INTERNATIONAL ASSOCIATION OF MARITIME UNIVERSITIES
PROCEEDINGS OF INAUGURAL GENERAL ASSEMBLY
26-29 JUNE 2000, ISTANBUL, TURKEY

TOWARD A GLOBAL STANDARD MET SYSTEM - AN ANALYSIS OF THE STRENGTHS AND WEAKNESSES OF PRESENT MET SYSTEMS

D. Zec, P. Komadina, B. Pritchard

Rijeka College of Maritime Studies, Rijeka, **CROATIA**

ABSTRACT

The primary consequence of the globalisation of international shipping industry is harmonization enforced through the STCW 95 certification systems established in different countries. However, after several years of its application, beside many positive effects the legal and educational framework enforced by the STCW 95 convention also shows a number of drawbacks.

In this paper the consequences of the application of the STCW 95 convention on the organisation of the MET institutions are examined. Particular attention is paid to the effectiveness, strengths and weaknesses of the traditional, more academic MET systems in comparison with the more vocationally oriented system of maritime education and training. Conclusions are based on the recent experience of MET institutions in Croatia where MET institutions were recently forced, by government decision, to abandon academic approach and to apply "pure" vocational system.

Finally, assuming that present trends toward further harmonization and standardization will be maintained, the papers presents an outline of a possible future global standard MET system with particular reference to MET institutions.

1. INTRODUCTION

As a sociological process globalisation has been noticed for the first time in the shipping industry back in early 1970's. At that time a number of well-known shipping companies from traditional maritime countries have gradually changed the flag of their ships to so-called flag of convenience (*foc*) countries. At the beginning, companies registering ships in *foc* countries would retain national crews but after some time, first crew members and later masters and officers were replaced with seafarers, mainly from developing countries, willing to work for much lower salaries. Today, except at routes directly or indirectly controlled by a national authority, a great proportion of trading ships sailing at international routes have multinational crew on board. The number of different nationalities ranges from two or three up to twenty or more on great passenger cruisers. In the situation where the ship's owner, flag of the ship, ship's operator and crew members rarely come from one and the same country, the governmental control of education and training standards can hardly be implemented. Eventually the number of problems arising from such circumstances and severity of their consequences has progressively increased to the extent that an international action became a necessity. In response to this fast-growing problem the International Maritime Organization (*IMO*) organised the first International Conference on

Standards of Training, Certification and Watchkeeping of Seafarers in London in 1978 (*STCW*). Unfortunately, after several years, the minimum standards set up in the original convention proved to be insufficient, forcing IMO to practically rewrite the original text

2. STCW 95 - FRAMEWORK TO BE EXTENDED

Recognizing the importance of the human factor for all levels of maritime safety and environmental protection, IMO assigned highest priority to the work on the new text of the STCW convention, which was eventually accepted in 1995.

If compared with the original version, where only a broad outline of the certification system to be followed by the member states has been defined, the new text contains numerous improvements. Among the most important are clear and concise procedures for issuing certificates of competency and for their recognition, the competencies required are described in much greater detail as well as other duties and responsibilities of the member states, etc. Taken together, the new text of the convention has been generally deemed as a giant step towards standardization and harmonization of the certification systems used in member states.

It has been frequently stated that the most important difference between the 1978 and 1995 versions was the fact that new convention is competency-based. The term "competency" has been indirectly defined as phrase "incorporating prescribed standards or levels of knowledge, understanding and demonstrated skill". The terms "demonstrated skill" and "proficiency" are used interchangeable in the text as synonyms.

However, it has to be emphasized that the new convention did not in any sense define the processes to be followed for obtaining the competency, *i.e.* it did not try to standardize or harmonize any aspect of the maritime education and training (*MET*). In other words, the convention defined the final product of the MET process without defining the process itself. The "honourable" exceptions are numerous recommendations to member states to follow model courses (being recommendation themselves).

It seems that the authors of the convention tried to avoid any direct influence on the national MET systems as much as possible. For example, the convention did not even try to define the duration of education/training, resources and equipment, MET entry requirements, etc. Justification for such an attitude can be found in numerous variations of national MET systems in existence, making the task extremely complex. Another reason can be found in the fact that the basic requirements (to be fulfilled in a limited time as defined by the convention) burden administrations to the such extend that additional pressure could force them to consider or actually reject the convention.

Even with such an approach the influence of the STCW 95 convention on national MET systems cannot be disregarded. The convention clearly defined certificates at different levels as the final "product" of the MET process. Subjects to be taught are defined implicitly in the description of the each competency. Also, very helpful information can be extracted from the methods for demonstrating competencies as well as in the assessment criteria.

It can be stated that STCW convention, one way or another, just started the process of harmonizing various national MET systems toward an internationally agreed MET system. However, it will not be fast as it could be if requirements regarding curricula and institutional framework of the national MET system are articulated more clearly. Probably the most important changes will be imposed by the obligatory application of quality systems (QS) in the MET institutions. In order

to obtain QS certificates, MET institutions will be forced to compare their standards with whatever standard exists. In this respect, IMO model courses are of the highest importance since these are still the only existing ones, though unofficial standards concerning the process of MET. However, it could be expected that in following years model courses will be applied more or less uniformly by numerous national MET systems in the world.

In light of the relation between the STCW 95 convention and national MET systems, the STCW convention presents a major step towards an internationally harmonised certification system and, at the same time, a first step towards internationally harmonised maritime education and training system. From the standpoint of MET institutions it can be deemed as an international framework and basis for further development to be expected in the near future.

3. INSTITUTIONAL CHANGES - EXPERIENCE FROM CROATIA

Maritime education and training in Croatia has a long-time tradition. The first secondary schools, many of them still existing today, were established in the first half of the 19th century. A higher education programme, lasting two academic years and dedicated to masters and engineers, started in Rijeka in 1949, soon to be followed by higher MET institutions founded in Split and Dubrovnik.

In 1978 the Maritime Training School in Rijeka became the Faculty of Maritime Studies, offering two and four years programmes, and in the latter case, a Bachelor of Science degree. At the same time the institution became a full member of the Rijeka University.

During 1998 the Croatian government's decision to split the academic system in two parts, academic and vocational, became effective and the institution was forced to abandon the four year programme and to split in two institutions: the Rijeka College of Maritime Studies and University Department of Maritime Studies. The College deals with vocational education of seafarers while University department offers a university programme in the field of maritime transportation. Graduates of the University departments are trained to take up positions on shore. At the same time, Croatian maritime authorities have started the process of full implementation of the provisions of the STCW 95 convention. It has to be emphasized that institutional change of the education system did not influence the Croatian MET institutions on the secondary level as those on the level of higher education.

The institutional reform and the application of the STCW convention provisions have considerably changed the position of the higher-education MET institutions in the overall national higher education and technology (ET) system.

The changes regarding institutional organization and work are numerous. Since the higher education MET institutions are no longer a part of the local university, theoretically, the requirements to be met by students for the entry level need not necessarily to follow university standards. Another direct negative consequence is decrease of the requirements for the electing academic staff – they are no more required to obtain appropriate academic degrees (M.Sc. and Ph.D.) as before. As the STCW 95 convention, more or less clearly, prescribed a minimum content of education programmes, there are numerous requests for a stricter application of STCW 95 provisions, thus abandoning additional subjects (such as a higher mathematics). As for the existing higher-education institutions in Croatia are concerned, this means that the requirements to be met by the students in order to graduate (particularly regarding knowledge and understanding), previously in accordance with university standards, could be decreased.

Finally, the number and extent of research projects, previously quite common and important for a long-term development of an institution, almost disappeared from the everyday agenda.

As a direct consequence of the previously mentioned changes there is a number of requests to national ET authorities to establish higher-education MET institutions according to new rules in the smaller local centres where previously applied standards, particularly regarding academic staff and other resources, could not be met.

In addition, with the separation of academic and vocational education, seafarers wishing to obtain an academic degree after a number of years spent at sea have little or no possibilities to do so.

4. MET - WHAT NEXT?

In response to the changes imposed mainly by the mentioned political decision and partly by the application of the STCW 95 convention numerous members of the academic staff in Croatian higher MET institutions have raised a number of issues regarding future development of MET institutions, both in the Croatia and abroad. The most important issues, according to the authors' opinion are the following:

- Who is the real customer of MET institutions at a higher level? Individual seafarers, shipping industry, national administration, or the country as whole? Depending on the possible answer, the development policy of an institution will be completely different!

- Should higher education MET curriculum consist of vocational subjects defined in the STCW convention (educating the so-called "deep-sea drivers") or should they include general subjects such as higher mathematics, chemistry, and physics?

- What is the "depth" of the MET curriculum – only subjects directly associated with professional tasks (relating mainly to maritime safety and pollution prevention) or should some other additional subjects be included helping the student to understand the underlying processes (shipboard technology, law, economy, cargo, ports and their organization)?

- Should MET institutions include in their regular curriculum the subjects supplementary to those defined in STCW convention, thus covering a wider area of maritime transport, making education more expensive, but offering students extended possibilities when applying for positions on shore?

- What approach should be used when designing and conducting the curriculum taught at higher education MET institutions: theory vs. practice, problem solving vs. skills (blind routine)?

- How much effort should be dedicated to develop skills, knowing that skills are based on the presently existing technology that will be abandoned or replaced in due time, no matter whether in a few years or over the next decade? How much attention should be paid to almost abandoned technologies, such as celestial navigation?

- Should MET institutions on higher level dedicate a part of their resources to research projects? If so, what kind of projects?

It is worth noting that many important questions can be answered if answers to previously stated questions are known. An example could be the question of minimum qualifications for the academic staff - as high as possible if an MET institution intends to teach students how to use problem-solving methodology or if it is involved in research projects, and as low as possible if an MET institution's sole concern is to offer the minimum level of competency as required for

the target certificate in the shortest possible time and at a price as low as possible (the so-called "deep-sea driver" option).

For the authors of this paper the most viable option for higher education MET institutions is based on the proposal made by the authors of the METHAR project [1,2]. According to this proposal a national MET system should recognize two types of institutions: those, preferably being members of the university, offering degree courses (BSc) and those, whether independent institutions or not, offering non-degree courses.

The degree programme, lasting 3½ - 4 years, should consist of general subjects (such as university-level mathematics, chemistry and physics), core curriculum, extension and enrichment. The core curriculum part should be based on the corresponding IMO model course (without any alterations) and should be harmonized (regarding the subjects, duration and time sequence in relation to general subjects) at least on the national or preferably on the international level. The extension part should consist of several groups of elective subjects to be selected by the student, and corresponding to different modern transport technologies (for example liquid cargoes, transportation of passengers, bulk commodities, etc.). Certain components of the extension part should as much as possible correspond with or include IMO model courses, if existing. Enrichment part should be fully dedicated to various aspects of the shipping industry and related activities – basically for taking positions on the shore (maritime law, economics of shipping and ports, multimodal technologies, environment protection, etc.).

The non-degree programme, lasting two years, should consist of core curriculum (same as for degree programme) and general subjects (including mathematics, chemistry and physics but at lower level than for the degree programme).

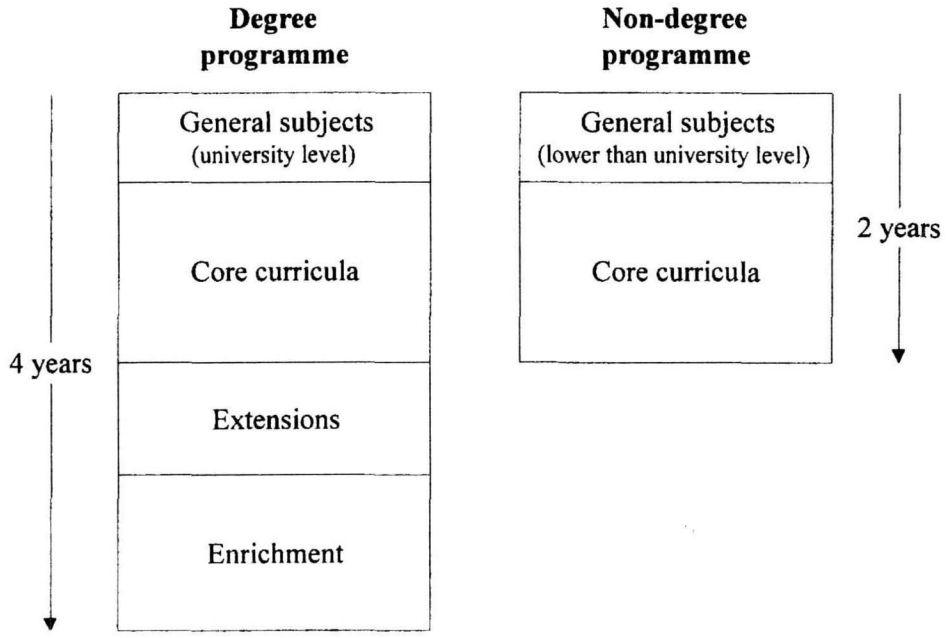

Figure 1 Schematic presentation of the proposed harmonized MET system for higher education [2]

It is the authors' opinion that the proposed system could satisfy the needs for a wide range of different countries and different national ET schemes. Advantages of the proposed system are enclosed basically in the appropriate combination of the standardization, even on the international level (in the core part) and adaptability for specific purposes (in the extension and enrichment part). The system as proposed offers a possibility for an easy continuation of the education of seafarers after a number of years spent at sea. The system also conforms to present developments regarding mobility of students as proposed by the European Rector Conference (CRE), especially if European Credit Transfer System (ECTS) is applied.

5. CONCLUSIONS

It is the authors' opinion that structure of national MET systems at higher education level, presently under the strong influence of the national tradition and ET systems in place, will tend to the similar form. This tendency will be further promoted predominantly through the standardization of certification systems under the umbrella of the STCW convention. Today, at the beginning of the process, the standardization of MET systems will be encouraged through informal recommendations, first and foremost through IMO model courses. Later on, more formal standardization, probably using the STCW convention as a legal framework, can take place. However, the standardization, whether formal or informal, will be limited only to subjects defined by the STCW convention as essentials, while a significant part of the curricula will be left outside, thus allowing each institution or country to tailor its education programmes to their specific needs.

REFERENCES

[1] EC Waterborne Transport 4th Framework 6.4.3 – Task 43 Harmonization of European Schemes – METHAR – Conclusions and recommendations, World Maritime University, Malmo, Sweden, 2000

[2] Recommendations for improving of present European MET and preparing it for meeting future training needs in the context of MET harmonization for increased safety and environmental friendliness as well as improved efficiency of European shipping, METHAR Work package WP5, prepared by Hermann Kaps, HBHS-N