Constanta Maritime University's Role in Training Future Romanian Officers

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CMU considers education along with scientific research to be the most important factors of economical growth, and human resources are seen as the main condition for permanent development and innovation. That is why every higher education institution should target first towards identifying, training and developing students' innovation, creativity and originality. On these lines, traditional teaching and evaluation practices are considered to be out of date on the background of nowadays economical, social and cultural conditions. The development of maritime transportation and its connected activities imposed the necessity of having more trained people involved in operation, able to act in very various situations based on a considerable volume of knowledge. CMU, through all members of the academic community, promotes the concept of innovative university, with a specific interest towards practices allowing educational activities' to focus on student's needs. The suggested education system is an open and flexible one, able to easily adapt to all requests coming from world maritime industry and connected legislation. CMU considers that providing quality into educational performance is a fundamental option today in order to adapt to continuously changing needs of the maritime and engineering environment, acknowledging the fact that national and international competitive universities have developed and are permanently improving their evaluation and quality promotion internal mechanisms. In this paper we are trying to point out the main characteristics of the training programme inside the university and how it influences the young officers in their future career.

Keywords: maritime university, officer, training

1. Introduction

Maritime Education and Training is quite an expensive system since it requires high investments. Training on board ships is a difficult target to achieve for all the maritime universities. The main question is if this training on board should continue or could there be another solution for training students within the university. Maritime Education and Training became expensive in Romania since costly equipment, such as simulators and training ships, were considered by the Romanian Naval Authority to be a necessary prerequisite for offering a high-level education. This situation, which suggests the compulsory need for these resources, worth several million euro and incurring considerable running costs, is acerbated by the reduced number of students at many MET institutions. It also leads to the fact that not all institutions can offer high-quality MET (particularly not those which cannot afford expensive equipment) and that maritime education is more expensive than it needs to be. These arguments make it necessary to have a closer look at costs and financing of MET and to investigate the constraints in the present economic conditions.

Rapid evolution of technologies, increased globalization, communication, and economy factors will govern any attempt at finding the best costs' reducing solutions. Therefore, it is compulsory for the maritime universities to catch up with the technologic advancements and to improve the quality standards in order to remain viable and competitive, to design the education of the next generation and to compete with other universities. Constanta Maritime University is a good example of a maritime institution that had to reduce expenses by suspending students' training on board its own ship,

"Neptun", in 2004. Therefore, our university uses a protocol with the most influent shipping companies in Romania, for training our students on board their ships.

2. Maritime Education in the Present Economic Conditions

Over the generations, the education of professional officers has undergone many evolutions. Today's maritime universities, academies and faculties using advanced methods of teaching, modern simulators and other sophisticated equipment have not to forget that practical training plays an invaluable role in officers education. Training ships and on board practice gives students and cadets an important and unique opportunity to achieve proper skills for performing their future job requirements under the control of experienced teachers and seafarers.

Practical on board training of maritime students became a very important component of the maritime education process since the International Maritime Organization (IMO) imposed seagoing practice as an integrated educational part for future seafarers. Therefore, the optimum solution could be the training of the future officers performed by combining the simulator hours (Radar Training, Ship Handling Training, GMDSS Training) inside the maritime universities with the training on board training ships or on board merchant ships.

2.1 Training on board

On board training record book is an important component of the training process as it includes sea training tasks for cadets. During this training, the cadets gain the professional skills and experience necessary during the work process as a watch keeping officer. On board training skills achieved according to the program included in the Training Record Book fulfil the minimum requirements for certification as an officer in charge of a navigational watch.

During the sea training period the cadets have the opportunity to combine the theoretical knowledge obtained during the classes taken at the maritime university and the practical knowledge achieved first on the simulators in the university and now improved when being onboard a real ship. It allows the future watchkeeping officer to learn everything about his job on board modern and automated seagoing ships.

However, training on board training ships involves spending a large amount of money by the maritime university that owns the training ship (costs for maintaining and repairing the ship, costs for the crew, costs for operating the ship – fuel, spare parts, taxes for crossing the channels, taxes for calling a port, for berthing, flag costs and so on), a sum of money that could be redirected to investing in a better material base inside the university in this present economic crisis (last generation simulators, teaching aids and materials for students and teachers). Training ships belonging to the maritime universities also imply the need for teachers with a particular on board experience to be present on board the training ship during the training period and these teachers also have to be extra paid.

2.2 Training in a multicultural crew

Another important issue to be taken into account is the multicultural crew that will not be on board a training ship under the national flag of the university. Nowadays, the shipping industry is a multinational one and future maritime officers should be prepared for working in a multinational crew. All activities in this industry are based on interaction and collaboration between people from different countries and cultures. This is why Constanta Maritime University introduced specific classes in the curricula such as "Culture and Multiculturalism". But these aspects become more complex when we refer to onboard ship activities.

For this reason, it is necessary to observe and study the kind of compatibilities or non-compatibilities that exist between seafarers from different countries in order to create a proper working environment on board the ship. These problems are worse when we think for example about a cadet at his first experience on board a ship and especially in a multinational and multicultural crew. This category includes cadets and young officers who performed their practice stages on board merchant ships under international flags.

Facing a multicultural working environment, many seafarers have accommodation problems, difficulties in the working relationships onboard and the worst problem has been created by the use of a foreign language, mostly maritime English, in the daily duties communication. The multicultural problems are hard to be managed at the first contact and here we refer to young maritime cadets and officers, people who can be very affected by the difficult relation especially in communicating with those of a different nationality.

A solution could be the involvement of the training institutions in preparing the young cadets for a multicultural work environment. Before their first experience onboard ships, a special training about multicultural concepts and social activities in a multicultural crew would be useful in order to provide the necessary knowledge about and how to deal with problems raised by cultural differences.

According to Popescu and Varsami [5], maritime English represents another problem for students. It is a fact that the language barrier on board the ship can be overtaken only if the students really master the maritime English, so it could be important for them to work in a multinational crew right from the very beginning in order to get used to speaking in a different language other than their mother tongue. Therefore the teaching curriculum of our university provides maritime English classes for all the four years of study.

In order to reduce the expenses caused by the training of young deck cadets on board a university's own training ship, it would be much cheaper to sign a collaboration protocol with the shipping companies. [3] This way, students have the opportunity to work in a multicultural environment and to get used to it, having the opportunity of improving their Maritime English and the opportunity of learning from experienced seamen. Also, another advantage of these protocols is in favour of the shipping companies having the possibility to train their future officers as per the company's policy and on their own type of ships.

Constanta Maritime University is a good example of a maritime institution that uses a protocol with the most influent shipping companies in Romania. In 2004, the University suspended the students' training on board the training ship "Neptun". Since then, the solution found for training the deck and engineer cadets was to send them in international voyages with different shipping companies, local or international and for this action the local crewing agencies or ship owners' offices have been contacted.

This was the accomplished first step, when over half of our students covered their requested onboard training on ships belonging to different owners, most of them, international shipping companies with a great name on the world shipping market, as NYK Ship Management from Japan, Peter Dohle from Germany, Maersk from Denmark, CMA-CGM from France and many others, in total 22 shipping companies being part of the partnership.

Therefore, Constanta Maritime University is a good example of how not using a training ship can work. Money that should have been invested in a new training ship were spent for training the teachers, for acquiring last generation simulators, for investing in a high standard material base, for improving the library with the latest editions of the required bibliography and so on.

2.3 Training onboard merchant ships through ERASMUS programme

ERASMUS is part of the communitarian education programme SOCRATES and includes actions meant to encourage European cooperation in the superior teaching system. ERASMUS supports the development of the European dimension of university and post university studies, and it covers all study subjects and domains.

The programme pursues to continue, into a revised and extended form, the action project of the European Community for students' mobility (European community Actions for the Mobility of University Students), having as objectives the quality development and consolidation of the European dimension in the superior education; promoting trans-national cooperation between universities on all educational levels (university diploma, post-university studies, doctorate), encouraging students' and teachers' mobility, improving transparency and academic acknowledgement of studies and qualifications obtained in any of the European Union countries, harmonization of university studies curricula, providing them with European value in order to become compatible with well known university's curricula in EU, development and extension of the Transferable Credits European System, meant to facilitate the academic acknowledgement of diplomas and qualifications obtained in partners universities.

ERASMUS programme is developed in Constanta Maritime University during the onboard training periods performed by students who were onboard ships in international voyages. In this view, our university has signed protocols with the largest shipping, crewing and manning agencies in the United Kingdom (Dohle Manning Agency, Zodiac Maritime Agencies Ltd. and Carisbrooke Shipping Ltd.), in Denmark (Maersk Marine Services Ltd) and Germany (Oskar Wehr KG Gmbh & Co, International Tanker Management Gmbh) which provided students' recruitment for the cadet position, their training and monitoring during the onboard training period. We should also mention the fact that, besides the monthly scholarship offered by these companies for our students, they also benefit from the best onboard learning conditions, as well as the possibility to have access to the newest technologies and equipments, compulsory instruments for the navigation activity.

Shipping and ship management companies and maritime training institutions must work together to tackle the raft of concerns that dissuade school leavers and college graduates from embarking on a sea-going career. From this point of view and taking into account the latest experiences one can honestly conclude that much more can be learned on board merchant ships especially about the safety and watchkeeping tasks.

The costs for training the students on board training ships could be totally reduced and redirected to other more important investments and the training on board could be solved by the shipping companies that need to train their future officers. It is also a good deal for the shipping companies as they train the students as per their own purposes and they make sure that they will have well trained officers on board their fleet ships.

3. Cooperation between Constanta Maritime University and the Local Maritime Industry

On board maritime students' training became a very important component of the maritime education process since the International Maritime Organization (IMO) introduced seagoing as an integrated educational part for future seafarers.

Over the generations, the education of professional officers has undergone many evolutions. [1] Today's maritime universities, academies and faculties using advanced methods of teaching, modern simulators and other sophisticated equipment have not to forget that practical training on board a ship plays an invaluable role in officers' education. On board practice gives students and apprentices an opportunity to practice their skills under the control of experienced seafarers.

This means that shipping companies need to have a certain standard for employing when commencing collaboration with crewing agencies all over the world and those young future officers should pass several tests before being accepted on board merchant ships. Simultaneously, the company should provide the best training programme for these apprentices as it is in their interest to have well trained officers.

In this paper we are trying to point out the fact that a proper training programme of future officers means combining simulator hours (Radar Training, Ship Handling Training, and Global Maritime Distress Safety System – GMDSS Training) provided by the Maritime University (in this particular case Constanta Maritime University) with the experience acquired on board merchant ships inside a multinational crew.

3.1. Solution for Compulsory Training on Board

In our opinion, in order to obtain the best training for young cadets on board, it is much better for the maritime university to sign a collaboration protocol with the shipping companies. Also, the shipping companies can form their future officers as per their company policy and on their type of ships. [4] It is in their interest to train the apprentices the best they can in order to have on board well trained officers after the students ended their 12 months period of training on board.

On board merchant ships, there are usually one, two or maximum three cadets, so the entire attention of the officers focuses on training fewer people than on board a training ship where there are more cadets (some training ships can accommodate up to 30 students) and so it is rather difficult to properly train each one of them and to make sure that they fully understand their responsibilities. But there is also the reverse side of the coin for the shipping companies – the students they take on board could have a poor theoretical background or they might not adapt to the sea life, so the Master could be forced to disembark them and so the company could lose the money invested for bringing them onboard.

As previously mentioned, Constanta Maritime University is a good example of a maritime institution that uses a protocol with the most influent shipping companies in Romania. Recruitment for onboard practice of cadets is done by the Crewing agencies in consultation with the school lists of students (by agents) and the test imposed to the cadet who goes into effect (specialized English tests, interview with a manager or crew manager on general maritime knowledge, logic, test insight and psychological profile). The main objective of the onboard training is to achieve or exceed the standards of competence specified in the STCW Code.

Therefore, Constanta Maritime University is a good example of how not using a training ship can work and this way the money that should have been invested in a new training ship were actually spent for training the teachers, for acquiring last generation simulators, for investing in a high standard material base, for improving the library with the latest editions of the required bibliography and most important for developing training on board programmes that actually help the future maritime officers.

Constanta Maritime University's main objectives concerning the on board training programmes are:

- increasing students' training level in order to integrate them in the European environment and provide compatibility and comparability with European diplomas regarding quality and competencies in Constanta Maritime University study domains;
- implementing a monitoring system of graduates' hiring capacity;
- identification of the maritime and technical – economical environments' requirements and real expectations regarding each specialization graduates' competencies and correlating them with the university's experience and international (European) practice;

- continuous tracking of students', graduates' and employers' feedback, regarding educational performance structure and quality, and improving it accordingly;
- improvement of students' practical training by increasing the number of practice jobs on board operating ships belonging to national and international companies;
- University's academic integration accomplished by promoting partnerships' development with public and private organizations aiming for supporting students' integration process in the social economical life.

Constanta Maritime University disposes of a "*Scholarship* REGULATION" and other forms of material support for students, where types of scholarships and conditions for getting them are presented. Scholarships are given from the state budget allocations and from own resources. The best example when it comes to the on board training programmes is the Japanese Ship Management Company NYK which awards monthly scholarships during the whole period of school to students that take and pass the selection exam of the company. Besides this scholarship, that actually represents a support for school expenses, students get a wage for the period they are embarked as Deck/Engine Cadets on board the company's ships.

The students training on board merchant ships combining with the theoretical base acquired from the University's classes obtain general competencies and abilities like:

- Usage of electronic charts and complex calculi of navigation problems based on the knowledge accomplished by: Electronic Navigation, Radar Navigation, Seamanship, Theory, Construction and Vitality of Ship, Bridge Team Management, Commercial Operation of Ship, Voyage Planning and Execution, Astronomy and Celestial Navigation, Ship Handling, Navigation in Special Conditions.
- Conducting and coordinating experiments, measurements, analysis and interpretation of obtained data and usage of techniques, special instruments and modern practices in the engineering activity based on the knowledge accomplished by: Electric Aids to Navigation, Thermo-techniques, Heat Engines, Electronic Transducers and Measurements, Mechanics, Electronic Devices and Circuits.
- Solving of managerial, communication, professional ethics, specific legislation and environment protection problems based on the knowledge accomplished by: Bridge Team Management, Maritime English, International Maritime Law, Global Maritime Distress and Safety System, International Maritime Organisations.

4. Implementation of the 1995 STCW Convention in Constanta Maritime University

Today, Constanta Maritime University is the principal maritime training institution in Romania. This position has been acquired through a continuous effort to offer to future deck and engineer officers the best training and knowledge in the interest field. In this way, we have made a number of changes, starting with revaluation of curricula, bringing it more closely to the present requirements of STCW Convention and shipping industry requirements, continuing with improvements of teaching methods, usage of high technology and newest simulators in this process. The development of the maritime transportation and its connected activities imposed the necessity of having more trained people involved in operation, able to act in very various situations based on a considerable volume of knowledge.

To achieve these standards, the training process, especially for operation, safety and security activities, must be highly professional and in concordance with the international requirements in the field. This professional training involves the use of the latest developed techniques, as simulators and dedicated computerized programs. These new techniques and working procedures in scope of a better skills development has represented, in the beginning, a challenge for the traditional maritime academic training field, some of them still being a challenge due their continuous improvement and updates.

Once the shipping industry develops and the work force market requests more professionals and specialized persons, the training system, at all levels, but special at academic level, have to accept the challenge of necessary technology in order to respond and provide the required personnel. In all cases where it was necessary to change the traditional way of teaching and practice to the new one, the first step was represented by the mentality changes of the trainers involved and, in the same time, by the rethinking of the theoretical base, including the technical aspects now. This was not an easy process, the beginning and first stages were complicated, partially due to the reduced knowledge about the new technologies and the better approach way to perform the best training in order to reach the proposed results.

4.1. The development of the training process in Constanta Maritime University according with the STCW Convention and shipping industry requirements

The improvement of the training process is compulsory in the present is due to the new position of the Maritime Education and Training institutions, as providers of services for maritime industry and correspondent activities. For this they must never lose sight of the following underlying factors: *programmes and courses must meet industry standards and regulatory requirements, programmes and courses must be relevant to and meet clients and industry needs, training level of graduates must be accordingly with STCW and national authorities requirements, teachers and trainers involves in the training process to have a high level of knowledge and understanding of the system and his requirements under present in force regulations.*[2]

According with these major objectives, Constanta Maritime University has developed its study programmes under requirements of the Convention and applying the curricula recommended by this through the IMO Model Courses for each of the main specialisations, Navigation and Marine Engineering.

Not only the programmes and curricula have developed and updated according with these requirements, also the study cycles have been structured in operational and managerial levels. For achievement of these objectives, Constanta Maritime University performed a process of training of the trainers, to improve or to reline their knowledge and teaching skills to the present conditions and evolutions, based on:

- ✓ Increasing lecturers competencies through promotion of knowledge and technologies in the academic maritime field;
- ✓ Creation of a development, update and on-line management framework for initial and continuous training of the human resources;
- ✓ Initiating studies and analysis to define formative programs and an optimum correlation of these with maritime industry necessities;
- ✓ Increasing access and participation of lecturers to formative programs and to obtain a double qualification;
- ✓ Verifying the process and teaching activities through initial and continuous formative programs in order to improve TIC using level.

All these are based on the premise that continuous learning is the main condition for restructuring and development of educational and formative systems, for assuring decisive competencies and to realize the coherency between persons involved in the maritime academic system. Also, it is necessary to involve maritime lecturers in the international maritime transport framework, to put them in direct contact with the end users of their work, the companies from maritime industries and to know exactly their needs. The international maritime companies are the necessary source of information regarding worldwide requests for employing maritime personnel.

Collaboration with partners from the maritime field, as project objective, will be found on communication and information changes to identify and implement of adequate modalities to increase the number of work places and to optimize these. According with the revised STCW Convention, the

simulators must be used more effective in the training process of the future seamen and officers. The high technology has to be used in order to increase the level of training and to reach higher standards of knowledge and skills. The use of simulators and technology, especially electronic devices in the training process offer the possibility to create models close to reality, students are more implicated in the events and also more receptive to the training objectives.

5. Conclusions

In the present, Constanta Maritime University, as a maritime training institution, complies with and applies the complete requirements of the STCW Convention and national legislation regarding levels of training and content of the training process according with the final specialisation, deck or engineer officer.
Study programmes are structured according with the requirements of the present regulations and with the shipping industry needs, at the end of their studies, the graduates having knowledge and skills necessary to perform their on board duties in respect of safety and secure procedures and standards.

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