

Cooperation between Constanta Maritime University and the Local Maritime Industry – A Solution for the Compulsory Training On Board

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Abstract Maritime students' training as far as seagoing experience is concerned represents a sensible issue for maritime universities all over the world. The main question is how could this be done if a training ship is missing? A solution to this problem could be a protocol signed with crewing agencies. Closing this protocol, crewing agencies have a responsibility in training the young students for serving their compulsory periods on board merchant ships in order to get their officer on watch licence. A good example is given by Constanta Maritime University that has such a signed protocol with over 20 crewing agencies and it has been noticed that it has been working properly.

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. 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. Thus, 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. In the same time, 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.

Keyword: *maritime education, maritime university, training on board, crewing agency*

1. Maritime Education and Training

The quality improvement of the Maritime Education and Training system is an issue which strongly impacts worldwide the competitiveness of the shipping sector. However, Maritime Education and Training is a really expensive Education and Training system as it requires high investments and incurs high running costs. Taking into account the present economic crisis, all the maritime institutions (universities) should consider cutting their costs in order to survive but in the same time not to reduce the quality of Education and Training. Training on board training ships or training on board merchant ships is a sensible issue for all the maritime universities. The main question is if this training on board should continue or there could be another solution for training the cadets for the required 12 months (this could be done through a protocol with the main shipping companies).

Maritime Education and Training is expensive education and training system, particularly if costly equipment, such as simulators and training ships, is purchased and operated which is considered to be a necessary prerequisite for offering high-level Maritime Education and Training. This situation, which suggests sharing or concentrating these resources, which are worth several million euro and incur considerable running costs, is exacerbated by the reduced number of students at many Maritime Education and Training institutions. It leads to the theses that not all institutions can offer high-quality Maritime Education and Training (particularly not those which cannot afford expensive equipment) and that Maritime Education and Training is more expensive than it needs to be. These arguments make it necessary to have a closer look at costs and financing of Maritime Education and Training to investigate the constraints in the present economic conditions.

Rapid evolutions of technologies, increased globalization of information, communication and economy will occur. 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 next generation and to compete with the other universities. In the present economic conditions, these can be done if the costs for training the students on board training ships are reduced, so that the money can be redirected.

Constanta Maritime University 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 capacities.

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. Constanta Maritime University, 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 the world maritime industry and connected legislation such as 1995 STCW Convention.

2. Training the Apprentices

2.1 Training inside Constanta Maritime University

Constanta Maritime University is training engineers for navigation and naval engineering field, according to the national standards developed by the Ministry of Education, Research and Innovation, and to the international standards elaborated by IMO (International Maritime Organisation). Apart from the evaluations made by the Ministry of Education, Research and Innovation, the University's curricula are assessed and approved by the Romanian Naval Authority considering the legislation and recommendations of the International Maritime Organisation, and of the European Agency for Maritime Safety and thus, the certificate of competency has international recognition.

The Bachelor of Science degree graduates have the advantage of a double certification. They get:

- Engineer diploma in the Naval Engineering and Navigation field (the European equivalent of Bachelor of Science diploma);
- Officer of a Navigational/Engine Watch.

Constanta Maritime University is fitted with simulators and laboratories with software for each specialty discipline thus every student from each faculty gets the best theoretical training before going on board merchant ships as Apprentices.

Constanta Maritime University is particularly aiming at providing training by IMO courses for the students of all maritime specialisations as well as guiding students who carry out onboard training. First year students are attending four IMO courses necessary to get the seaman's book and apprentice deck officer certificate.

As a result of the examinations that take place at the end of the classes the graduates will get certifications of graduation for each course. All the students that have passed the IMO classes and the medical tests get the Seaman's Book and the Apprentice Deck/Engine Officer certificate from the Romanian Naval Authority. As a consequence, students can be trained on board merchant ships. This period of training (12 months) is compulsory for getting the deck/engine officer certificate of competency. Students' training can be performed on board merchant ships of 500 TRB or above, on international voyages.

Also, the University develops programmes for the continuous training of students. *Bridge/Engine Team Management* course aims to familiarize students with the bridge/engine systems operations considering the special conditions of ship operation and to perform teamwork procedures required on board the ships. This course consists of drills based on bridge/engine simulation. The drills are supervised by an instructor and a technician who, initially, will allow the students/officers to familiarise with the instruments and controls found on the bridge/engine room of a merchant ship. The student/officer will be able to locate and use the bridge/engine room equipment in normal operating conditions.

The exercises get more and more difficult and the student/officer gets accustomed with the procedures used for turning on the navigation/engine room equipment. Every exercise is preceded by a briefing and followed by a group discussion - debriefing, in which the actions and decisions taken by the student/officer are analysed.

During exercises, every student/officer will play different roles within the bridge/engine team and will have the possibility of taking part in all the operations done during the watch, covering all the steps in the chain of command of the navigational bridge/engine room. The scope of these exercises is to achieve the following goals:

- Familiarisation with the use of instruments and controls from the navigational bridge/engine room;
- The ability of making decisions;
- Organising the bridge/engine team;
- Understanding the individual role in the chain of command while working in a team;
- Understanding the specific tasks according to certain situations;
- Understanding the necessity of a good planning, the following of step by step check lists, and the scheduling of each specific procedure;
- Good understanding of the watchkeeping procedures;
- Getting the expertise in identifying the operational problems and solving them;

Global Maritime Distress and Safety System Long Range Operator's Certificate Course -GMDSS LRC is another course provided by Constanta Maritime University and consists of the students' familiarisation with the issues considering the fundamental theoretical concepts about: maritime radio - communications and satellite equipment and systems (SMM - Maritime Mobile Service and SMMS - Satellite Mobile Maritime Service), communication techniques used in GMDSS, radio frequencies, GMDSS functions, and communication procedures etc.

The goal of training is to achieve abilities for operating, testing and maintenance of the GMDSS equipments and systems provided and set up on yachts and pleasure boats.

This course is both theoretical and practical, aiming at complying with the requirements of the curriculum for SMMS - GMDSS - LRC Radio Operator Certificate, issued according to that

specified in A IV/2 STCW Code, the CEPT ERC/REC 31 - 05 E recommendations and to IMO courses models and ITU documents.

2.2 Training On Board Merchant Ships

According to the STCW Convention requirements, the sea time necessary for obtaining the watch officer license should be minimum 12 months.

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. On board practice give students and cadets an opportunity to practice their skills under the control of experienced teachers and seafarers.

As previously mentioned, practical on board training of maritime students became a very important component of the maritime education process since International Maritime Organization (IMO) proposed seagoing as integral educational part for future seafarers. So, the training of the future Romanian officers is performed by combining the simulator hours (Radar Training, Ship Handling Training, GMDSS Training) inside Constanta Maritime University and the training on board merchant ships.

On Board Training Record Book includes sea training tasks for deck cadets. During this training, the cadets gain professional skills and experience necessary in the work as a watchkeeping officer. On board training skills gained 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 sea training the cadets learn to combine theoretical knowledge obtained during the classes from Maritime University and practice. It allows the future watchkeeping officer to learn the job on board modern and automated seagoing ships. Sea training properly integrated with theoretical education is necessary for an officer of a contemporary ship. Practical training should be compared under supervision of the Master, Chief Officer and designated supervising officers. Properly filled Training Record Book is evidence that the trainee has achieved professional skills and experience required in the standards of competence according to the Code A of the STCW 78/95 Convention. That is why the Training Record Book should be precisely filled up.

There is also another important issue to be taken into account and that is the multicultural crew that will be on board a merchant ship. Nowadays, the shipping industry is a multinational one. All activities in this industry are based on interaction and collaboration between people from different countries and cultures. In an international company these details are common, due to company necessity in having offices placed in different countries according to business interests. 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 seamen from different countries in order to create a proper working environment on board the ship. These problems are even more important when we talk about a person at the first experience on board the ship and especially in a multinational and multicultural crew. This category includes cadets and young officers who made their practice stages on board merchant ships under international flags.

Facing multicultural working environment, many seafarers have accommodation problems, difficulties in working relationships onboard and the biggest 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, persons who can be very affected by the difficult relation with people that have a different nationality. A solution can be represented by 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 can prove to be useful in order to offer the necessary knowledge about how to deal with problems raised by cultural differences.

Maritime English represents another problem for students. It is a fact that the language barrier on board ship can be overtaken only if students really master Maritime English, so it is important for them to work in a multinational crew in order to get used to speaking in a different language other than their mother tongue.

2.3 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. This way, students have the opportunity to work in a multicultural environment and to get used to it; they have the opportunity of improving their Maritime English and the opportunity of learning from experienced seamen. Also, the shipping companies can form their future officers as per their company policy and on their type of ships. 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.

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 engine cadets was to send them in international voyages with different shipping companies, local or international and for this action the local crewing agencies or owners' offices have been contacted. This was the first step, when over half of our students covered their requested on board training on ships belonging to different owners, most of them, international shipping companies with a well known name on the world shipping market, as AB Crewing, Ofer Brothers (Management) Ltd., Dohle Manning Agency, SeaTrans Crewing, Barklav, Cosena, Zodiac Maritime Agencies Ltd., Histria ShipManagement, Smart Group, Maersk Romania, V Ships Manpower, Fair Play Maritime, Navmar Incorporated Ltd., Triton Company, Bright Maritime Service, Rickmers Marine Agency Romania, Kru Maritime, Capital Ship Management, Stargate Crewing Agency, Tigitrans S.A., Cardinal Shipping Services, CMA Ships 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 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' feed – back, 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 scholarships of 100 EURO per month 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 400 – 500 EURO wage for the period they are embarked as Deck/Engine Cadets on board the company’s ships.

The students performing 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.

3. Conclusion

Nowadays, it is generally accepted that in order to maintain a safe shipping environment all seafarers across the world should observe high standards of competence and professionalism in the duties they perform on board. The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended in 1995 (STCW-95), has the role of setting those standards, governing the awarding of certificates and controlling watchkeeping arrangements. Its provisions not only apply to seafarers, but also to ship-owners, training establishments such as maritime universities and national maritime administrations.

Therefore, all Constanta Maritime University’s affiliations and member qualities along with the fact that our university is evaluated every year by the Romanian Naval Authority are solid proofs of a proper implementation of the 1995 STCW Convention in our institution. All training programmes and assessments in our university are provided in connection with the STCW-95 certificate and comply with STCW-95 standards, being approved by the respective Administration in our country, the Romanian Naval Authority.

In our opinion, 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.

While the world is facing a large economic crisis, it is important to cut costs from wherever it is possible. Cutting the costs for training the maritime students can also be good for them because they have the chance of training on board merchant ships and this is not a bad thing. They can accommodate to the sealife from an early stage of their career. They can see from the beginning what the ship means (working in a multicultural and multinational crew, the responsibility for the lives of the entire crew members, for the safety of cargo and the ship itself while performing the watch and not only during this period, using a language different to their native one while working on board and so

on). This is an economy of scale that could permit the Maritime Universities to maintain their strong positions in the Maritime Education and Training.

Our final conclusion can be resumed to: as far as Constanta Maritime University is concerned from the training on board point of view, the protocol signed with the 22 crewing agencies represents the best solution for training on board because the companies offer the best conditions for students to learn and to acquire the proper experience for developing a seamanship career..

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