthiness. When the vessels move in region where polar code is effected, new rules will require ships of different things. Fitness is a relative term, and implies fitness to the vessel’s working environment: Equipment (propulsion, navigation, safety, cargo, etc.), supplies, number and training of crew, etc. IMO’s Polar Code addresses both technical issues and training issues. Polar Code recognizes the unique nature and risks of the Arctic environment [1].

Polar Codes part on operations and manning relates to navigation (ice conditions, weather). Ship entering polar waters need a specific Polar Ship Certificate and Polar Water Operational Manual. Appropriate basic training for open-water operations and Advanced training for other waters, including ice needs to be created and arranged [2]. The Code provides standards for both polar ready vessels and crews in order for the vessel to be considered Polarworthy.

Specific problems arise when meeting the demands of Polarworthiness. The harsh and fragile environmental conditions create challenges for operation in Polar waters. Lack of infrastructure is a special problem. Especially this consists of lack of navigational aids, lack of bunker facilities and lack of repair facilities. The vessels entering Polar waters need to need to be able to operate more independently than usually. Technical assistance, salvage and ice breaking are services which are not available like elsewhere in more southern levels.

Achieving polarworthiness demands is crucial for ship owners who need to assess their potential risks and liabilities. If the vessel is not seaworthy in arctic conditions the environmental liabilities cannot be limited. The insurance aspects are also related to seaworthiness: If the vessel is not seaworthy in arctic environment, the insurance cover will not be in force or if the safety regulations are breached, according to Nordic Marine Insurance Plan, the insurance will not cover the casualty. The Polar Code is automatically considered as a safety regulation under the Nordic Marine Insurance Plan [3].

Many Nordic ship owners insure their vessels on Nordic standard conditions and for those using these conditions it is enough for their risk management and insurance cover to follow the SOLAS, MARPOL and STCW conventions in version updated by Polar Code rules (as well as other conventions by IMO related to safety of vessels) to be certain that their risks are covered also by their insurance conditions. However, few non Nordic owners use Nordic insurance conditions and in the future many ship owners who will be interested in entering Polar waters will be covered by English law of marine insurance and English Marine Insurance Clauses and conditions.

Seaworthiness in English law may be defined like Tetley: “Seaworthiness may be defined as the state of a vessel in such a condition, with such equipment, and manned by such a master and crew, that normally the cargo will be loaded, carried, cared for and discharged properly and safely on the contemplated voyage.” [4]. In other words, the essential issue is fitness for purpose and carriage relating to the polar and arctic environment. Therefore, the term polarworthiness is the term which we need to address and examine when we concentrate on the specific requirements in risk management for the Polar regions.

What is required of a vessel in order to be polarworthy throughout the voyage? Fitness is a relative term, and implies fitness to the vessel’s working environment and harshness of the conditions to be expected during and throughout the voyage contemplated. When examining the expected fitness in Polar waters the Polar Code concentrates on equipment (propulsion, navigation, safety, cargo, etc.), supplies, number and training of crew, etc. IMO’s Polar Code addresses technical issues and training issues. Polar Code recognizes the unique nature and risks of the Arctic environment and for the first time as a mandatory regulation it creates a standard of seaworthiness specifically for Polar environment which needs to be addressed by the ship owners as a part of their risk management in order to comply the international standards of safety in this region and to held their insurance cover in force throughout the journey. Seafaring is especially risky business. Therefore, the modern insurance system was first established for maritime trade. Risk management in the Polar shipping defines the issue: Who is to bear the risk (of
casualty, cargo loss, damage to the environment or delay) in the Polar context and how can these risks be shared or carved out? Polar Code as well as the other safety conventions is also a tool of risk management: Following the international standards is of utmost importance and procedures in complying with the standards by company procedures is the starting point.

Developing the company procedures in critical issues (relating to Polar environment) in uniform manner is the key element which can be achieved by in co-operations with the education and ship owners risk management professionals as we will examine below in the chapter four in this article. The investment on developing company procedures relating to safety in the arctic regions is a necessity – It has to be also a clear indication of company strategy if the company wants to avoid the negative publicity in using the arctic regions. In Nordic countries we have examples of companies facing severe difficulties with public image and organisations like Greenpeace if the company management has not made a decent risk assessment on the operations in the Polar region. Even though the organisations like Greenpeace do not have that purpose, their actions create environmental concerns when they forcefully enter the offshore platforms or supply vessels or try to prevent them from working in the region.

3. Educating seafarers for the Arctic

IMO gives guidance for implementation of the new Rules [2]. Model courses do not however meet all the demands the shipowner’s and masters are facing in the area. Teaching these new issues has potential for co-operation between Maritime Universities.

Polar Code implementation is an important issue not just northern shipping companies, but also all companies which consider the use of northern route from Asian markets to Europe in the future. The economic advantages are lucrative when using the northern route. This creates possibilities especially for Nordic Maritime Universities in exporting the education and attracts students to choose Nordic Universities as a destination for student exchange. The Nordic Universities should use this challenge and develop their activities to meet this challenge.

As approximately 80% of maritime accidents have human elements involved when casualty occurs in relation to a vessel, the training of the seafarers for the Polar conditions is an important part of Polarworthiness of vessels when the Code enters into force. After 1 January 2017, ships operating in polar waters shall be appropriately manned with adequately trained, qualified and experienced seafarers, taking into account the relevant provisions in the STCW Convention and Code [2]. Amendments to the STCW Convention and Code regarding the training and certification associated to the Polar Code are expected to become effective in 2018. New training guidance for personnel serving on board ships operating in polar waters need to implemented before that. Measures to ensure the competency of masters and officers of ships operating in polar waters has to be created by the Maritime Universities. Training for Masters, Chief Mates and Officers in charge of a navigational watch on ships operating in polar waters is mandatory requirement but the problem is that not all Maritime Universities have enough expertise in teaching the navigation in the Polar waters. The starting point for the training are the international requirements, but several countries have local legislation which need to be implemented in the training requirements when the vessels are about to enter their waters, e.g: Russia, Canada, Norway and the US [2].

When considering the basics of the education needed for Masters and officers in charge of a navigational watch, they should receive basic training or instructions as determined by the Administration on Ice characteristics and ice areas, relevant education on Ship’s performance in ice and cold climate as well as Operating and handling a ship in ice. For masters and chief mates on board ships sailing in Polar waters the following skills are needed in addition: Knowledge of voyage planning and reporting, knowledge of equipment limitations, knowledge of safety, knowledge of commercial and regulatory considerations [2].

The importance of expertise in teaching these topics is essential for the safe operation of those who take the courses. The issue of Polarworthiness in relation to the quality of training will probably be raised in a court - If there will be a casualty. Therefore, we need to think how to achieve the best possible modes
for educating crew for polarworthy vessels? – At least it is the maritime Universities who should take care that if there will be vessels found not to be polarworthy.

It is up to the training institutions to assure the vessels are not breaking the rules on seaworthiness due to indecent training for the Polar environment. The co-operation here is more important than ever before. As most Maritime Universities have no experience at all on training crews for the vessels operating in the arctic, we must share our experiences in a situation when entering Polar waters in the future is lucrative for most ship owners. In this respect I see the IAMU organisation and family of Universities as an important tool for Unification of the training in the years to come.

4. Modes of co-operation for achieving arctic excellence

Maritime Universities in Nordic countries have a huge benefit when they develop education for arctic environment. Many Universities do research and co-operate with the companies already present in the Arctic environment. The co-operation between Satakunta University of Applied Sciences and companies is already used to develop in depth study courses, which can be delivered also to other Maritime Universities through student exchange and seminars. Building a course module for environmental risk management for ice operations is already on its way. Company representatives have taken their Master of Maritime Management degree and produced parts of in-depth study course in Arctic Shipping Management based on their research together with Satakunta University of Applied Sciences.

Some examples of the research conducted in co-operation with the student working in the companies with arctic experience and the University can already be listed. This co-operation is part of the research work of the University as well as risk management procedure of the companies working in the Polar regions:

Tanker operations in the arctic environment are especially risky due to the environmental vulnerability of the region and the specific risk element for tankers relating to the ice pressure. The ship to ship operations of tankers (STS-operations) in the arctic are however a necessity in specific circumstances. In a research study the safety procedures of STS operations in this environment are analysed, data from previous operations is collected as well as silent information from the captains with tens of years of experience from the arctic altogether is analysed in order for the risk assessment tool for the tankers operating in the arctic to be developed [5]. Tanker fleet personnel operating in the arctic environment is highly skilled group of seafarers. The experience and practices adjusted to the new Polar code requirements is a model example of the co-operations between Maritime Universities and specialised shipping companies. Tanker operations in ice is one of the expertise courses to be developed based on the co-operation in research work.

Another important research project to be analysed is oil pollution response planning of the company operating in the arctic [6]. The problems of collecting oil from sea with ice cover or ice blocks has been an issue for researchers for decades. Taking the technology to Polar areas is especially important but also extremely costly. Effective as well as cost effective produces and equipment together with a company environmental response strategy are part of a research combined into Master’s thesis and company development project which will also benefit the Arctic environmental risk courses of the University in the future. The oil catastrophe in the arctic is something which no one dares to imagine – But the companies planning their activities has to prepare for the worst scenario. The Maritime training institutions cannot turn a blind eye either.

Third example of an ongoing research project is DP ice management, which is also a topic very little examined by researchers [7]. The topic is and research is highly based on persons with long experience in offshore activities in the arctic environment. This project is well targeted to serve the persons who need further education on DP in the arctic environment in the future years when the offshore industry recovers and the arctic drilling projects now waiting for implementation will be carried out. Safe
offshore drilling in the harsh environment is highly dependent on the skilled experts navigating and operating in ice.

Satakunta University of Applied Sciences uses the Master of Maritime Management student’s expertise as well as the own staff’s expertise in creation of new knowledge and use of the experienced Masters are also used in teaching the specialised arctic courses. The strength of the education is close co-operation with the companies working in the Polar region. The companies which can be specially referred to are Neste Shipping Ltd. and Arctia Shipping Ltd. and Arctia offshore Ltd. We feel privileged to have their best people working together with our University’s staff and further educating together crews for the vessel operating in the Polar waters and ensuring that all our students and exchange students visiting our institution get the best possible education and the latest experience from the Polar water navigation experts.

The ship design and shipbuilding industry in Finland is concentrating also to designing and building specialised vessels for arctic regions. Combining this knowledge to the course development and using the expertise of the companies in teaching the courses gives also great advantages for those attending the courses in Nordic Universities.

5. Conclusions

Polar Code is an important tool for the industry. Its implementation needs to be done with cautiousness by the companies that intend to operate in arctic regions. Therefore, the educations of those who will operate in the region also needs to be done properly. It is also important for the image of seafaring and shipping community in general.

The environmental organisations are strongly opposing the use of arctic regions for transportation and especially for offshore activities. We all remember the consequences of the Exxon Valdez accident in Alaska 1989 and its impact in the oil transport industry as well as the legal implications that followed the incident. If the industry wants to operate in arctic regions, we cannot afford to allow any more fatal catastrophes even near the arctic. The education is of the essence and we need to use every opportunity to show that the education system together with the shipowners is ready to invest in education and preventing the spills to the sensitive areas. Therefore, we need to seek co-operation together with the Universities and the industry to make the arctic shipping as safe as possible. I hope our practice in this field described in this presentation is an example for other institutions. We are happy to share our experiences to fellow colleagues and visiting professors as well as exchange students.

References

[2] IMO, International code for ships operating in polar waters (polar code) and Model course advanced training ice navigation in arctic water, 2016, London, IMO