The impact of STCW implementation
ON
Maritime Administrations, MET Institutions and Shipping Companies

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Abstract

أقرت المنظمة البحرية الدولية الاتفاقية الدولية لمستويات التدريب وإصدار الشهادات للعاملين في البحر
STCW 95. وقد كان الهدف الأساسي من هذه الاتفاقية الارتقاء بمستويات السلامة وحماية البيئة البحرية
من خلال رفع مستوي أداء العنصر البشري، فضلا عن خلق معايير تدريب دولية للعامين بالسفن ووضع
آليات للدول الأعضاء في المنظمة للتطبيق والرقابة علي العمل بهذه المعايير.

ولقد فرضت الاتفاقية دورا لكل من الإدارات البحرية بالدول الأعضاء ومعاهد التدريب والتعليم البحري
وكذلك الشركات الملاحية في عملية تطبيق بنود الاتفاقية، وبذلك تكون هذه هي المرة الأولى التي تساهم
فيها صناعة النقل البحري في رفع كفاءة العاملين بالسفن.

وبالرغم مما أنجزته الاتفاقية في وضع مستويات تدريب لكثير من الدول، ورفع مستويات التدريب في كثير
من الدول الأخرى، فضلا عن توحيد مفاهيم التعليم والتدريب البحري في معظم الدول الأعضاء، إلا أنه
مازالت هناك بعض نواحي القصور في الاتفاقية وعلي الأخص فيما يتعلق بنواحي التطبيق.

The International Maritime Organization (IMO) had adopted the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW 95) in order to enhance the maritime safety and environmental protection by improving the performance of human element, as well as, establishing global minimum standards for seafarer's competency and for the administrations to ensure the compliance of its requirement.

In order to meet the minimum international standards, according to the provisions of the convention by the member States, the convention had created roles for the

administration, maritime education and training (MET) institutions and shipping companies in the implementation process.

Although that the convention had achieved most of its objectives, particularly in improving and establishing education and training systems in most of the member States, a number of weaknesses and shortcomings in the implementation process, have to be considered by the organization in the future development of the convention.

Introduction

Modern sophisticated ships, multinational crew, increasing number of maritime accidents as a result of human errors, and numerous other factors established the need of improving the standard of the seafarer's competency on global basis rather than national standards in individual maritime nations.

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW 78) was adopted by the IMO in order to establish the global minimum standards for seafarer's competency and administrations to ensure the compliance of its requirement.

Regretfully the STCW 78 convention failed to achieve its objectives for various factors, the most significant of which include the flexibility given to each administration to establish the standards to her satisfaction, the lack of specific standards of competence related to the skills required to perform the shipboard functions. Moreover, it has failed to meet the industry's predictable needs.

The revised STCW convention clarify the required standards of competence for seafarers and provide mechanisms for the implementation of its provisions and requirements, the new approach of STCW 95 was to enhance the maritime safety and environmental protection by improving the performance of human element.

One of the most significant change was the transfer of the detailed technical requirements in associated code, the code contain 2 parts, part (A) is mandatory while

part (B) is recommended, the basic concept of such code is to facilitate the revision and updating of the technical requirements. Moreover, to assist MET institutions, administrations and shipping companies in identifying the skills and competence required for the seafarers. In other words it shows how practically the convention can be implemented.

For the first time the STCW 95 convention creates a role for the shipping industry by involving the shipping companies in the implementation process. The shipping companies are responsible for ensuring that the seafarers they employ meet the minimum international standards of competence according to the provisions of the convention, in addition, they have to ensure the familiarization of every seafarer with the onboard duties they are assigned to do.

The revised convention also introduced new requirements including medical fitness, rest hours, special training, safety training, use of simulators, measures to prevent fatigue and the qualification of maritime instructors and assessors.

The following paper will review in brief the processes of implementing STCW 95, and will discuss the impact of such implementation on administrations, MET institutions and shipping companies, as well as, demonstrate some of the pros and cons of such impacts.

1. The Impact on Maritime Administrations

The STCW convention article 1(2), provide:

> *"The parties undertake to promulgate all law, decrees, orders, and*
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> *regulations and to take all other steps which may be necessary to give*
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> *the convention full and complete effect, so as to ensure that, from the*
>
> *point of view of safety of life and property at sea and the protection of*
>
> *the marine environment, seafarers on board ships are qualified and fit*
>
> *for their duties."*

In order to give the full effect to the provisions of STCW 95 convention, the maritime administration have to introduce such provisions in their national legislations and to ensure the control and monitoring of implementation process, in order to ensure the continuity of complying with those provisions by structuring mechanism and procedures to perform such implementation.

> *"For many administrations and training institutes, the revised convention exposed them to many new concepts and procedures. In many cases the expertise or many manpower did not exist in their countries. Not only national laws have to be amended, but detailed requirement of training schemes, examination systems, use of simulators, qualification of instructors and assessors and quality standard system had to be established and documented."*

<div align="right">(P.Muirhead, 2000)</div>

Parties that have ratified the convention may have to undertake these responsibilities as flag state, a state that maintains a shipping register for ships flying its flag, endorsements for seafarers certificates ensures compliance with the convention and provides implementation information to the IMO, or as port state, a state that exercises port state control (PSC) for ships entering its ports, in addition to the two stated types of state control, a third type of control for States that implement a system for maritime education and training. This may include any institute that provides seafarers maritime education and training as defined by the convention.

The contracting parties have to fulfil such implementation by taking the responsibilities of accomplish certain functions include:

1.1 Certification:

All certificates have to be issued, endorsed and revalidated in accordance with the revised STCW Convention.

According to article II (C) of the convention, *"Certificate means a valid document; by whether name it may be known, issued by or under the authority of the Administration or recognised by the Administration authorizing the holder to serve as stated in this document or as authorized by national regulation."*

Each administration has to establish a system of physical fitness (criteria of medical standard), age, education, training, seagoing experience and assessing standard of competence according to the requirements of the convention in order to issue certificates.

Every certificate of competency shall specify the function, level and limitations (if any) in which the holder is authorized to serve, in addition to that the convention requires the administrations to attest the recognition of the certificates by issuing an endorsement. Original certificates are required to be kept available onboard the ship on which the holder of the certificate is serving.

In order to maintain and update the seafarers competency and knowledge certificate of competency are to be revalidated at intervals not to exceed five years. Detailed records of all issued certificate to be established by every party to the convention, such records are to be communicated to other parties on request.

Parties are obliged to establish legal processes and administrative procedures for the investigation of any reported incompetence, including applying penalties and disciplinary measures.

It is the responsibility of the administration to ensure the compliance of the provisions of the convention with regard to recognising and endorsing certificates issued by other parties as provided in regulation 10 (1.1) of the annex which provide,
"The administration has confirmed, through all necessary measures, which may include inspection of facilities and procedures, that the requirements concerning standards of

competence, the issue and endorsement of certificates and record keeping are fully complied with; and..."

1.2 Maritime Education and Training:

The STCW code define the training requirements according to the level of responsibilities which was classified to three level, management level, operational level and support level in order to establish standards based on competence and skills to be able to meet the present industry demands.

The code also define seven functions "group of tasks, duties and responsibilities, as specified in STCW code, necessary for ship operations, safety of life at sea or protection of the environment" those functions are:

- Navigation.
- Cargo handling and stowage.
- Controlling the operation of the ship.
- Marine engineering.
- Electric, electronic and control engineering.
- Maintenance and repair.
- Radio communication.

The STCW code uses a four-columns table to specify the minimum standard of competence of every function at every level and so on for other required training e.g. safety training, such columns are, competence, knowledge, methods for demonstrating competence and criteria for evaluation competence.

The administrations must approve, supervise and monitor management system of MET institutions including onboard and shore training programs, courses and assessment; such control shall include onboard training.

Education, training and assessment shall be "*structured according to writing programmes, including such methods and media of delivery, procedures, and course material as are necessary to achieve the prescribed standard of competence*" as specified in STCW code.

The convention also requires the administrations to ensure the qualifications of the instructors, supervisors and assessors, regarding this requirement W G S Morrison (1997) argue, "*Training supervisors ashore and afloat are required to have a full understanding of the training programme and the specific objectives for each type of training being conducted. They should also have an appropriate knowledge of instructional techniques and training methods and practices.*"

Assessors also shall require similar qualification with emphasis on assessment methods and practices such as practical tests, computer based training (CBT), oral examination or even using the simulators for assessing, to be able to confirm that the assessed competence is in accordance with standards.

Administrations are also obliged to monitor training procedures, as well as, the performance standards of simulators when used in training to meet the requirements of the convention.

1.3 Quality standards:

According to the requirements of STCW 95 convention, administrations have the overall responsibility in ensuring the continuous complying with the provision of the convention by establishing quality standard system.

The required quality standard system shall apply to all the stakeholders involved in the implementation and activities of STCW convention including MET institutions, administrations, ship operators, assessment of competences, certification, endorsement or revalidation of certificates.

Parties may adopt any quality system, whether it is standard model such as International Organization for standardization (ISO 9000) series or any other national or international model. The cornerstone in any introduced system is the ability to establish processes, procedures, controls and internal reviews to ensure achieving certain stated objectives.

The entire quality standard system shall be documented, "say what you do and do what you say and prove it", systematic monitoring of the system shall be adopted and described in the system by adopting an internal reviews at intervals not to exceed five years, as well as, external evaluations.

Qualified persons who are not involved in the audited activities shall perform such internal review. Parties are obliged to report to the IMO within six months of performing the evaluation.

According to D.Fisher & P.Muirhed, (2001), *"There are four important steps to introduce namely: Documents process, Compliance with procedures, Self-assessment of the operation, Independent external evaluation by approved quality authority or body*."

1.4 Communication of information to IMO:

The basic concepts of the communication of information to IMO are to provide more effective and control mechanism, to ensure proper implementation to the provision of the convention by the member States. Moreover, to make parties accountable to each other through the IMO for proper implementation to the provision of the convention and quality of their training and activities.

Parties have to prepare a report to the Secretary-General of the organization, about information concerning all administrative measures taken to ensure compliance with the convention including certification procedures, training requirement, standards and systems in place and national law.

The next step is the selection of the assigned competent persons by the Secretary-General to examine the report. The task of the competent persons is to compare the information communicated to the provisions of the convention, to reach final agreement, regarding the compliance of the concerned party.

According to A Winbow (1999), *"It is also important to appreciate that 'full and complete effect' may not be the same for all parties: some may choose not to have any*

maritime training institutes at all and rely on recognition of certificates issued by other States. Similarly, some parties may only provide a limited scope of training, such as for ratings only."

The competent persons may meet the party's representative, to present the report or to clarify any of the provisions, if they find it necessary; subsequently they provide the final agreement to the Secretary-General.

Based on the agreement and opinions of the competent persons, the Secretary-General submit the report to the maritime safety committee, in order to confirm compliance of the concerned party, other parties may then accept to recognize certificate issued by or on behalf of this party.

After the initial evaluation, parties are required to report to the Secretary-General the result of independent evaluation carried out every 5 years on their quality standard systems.

2. The Impact on MET Institutions

MET institution shall adopt the competency based training in reviewing and redesigning all the training programmes in order to comply with the competences specified in the STCW code, in redesigning such courses special attention shall be given to the learning activities to include, lectures, hand on training, use of technology such as simulator based training, in particular radar and automatic radar plotting aid (ARPA), as it's the only mandatory simulator training according to STCW requirements. MET institutions shall document all curriculum including, courses and training programmes, in order to submit it to the administration for approval prior placing them into force.

Qualified instructors and lecturers; having sufficient experience in relation to the required level and standards of competence who may be involved in training shall be employed in the institutions. Moreover, good facilities and equipments shall be available, well maintained and upgraded regularly to meet the changing demands.

One of the keystones of maintaining the lecturer's proficiency are the continuous updating of the instructor's knowledge and skills, through pedagogical training, field training, information technology (IT) training, research projects, use of simulator training and other necessary training as it develops.

IMO has developed a number of model courses to provide important information and knowledge in technological process in the maritime sector; model courses are not mandatory, they are to assist lectures, as well as, MET institution to develop curricula or to update and improve their curricula already in place.   Model courses can be considered as on of the harmonization tools of MET; they are subject to updating, in order to maintain their validity.

B.Lewarn (2000) mentioned, "*Clearly no MET institution can be the best, but every MET institution can aspire to achieve the attribute of quality MET institution. STCW 95 can be viewed as a very loud, very long wake-up call for MET institutions to lift their performance. To do this requires resource, competence and the will to critically examine the effectiveness of every aspect of the institution.*"

The introduction of quality systems places greater responsibility with the MET institutions for the detailed content of training programmes and the assessment of individual students' competence. The MET institutions must present documentation to the administrations to show how they meet the objectives given to them, including compliance with the requirements of the STCW Convention.

MET institutions shall implement any model or scheme of quality standard system, processes, procedures, systems, controls and internal reviews are to be established, in order to ensure the achievement of the objectives.

In some regions, MET institutions may need to integrate, to provide sufficient resources, in order to achieve the likely standard of quality, to allow them to comply with the requirements of the STCW convention.

3. The Impact on Shipping Companies

The responsibility and obligation of shipping companies in improving and promoting the seafarer level of competency and qualifications are set in the international safety management (ISM) code and STCW convention.

In order to perform such obligations and achieve the objectives of the STCW convention, which is, Competent, Qualified seafarers, who will be able to perform their duties in safe and effective manner onboard ships, the convention and the ISM code created a role for the shipping companies.

The theoretical part of the training will be completed at maritime institutions, the practical training (on board training) is conducted on board the ship under the guidance and supervision of the qualified watchkeeping officers and it should be documented.

Companies are to adopt approved training policy and procedures, some companies may assign dedicated training officer to supervise the training programme and processes, and other companies may rely on the MET institutions. Seafarers require record of training (approved by the administrations) and assessments to present to the authorities, as part of the certification processes, and companies require records in order to ensure that the company training policy is being carried out.

Companies are responsible of ensuring that seafarers employed by them meet the minimum standard of competence required by the administration. Detailed records of seafarers includes, appropriate certification and medical examination shall be maintained and available onboard, and ready to be examined by authorities on request.

Familiarization with shipboard operations shall be performed according to written procedures and policies, set by the company and available on board to the master, such familiarization shall include emergency response training, such as basic safety and pollution prevention and control training, and additional familiarization in special training e.g. onboard Roll on/Roll off (RO/RO) passenger and Tanker ships, as well as global maritime distress and safety system GMDSS for Master and deck officers, in

addition to every day onboard operations, such as use of equipments and watchkeeping duties.

Ships must be manned according to the applicable manning set by their flag states. Companies also have to ensure complying with minimum rest hours for watch keepers to eliminate fatigue according to STCW requirements.

Companies are to ensure the co-ordination between seafarers through effective communication, particularly in emergencies. Promoting common working language understood by the crew, as well as, implementing appropriate procedures for drills and training regimes will ensure that adequate communication is maintained.

Certain functions on board require knowledge of English language, e.g. officers in charge of navigational or engineering watch as well as, GMDSS operators. Such knowledge will assist them to perform their duties, such as reading operation manuals and instructions, in addition to effective and safe communication.

Administrations are required to set penalties for companies found to be in breach of the provision of the conventions; such penalties may be applied by flag or PSC.

4. The "white list":

According to IMO,

> "The "*white list" reveals is those Parties currently deemed to be giving full effect to the provisions of STCW 95. But a simple list such as this cannot reveal the huge body of work at all levels that has gone into - and is still going into - achieving "white list" status*."

S. Bennett (2000) argues, *"The IMO "white list" is the mechanism where by countries which have ratified the new STCW convention are required to submit to IMO sufficient documentary evidence to demonstrate that action has been taken to implement the new training and certification requirements."*

The "white list" is considered to be the most fundamental reference of compliance; it is the keystone in many situations, such as recognition of certificates issued by other States. Verifying whether a party is listed in the "white list" or not, is always the first procedure in many bilateral or mutual agreements between member States.

The "white list" had created a great incentive to many member States, who worked hard, in order to be included in the "white list" including; revising syllabus, quality systems and certification processes, so as to meet the provisions of the convention, which resulted in raising and harmonizing the skills and competence of the seafarers internationally

Definitely the "white list" has been a key issue in improving MET standards within some nations. In considering the Philippines for example, currently nation number one in seafarer's supply, "*their efforts to join "white list" has resulted in reducing the number of approved training programmes and institutes from more than 100 to around 50. The other 50 were simply substandard*". M.Mejia (2002).

Major maritime labour supply countries managed to maintain their share of international market by complying with the provision of the convention within the time span, "*the enforcement of STCW does not appear to have had a fundamental impact on the overall structure of the international labour market or the countries from which seafarers are recruited.*" International shipping federation (ISF). (2003)

According to IMO "*the work of improving and marinating the standards will continue, STCW95 requires the training provisions to be independently evaluated every five years, and the result of the evaluation reported to IMO.*"

5. Some Problem Areas of the Implementation of STCW:
The STCW implementation process, which has been discussed briefly in this paper, highlights the strengths and advantages gained to the maritime international industry, particularly in the filed of maritime education and training in different aspects.

On the other hand there was a number of weaknesses of such implementation, unachieved objectives, as well as, shortcomings, which have to be considered in the future development of the convention such as:

- The convention focused on the vocational level of education, by adopting the concept of introducing sufficient skills in relation to ship operations, safety of life at sea and protection of the environment, neglecting the importance of other fields related to the building of academic knowledge, such subjects may carry the same value as skills and competency standard in operating the ships. H. Zhengling & S. Hangjun (1999) argued, "A graduate does not know how to prepare a sea protest and maritime accident report, let alone its evidential effect in law", as an example of ignorance of masters and deck officers of commercial law.

- STCW convention provides minimum standard of competency, which have to be integrated among other standards to produce the likely competent and knowledgeable seafarer, who can interact with other stakeholders of the industry. Enriching the knowledge of seafarer to the level of high education will benefit the maritime industry. Most of today seafarers are likely to hold different positions in the industry in the future.

- Evaluation of the compliance to the provisions of the convention, is entirely based on the information submitted by each party, no physical verification is made by the organization to confirm the integrity of such information.

- According to Winbow (2000), "*Seafarers are required to provide evidence of having achieved the required basic safety training standard within the previous five years. To meet this requirement, some Parties are issuing documentary evidence with a five year expiry date, requiring therefore that seafarers are re-trained at five- yearly interval*" that indicates that the wording in some parts of the STCW code consider revision.

- The Administrations shall adopt measures to enable the enforcement of the rest period as specified in chapter VIII in the STCW annex. To implement such regulation many counties have to consider it in the safe manning certificate

issuing process. It is impossible to comply with such rest periods onboard super container ship manned by twelve persons.

- The STCW Convention specified the approved performance standards governing the use of simulators in training and assessment which the member States are obliged to comply with, the convention did not specify in details the technical specifications of the approved type simulator or the qualification of instructors and assessors involved in the simulator training and assessing as required by the convention.

- The phrase "appropriate" has been remarkably repeated in the text of the STCW95 convention, which can result of more flexible application of the convention in some administrations, equally to what happened in the implementation of initial STCW 78.

- According to winbow (2000), "*the section on tanker training… it therefore lacks the tabular presentations of statements of competence that are provided else where. Another example the special training requirement for passenger and ro-ro passenger ships.*"

- When a State found complying with the provision of the convention, it will end up in the "white list", the question now, what about if a certain State failed to continue complying, would the organization drop that State from the "white list", or may the organization consider establishing a black list for such States. According to S. Bennett (2000), "*The STCW convention may need to be subjected to further amendment to permit the "white list" to become the living, dynamic tool that is now desired.*"

- Onboard training will create additional load on the ship's officers, which may fail to achieve the likely standard of seagoing training to their trainees.

Conclusions

Many administrations and MET institutions of various countries did very hard work, in order to be included in the white list, the amended STCW white list includes 118 countries. The maritime safety committee (MSC) circular (MSC/Circ.) 1092 indicates that most of the seafarers around the globe are holding certificates complying with the provision of the convention.

The question raises itself now, whether the competencies and skills of the seafarers holding such certificates have been developed or not. The real assessment of how the implementation of the STCW 95 convention was effective and successful will be confirmed after the submission of quality standard reports to the IMO, as required by the convention.

However various shortcomings, unachieved objects and weaknesses in the implementation process, present the need of additional work and revision to the convention, in order to achieve its objectives in ensuring the maritime safety and protect the environment by improving the global professional standard of the seafarers.

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