

A Perspective of Seafarers Training

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ABSTRACT

A university graduate is generally believed to be a well rounded person, with not only a strong understanding of the professional skills of their major course of study, but also a liberal education in humanities, social issues, history, etc. Many universities have periodic reviews of the curriculums of their majors, with the purpose of ensuring that the curriculum is relevant to the changing nature of the major. Without such a periodic review, medical universities would still be teaching the use of leeches, blood letting and other medieval period techniques and would not teach modern medical advances such as antisepsis, the diagnostic uses of MRI, etc.

As the breath of knowledge of a profession grows, there is a tendency to add material to the professional curriculum at the expense of the traditional liberal education. The new courses would be added without other changes or deletions of the existing curriculum. Such an approach can compromise the academic rigor by placing so much material into a finite length program that it cannot be covered in depth without reducing the rigor of the studies. The other alternative could be to keep the rigor in the professional subjects, but reduce the liberal university courses, either in number or quality. This approach, taken to an extreme, would result in a program that is all professional training, and not a university education. While this may be appropriate for a technical school, it is not appropriate for a university.

The appropriate approach to this periodic review is to realize that no subject is not to be considered for deletion and to start the review with a blank table on which will be laid the skills and knowledge required for the graduate.

This empty table approach is complicated for members of IAMU as a significant portion of the professional skills are specified, not by the university faculty, but by the STCW 95, and this Code is often viewed as untouchable. It is the view of the author that the Code also needs to be periodically reviewed and changed to reflect changes in the profession, and that such a review is an appropriate task of IAMU Working Group I.

In this paper the author will examine the STCW code knowledge, understanding and proficiency requirements for their relevancy to current sea going skill requirements, with a view to recommending the deletion of outdated requirements. It is recognized that some of these

recommended deletions or changes will be controversial, but only through an open discussion by IAMU members will the curriculum of our universities provide our graduates with the skills and liberal education that they need.

1. Introduction

One of the objectives of the International Association of Maritime Universities is to develop a set of global standards for maritime education. It may be argued that this goal is to ensure that each member University adheres to acceptable standards of a university education. It is the opinion of the author that this should be only part of this goal. Certainly, each University should have an academic program whose rigor and depth meets the requirements of their accreditations organization. In addition, however, the content of the technical curriculum should be standardized by the IAMU, and this standardized maritime education should be solely the purview of the IAMU.

Currently, the content of the maritime training component of the curriculum is spelled out by the IMO in the STCW Code. Most member Universities of the IAMU have a curriculum that varies from University to University. For the purpose of this paper, I will use the current curriculums of the California Maritime Academy as basis for developing my arguments.

2. Current Curriculum

As a Campus of the California State University, we are obliged to have an accredited program in our majors that is at least 120 Units. A unit is 1 hour of class per week for a 15-week term. It is generally assumed that a student spends 2 hours outside the classroom in preparation for each 1-hour class. For laboratory components of the curriculum, 1 unit equates to either 2 or 3 hours of laboratory work. We do not give credit for work experience. To graduate, a student must have a grade point average of 2.0 out of 4.0 or greater in the courses in their major and in all baccalaureate courses. Students should undertake at least 12 units per term and course loads in excess of 20 units per term require special permission.

In the Maritime Majors, the total units required to complete the major is between 156.5 units and 187 units. At 20 units per term, this equates to 3.4 to 3.95 years. At 12 units per term it would take a student 5.6 to 6.6 years to complete their studies. To complete the major within the nominal 4 years a student must take a very heavy course load each term or transfer in the satisfactory completion of curriculum course work from other Universities taken either prior to starting at CMA or taken during the brief annual 2 month vacation period. This heavy course load allows little time for the student to participate in extra curricular activities or campus social life. With this heavy academic load the students have little time to study course material to any great depth. The result is that there is always pressure on the university to reduce the course rigor, a compromise that strikes at the very heart of a university education.

The California Maritime Academy has always placed a great deal of emphasis on the development of practical skills and knowledge in that we generally teach the student the theory then have them demonstrate the knowledge and skills in a laboratory or at sea setting. This

approach to the maritime training is in keeping with the STCW assessment procedures, and required little change when STCW 95 was implemented. In addition, in the United States, the Maritime Universities curriculum has been based on the principle of completing all theory and training required by a professional mariner through the management level. Thus our graduates only need the sea experience to upgrade their license from Officer in Charge to Management levels. Once a graduate completes the course and receives their initial license, they only return to a training institution for refresher training such as for Radar or for training in new equipment. For example, we anticipate adding, in the near future, Voyage Data Recorders to topics to be taught in the undergraduate curriculum. Graduates who did not receive this training prior to their graduation would most likely take a short course, at their own expense, to gain the appropriate knowledge and skills as this or any future knowledge requirements become required by STCW-95.

3. STCW-95 Code Requirements Recommended to be Deleted

In order to provide the graduates of a Maritime University with a rigorous and appropriate university education that includes the profession knowledge and skills necessary to be a competent mariner from their very first day onboard a vessel, the university needs to periodically revisit the content of the curriculum and add material to reflect the current needs of the industry as well as deleting antiquated topics. Unfortunately, we are not masters of our own curriculum. It would certainly be appropriate for the university to be responsive to the needs of the industry; if the companies that employ our graduates feel that they need to be knowledgeable about computer maintenance planning programs or computer payroll programs, we could accommodate that relatively easily. For example, a number of United States flagged shipping companies require that their Deck Officers have training in the use of Electronic Charts as they have outfitted all of their vessels with ECDIS equipment.

On the other hand, it is very difficult to teach a topic that has little if any relevance, as both the students and the instructors recognize that the time spent mastering this subject is wasted. As an example, the United States license examination organization continues to test ALL U. S. deck license candidates on Radio Direction Finder fixes. Yet the United States has no RDF beacons in operation, nor any RDF calibration facilities. In order to pass their license examinations, our students have to be able to calculate and plot an RDF fix, a skill that they will never use at sea in the pursuit of their profession. Yet they must be able to solve this problem type in order to obtain their Officer in Charge of a Navigation Watch license. There is no specific requirement in STCW model courses for the mastering of the skills needed to obtain a position fix using an onboard Radio Direction Finder. If this requirement is valid, then why not also require the ability to obtain an OMEGA fix? It will be necessary to soon add training in Galileo satellite system.

It is the opinion of the author that now is the time to delete all requirements for Officers in Charge of a Navigation Watch and Management level to be proficient in celestial navigation and in visual signaling. It is further the author's opinion that vessels no longer use celestial navigation or visual signaling in the operation of the vessel. To continue to require skill in the area of celestial navigation and visual signaling is to continue to pressure students to study antiquated

methods at the expense of newer and more relevant skills or at the expense of a rigorous classical university curriculum.

Some may argue that these skills must be retained in the event that GPS or GMDSS systems become unavailable. It is obvious to all persons in the maritime industry, that the economics of vessel operations require the reliability of these systems. This reliability is provided by redundancy; regulated for GMDSS. Most vessels now have more than one GPS receiver, as the cost is minimal. Good economics requires that the efficiency and accuracy of voyage monitoring must provide a greater accuracy than celestial navigation is capable of providing. In addition, modern satellite navigation systems are all weather, where celestial navigation is subject to the whims of the weather. The author recalls a voyage some years back where the sky was total overcast and rain for 5 days, forcing a landfall to be made on a 5 day old deduced reckoning position. This was done by slowing, approaching the coast at an oblique angle, and stopping upon detecting land on radar until the coast features were identified and a position determined. This landfall was the west coast of the United States, where offshore hazards did not exist. No responsible mariner, faced with schedule and economic pressures would attempt to make a landfall in this manner today. The industry requires that vessels operate to a degree of timeliness and accuracy that celestial navigation is incapable of providing.

Others may argue that skill in obtaining compass error from celestial observations is still necessary. It is my opinion that the reliability of modern gyrocompasses makes this argument mute. As an aside, I question even the need to have a magnetic compass on a vessel. Once landfall is made, other methods, which are more accurate than celestial observations, are available to determine if any compass error exists. The existence of a compass error, which will be slow in developing and small in magnitude, will not impact a vessel's open ocean voyage. If a sequence of GPS fixes show the vessel not making the track course, the mariner simply steers a course to make good the required track. It is immaterial if the course steered is not being made good because of compass error or wind or current.

Visual signaling has significant disadvantages as a means of communicating; it is slow, is limited in effective range and is difficult to establish as a means of two-way communications. In addition there is no international agreement on what are acceptable speeds or accuracy of sending and receiving visual signals. The only current use of visual signaling is the use of single flags to indicate a pilot is aboard, etc. It is the author's opinion that this use of signal flags is tradition only. The port control or other vessels do not rely on the display of these flags to be aware if a vessel needs pratique or a pilot or tugs, etc.

4. Conclusion

This paper has proposed a rather radical change in the knowledge and skills currently required of a licensed mariner. It is recognized that this proposal is open for debate. It is the author's opinion that this debate rightfully belongs to IAMU. There will obviously be changes in the knowledge and skills needed to be a competent mariner in the future. It should be the obligation of the IAMU to take the lead in these issues and use the expertise as university faculty and professional mariners of the members to identify the changes and work diligently to effect these changes in a

timely manner. If we do not take this role, we will find that our universities will lose control of our curriculum, that our academic standards will be tested, and the mariners of all nations will not have the skills and knowledge required to safely operate their vessels.