

# **Upcoming Changes to Chapter II Of the International Convention on Standards Of Training, Certification And Watchkeeping For Seafarers (STCW Convention)**

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## **Background Information**

The role of the human element has long been recognized as a vital component for the safe operation of ships. In the past, the standards of training and certification of seafarers were determined by individual administrations. Considering the global nature of shipping, such arrangement was not appropriate and the International Maritime Organisation (IMO) addressed this issue which culminated with the adoption of the first international convention on seafarer training standards - the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW Convention) in 1978. The STCW Convention, which came into force in 1984, was the first attempt to establish global standards for training and certification of seafarers. However, by the late 1980's, it was realised by many in the shipping industry that the training standards in the 1978 STCW Convention were not achieving their intended purpose. The main cause for this appeared to be the general lack of precision in its standards, as much of the interpretation of the Convention requirements was left "to the satisfaction of the Administration," which resulted in a widely varying interpretation of the standards.

2 In May 1993, the Maritime Safety Committee (MSC) with extensive support from Member Governments and the shipping industry decided to have an extensive review of the STCW Convention. The detailed revision of the Convention, which was accomplished with assistance of consultants, was aimed

to address international concerns about declining seafarer training and certification standards and poor operational management leading to accidents and pollution. The review culminated with the adoption of a series of amendments to the Convention by a Diplomatic Conference held in London in July 1995. These amendments known as the 1995 amendments or STCW95 came into force on 1 February 1997 with a phase in period of 5 years. A key objective of the review was to establish clear outcome-based standards of competence, meeting industry demands. Accordingly, the skills, knowledge, understanding and proficiency (KUP) needed to ensure that individuals are capable of fulfilling the roles expected of them at sea were defined and tabulated. Since 1995, there were four amendments to the Convention.

3 At the opening of the 37<sup>th</sup> session of the IMO's subcommittee on Standards of Training and Watchkeeping (STW 37) in January 2006, the Secretary-General remarked that perhaps the time had come to give some preliminary consideration for another comprehensive review of the Convention to ensure that it meets the new challenges facing the shipping industry today and in the years to come. Subsequently, the MSC at its 81<sup>st</sup> session (MSC 81 - May 2006) instructed the STW Sub-Committee to conduct a review of the STCW Convention and its associated Codes to harmonize any inconsistencies and to meet the new challenges faced by the industry.

### **Principles for the Review of the STCW Convention**

4 Accordingly, the STW agreed that the review should only embrace the following principles:

- retain the existing (STCW 95) structure and goals;
- not to down scale the existing standards;
- not to amend the articles of the Convention;
- address inconsistencies, interpretations, outdated provisions, MSC instructions, clarifications already issued;
- address requirements for effective communication;

- provide for flexibility in terms of compliance and for required levels of training and certification and watchkeeping arrangements due to innovations in technology;
- address the special character and circumstances of short sea shipping and the offshore industry; and
- address security-related issues.

## **Structure**

5 Following detailed discussions, it was agreed that the present structure of the Convention had more than adequately served its purpose and there was no need to change it. Furthermore, there was unanimous agreement that during the review process to ensure that there should not be any down scaling of the existing standards.

## **Areas for Review**

6 It was agreed that there was no compelling need to review the articles of the Convention during the proposed review process (The articles were also not amended during the 1995 revision as any proposed changes to the articles take a long time, due to ratification requirements, before the amendment can enter into force.) The key areas for revision were identified as those in the Annex to the convention (Regulations) and the associated chapters in Code A and Code B, where the detailed technical provisions of the convention are found. The key areas for the review are limited to Chapters I to VIII in the Annex and associated chapters in Code A and B. Brief description of key changes to the STCW Convention are as follows.

7 This paper will be limited to the proposed amendments to Chapter II of the STCW Convention and the associated Codes. Other chapters are covered in the presentations by other distinguished speakers. Chapter II contains the competences and KUP requirements for the issuance of certificates and endorsements for Masters, Chief Mates, deck officers and ratings of the deck department.

## **Amendments to Chapter II - Deck Department**

8 The proposed amendments to Chapter II are to remove outdated provisions, cater to changes in technology and recent revisions in IMO conventions or codes (e.g. MARPOL). The proposed changes include the following.

### **Amendments to Regulations**

9 Regulation II/1 (*Mandatory minimum requirements for certification of officers in charge of a navigational watch of 500 gross tonnage or more*), Regulation II/2 (*Mandatory minimum requirements for certification of masters and chief mates on ships of 500 gross tonnage or more*) and Regulation II/3 (*Mandatory minimum requirements for certification of officers in charge of a navigational watch and of masters on ships of less than 500 gross tonnage*) have been amended by including a new sub-paragraph that they should also meet the standard of competence in A VI/2 ( proficiency in survival craft ), A VI/3 (advanced fire-fighting ) and A VI/4 (medical first aid/medical care) of the Code. While most administrations have made proficiency in these ancillary courses a pre-requisite for obtaining a certificate of competence for deck officers, however the current text of the convention is ambiguous. This amendment will remove this ambiguity and hopefully reduce the number of ancillary certificates required to be carried by officers on ships. There are also minor editorial changes (e.g. using months instead of year) to be consistent with other parts of the Convention.

10 A new regulation II/5 (*Mandatory minimum requirements for certification of ratings as able seafarer deck*) to cater for competence and training requirements for deck ratings. Currently the competency and sea service requirements for deck ratings are given in the ILO's convention on Certification of Able Seaman, 1946. The AB convention, is ratified by only a handful of countries and in any case have become outdated as it was prepared more than 6 decades ago with no amendments. At the 78<sup>th</sup> session of the Maritime Safety Committee (MSC 78), it was agreed

that as IMO was the appropriate body to deal with standards related to the competence of seafarers (other than cooks), and to transfer the provisions in the ILO's AB convention within the ambit of the STCW Convention and update the requirements to meet the requirements of contemporary shipping. Accordingly, the sub-committee on standards of training and watchkeeping prepared relevant regulations and competency requirements and updated it to meet technological advances since 1950s and comply with the structure of the STCW Convention. These requirements have transitional provisions or "grandfather clause" to enable existing seafarers qualified under the earlier ILO regime or serving or certified as ABs (under national regimes) to be issued with appropriate certificate provided that the administration is satisfied that the rating would meet the appropriate KUP requirements. Accordingly, In the STCW Code A, a new competence and KUP table A II/5 has been prepared to assist in training of such seafarers. At this point, it may be pertinent to note that STCW Convention is related to standards and not to the manning requirements. As such, AB requirements would only be applicable when such ratings are placed on board, in that case they ought to be trained to the applicable standards.

#### **Amendments to STCW Code**

The proposed amendments to the STCW Code A and Code B, where the detailed technical requirements are found, relating to the deck department include the following.

11 Proposed amendments to Table A II/1 (Deck Officers at Operational level) includes the following.

12 **Bridge Resource Management (BRM)** - The Inclusion of new competency for BRM under the competence "Maintain a safe navigational watch". The knowledge of BRM principles include the following KUP requirements:

- a) Allocation, assignment, and prioritization of resources;
- b) Effective communication;
- c) Assertiveness and leadership; and

d) Obtaining and maintaining situational awareness. The criteria for evaluating competence for BRM includes assessing on the following.

- a) Resources are allocated and assigned as needed in correct priority to perform necessary tasks;
- b) Communication is clearly and unambiguously given and received;
- c) Questionable decisions and/or actions result in appropriate challenge and response;
- d) Effective leadership behaviours are identified.; and
- e) Team member(s) share accurate understanding of current and predicted vessel state, navigation path, and external environment.

14 In view of the recent amendments<sup>1</sup> to Chapter V of the SOLAS Convention which would make carriage of ECDIS mandatory on most ships , a new competence has been established '**Use of ECDIS to maintain the safety of navigation**'. The new ECDIS competence includes the following KUPs. Knowledge of the capability and limitations of ECDIS operations including:

- a) a thorough understanding of Electronic Navigational Chart (ENC) data, data accuracy, presentation rules, display options and other chart data formats;
- b) the dangers of over reliance;
- c) familiarity with the functions of ECDIS required by performance standards in force
- d) Proficiency in operation, interpretation, and analysis of information obtained from ECDIS, including:
  - (1) use of functions that are integrated with other navigation systems in various installations, including proper functioning and adjustment to desired settings;

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<sup>1</sup> Amendments to Regulation V/19 of SOLAS is expected to be adopted by MSC 86 (May 2009). ECDIS requirements will be applicable for new passenger ships and tankers from 1 July 2012 and a phased implementation for other ships by Jul 2018.

- (2) safe monitoring and adjustment of information including own position, sea area display, mode and orientation, chart data displayed, route monitoring, user-created information layers, contacts (when interfaced with AIS and/or radar tracking) and radar overlay functions (when interfaced); (including radar and AIS where interfaced), and prevailing circumstances and conditions;
- (3) confirmation of a vessel's position by alternate means;
- (4) efficient use of settings to ensure conformance to operational procedures, including alarm parameters for anti-grounding, proximity to contacts and special areas, completeness of chart data and chart update status, and backup arrangements;
- (5) adjustment of settings and values to suit the present conditions;
- (6) situational awareness while using ECDIS including safe water and proximity of hazards, set and drift, chart data and scale selection, suitability of route, contact detection and management, and integrity of sensors.

15 The methods for assessment of competence for ECDIS could be obtained by an approved training ship or ECDIS simulator training. The criteria, for evaluating competence in the use of ECDIS, includes the following.

- (a) Monitors information on ECDIS in a manner that contributes to safe navigation:
- (b) Information obtained from ECDIS (including radar overlay and/or radar tracking functions, when fitted) is correctly interpreted and analyzed taking into account the limitations of the equipment, all connected sensors (including radar and AIS where interfaced), and prevailing circumstances and conditions.
- (c) Safety of navigation is maintained through adjustments made to the ship's course and speed

- through ECDIS-controlled track keeping functions (when fitted); and
- (d) Communication is clear, concise and acknowledged at all times in a seamanlike manner

It should be noted that Training and assessment in the use of ECDIS is not required for those who serve exclusively on ships not fitted with ECDIS. However, such limitation shall be reflected in the endorsements issued to the seafarer COC.

16 There are minor changes to other competences, viz. maintain safe Navigational Watch, transmit and receive information by visual signaling and prevention of pollution. The minor amendments to KUPs are as follows.

- (1) The use of information from navigational equipment for maintaining a safe navigational watch (i.e not limited to radar);
- (2) Knowledge of blind pilotage techniques; and
- (3) The use of reporting in accordance with the General Principles for Ship Reporting Systems and VTS procedures.
- (4) Ability to transmit and receive by Morse light, [distress signal SOS as specified in Annex 1 of COLREG and single letter signals and group of letters as specified in the International Code of Signals]. These amendments are in square brackets as they would be referred to IMO's subcommittee on Safety of Navigation for its concurrence.
- (5) Importance of proactive measures to protect the marine environment.

17 Proposed amendments to Table A II/2 (Masters and Chief Mates of ships of 500 gross tons or more) , includes amendments similar to table II/1 but of higher standards to meet requirements at management level. Some of the significant proposals are as follows.



18 The current competence "Organise and manage crew" has been replaced with a new competence entitled "**Use of Leadership and Managerial Skills**" to reflect more accurately the skill sets required by masters and chief mates in discharging their duties on modern ships. Under this competence, following KUPs have been proposed.

- (a) Ability to apply Task and workload management including:
  - (1) planning and coordination;
  - (2) personnel assignment;
  - (3) time and resource constraints; and
  - (4) prioritization
  
- (b) Knowledge and ability to apply effective resource management including :
  - (1) allocation, assignment, and prioritization of resources;
  - (2) effective communication onboard and ashore;
  - (3) assertiveness and leadership including motivation; and
  - (4) obtaining and maintaining situation awareness.
  
- (c) Knowledge and ability to apply decision making techniques, using:
  - (1) Situation and risk assessment;
  - (2) Identify and generate options;
  - (3) Selecting course of action; and
  - (4) Evaluation outcome effectiveness
  
- (d) Development, implementation, and oversight of standard operating procedures.

19 As in table A II/1 a new competence for **ECDIS** in view that ECDIS would be mandatory in the near future. The new competence in Table II/2 is "Maintain the safety of navigation through the **use of ECDIS and associated**

**Navigation systems to assist command decision making".** The KUPs under this competence includes the following.

- (a) Management of operational procedures, system files and data, including:
  - (1) Manage procurement, licensing and updating of chart data and system software to conform to established procedures;
  - (2) System and information updating including the ability to update ECDIS system version in accordance with vendors' product development;
  - (3) Create and maintain system configuration and backup files;
  - (4) Create and maintain log files in accordance with established procedures
  - (5) Create and maintain route plan files in accordance with established procedures
  - (6) Use ECDIS logbook and track history functions for inspection of system functions, alarm settings and user responses
  
- (b) Use ECDIS playback functionality for passage review, route planning and review of system.

20 The other amendments to table A II/2 and KUPs include general principles for ship reporting systems and VTS procedures, terrestrial and hyperbolic navigation systems, maintain safe navigation through the use of information from navigation equipment systems to assist command decision making. There are also some minor editorial amendments.

21 The proposed amendments to Table A II/3 (*officers in charge of navigational watch and masters of ships of less than 500 gross tons engaged in near coastal voyages*) include the following KUPs under the competence "Plan and conduct a coastal passage and determine position". The key amendments are:-

- (a) Thorough knowledge of and ability to use ECDIS.
- (b) Voyage planning and navigation for all conditions by acceptable methods of plotting coastal tracks, taking into account factors such as restricted waters, meteorological conditions, restricted visibility, traffic separation schemes, vessel traffic service (VTS) Areas and areas of extensive tidal effects

22 A new table II/5 which specify the minimum standards of ratings as able seafarer deck. The key competences required for the ABs, are in addition to those in the existing table A II/4, and include the following competences.

- (a) Contribute to a safe navigational watch.
- (b) Contribute to berthing, anchoring and other mooring operations.
- (c) Contribute to the handling of cargo and stores.
- (d) Contribute to the safe operation of deck equipment and machinery.
- (e) Apply occupational health and safety precautions.
- (f) Apply precautions and contribute to the prevention of pollution of the marine environment.
- (g) Operate survival craft and rescue boats.
- (h) Contribute to shipboard maintenance and repair

23 There are also corresponding changes in STCW Code B in Chapter II in view of proposed changes in Code A. STW 40 had agreed that there was a need to retain celestial navigation, as there is currently no back up in case of GPS failure. New guidelines have been incorporated in Code B for training in celestial navigation. The guidelines of the recommended training in celestial navigation should include following proficiencies:-

- (a) correctly adjust sextant for adjustable errors;
- (b) determine corrected sextant altitude reading of celestial bodies;
- (c) accurate sight reduction computation using preferred method;

- (d) calculate the time of meridian altitude of the sun;
- (e) calculate the latitude by Polaris or by meridian altitude of the sun;
- (f) accurately plot position line(s) and position fixing;
- (g) determine the time of visible rising/setting sun by preferred method;
- (h) identify and select most suitable celestial bodies in the twilight period,
- (i) determine the compass error by azimuth or amplitude using preferred method,
- (j) nautical astronomy to support required competence stated above.
- (k) Training in Celestial Navigation may include the use of electronic nautical almanac and Celestial Navigation Calculation Software.

#### **Amendments in Other Areas**

24 There are amendments in other Chapters of the STCW Regulations and the corresponding chapters of Code A and B which could affect the training of deck officers. Some of the key topics are summarized below.

- (a) Amendments to Chapter V - relating to training and obtaining endorsements for serving on oil, chemical and liquefied gas tankers.
- (b) Amendments to Chapter VI - relating to the security related training for all crew and those with designated security duties, additional fire-fighting training for tankers and fatigue management training.

Amendments to Chapter VIII - relating to rest periods, fatigue prevention, watch keeping principles to comply with BRM principles, using ECDIS, keeping cargo watches, keeping anchor watches and prevention of drug and alcohol abuse.

#### **Conclusion**

25 The comprehensive review of the STCW Convention and the STCW Code, more than ten years after its last major revision, would ensure that the requirements are kept

updated to ensure that seafarers on board are adequately trained to meet the new challenges facing the shipping industry today and in the years to come. World casualty statistics<sup>2</sup> reveals that 46 of the 135 ships lost in 2007 were as a result of collision or stranding. These figures, while very high, do not take into account large number of groundings and collisions, albeit expensive to repair, did not result in loss of ships hence not reported. Many of these incidents could be directly attributable to errors or incompetence of deck officers. Maritime Trainers have a heavy responsibility to inculcate the right values and proficiencies to train deck ratings and officers to be competent to man modern ships. I am confident GlobalMET and its partners would take up this challenge and put in more efforts to enhance the training.

***Views expressed in this paper are the writer's, and do not necessarily express the views of MPA.***

#### **References:**

1. International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978, as amended.
2. Reports submitted at various sessions of the IMO's Subcommittee on Standards of Training and Watchkeeping.

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<sup>2</sup> Lloyds Register Fairplay - World Casualty Statistics 2007