

EMPOWERING SEAFARER — ROLE OF MARITIME UNIVERSITIES

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ABSTRACT

Shortage of seafarers can be broadly attributed to two factors namely inability to attract talented youth to sea career and retaining the trained seafarers. The main motivating factors that influence students in choosing a career are money and the job satisfaction where as they are mainly influenced by parents and teachers (Kniveton, 2004). Students look for short term motivating factors in a career whereas parents and teachers look for long term motivating factors. In career at sea the short term factors are good and students like to join career at sea but the parents influence is lacking as career at sea is not a lifelong career and there is negligible academic growth. The talented seafarer of today does not want to be at sea throughout his life especially when jobs ashore are equally rewarding. The problem is more aggravated in that the seafarer is leaving sea career too early to prepare for shore job. Solution to the problem is in empowering the seafarer by providing quality education at sea, so that he learns while he earns and develops multiple competencies and qualifications. This will provide for a life long career thru the career at sea thereby increasing thru put via the sea career route. It will also assist in retaining the seafarers for longer time. The paper will outline the role of Maritime Universities in empowering the seafarer. The programs offered, eligibility requirement for each program, basis and procedure of granting equivalent credits based on his certificate of competency, method of delivery of remaining credits and assessment procedures will be discussed. A structured and flexible academic path will be suggested from bachelors' level to doctors' level. Integration of maritime disciplines into other disciplines will be suggested. Topics of research and dissertation possible on board ships will be suggested.

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I. INTRODUCTION

Seaborne trade forms 90% of the total world trade and ship operations is one of the main activities to execute the trade. Seafarer is critical in the efficient and safe operation of ships to ensure intact and timely delivery of goods without harming the environment. Complex techno-dynamic shipboard operations in a highly demanding commercial environment constrained by plethora of regulations require the seafarer of the future to possess higher analytical skills, abilities and competencies. Most shipping journals, magazines, shipping conferences and seminars highlight the crisis of shortage of well educated and trained manpower on board ships.

The problem can be attributed to two main factors namely inability to attract good students and retention of seafarers. The talented seafarer and youth of today do not want to be at sea throughout their life especially when jobs ashore are equally rewarding. The problem is more aggravated in that the seafarer is leaving sea career too early to prepare for shore job. Seafarers are the main ambassadors of promoting the career at sea and sometimes play the role of career counsellors as far as sea career is concerned. At the same time view of the society about the career is important as the student is mainly guided by the opinion of the society (family, teachers and friends). Reflection of seafarer's views on his own career and perception of the society about present scenario of career at sea is important has been established by analysing responses received from seafarer trainees, ship's officers and seafarers working ashore through a set of questionnaires. The over 150 responses collected reflect dissatisfaction, isolation, and lacking in academic qualifications to make the career at sea as a lifelong career path. Seafarer's career satisfaction, his better integration into the society and lifelong career options is the key to attract good candidates and retain them longer at sea.

Empowering seafarer through higher integrated education and multiple skill development makes the career at sea more attractive by opening up multitude of career options to him thru the sea career path. Higher level education will also empower him with flexible functional abilities required in shipboard operations today. Empowerment of the seafarer as required above is suggested in this paper thru an empowerment model and its positive affectivity is reflected in the analysis of responses to the questionnaire by the seafarers after reading the empowerment model. The role of the maritime universities and International Association of the Maritime Universities is very important in empowering the seafarers. Recognition of seafarer's previous learning demonstrated by certificate of competency, providing higher education programs necessary for multiple competencies and obtaining higher academic qualifications are suggested. The "learn while you earn" concept of delivery of these programs that makes optimum use of seafarers time at sea and ashore is explained. The paper also discusses the necessity of programs on social sciences in seafarer's better understanding of self and integration

into society. The role of International association of maritime universities and other universities in adopted marine education and training is briefly outlined.

2. PRESENT SCENARIO

Present status of sea career has been collected through a set of questionnaire circulated amongst trainees, sailing officers and seafarers working ashore which is reflection on his career at sea and society's perception about the sea career. The samples include seafarers from India, Philippines, Indonesia, Algeria, Egypt, and the Netherlands. The factors that influenced seafarers in choosing the career at sea are:

- Parents and family influence below 50%
- Pay and conditions over 80%
- Foreign travel over 70%
- Flexibility below 50%

The above data shows that the seafarer has been influenced by short term motivators pay, foreign travel and adventure. The long term influencing factors of family and flexibility show less influence. At the beginning of his career the seafarer is satisfied but with passage of time his satisfaction level drops from 3.8 to 2.7 on the Likert scale. Similar result is obtained when the satisfaction level is analysed from trainees to the seafarers working ashore. The trainees are more satisfied than the ship's officers 3.4 as compared to 2.9. However if the comparison is done with seafarers working ashore they were more satisfied with career at sea recording 3.8 which can be attributed to their continuous growth and development on shifting ashore. Hence it can be correctly said that for seafarers to be more satisfied with career at sea, route to shore employment that ensures lifelong career is essential.

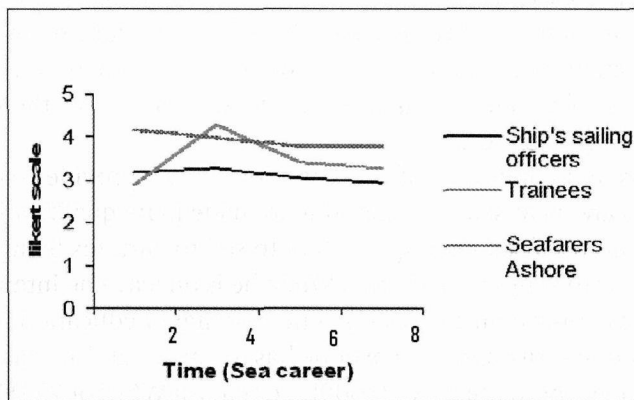


Figure: 1 (Seafarer's Career satisfaction)

Most seafarers feel isolated at sea and ashore which is evidenced by their response as 3.8 and an equal response shows that the career at sea is boring after sometime. Over 70% of the seafarer's who responded do not feel that the career at sea is life long career. Over 90% of seafarers sailing and ashore feel the need for higher education. The Present day training and development of seafarers, in areas other than safety, needs to be reviewed (OECD Project, 2003). The survey conducted by Chinese shipowners also suggests "low social status" and "lack of mental stimulation at sea" is hampering recruitment (Grey, 2007). Seafaring Empowerment Model (SEM) is suggested below in order to provide for integrated, flexible and less expensive higher education.

2.1. SEAFARING EMPOWERMENT MODEL

2.1.1. WHY EMPOWERMENT?

Empowerment is a complex word used in many disciplines like community development, psychology, education, economics, and studies of social movements and organizations, among others. According to Bailey (1992), definition of empowerment depends upon the specific people and context involved. Empowerment discussed in this paper is the constraints on seafarer's right for further education and training.

To be empowered one must be disempowered, i.e. to say one does not have freedom or ability to make choices (Sen, 1999 & Mosedale, 2005). Seafarers are among the most exploited and abused group of workers in the world. "Life at sea is at sharp end of multinational capitalism – the free market let loose with limited restrictions and sometimes little morality" (ITF, 2007). Criminalization of seafarer's is more of a norm now than an exception. The imprisonment of the masters of the ill-fated ships ERIKA and PRESTIGE in Europe and of the master and crew of the TASMANSPIRIT in Pakistan provide sufficient evidence of this. Denial of shore leave, unfair treatment of seafarers and undue harassment of seafarers are some of other violation of basic human rights and dignity. They are frequently treated as serious criminals before their guilt has been established (Mukherjee, 2006).

Present terms and conditions of seafaring job do not provide freedom to make choices between careers at sea or ashore due to inadequate qualifications. Moreover the contractual nature of sea job requires him to sail to earn his living, thus he must sail for long periods to support his family. When he is on leave he intends to stay with his family whom he missed during his sea time. For higher education he has to spend time in college or university and moreover he has to pay handsome amount as fees for higher education e.g. approximately 50,000US dollars at WMU or 25,000£ in a college in UK. Thus he has to spend hefty amount for higher education when he is on leave when not earning and also he has to stay away from his family. It can be said in the

present scenario the environment is not conducive to his lifelong learning, hence his rights of further training and education to provide for skill development and portable competencies in order to secure and retain decent work to improve individual employment prospects is not provided for (ILO, 2006).

Appropriate provision of resources and regulations shall be provided to enable them (seafarer) to pursue their interests (Kilby, 2006). Maritime labour convention regulation 2.8 “career and skill development and opportunities for seafarers’ employment” has provided a base for flag states to implement certain procedures but the convention is yet to be ratified and enforced. European Union green paper on maritime policy for the union has identified knowledgeable and skilled maritime human resource as one of the twin pillars to achieve strategic objectives of the policy:

“the particular need for an all-embracing maritime policy aimed at developing a thriving maritime economy, in an environmentally sustainable manner. Such a policy should be supported by excellence in marine scientific research, technology and innovation”

It also states that continued investments in knowledge and skills are key factors for maintaining competitiveness and ensuring quality jobs. Thus it is fair to conclude that empowerment of seafarer is need of the hour.

2.1.2. SEAFARER EMPOWERMENT MODEL

The objective of the model is to provide higher education to the seafarer using complimentary teaching methods such as work based learning and learning thru conventional methods. Work based learning takes place at sea and learning thru other methods takes place ashore. The purpose is to make optimum use of time at sea mainly mid oceans thereby making higher education less expensive on time and money. Thus it provides opportunity to the seafarer to “learn while he earns”. This will motivate seafarers to take up higher education, which will enhance his employability ashore by providing him with necessary competencies and educational qualifications. It is also suggested the maritime education universities and colleges shall offer non marine programs and associate with main stream universities. This will provide for vertical and horizontal integration as well as permeation of one stream into the other. It also opens opportunities for seafarer to interact with future regulators, managers, financiers and socialists or they become one. At the same time this will spread awareness among the students of other streams which is in a way subtle marketing of the seafaring career and shipping industry. Such a learning environment will help in better integration of the seafarer into the society and remove the feeling of isolation at sea and ashore.

The projected benefits of the model are that it provides:

- Competent and professional human resource to the shipping industry
- the seafarer with stable and secure career

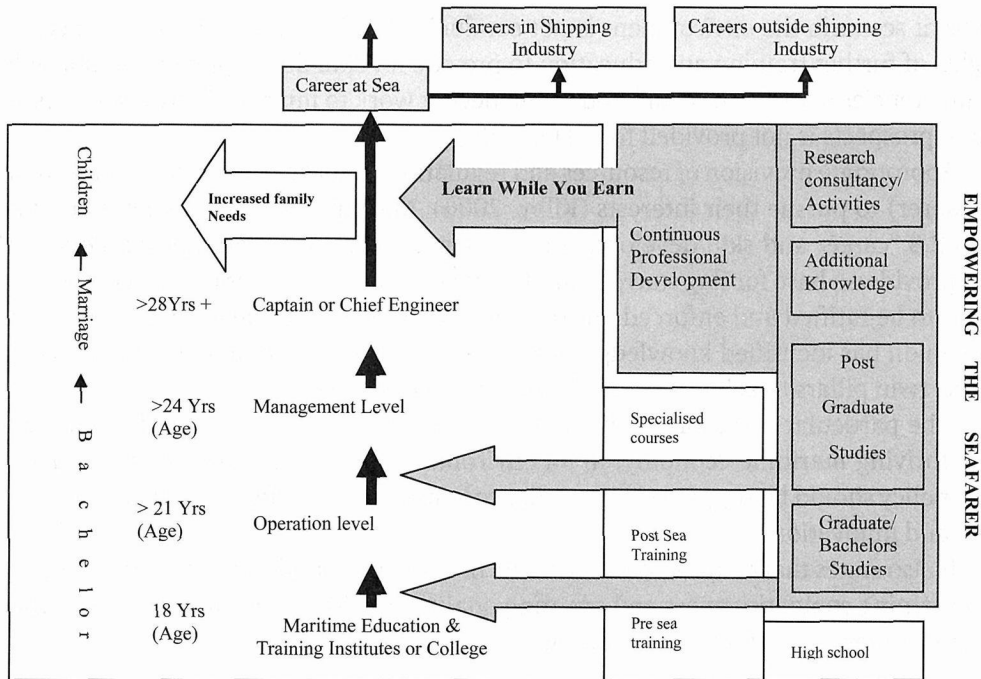


Figure: 2 Seafarer Empowerment Model

- motivation to the seafarer by reducing feeling of isolation, boredom and by raising self esteem
- for rotational employment onboard ships and ashore
- opportunities of consultancy and research on board ships and ashore
- seafarer with more time for family life as better job flexibility
- attraction to good students to seafaring by making the career challenging, flexible, stable, secure and rewarding – a career option for life

2.2.3. BENEFITS OF SEM

To see the affectivity of the model it is required that the model is validated. Towards this objective a set of questionnaire was requested to be filled up by the respondents of the earlier questionnaire after reading the objectives of the model and the result obtained are positive. Over 90% of the respondents feel that the seafarer will be empowered academically, socially and professionally that is to say they will be able to perform better aboard ship and ashore, get better shore jobs and better integrate into the society. Over 85% of them will sail longer if empowered as above. Over 80% will recommend the sea career to good students compared to below 60% before empowerment and over 75% will recommend the sea career to their son compared to below 50% in the present

scenario. Therefore it can be rightly concluded that empowerment of the seafarer as outlined above will help attract good student to the shipping industry. Adoption and implementation of the Seafarer Empowerment Model (SEM) may provide the necessary impetus to attract young talented students to seafaring. World Maritime University (WMU), International Associations of Maritime Universities (IAMU), its members and MET institutions play a critical role in facilitating implementation of the SEM.

3. ROLE OF MARITIME UNIVERSITIES

The role of maritime universities is important in delivery of higher education. The SEM uses the learn while you earn concept of learning thereby not only making the learning less expensive in time and money but also utilizes the best features of both cheaper and flexible but also making best use of both in class teaching and online learning that promotes independent learning and reduces in class seat time (Granham & Kaletta, 2002). Another special feature of the SEM is the integral learning environment.

3.1. "LEARN WHILE YOU EARN" CONCEPT

The objective of the SEM is optimum utilization of the time compulsory spent by ship's officers on board ships during their contract periods for sea time requirement for higher level Certificate of Competency (COC) or as normal employment to earn his living. As during deep sea sailing ship's officers can easily spare about 2hrs. i.e. (8hrs of watch keeping, 10hrs rest period, 2hrs maintenance, 2hrs of other activities, 2hrs free time). This spare time can be used for higher learning which will not only benefit the seafarer but also the shipping company and the industry. Hence this time combined with some contact teaching hours will be used towards higher education. This is efficient as in class time has reduced and seafarer is earning as well as learning that too at the place where it is very easy to visualize and understand. The credit system suits this method of delivery very well as credits may be awarded for work based learning, in class teaching and they may be easily transferred into other programs even if offered by other universities. The other advantage of the credit system is that the course may be done in modules hence it supports better flexibility. Thus the maritime universities need to offer programs and infrastructure to support this learning activity on board ships and ashore.

3.2. INTEGRATED LEARNING

Maritime industry does not operate in isolation of economical, social, political activity. But the seafarer is educated and trained in an isolated environment of maritime education and institutions only teaching maritime related subjects. Not only he is

physically isolated but also academically isolated where he is only exposed maritime related subjects and resources. SEM suggests that maritime universities and maritime education and training institutes shall collaborate with other universities to offer other streams at their campuses so that both maritime and other streams are offered in one campus, this encourages cross facilitation and permeation of human resource.

Providing resources is one aspect and the other is to educate seafarer to better integrate into the society. Also to enable the seafarer to make optimum use of the provisions and resources for growth, development the SEM suggests subjects like social science and psychology, management and leadership skills. These subjects will also assist seafarer in better understanding of the human element concepts in shipboard operations. Management programs will assist seafarers to learn how to live with, manage and positively motivate others in a shipboard environment (Mc Mullen, 1988). These subjects and integrated environment will broaden his horizon and encourage him to venture into other fields such as politics, bureaucracy, legal, financial, economics, management, sociology, media etc. Thus the concept is of vertical integration into the hierarchy as well as in thinking thus influencing decision and policy making towards betterment of the shipping industry and seafarers.

3.3. FACILITATION OF THE SEM

To effectively deliver higher education at sea collaboration of maritime training institutes, maritime universities and non marine universities is essential which will not only improve quality of education in maritime world but also make the seafarers truly global and assist there better integration into the society. Thus development of a network of learning and facilitation centre across the maritime nations is required. A large number of already existing Maritime education and training institutes can be networked to run the program. WMU already has a number of branches that may be activated to facilitate the delivery of the programs. This decade belongs to consolidation of industries across the globe where mergers and collaboration is in vogue not only in shore industries but also in aviation and shipping (Star Alliance, Maersk take over of APL etc.). In education world collaboration also exists e.g. Universitas 21 Global (Chua, & Lam, 2007) (U21G). Maybe the role of IAMU becomes important in facilitating such a process or providing a common platform.

3.3.1. HIGHER EDUCATION PROGRAMS

Based on discussions with focus group of ship's officers working ashore and earlier research papers and publications (METHAR, OECD Project 2003, Grey, 1980) and the requirement for higher learning has been identified in subjects related to Human factors (Sociology, Psychology), socio-technical factors (Ergonomics and designing),

Technical (Surveying, Maritime administrations, Meteorology, Dredging and offshore operations, IT applications, Naval architecture), Management and commercial (Port Management, Ship Management, Consultancy and Project Management, Human Resource Management, financial management, Logistics and chain management, Commercial ship management, Integrated transport Management, Marine insurance and claims, Maritime economics), Legal (Maritime Law and Policy, Marine labour laws, arbitration) and Maritime Education and Training.

3.3.2. DURATION AND ELIGIBILITY

Seafaring is a unique career as the time spent at sea whether on watchkeeping duties or otherwise continuously exposes him to a learning environment. Work based learning has existed since the development of mankind as skills were passed from one generation to the next. As far as accreditation of work based learning is concerned it has existed in the maritime industry since the requirement of certification as per ILO convention 53. Prior to STCW 95 flag states were awarding certificate of competencies based on sea time and oral and/or written assessment. STCW 95 clearly lays down a competency table in which the competency to be learned is associated with knowledge required for the competency, the method of demonstrating the skill learned and the tools for assessment. Thus the seafarer has to demonstrate his competence for each competence as per the STCW tables which is also the case in credit based learning. For awarding a degree in credit based learning number of credits and level at which they are achieved is clearly outlined in the table 1, which uses 10 hour of notional learning as 1 credit.

Table 1

Qualification	Min. Overall credits	Range of levels	Min credits at highest levels	Max. Credits at Lowest level
Bachelor's Degree	300	3,4,5,6	Min. 60 credits at level 6	Max. 30 credits at level 3
Master's Degree	180	6,7	Min. 150 credits at level 7	Max. 30 credits at level 6
Integrated Master's Degree	480	3,4,5,6,7	Min. 120 credits at level 7	Max. 30 credits at level 3
Professional Doctorate	540	6,7,8	Min. 360 credits at level 8	Max. 30 credits at level 6

Source: Quality Assurance Agency for Higher Education (UK)

The above credit system is meeting the requirements for Bologna Declaration and also provides for a common framework of qualifications supported by a consistent approach to credit levels and by ECTS (European Credit Transfer System).

As STCW competency tables are based on demonstrable learning outcomes at operation and management levels. The learning outcomes can be assigned credit levels using Bloom’s Taxonomy. Assessment of competence does not only encompass immediate technical requirement for the task but is to also reflect relevant knowledge, theory, principles and cognitive skills at varying degrees to work competently in different ships across a range of circumstances. Officer of watch has to also demonstrate competence to anticipate, prepare for and deal with emergency (STCW Code BII/13). He is expected to appraise, plan, execute and monitor his actions regularly, hence his competence reflects cognitive skills at all levels. Once the levels are defined then using detailed teaching syllabus outlined in IMO model courses 7.01, 7.03, 7.02 and 7.04 and compulsory sea time requirement the competencies can be assigned by a number of credits.

The total credit calculation for nautical stream is given below.

Table 2

COC	College Time Hrs (Credit)	Compulsory sea Time (Work based Learning)	Total Credits	Levels	Available Learning Hrs
Operator level	1560(156)1 997 (99)2	730(73)3	328	3,4,5	730(73)5
Management level	707 (23)4		23	6,7	2190 (219)5
Total	1704 (108)	11520 (360)	638		292

1. Pre sea training time (one year face to face learning)
2. learning hours as per IMO model course 7.03
3. One fourth of sea time taken as learning time (one year of sea time at cadet level and three years up to masters level.)
4. Learning hours based on IMO model course 7.01
5. Available learning hours based on 2hrs daily of compulsory sea time days

Hence it is seen that the STCW competencies table associated with the Certificate of Competency (COC) can be easily assigned equitable credits and levels. On comparing the tables 2 and 3 we find that the ship’s officer at operator level is going thru 328 credit hours of learning which is much more than credit hours required by bachelor’s degree program of 300 credits. However since the certificate of competency learning is more task and skill based therefore it is required that seafarer is exposed to higher learning environment and methodologies by offering him one of the compulsory 30 credit module like human resource Management, General Management principles, social sciences and another non credit compulsory module on research methodologies and writing spread over one year to get his Bachelor’s degree. This should be offered to all holders of operator level certificate of competency for existing seafarers thru distance learning mode with compulsory research project after eight weeks of contact classes on the specialized subjects and a workshop of one week on research writing. The course once built in with pre sea training than the cadet shall be able to obtain his bachelors along

with operator level COC. Minimum duration of the course shall be one year including nine months compulsory sea time for research project.

The master's program shall be offered to all management level COC or seafarers holding a Bachelor's degree. For masters program 180 credits are required compared to 242 credits available for learning at sea (table 2) hence the master's program can be easily delivered during this time. Since master's program is a specialized module therefore it shall include initial lectures on the specializing subject, workshop on research methodologies and writing for five months followed by an assignment and compulsory writing of dissertation on the specialized topic with applicability to shipboard scenario. Sea time may be made compulsory to carry out such research activity. The IAMU can play major role in making uniform guidelines for recognizing seafarer's competencies and suggesting a structured post graduation program built in with management level COC for the seafarers desiring higher education. The authors are in the process of developing such a program.

21st century is seeing exponential growth of information and technology. Maritime education has not yet made the most of it as yet. Internet connectivity to ships at sea is crucial in delivery of higher education programs and for conducting research activity on board ships. Cooperation from ship owners and managers is necessary in supporting this need of the seafarers. The ships need to be provided with Internet facility, mail and e-mail connectivity. Mentoring and monitoring on board are essential to keep the learners motivated and for them to derive maximum benefits from the learning environment.

4. CONCLUSION

Shipping industry is often referred to be the veins or lifeblood of world trade but this lifeblood will stop flowing if the heart (the seafarer) stops pumping. Shortage of well-trained and educated seafarers is looming large with shipyards churning out ships faster than ever before. Romance of the sea and wage differential has given way to more social and rewarding careers ashore. Retention of trained ship's officers and attracting talented youth to the seafaring is a challenge today. Attracting talented youth to take career at sea and providing them with good education and training is critical to safe and efficient operation of the shipping industry. Educational organizations like IAMU, the marine universities and colleges have major role in the facilitation of the above goal. Empowering seafarer with higher education along with competency skills will provide necessary flexibility, stability and security to the career at sea. Higher education will not only help in developing seafaring into a lifelong career but will help in better shipboard management. It will provide seafarers with much needed appreciation and motivation. Social integration through cross-stream education and awareness will also assist in attracting young talent to shipping. Maritime universities will have access to

unique research facility (Grey, 2007) and talent. The role of maritime universities is to take this opportunity and develop and offer programs related with maritime cluster activities and humanities so that the talented youth is wooed by the internationally recognized academic qualifications. Awarding of work based credits to seafarer's certificate of competencies and facilitating learning at sea is essential to quality education that is most efficient in time and money. In today's globalised world where shipping being first and most global in nature it is surprising the shipping industry is still talking of local harmonized education instead of global integrated education. When majority of ships with multinational crew operate in a socio-economic environment "why are the seafarers being trained in isolation?" This will raise the educational standards and provide for easy transition from seafaring to onshore employment (Laubstein, 2007). The role of International Association of Maritime University (IAMU) is most important in providing a platform for the global maritime universities to collaborate and share academic, financial and human resources with each other in order to meet the challenges of the industry. Thus to realize the objective of sustainable global system of MET of excellence the IAMU has a role not only in horizontal integration but also in vertical integration of the maritime education and training.

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