

# Study of Estonian Maritime Education Institutions Alumni

M-L. Kuuse & M. Kopti

*Estonian Maritime Academy of Tallinn University of Technology, Tallinn, Estonia*

**ABSTRACT:** From November 2015 to June 2016 Research and Development Centre of the Estonian Maritime Academy (hereinafter R&D Centre of EMARA) carried out a survey among the alumni of maritime institutions in Estonia. The survey based on a questionnaire developed by R&D Centre of EMARA in cooperation with the academies' management, curricula leaders and maritime associations. Participants included different maritime education institutions alumni, including the citizens of the Republic of Estonia, who had studied in marine educational institutions abroad. In total 343 maritime educational institution alumni participated in the survey.

## 1 INTRODUCTION

### 1.1 *Maritime Education in Estonia*

The Estonian Maritime Policy 2012-2020 (Ministry of Economic ... 2012) is a national development plan, which aims to develop a synergy in the maritime sector in Estonia. The development plan has set five priorities and one of the priorities recommends that the Estonian maritime education, research and development must be on high level. In order to complete the priority, two objectives has been set. One of them states that the maritime education in Estonia must ensure high-level education to all specialists in different maritime fields including seafarers, marine engineers, hydrographs, fisheries technologists, port managers, ship agents and others. To fulfil aforementioned objective, measure 8.1 - development and implementation of the Maritime Education Concept (hereinafter MEC), has been fixed. MEC will describe perspective of maritime education, the need for specialists, structure, size, funding, and other important aspects of the maritime sector, including research. MEC is the basic document for

maritime education facilities that are offering maritime training on different level. The results of this survey are one of the inputs to develop MEC. Furthermore, outcomes will be useful for future development of maritime education and training and for further research. In addition to this study, other surveys give input for the development of MEC. For example "Labour Competences and Skill Levels and Needs of the Labour Market in the Fisheries Sector" (2012) and "The Maritime Labour Survey" (2015). Furthermore, the concept is supported by the survey of the Ministry of Economic Affairs and Communications, "The Labour Demand and Supply Projections Up To Year 2023", and in 2011 in the Estonian Maritime Academy completed "Maritime Cluster Survey". The aims of this survey were to assess the satisfaction of the alumni with maritime education institutions, analyse different possibilities for maritime education, create an overview of alumni career opportunities and get an overview of people's willingness working in the maritime sector, to contribute to the development of maritime education in Estonia.

## 1.2 Methodology

The R&D Centre of EMARA developed the questionnaire in cooperation with the academy's management and curriculum leaders. To increase the reliability of the questionnaire, R&D Centre cooperated with the Estonian Seamen's Independent Union, The Association of Estonian Deck Officers, The Association of Estonian Marine Engineers, Estonian Shipmasters' Associations, students, staff members and alumni of EMARA. Together with a number of corrections, it took three months to finalize the questionnaire.

The participants had to answer general questions, questions regarding education and career-related questions. It was also possible to express willingness to contribute in to the development of Estonian maritime education. In addition, at the end of the survey, respondents were able to add additional comments. The survey was in Estonian.

The survey included different maritime education institutions alumni, including the citizens of the Republic of Estonia, who had studied in marine educational institutions abroad.

Nine different educational institutions, 28 different professional associations, which are active in the maritime sector, 11 different public bodies and 5 maritime classification societies operating in Estonia, were involved. The questionnaire was sent to more than 900 unique e-mail addresses.

Research enterprise Psience was responsible for online solution of the survey and systematised results for further analysis. The poll was available online from March 7 to June 28 in 2016. In total 343 maritime educational institutions alumni participated in the survey.

The analysis of the results is divided throughout the report according to whether the maritime educational institution was most recently graduated in 1992 and before or 1993 and later. Such distribution relies on the fact that in 1992 the Estonian Maritime Education Centre, as an institution of higher maritime education, was founded. (Maritime Academy ... 1995)

Detailed analysis was done according to the main graduated curricula, which were Deck Officer, The Operation and Management of Marine Diesel Power plants, Refrigeration Technology, Port and Shipping Management, Waterways Safety Management, Fishing and Fish Processing Technology. Report gives information if the alumni started to work in maritime sector and whether they still work there. In addition, analysis was done about how the first job was found, how long it took after graduation to find a job, what

the position was after graduation and what was position while answering. How long it took to get up to the position the respondents had by the time of answering. In the end of the survey, it was possible to leave remarks about the Estonian maritime sector, which was added to the reports' qualitative analysis.

## 2 THE RESULTS

### 2.1 General information

Among the alumni there were 58 participants who had graduated maritime educational institution 1992 or earlier (*hereinafter group I*) and 285 who had graduated in 1993 or later (*hereinafter group II*). Two percent of participants in the group I were female. The same percentage is 31% in the group II. One of the reason for such increase could be that after 1992 some of the developed curricula were also attractive to female students (for example fisheries technologies, port and shipping management and hydrography). All participants in group I speak Estonian as native language and in group II 77% speak Estonian, 22% Russian and 1% mentioned some other language as their native language. 125 participants of 129 answered their permanent residence in Estonia.

30% of participants had most recently graduated Deck Officer curriculum, 15% the Operation and Management of Marine Diesel Power plants, 14% Port and Shipping Management and 8% Refrigeration Technology (Figure 1).

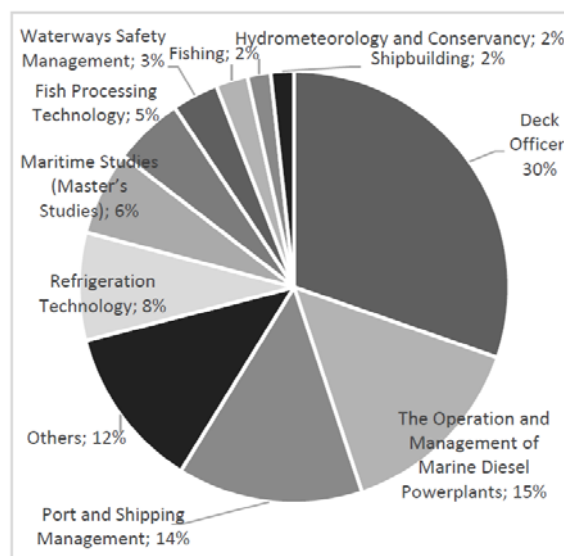


Figure 1. All graduated curricula

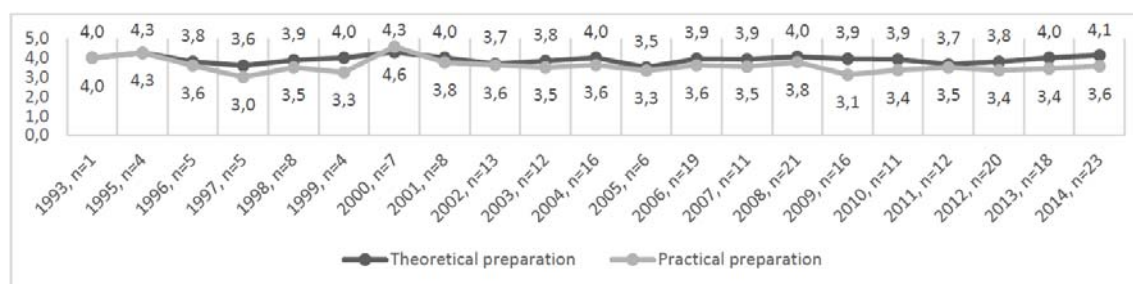


Figure 2. Satisfaction with the theoretical and practical preparation in Estonian Maritime Academy

The most recent graduated level of education was applied sciences/bachelor for 56% of participants, vocational education for 23% and master for 14%. 4% of participants had graduated maritime institution abroad and 3% some other level (e.g. specialised maritime secondary education). 88% of group I alumni started their first job according to their studies. This percentage is 69% in group II.

The participants were asked to explain why they chose maritime education. The answers were divided into 7 categories of which the most popular (24% of answers) was that maritime education appeared interesting. 19% of participants had specific professional interest or earlier experience, 18% had great interest in maritime field and 17% were influenced by family members and friends or by family traditions. The analysis were also made by all main curricula and it showed that 50% of fisheries technology and 31% of marine diesel power plants graduates had very specific interest in the speciality while selecting speciality. 21% of port and shipping management, 19% of refrigeration technology and 18% of deck officer graduates relied on their family traditions or suggestion of family member/friend while choosing maritime education.

Participants had graduated altogether 462 times of which 57% was applied sciences/bachelor degree, 28% vocational, 10% master studies and 5% others. Applied higher education from Estonian Maritime Academy was the most common degree (249 responses, 54%) and master level in the same school was graduated 31 times (which makes 7% of all answers). 11% of participants continued after applied higher education on master level and 4% continued after vocational school on higher level.

During years 2011-2014, the satisfaction with the education in Estonian Maritime Academy increased. Since 2001 alumni were constantly more pleased with the theoretical rather than practical part of the studies (Figure 2). From group II 76% out of 229 had their first job in private and 24% on public sector. During survey 50% of 120 were working in public and 50% in private sector. In group I 26% of 57 participants started to work in private and 74% in public sector. While answering, 40% out of 15 were working in private and 60% in public sector. 88% from group I and 69% participants from group II had their first position in maritime sector and directly related to their studies. In total, 73% of respondents had their first position in the same field as they were studying. 191 participants had their first job offshore and for 91% of them it was the same field as they were studying. Hundred participants started their first job on shore and 76% of them in maritime sector in the field of their studies. According to the Maritime Administration in Estonian, there are 8992 seafarers with valid certificates to work on board as of 11<sup>th</sup> of November 2015. 14% of participants had never worked in maritime sector. 23% of 222 participants who marked their average gross wage earn on average 1501-2000 EUR/month.

## 2.2 Deck Officers

88% of participants who had graduated deck officer curriculum had their first job directly related to the studies (Figure 3).

89% of graduates started working already during studies or less than one year after graduation. 7% of deck officers also graduated master degree. 36% of participants found their first job through school or after internship, which shows how important it is to keep contact with enterprises and the role of education institution. 77% of graduates from group I and 17% from group II started working in public sector after studies. 97% out of 115 deck officer graduates started working offshore and 73, which makes 62% of them are still working off shore during survey. Altogether 72% of deck officer graduates are working on a position related to their studies during survey. On average, it took 11 years for graduates to become a captain, 6 years until becoming chief officer and 4 years to become second officer. According to the data from Estonian Maritime Administration they have released 221 captain certificates (GT > 3000) and based on the graduation year it can be said that it takes average of 15 year to become captain. Nevertheless, this statistics does not show if certificate holders actually work as captains as well. 24% of deck officer graduates earn average 2001- 3000 EUR/month and 18% both 3001-4000 and 1500-2000 EUR/month. The highest salary is earned on tankers and dredging vessels. According to the survey, seafarers who sail under Estonian flag, earn a lot less than for example the ones who sail under Finland or the Netherlands flag.

51% of all deck officers graduates are interested in contributing to the development of maritime education.

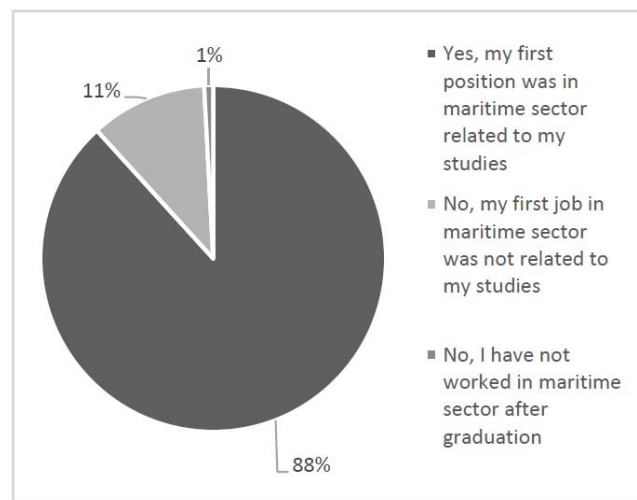


Figure 3. Deck officer graduates working in maritime sector after graduating

## 2.3 The Operation and Management of Marine Diesel Power plants

50 marine engineering graduates participated in the survey. 90% of them started working in maritime sector on the field related to their studies right after graduating. 93% of graduates started working as marine engineers during their studies or in less than

one year after graduation. Six percent of marine diesel power plants alumni also graduated master degree.

31% of graduates found their first position during internship, which shows its influential role during studies. 61% graduates from group I and 21% from group II had their first position in public sector.

73% of graduates were still working off shore in the field of their studies during survey. 23 of them (55%) are employed as chief engineers, 17 as second engineer. 17% are working on shore in the navy or as lecturers. According to the study, it takes 10 years to become chief engineer, 4 years until second engineer and 1 year to become third engineer (Figure 4).

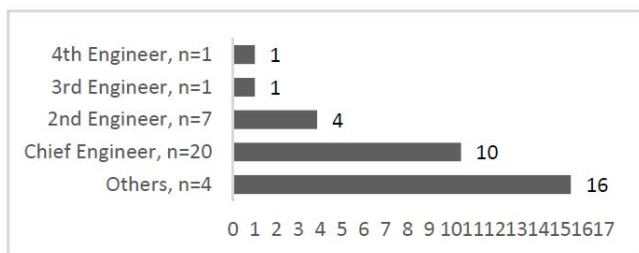


Figure 4. Career model for Marine Engineer graduates

Estonian Maritime Administration has issued 274 (GT > 3000) chief engineer certificates from 2006 to 2014. Relying on the graduation years then according to this statistics it takes 16 years to become chief engineer.

19% of diesel power plants graduates earn on average 5001-10000 EUR/month and 22% earns on average 4001-5000 EUR/month. 69% of marine engineers are planning to work until retirement or until it is possible. Twenty-seven participants answered whether they would be interested in developing maritime education. 52% were interested and 22% are already giving lectures or seminars.

## 2.4 Refrigeration Technology

47% on refrigeration technology graduates (16 participants) continued after school in the same field that they were studying and 83% found a job in less than one year, including during studies. 9% of the alumni also graduated master degree. 39% of refrigeration technology graduates found their first position during internship or with the assistance of the maritime education institution.

Some of the refrigeration technology alumni started working on shore, but the position is still related to their studies. 44% of graduates who participated in the survey had their first job off shore and 56% on shore (Figure 5).

During survey, 13% of graduates are still working off shore and 50% on shore, of which 31% in maritime sector. According to the information from graduates, it takes average 2 years to become refrigeration engineer and 4 years to make career in enterprise that handles refrigeration and conditioning equipment.

44% of graduates earn average 1001-1500 EUR/month and 33% 1501-2000 EUR/month. Some of the alumni were interested in contributing education

development and some of them are already participating in carrying out seminars.

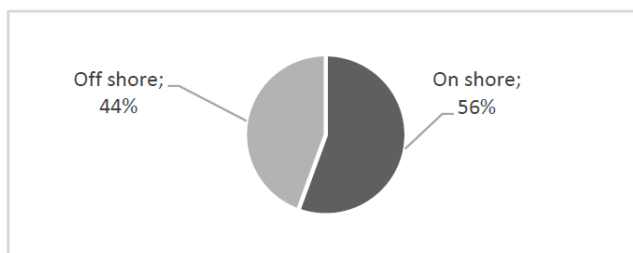


Figure 5. First position after graduating Refrigeration Technology

## 2.5 Port and Shipping Management

59% of port and shipping management alumni had their first job related to their studies in the maritime sector. 86% of participants started their first job in less than one year. 30% of alumni also graduated master level. Forty graduates out of 50 answered that their first position was in public sector; during the survey, 35 participants out of 41 were working in private sector. After graduation, 29% started to work as expeditors, 18% in port as port specialist, 12% in shipping company and 8% as operators for shipping lines (Figure 6).

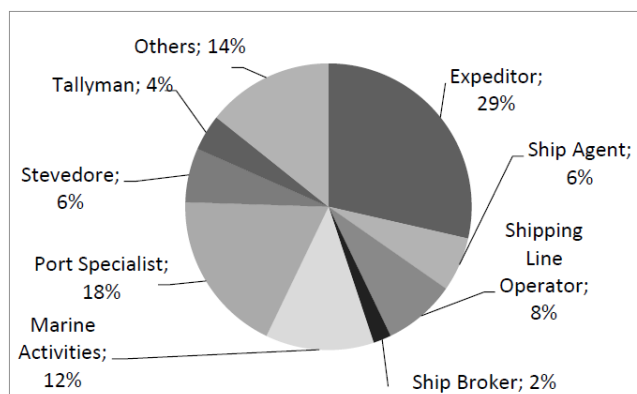


Figure 6. First position after graduating Port and Shipping Management

54% of port and shipping management graduates are still working in the field related to their studies during the survey, 26% are working in the maritime sector, but have changed their speciality and 20% are not working in maritime sector anymore. Altogether, during the survey, 55% of participants are working in the shipping industry, 13% in ports and 29% in some other fields. 22% of port and shipping management graduates are earning 1001-1500 EUR/month and 19% earn 1501-2000 EUR/month.

75% of graduates are already actively developing maritime education through lectures, seminars or training courses. 8% are not doing it yet, but are interested.

## 2.6 Waterways Safety Management

36% of waterways safety management graduates started to work on the position related to their studies

in the maritime sector, 14% started to work in maritime sector and very high, 50% of graduates have never worked in the maritime sector after graduation. 43% started to work during studies, 43% less than one year after graduation (Figure 7).

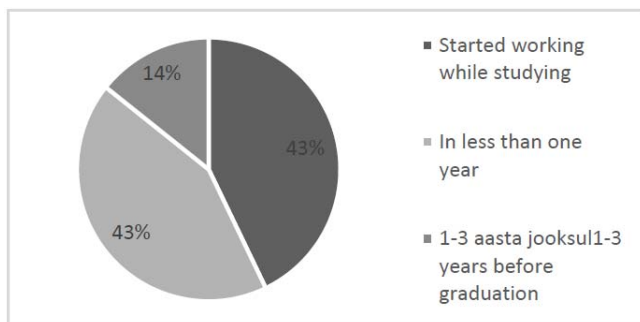


Figure 7. Finding first job after graduating Waterways Safety Management

Out of all the graduates, 27% have also graduated master level. 43% of graduates found their first job through internship or with the help from school. 28% of participants started to work in the field of cartography, maritime facility or as navigation and shipping routes specialist.

57% of waterways safety management graduates are working in the maritime sector but not on a position that is directly related to their studies. 43% are working on a position that is related to studies. The highest salary earned is 1501-2000 EUR/month.

### 2.7 Fishing and/or Fish Processing Technology

21 participants which makes 64% had their first job in maritime sector in the field directly related to their studies. 40% of graduates started to work during their studies and 44% started in less than one year. 24% of alumni found their first position with the help from school. 44% of participants who had graduated curriculum that is related to fisheries technology or fishing, had their first job offshore and 56% started to work on shore.

46% of participants started to work in the field that is related to fish processing technology and 13% in the field of fishing (Figure 8).

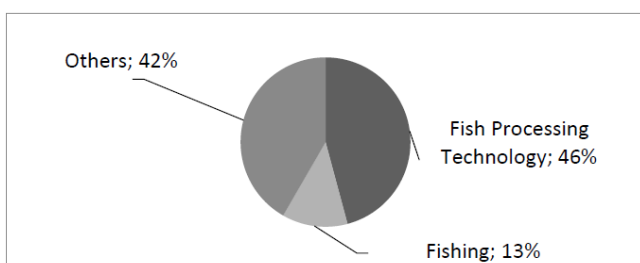


Figure 8. First position after graduating Fishing or Fish Processing Technology

During the survey, 40% out of 25 participants are working off shore and six on shore on a position that is related to their studies. Nineteen participants

specified their position and 23% of them were working in the field of fish process technology and 4% in the field of fishing. Few respondents had changed for example for marine engineering or work as crewmembers.

It took average 7 years to be proficient in the fish processing technology and 5 years in the field of fishing.

30% of participants earn on average 501-1000 EUR/month and 35% as much as 1501-2000 EUR/month. 77% of fish processing technology and fishing alumni are already contributing in the development of studies by giving lectures or seminars.

## 3 CONCLUSION

From the results, it can be seen that 88% of Deck Officer alumni had their first job directly related to the studies and that it takes about 11 years to become a captain. 50 marine engineers participated in the survey. 73% of them were still working as marine engineers while answering. If we count in the 8% who work as engineers on shore, then altogether 81% have a job related to their studies. It takes approximately 10 years for a graduate to become chief engineer. During answering 19% earn 5001-10000 EUR/month. A lot of Refrigeration Technology alumni start working on shore. The results confirm that fact, as 44% had their first job offshore and 56% on shore. The report also shows that 57% of Port and Shipping Management graduates start working in shipping industry and 29% in ports.

Study of Estonian Maritime Education Institutions Alumni is the first survey that has been done among different maritime education institutions with such a comprehensive range. The results will be used to develop the Maritime Education Concept in Estonia aiding to improve the quality of education.

Furthermore, the survey itself and the results can be used for future studies in the maritime sector.

## REFERENCES

- Ministry of Economic Affairs and Communications. (2016). Satisfaction survey of training and certification of the seafarers
- Ministry of Economic Affairs and Communications. (2012). Estonian Maritime Policy 2012-2020
- Maritime Academy graduates since 1995 (2016). Estonian Maritime Academy. (Excel-table)
- Rozeik, H., Kupts, M., Rell, M., Batueva, V. (2015). The Maritime Labour Survey. Tallinn: PRAXIS Center for Policy Studies.
- Labour Competences and Skill Levels and Needs of the Labour Market in the Fisheries Sector. 2012 Estonian Research Centre. The Ministry of Agriculture.