

SUPPLY AND DEMAND ANALYSIS OF EDUCATED SEAFARERS

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Abstract—This paper illustrates current state of creation of personnel in maritime industries in Montenegro and worldwide. In this paper, we compare many different systems of seafarers education around the world and underlining on benefits and shortcomings. We used BIMCO's research which points to supply and demand of seafares. We also consider the development of seafare's career according to international conventions which are configuring systems of education and training of seafarers. This paper focuses on current conditions in worldwide seafarers education. We conducted survey among 30 Montenegrin and 24 Croatian seafarers which takes in concern questions about educational methods, manning agencies and seafarer's career.

Keywords—seafarers education, human resource management, labor market.

I. INTRODUCTION

Human resource management is essential for business, because it is not possible to accomplish ideas without competent, organized and well trained employees [2]. Previous statement is the reason why we all need well trained and educated seafarers, according to international conventions. If we look back in past few years, we shall notice that EU (European Union) has dedicated an enormous interest in establishing regulations that concern education and training of seafarers, which had a big impact on maritime industries. Today it is not possible to generate quality seafarers unless they are educated and trained in accordance with many conventions such as SOLAS (Safety of Life at Sea), STCW (Standards of Training and Certification and Watch keeping) and many others which accurately define education and training for seafarers. Planning education system is essential for all transition countries which need to deal with carrying out radical reforms of education system so that it is in line with standards of EU. For example, EU has determined a long-life learning for seafarers based on knowledge. On the other side, Montenegro is far away from goals as far as long-life learning is considered. We need to generate our efforts in education of seafarers, because we create human resources that need to find their job in

international labor market. Following international trends of seafarer's education is essential.

II. SUPPLY AND DEMAND OF SEAFARERS ON INTERNATIONAL LABOR MARKET

BIMCO is well known as the largest of the international shipping associations representing ship-owners controlling around 65 percent of the world's tonnage. The association's main objective is to protect its global membership through the provision of quality information and advice, and while promoting fair business practices, facilitate harmonisation and standardization of commercial shipping practices and contracts. BIMCO (Baltic International Maritime Council Organization) has done research about supply and demand of seafarers. These results are presented in Figure 1 and are compared for 2000 and 2010 so the difference is evident because the shortage of educated seafarers (senior officers) is greater in 2010.

According to presented research results in 2000 there was a shortage of 16 000 officers which is approximately 4 % of total officer pool. Predictions for 2010 show that there is a shortage of 46 000 officers. Research results indicate that current labor market of seafarers has a significant shortage of senior officers that are educated and well trained. Positive variation of demand and supply of ratings suggests that shortage of senior officers could be caught up with additional education of ratings. On the other hand traditional distribution of professions on board, as well as big differences in education, indicate that mentioned solution could not be good for long term view. This survey also indicates that this problem is caused by two factors. First factor is quality of education system and second factor is lack of interest for navigation. Goal of conducted survey was to define most appropriate measures to boost up interest for career in maritime industries. Identifying dynamics of education system need to be determined. New economic paradigms in contemporary period of knowledge requires sophisticated methods of workforce managing, instead of supervising manpower what was main characteristic for industrial paradigms. The main problem is how to reach to quality seafarers whose

competences are origin of new knowledge and competitiveness. To accomplish mentioned goal we need to provide education and development of employees, as well as to create scenery in which knowledge is learned and shared, which assumes trust, cooperation, team work and dedication to goals. As good example we will mention German maritime industries and their human resource programs. Germany is trying to recover and recruit their seafarers by giving many facilities and benefits. Geographical prerequisites of Germany had influenced that Germany developed continental industries. In 19th century the concept of German merchant fleet has become very significant. Germany didn't have market support as for example Great Britain or Netherlands had, so they needed a state protocol that ensured many benefits for development of maritime industries. This protocol affirmed role of Germany as supporter of maritime industries. This role continued through World War II, as well as after war. By that time main workforce came to Germany from Spain, Greece, Italy and Turkey [5]. Today majority of seafarers comes

from North America, Japan and European countries. Shipping industries is concerned with fact that over 40 % of officers are older than 50 years, and 18 % is older than 55 years. The question that rises is why young people are not interested to work in shipping industries. One of the possible answers might be that education for this career is very hard, and one needs a lot of work experience to be promoted. This fact made EU to attract as many young people as possible with special benefits. One of the countries that acknowledged those benefits is Croatia. These benefits are applied in education system, where one can become a senior officer without having university diploma. Nevertheless seafarers need to attend many model courses to achieve rank of senior officer. Nowadays seafarers don't need to finish University if they want to reach higher ranks on board. Time will show weather this is good or bad solution. The fact is that University diploma becomes underestimated which could become a big problem in future. In our opinion, a crucial factor for progress in shipping industries is knowledge and experience.

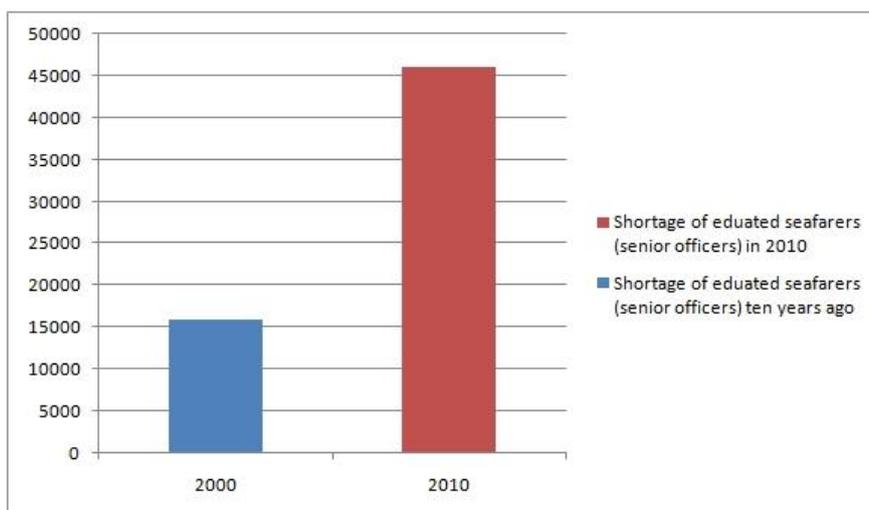


Fig. 1. Shortage of educated seafarers (senior officers) [1]

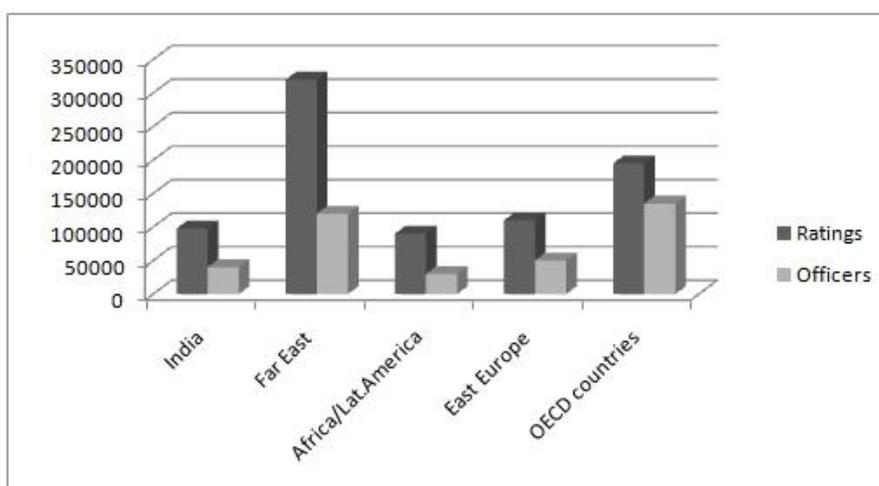


Fig. 2. Supply of seafarers by regions [1]

According to BIMCO's study [1], majority of seafarers comes from Far East and minority from European countries as you can see in Figure 2. Data from Figure 2 show that the center of gravity of the manpower industry has continued to move away from most of the traditional maritime countries in Europe, Japan and North America towards countries in the Far East, in the Indian sub-continent and Eastern Europe. Seafarers from OECD countries currently constitute about 27.5 % of the marine global workforce compared to 31.5 % in 1995 and there have been particularly substantial reductions in the numbers of junior deck and engine officers from OECD nations. But while these changes may well have been quite dramatic at the level of an individual company or country, from global perspective the over all declines of 4 % in the proportion of OECD seafarers over a five-year period suggest that the changes are evolutionary rather than revolutionary.

III. EDUCATION OF SEAFARERS

Seafaring is particular part of industries so people involved in seafaring are submitted to many specific conditions which shape their career and education. Being seafarer implies need for constant improvement and knowledge check. This follows from fact that during navigation there are many risks which affect safety of crew, cargo and ship, so there is a constant need that everybody on ship works as a team. Seafarers are submitted to permanent knowledge and skill check on international labor market. The all above mentioned implies that seafaring requires continuous education, whether the reason is fast development of navigational equipment or the reason is environmental protection. Senior officers need to know how to manage with their crew in dangerous situations that are common.

There are 3 common systems of seafarer's education in the world [3]:

- Traditional system,
- Gradient system and
- University system.

Traditional system successfully combines theory and learning through practice. Practice additionally explains theory and makes career development easier. This system is made of few phases which individually last 2 or 3 months, and whole system lasts from 5 to 7 years. Duration of this system is its biggest disadvantage and main reason why this system is slowly being replaced by other efficient systems. Many countries such as Great Britain, some Asian and African countries are still using this system but their tendency is to replace it.

Gradient system is much more popular and it is applied in countries of West Europe, USA, Australia, Canada, India, Philippines and Egypt. This system has a

navigation practice which lasts from 6 to 12 months. This education system lasts totally from 3 to 4 years after which a candidate acquires BSc diploma (Bachelor of science) and STCW certificate OOW (Officer of the Watch), (Deck/engine); Mar off, Dual (Polyvalent officer). This type of education is being applied on academies, independent universities, colleges and state universities. After adopting Bologna declaration Montenegro started using this system of seafarer's education. As a result we have well trained and educated seafarers.

University system is still being used in France, Spain, Greece, China, Poland, Russia, Bulgaria, Slovenia and Romania. There is small difference between this system and gradient system. After finishing this type of education candidates acquire BSc diploma with possibility to continue their education on postgraduate studies. During this type of education main subjects are: laws, economics, environmental protection and human resource management.

These systems that are mentioned above have some similarities such as: they all meet requirements of STCW 95 convention, all of them combine theory and practice (working knowledge). These systems successfully prepare students for work on board.

Survey that we conducted among seafarers show that seafarers evaluate maritime education system with average mark of 3.3. It is evident that many seafarers are not satisfied with education system. For example, Croatian seafarers believe that main disadvantage is fact that one can become captain without having university diploma, while Montenegrin seafarers believe that main disadvantage is lack of practice through education system. As far as compliance of IMO standards on Universities is concerned both Croatian and Montenegrin seafarers evaluated it with average mark of 3.5 which is satisfying. Consequently, 53 % of examinees find that knowledge and skills they learned in school/university are applicable on ship while 46 % think that those knowledge and skills are not applicable.

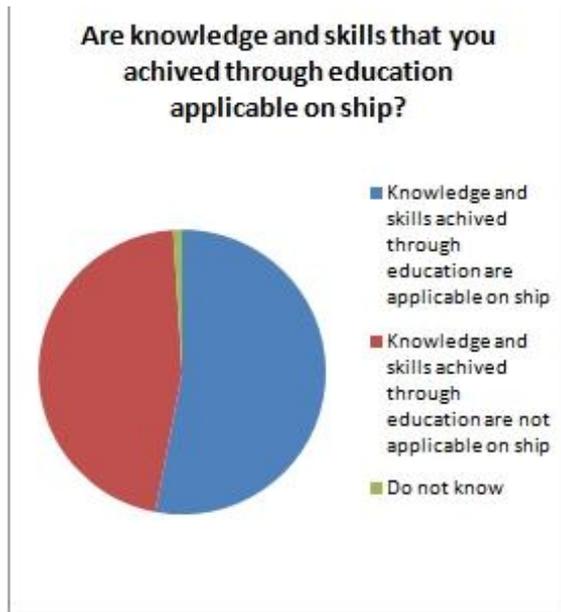


Fig. 3. Questionnaire results related to knowledge and skills

In the recent years, some questionnaire results are specified in Figure 3. This shows some of the important trends related to knowledge and skills achieved through education applicable on ship.

Examinees find that significance of simulator in education is rather big and they have given average mark of 3.9. Examinees are irresolute about whether online learning should be part of educational methods for seafarers, 40% finds that online learning should be part of education system, 41% of examinees are not interested for online learning and 19% of seafarers does not know whether it should be a part of education system. Majority of examinees 63% find that contemporary methods of learning are better, and 47% of examinees find that traditional methods of learning are better.

IV. TRAINING AND DEVELOPMENT OF CAREER IN MARITIME INDUSTRIES

Training is planned process of attitude forming, skills and knowledge forming through learning process. Primary purpose of training is boosting up performances of employees which satisfy needs of company for certain profiles of employees. Training is considered as a way of investigating in employees with purpose to enable them to do certain jobs.

If we want to boost up level of knowledge and skills that seafarers need, we have to shape certain model of education and training system. Recent trends indicate development of seafarer's knowledge and skills, as well as gaining new ones. This is also mandatory by organizations that control seafarer's education and training. The main reason for such drastic changes in education and training is technological development. In last fifty years there have been many changes such as

container ships. Every change in maritime industries requires additional education and training of seafarers. However many things are still the same, for example relations between crew members on board. Ship is isolated social environment where seafarers work and live. Autocratic style of manning with crew members exists as a consequence of a hierarchy between ship crew. On board every crew member knows its responsibilities who gives orders and who executes orders.

Recruitment of seafarers is a way to improve competitiveness of a shipping company. Before recruiting new seafarers every shipping company should have a plan which explains need for certain seafarers in future. However it is essential to pay attention before recruiting seafarers on fact how many funds needs to be spent in order to train new seafarers. If we take in consideration seafarer's career, then every seafarer needs to determine its own goal and interest, according to which seafarers plan their own career. As far as seafarer's career is taken in consideration we might say that every seafarer is responsible for his own career. If they are well motivated and good mannered then they will soon advance and develop their career. Nevertheless there are some conditions that need to be accomplished, for example STCW convention precisely defines how many years of work experience senior officer needs to have in order to become captain. In order to advance seafarers needs to attend many model courses which provide them new knowledge and skills. Seafarer's knowledge and skills need to develop according to technological development. Ignorance and irresponsibility cost a lot and might lead to end of seafarer's career [4].

Figure 4 gives results concerning sailing years of seafarers. These results from our survey indicate that 72 % of seafarers are going to quit sailing before retirement and only 28% of seafarers will retire as seafarers. This is a major problem for maritime companies, because they can not find skilful seafarers and they need to invest money in training of new seafarers.

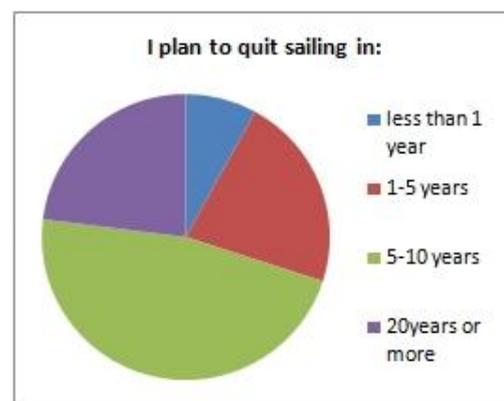


Fig. 4. Questionnaire results related to duration of

sailing

Data collected from survey indicate that 8% of examinees will quit sailing in less than a year, 22% of examinees will quit sailing in a period from 1 to 5 years, and 47% will quit sailing in a period from 5 to 10 years, while 23% of seafarers will conduct their duties on board for 20 or more years. Examinees find that main reason why young people are not interested in navigation is distance from family and friends and they gave it average mark of 4.9, second reason is the fact that young people are not encouraged by government to navigate and average mark is 3.5. As a third reason they listed that salary and working conditions are not attractive enough compared to other professions with average mark 3.1. According to survey data least important reasons is dangerousness of seafarer's job with average mark 2.7 and bad circumstances in world market with the same mark.

As far as manning agencies are considered survey data indicate that seafarers are not satisfied with their service. Seafarers find that manning agencies compile with international labor regulations and they gave it average mark of 3.3. According to this survey seafarers are dissatisfied with manning agencies in the sense that manning agencies are not negotiate on behalf of seafarers with average score of 2. In seafarers opinion manning agencies are not doing enough to improve their service and examinees gave average score 2.1.

V. CONCLUSION

Seafarer's education is long-term process that needs to be well planed in accordance with new global trends. That is not an easy job because it requires a lot of efforts and adjustment of national legislation with international conventions. Nowadays conventions are rapidly changed in order to improve safety of navigation. Technologies development requires a need for additional education and training of seafarers. It is not easy to track all sophisticated new equipment so management of company needs to assure employees that additional education and training is in their best interest if they want to develop their career. We can't forget to mention world economy which shapes demand for seafarers. If shipping industries are not working well and has difficulties than many seafarers will not be able to find job. That will cause that supply will be higher than demand. Everything mentioned affects plans for demand and therefore education of seafarers. Interest of young people for navigation is also important. As it is shown above majority of seafarers is old. Question that rises is why this profession becomes so repulsive to young people?! Montenegro as a small country needs to attract as many young people as possible in shipping industries so we can reward those people who put their efforts to

educate new seafarers.

REFERENCES

- [1] BIMCO/ ISF 2000 Manpower Update.
- [2] Ćorović, B. *Human resource management*, University of Montenegro, Maritime Faculty, Kotor, 2008.
- [3] Ćorović, B. *Ship crew management*, University of Montenegro, Maritime Faculty, Kotor, 2011.
- [4] Pritchard B. *Maritime education system – Croatia Republic strategy development in XXI century*, Zagreb, 2007.
- [5] Kundu, S.C., Malhan, D., Kumar, P. Human resource management practices in shipping companies, *Delhi Business Review*, Vol. 8, No. 1, 2007.
- [6] Klikaurer, T. and Morris, R. Human resources in the German maritime industries: 'back-sourcing' and ship management, *International Journal of Human Resource Management*, Vol. 14, No. 4, 2003.