



UniMET

Unification of Marine
Education & Training

**Going Beyond the Existing Standards in Maritime
Education and Training (UniMET) Symposium**



**Improving the Safety at Sea through
Maritime Education and Training**

Examples of needed amendments to STCW Code

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Report

of the presentation

at the Royal Institution of Naval Architects;

London, 22 November 2012



Introduction

The Centre for Factories of the Future with support from the UniMET consortium hosted the Symposium on “Going Beyond the Existing Standards in Maritime Education and Training” that took place on 22nd November 2012 in London. This event was part of the International Maritime Training Week.

One of the speakers was Dr. Zbigniew Szozda, assistant professor at the Maritime University of Szczecin (Poland), former Deputy Rector of this university, serving also as the Chairman of the Sub-committee on Stability and Load Lines and on Fishing Vessels Safety (SLF), International Maritime Organization. He presented some ideas concerning improvements to STCW Convention, STCW Code and the process of education and training of seafarers. **This report summarizes main points made during his presentation.**

The ideas and opinions presented in this report are private ones, not necessarily shared by Maritime University of Szczecin or SLF Sub-committee.

1. Situation in the fishing sector

1.1. During last years IMO (SLF) elaborated or reviewed a package of convention, agreement and recommendations related to the safety of fishing vessels. The main components of the package are:

- Cape Town Agreement on implementation of the provisions of the Torremolinos Protocol of 1993 relating to the Torremolinos International Convention for the Safety of Fishing Vessels, 1977. (Diplomatic Conference that took place in Cape Town on 8-12 October 2012 agreed on the conditions of entry into force of the Agreement. It is possible that the Agreement can enter into force in 2014-2015).
- 1995 International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessels Personnel (STCW-F) (entered into force on 29th September 2012).
- **Part B of the Code of Safety** for fishermen and fishing vessels.
- **Voluntary Guidelines** for the design, construction and equipment of small fishing vessels.
- **Safety Recommendations** for decked fishing vessels of less than 12 metres in length and undecked fishing vessels.
- **Guidelines to assist Competent Authorities** in the implementation of **Part B of the Code of Safety** for fishermen and fishing vessels, **Voluntary Guidelines** for the design, construction and equipment of small fishing vessels and **Safety Recommendations** for decked fishing vessels of less than 12 metres in length and undecked fishing vessels (approved by MSC 89, May 2011).

1.2. The fishing sector employ 15 million persons, of which approximately 1,5 million seafarers work on fishing vessels of 24 m in length and over; **with the highest death rate of any industry in the world.**

1.3. According to EC statistics (ILO, 2009): 24.000 fatalities per year in the fishing sector worldwide.

1.4. Conclusions:

- The most effective progress of the safety at sea, in terms of the reduction of the number of fatalities, could be achieved by worldwide improvements in the education of fishermen and relevant maritime administration officers.



- **A lot of training will be needed in fishing sector worldwide after 2014** –probably the best starting point is training of those who will be responsible for the implementation of the Cape Town Agreement and STCW-F in developing countries.
- There is a lot of space for introduction of new international projects aiming at technical co-operation and assistance in the frame of training and education of fishermen (teaching methods, teaching materials) and other stakeholders in the fishing sector. International co-operation in this area is needed.

2. Possible improvements and amendments to STCW Convention

2.1. Four types of improvements and amendments to STCW Convention (from the Author’s perspective) are necessary and/or advisable:

1. Improvement of the wording.
2. Harmonization with other IMO instruments.
3. Additional training emanating from existing regulations.
4. Additional training that may be foreseen with regard to current discussions at IMO.

There are four examples of amendments presented below – one for each type of the improvement as stated above.

In the Author’s opinion there is a lot of other similar areas of concern that should be considered by STW Sub-committee.

2.1.1. Improvement of the wording

The International Code on Intact Stability (2008 IS Code) entered into force on 1 July 2010 (via respective amendments to SOLAS and LL conventions). Before this date all stability criteria contained in IS Code were recommendatory. After this date stability recommendations became regulations for all new ships. This should be highlighted in the text of the STCW Code. Proposal for new wording is presented in the Figure 1.

Table A-II/2 (continued)

Function: Controlling the operation of the ship and care for persons on board at the management level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Control trim, stability and stress	<p>Understanding of fundamental principles of ship construction and the theories and factors affecting trim and stability and measures necessary to preserve trim and stability</p> <p>Knowledge of the effect on trim and stability of a ship in the event of damage to and consequent flooding of a compartment and countermeasures to be taken</p> <p>Knowledge of IMO recommendations concerning ship stability</p>	<p>Examination and assessment of evidence obtained from one or more of the following:</p> <p>.1 approved in-service experience</p> <p>.2 approved training experience</p> <p>.3 approved simulation where appropriate</p>	<p>Stability and stress conditions maintained within safe limits at all times</p>
Monitor and control	Knowledge of international maritime law embodied in	Examination and assessment of evidence obtained from one or	Procedures for monitoring operations and maintenance

Should be:
Knowledge of IMO regulations and recommendations concerning ship stability

Figure 1. An example of improvement in the wording of STCW Code



2.1.2. Harmonization with other IMO instruments

Different IMO conventions refer to the same objects. An example presented below concerns stability instrument – a measure (a computer and a computer programme) used to assess ship’s stability before departure. The stability instrument shall be named in the same way in both conventions: SOLAS and STCW. In the opinion of the Author the name used in SOLAS Convention is more appropriate. Therefore respective table in STCW Convention shall be amended as follows: “Use of electronic loading and stability computer or equivalent means”. This is shown in the Figure 2.

Function: Cargo handling and stowage at the management level;
Competence: Plan and ensure safe loading, stowage, securing, care during the voyage and unloading of cargoes (page 118).

<p>STCW:</p> <ul style="list-style-type: none"> • „Use of <i>stress calculating equipment, including automatic data based (ADB) equipment.....</i>” 	<p>SOLAS</p> <ul style="list-style-type: none"> • „electronic loading and stability computer or equivalent means”
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Figure 2. An example of harmonization: STCW and SOLAS conventions

2.1.3. Additional training emanating from existing regulations

The SLF Sub-committee developed amendments to SOLAS Convention regarding safe return to port of a passenger ship after flooding casualty. The amendments were approved and adopted by the Maritime Safety Committee. The original proposal by SLF is presented in the Figure 3.

SLF 53/19
Annex 4, page 1

ANNEX 4

DRAFT AMENDMENT TO SOLAS REGULATION II-1/8-1

Regulation 8-1 – System capabilities and operational information after a flooding casualty on passenger ships

A new paragraph 3 is added after the existing paragraph 2, as follows:

"3 Operational information after a flooding casualty

For the purpose of providing operational information to the Master for safe return to port after a flooding casualty, passenger ships constructed on or after [1 January 2014] shall have:

- .1 onboard stability computer; or
- .2 shore-based support,

in accordance with guidelines developed by the Organization*."

(*) Refer to the Guidelines on operational information for the Masters of passenger ships for safe return to port by own power or under tow.

Figure 3. Proposal of the amendments to SOLAS Convention by SLF



The SLF Sub-committee requested STW Sub-committee to consider whether additional training of crew members assigned to duties with regard to this amendment were necessary. STW opinion was negative in this respect. In the Author’s opinion this decision was wrong and Costa Concordia accident did prove this approach.

In the meantime the Author prepared the appropriate amendments to STCW Convention and STCW Code. This is presented in the Annex to this report. As the MSC approved new unplanned output: “Safety of passenger ships” - this proposal may be submitted to MSC 92 scheduled for June 2013 for their consideration and decision.

2.1.4. Additional training that may be foreseen with regard to current discussions at IMO

Piracy and armed robbery against ships is one of the top agenda items of the International Maritime Organization. There is a lot of discussions in the frame of this agenda item. One interesting issue is use of Privately Contracted Armed Security Personnel (PCASP) onboard ships and different aspects in this respect. From the MET point of view a very important question is: who is in charge – who commands such armed personnel?

The master is supposed to command and have overriding authority and responsibility. Figures 4 and 5 present respective elements of documents submitted to MSC.

PIRACY AND ARMED ROBBERY AGAINST SHIPS

Safety issues related to the use of armed personnel on board ships in the high risk area

Submitted by Italy

SUMMARY	
<i>Executive summary:</i>	This document draws the Committee's attention to safety issues related to the use of armed personnel on board ships in high risk areas and describes the decisions taken by the Italian Administration in order to address such issues
<i>Strategic direction:</i>	6
<i>High-level action:</i>	6.2.1
<i>Planned output:</i>	6.2.1.2
<i>Action to be taken:</i>	Paragraph 10
<i>Related documents:</i>	MSC.1/Circ.1405/Rev.1, MSC.1/Circ.1406/Rev.1 and MSC.1/Circ.1408

Introduction

1 The series of countermeasures recently approved in order to reduce the risk of successful piracy attacks, includes the interim recommendations regarding the use of Privately Contracted Armed Security Personnel (PCASP) on board ships in the high risk area which address different aspects of the matter in relation to the parties concerned: shipowners, ship operators and shipmasters (MSC.1/Circ.1405/Rev.1); flag States (MSC.1/Circ.1406/Rev.1); and port and coastal States (MSC.1/Circ.1408).

Figure 4. Element of documents submitted to IMO with regard to PCASP



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Example 4b.

MARITIME SAFETY COMMITTEE
90th session
Agenda item 20

MSC 90/20/6
14 February 2012
Original: ENGLISH

PIRACY AND ARMED ROBBERY AGAINST SHIPS

Draft Interim Guidance to private maritime security companies (PMSC) providing privately contracted armed security personnel (PCASP) aboard vessels transiting the High Risk Area off the east coast of Africa

MSC 90/20/6
Annex, page 7

Command and Control

5.6 The PMSC should have a policy and procedures governing the command and control of PCASP on board a ship, and ensure that the PCASP is fully aware of it. In particular, the policy and procedures should:

- | | |
|---|---|
| 1 | contain a clear statement that at all times the master remains in command and is the overriding authority on board, and a defined procedure in the event of the master being unavailable; |
|---|---|

Figure 5. Element of documents submitted to IMO with regard to PCASP

Current STCW Convention and STCW Code do not cover this issue. The masters trained in accordance with STCW Convention not necessarily have proper knowledge and skills to manage this problem while sailing along pirates' affected areas. Therefore appropriate amendments to STCW Convention are needed. IMO should start the discussion in this respect in the next future. Training centers (especially maritime universities) should develop new programme to cover the issue of commanding armed personnel onboard ships.

Conclusions:

- The questions may be raised:
 - How many other examples may be addressed taking into account different point of view?
 - Is it possible to create a Task Force out the structure of STW Sub-committee but dealing with issues under its purview - a PROJECT ?
- Call for a group of people aiming at holistic approach to amendments to STCW instead of „voluntary” submissions of Member States covering only particular part of the Code that the submitters are interested in. Amend the Code after the „critical mass” of the amendments has been gathered.

3. An area of concern that STW Sub-committee should be focused on

There are two main stages of seafarers' training leading to obtaining the certificate:

1. Education and training.
2. Assessment.

If the purpose of the STCW Code is to facilitate of “production” of good quality seafarers, examination (assessment) should be the barrier for avoiding poor quality seafarers. It is shown in the Figure 6.



Two main stages to obtain a certificate:

- Education and training.
- Assessment !!!

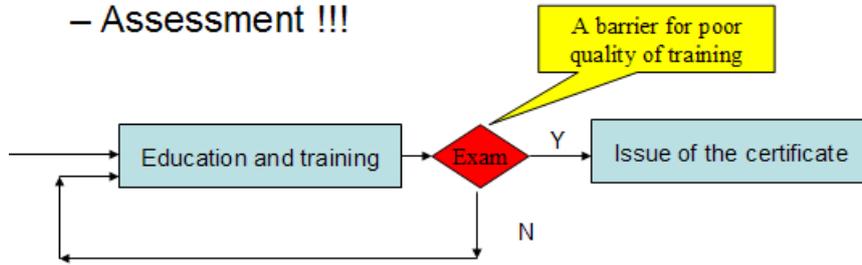


Figure 6. Exam as a barrier for poor quality seafarer

Figure 7. shows examples of possible barriers for poor quality seafarers that are breached from time to time.

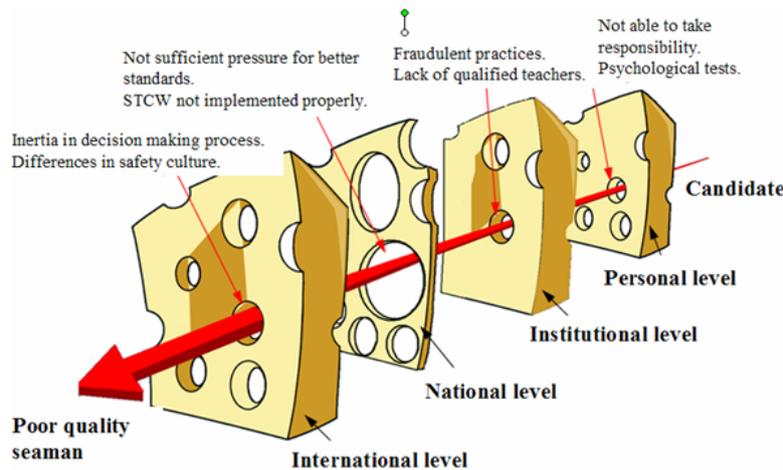


Figure 7. Examples of breached barriers that leads to poor quality seamen

Conclusion:

- The future aim for STW Sub-committee should be development of international standard for the seafarers assessment.

4. Discussion

A short discussion after the presentation focused on:

- the safety of fishing vessels and the number of fatalities per year in this sector;
- armed personnel onboard the ship and responsibilities of the Master and related objectives of the training;
- the question: why does it take so long time to enter into force of international regulations?



ANNEX

Guidelines on operational information for masters of passenger ships

for safe return to port by own power or under tow

Submitted by Poland

SUMMARY

Executive summary:	This document contains a proposal for amendments to STCW Convention and STCW Code concerning additional training for masters and crew members assigned to operate stability computers and/or co-operate with shore-based support institutions for the purpose of safe return to port after flooding casualty on passenger ships.
Strategic direction:	No related provisions
High-level actions:	No related provisions
Planned output:	No related provisions
Action to be taken:	Paragraph 9.
Related documents:	MSC 89/25, paragraph 9.13; SLF 53/19, paragraph 7.

BACKGROUND

1. The Maritime Safety Committee at its 89 Session approved MSC.1/Circ.1400 on guidelines on operational information for masters of passenger ships for safe return to port by own power or under tow. At the same session the Committee approved the draft amendments to SOLAS regulation II-1/8-1, which introduces a mandatory requirement for either onboard stability computers or shore-based support for the purpose of providing operational information to the Master of a passenger ship for safe return to port after a flooding casualty.

2. The Sub-committee on Stability and Load Lines and on Fishing Vessels Safety at its 53 Session discussed the need of additional training for masters and crew members on passenger ships assigned to operate mandatory stability computers and decided to refer the issue to the STW Sub-Committee for further consideration.



DISCUSSION

3. After a passenger ship is fitted with stability computer complying with new SOLAS regulation II-1/8-1, that performs new tasks that are not met at present onboard passenger ships, the proper and efficient use of such computer and outputs will be crucial for the safety of the passengers, crew, ship and environment.

4. **New skills and knowledge required** for effective use of the information provided by the onboard computers on passenger ships or shore-based support as well as co-operation and decision making after real flooding casualty **are different than those required for intact and damage stability assessment prior to departure** or use of onboard damage stability information required by SOLAS Convention so far.

5. Poland is of the opinion that necessary training for masters and crew members assigned to operate stability computers and/or co-operate with shore-based support institutions for the purpose of safe return to port after flooding casualty on passenger ships goes far beyond the standards of the STCW Convention and the STCW Code. Therefore amendments to Regulation V/2 of the STCW Convention (*Mandatory minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on passenger ships*) and section A-V/2 of the STCW Code may be needed.

PROPOSAL

6. Poland proposes the establishment of the drafting group to prepare the justification for an unplanned output on *Amendments to STCW Convention and STCW Code concerning additional training on safe return to port after flooding casualty for personnel on passenger ships* for submission to MSC 90 for approval.

7. The second option is to take into account that the earliest date of entry into force of the amendments to SOLAS regulation II-1/8-1 may be 1 January 2014 and that the Council instructed all IMO subsidiary bodies to avoid the proposals of unplanned outputs due to burden of the work. In this context Member States may be encouraged to submit to MSC proposals for a planned output, as set out in paragraph 6, for the biennium 2013-2014 with target completion date 2013.

8. Draft scope of the amendments proposed by Poland is set out in the Annex.

9. The Sub-Committee is invited to consider the proposals in paragraphs 6, 7 and 8 and take action as appropriate.



Annex

*Draft proposed Amendments to STCW Convention and STCW Code
concerning additional training on safe return to port after flooding casualty
for personnel on passenger ships*

A. Amendments to STCW Convention

1. Insert new paragraph number 8 in Regulation V/2 - *Mandatory minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on passenger ships*:

8 Masters and crew members assigned to operate stability computers and/or co-operate with shore based support institutions for the purpose of providing operational information for safe return to port after a flooding casualty shall have completed approved training in safe return to port after a flooding casualty as specified in section A-V/2, paragraph 5 of the STCW Code.

2. Existing paragraph 8 renumber to 9.

B. Amendment to STCW Code

1. At the end of the Section A-V/2 add new text as follows:

Safe return to port after flooding casualty

5 The training in safe return to port after a flooding casualty required by regulation V/2, paragraph 8, for Masters and crew members assigned to operate stability computers and/or co-operate with shore based support institutions for the purpose of providing operational information for safe return to port after a flooding casualty shall include, but not necessarily be limited to:

- .1 understanding the difference between intact and damage stability assessment prior to departure and determination of the ship condition after flooding casualty;
- .2 knowledge and understanding of algorithms used in damage stability and strength modules for safe return to port after flooding casualty and other onboard computer software for stability calculations - its assumptions, simplifications, limitations etc;
- .3 interpretation of the output in order to provide required information;



- .4 ability to perform prompt and effective collaboration with shore-based institutions, especially classification societies' experts and ship designers;
- .5 ability to apply properly and immediately the results of damage stability and strength calculations in decision making process after flooding casualty.