



The 2010 Manila amendments to the STCW convention and code and changes in maritime education and training

Yabuki, Hideo

(Citation)

Journal of maritime researches, 1(1):11-17

(Issue Date)

2011-03

(Resource Type)

departmental bulletin paper

(Version)

Version of Record

(JaLCD0I)

<https://doi.org/10.24546/81004906>

(URL)

<https://hdl.handle.net/20.500.14094/81004906>



THE 2010 MANILA AMENDMENTS TO THE STCW CONVENTION AND CODE AND CHANGES IN MARITIME EDUCATION AND TRAINING

Hideo YABUKI *

ABSTRACT

In order to improve the safety of life and property at sea and protect the marine environment, the 2010 Manila amendments to the STCW Convention and Code were adopted at the diplomatic conference of parties which was held in Manila from 21st to 25th June 2010. This paper describes the outline of the new provisions in the STCW Convention and Code. The specific focus of the paper is the education and training for the Class III deck officer students and engineer officer students, and the necessary countermeasures for Japanese Maritime Education and Training Institutions to fulfill the requirements of the STCW Convention and Code.

Keywords: STCW Convention and Code, Manila amendments, Maritime Education and Training, Class III deck officer and engineer officer

* Professor, Tokyo University of Marine Science and Technology, 2-1-6 Etchujima, Koto-ku, Tokyo, 135-8533, Japan. Email : yabuki@kaiyodai.ac.jp

1. INTRODUCTION

In 2006, a comprehensive review of the STCW Convention and Code (International Convention on Standards of Training, Certification and Watchkeeping for Seafarers) was proposed to the IMO Maritime Safety Committee by the STW sub-committee (STW 37). The proposal was subsequently endorsed by the MSC 81. The issues in the current STCW Convention and Code were defined by the STW 38 and the list of areas in the Convention and Code was identified for the comprehensive review work. In May 2007, the MSC 87 approved the principles and scope of the review, including the list of areas, and instructed the STW sub-committee (STW 39) to commence the review work. The following basic principles were set out prior to the start of the comprehensive review.

- (1) Retain the structure and goals of the 1995 revision.
- (2) Ensure that existing standards were not down-scaled.
- (3) No amendment of the articles of the Convention.
- (4) Address inconsistencies, interpretations, outdated provisions, MSC instructions, clarifications already issued and technological advances.
- (5) Address requirements for effective communication.
- (6) Provide for flexibility in terms of compliance and for required levels of training, certification and watchkeeping arrangements, due to innovation in technology.
- (7) Address the special character and circumstances of short-sea shipping and the offshore industry.
- (8) Address security-related issues.

During the review work, key issues such as Fatigue Management, Leadership Training, Effective Communication, and Environmental Awareness Training, among others, were considered. In 2010, the draft amendments were finalized by the STW 41 and the amendments to the STCW Convention and Code were adopted and named as “The Manila amendments to the STCW Convention and Code” at the diplomatic conference of parties which was held in Manila, the Philippines. The draft amendments are scheduled to be accepted by the IMO on July 1, 2011 and enter into force on January 1, 2012.

This paper looks at these amendments from the point of view of the Maritime Education and Training (MET) for officers in charge of a navigational watch and an engineering watch. Specifically, the paper considers the countermeasures necessary for the Japanese MET institutions to fulfill the new provisions in the Manila amendments to the STCW Convention and Code.

2. MET FOR THE CLASS III DECK OFFICER STUDENTS

Every candidate for certification of officers in charge of a navigational watch

on ships of 500 gross tonnage or more must meet the competency requirements specified in the STCW code, Part A, Table A-II/1. The important new requirements are the use of ECDIS (Electronic Chart Display and Information System) to maintain the safety of navigation, the Bridge Resource Management (BRM) to maintain the safe navigational watch, and the application of leadership and team working skill for shipboard personnel management and training.

2.1 ECDIS

The minimum requirements of knowledge, understanding and proficiency for navigation using ECDIS are summarized in Table 1. Students are required to master theoretical knowledge of the capability and limitations of the ECDIS operations and achieve the necessary level of proficiency in operation, interpretation and analysis of the ECDIS information. The above competencies of students are evaluated both by the examination, as well as the assessment of evidence obtained from approved training ship experience, and/or approved ECDIS simulator training. The evaluation criteria of competence listed in Table 2 appear to suppose ECDIS training using the actual equipment. Therefore, the installation of a full mission ECDIS simulator is strongly recommended for the MET institutions.

Table 1 Knowledge, understanding and proficiency on the Navigation using ECDIS

- | |
|--|
| <ol style="list-style-type: none"> 1. Knowledge of the capability and limitations of ECDIS operations, including: <ol style="list-style-type: none"> .1 a thorough understanding of Electronic Navigational Chart(ENC) data, data accuracy, presentation rules, display options and other chart data formats .2 the dangers of over-reliance .3 familiarity with the functions of ECDIS required by performance standards in force 2. Proficiency in operation, interpretation, and analysis of information obtained from ECDIS, including: <ol style="list-style-type: none"> .1 use of functions that are integrated with other navigation systems in various installations, including proper functioning and adjustment to desired settings .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) .3 confirmation of vessel position by alternative 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 |
|--|

Table 2 Criteria for evaluating competence

1. Monitors information on ECDIS in a manner that contributes to safe navigation 2. Information obtained from ECDIS(including radar overlay and/or radar functions, when fitted) is correctly interpreted and analysed, taking into account the limitations of the equipment, all connected sensors(including radar and AIS where interfaced), and prevailing circumstances and conditions 3. Safety of navigation is maintained through adjustments made to the ship's course and speed through ECDIS-controlled track-keeping functions(when fitted) 4. Communication is clear, concise and acknowledged at all times in a seamanlike manner

Table 3 Knowledge, understanding and proficiency on the BRM

1. Knowledge of bridge resource management principles, including: .1 allocation, assignment, and prioritization of resources .2 effective communication .3 assertiveness and leadership .4 obtaining and maintaining situational awareness
--

Table 4 Criteria for evaluating competence

1. Resources are allocated and assigned as needed in correct priority to perform necessary tasks 2. Communication is clearly and unambiguously given and received 3. Questionable decisions and/or actions result in appropriate challenge and response 4. Effective leadership behaviours are identified 5. Team member(s) share accurate understanding of current and predicted vessel state, navigation path, an external environment
--

2.2 BRM

As the watch-keeping personnel on the bridge are part of the bridge team, the BRM is introduced in the function of navigation at the operational level. The minimum requirements of knowledge of BRM principles to maintain a safe navigational watch are summarized in Table 3. The BRM competencies of students need to be evaluated by the evidence obtained from one or more of the following: approved training; approved in-service experience; and/or, approved simulator training. In order to achieve the evaluation criteria of BRM competence listed in Table 4, BRM training using a full mission ship maneuvering simulator is considered to be indispensable.

2.3 Leadership and team working skill

The officers are expected to act as manager and leader to the crew. With this in mind, the competence of leadership and team working skill is introduced as part of the function for controlling the operation of the ship and care for persons onboard

at the operational level. The minimum requirements of knowledge, understanding and proficiency on the application of leadership and team working skill are summarized in Table 5. The leadership and team working skill of students are requested to be evaluated by the evidence obtained from one or more of the following: approved training; approved in-service experience; and/or, practical demonstration. The evaluation criteria can be summarized as shown in Table 6. The development of new training programs for students in order to master techniques such as task management, workload management, effective resource management, and decision-making seems to be necessary.

Table 5 Knowledge, understanding and proficiency on the application of leadership and team working skills

1. Working knowledge of shipboard personnel management and training
2. A knowledge of related international maritime conventions and recommendations, and national legislation
3. Ability to apply task and workload management, including:
.1 planning and co-ordination
.2 personnel assignment
.3 time and resource constraints
.4 prioritization
4. Knowledge and ability to apply effective resource management:
.1 allocation, assignment, and prioritization of resources
.2 effective communication on board and ashore
.3 decisions reflect consideration of team experiences
.4 assertiveness and leadership, including motivation
.5 obtaining and maintaining situational awareness
5. Knowledge and ability to apply decision-making techniques:
.1 Situation and risk assessment
.2 Identify and consider generated options
.3 Selecting course of action
.4 Evaluation of outcome effectiveness

Table 6 Criteria for evaluating competence

1. The crew are allocated duties and informed of expected standards of work and behaviour in a manner appropriate to the individuals concerned
2. Training objectives and activities are based on assessment of current competence and capabilities and operational requirements
3. Operations are demonstrated to be in accordance with applicable rules
4. Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks
5. Communication is clearly and unambiguously given and received
6. Effective leadership behaviours are demonstrated
7. Necessary team member(s) share accurate understanding of current and predicted vessel and operational status and external environment
8. Decisions are most effective for the situation

3. MET FOR THE CLASS III ENGINEER OFFICER STUDENTS

Every candidate for certification of officers in charge of an engineering watch in a manned engine-room or designated duty engineers in a periodically unmanned engine-room must meet the competency requirements specified in the STCW code, Part A, Table A-III/1. The important new requirements are to the Engine-room Resource Management (ERM) to maintain the safe engineering watch, and the application of leadership and team working skill for shipboard personnel management and training.

3.1 ERM

The concept of ERM is newly introduced to the STCW Convention and Code. The minimum requirements of knowledge of ERM principles to maintain a safe engineering watch are summarized in Table 7. The ERM competencies of students need to be evaluated by the evidence obtained from one or more of the following: approved training; approved in-service experience; and/or, approved simulator training. In order to achieve the evaluation criteria of ERM competence listed in Table 8, ERM training using a full mission engine room simulator is considered to be necessary. Therefore, the author recommends the installation of a full mission engine room simulator to the MET institutions.

3.2 Leadership and team working skill

The background of introducing the competence of leadership and team working skill for the Class III Engineer Officer students is the same as the case of a deck officer. Also, the minimum requirements of the knowledge, understanding and proficiency on the application of leadership and team working skill are the same as

Table 7 Knowledge, understanding and proficiency on the ERM

1. Knowledge of engine-room resource management principles, including:
.1 allocation, assignment, and prioritization of resources
.2 effective communication
.3 assertiveness and leadership
.4 obtaining and maintaining situational awareness
.5 consideration of team experience

Table 8 Criteria for evaluating competence

1. Resources are allocated and assigned as needed in correct priority to perform necessary tasks
2. Communication is clearly and unambiguously given and received
3. Questionable decisions and/or actions result in appropriate challenge and response
4. Effective leadership behaviours are identified
5. Team member(s) share accurate understanding of current and predicted engine-room and associated systems state, and of external environment

those of deck officers shown in Table 5. In addition, the evaluation methods and the criteria of competence are the same as for deck officers (Table 6). Therefore, the development of new training programs for engineer officer students in order to fulfill the requirements of the STCW code is desired.

4. SUMMARY

On the 2010 Manila amendments to the STCW Convention and Code, this paper introduced the outline of the important new provisions such as ECDIS, BRM, ERM, Leadership and Team working skill. To end, I would like to propose the following countermeasures to fulfill the new requirements.

- (1) As the evaluation criteria of competence on the ECDIS seem to suppose the training using the actual equipment, the installation of a full mission ECDIS simulator is desired.
- (2) When performing the BRM training, use of a full mission ship maneuvering simulator is recommended.
- (3) The ERM training using a full mission engine room simulator is recommended. When performing the ERM training, experience of the BRM training for deck students using a full mission ship maneuvering simulator will be a good reference
- (4) In order to fulfill the requirements for leadership and team working skill, both for the deck students and the engineer students, the development of new training programs is indispensable.
- (5) As the STCW Convention and Code will fully enter into force in 2017, Japanese MET institutions must start the new education and training for students entering their MET programs from April 2013.