

QUALITY CONTROL OF SEAFARERS TRAINING

Wael Khattab

College of Maritime Transport and Technology

Arab Academy for Science, Technology and Maritime Transport

مستخلص

ان البحارة هم عنصر اساسي و حيوي في صناعة السفن حيث ان الطلب على البحارة المؤهلين و المدربين يتزايد باستمرار في هذه الصناعة و ذلك نظرا لما تتطلبه هذه الصناعة من معايير معترف بها دوليا. و يؤكد مؤتمر معايير التدريب و الشهادات (STCW) التابع للمنظمة البحرية الدولية (IMO) على ضرورة ان يكون التعليم و التدريب البحري خاضع لمراقبة الإدارة عن طريق نظام للجودة. كما يجب وضع نظم لتقييم التدريب – التأهيل- تجديد الشهادات كل خمس سنوات على الأقل.

ABSTRACT

Seafarers are the core element of the shipping industry and demand for competent and well educated seafarers has been growing. Due to the global nature of shipping industry, structured, standardized, internationally accepted, monitored, and assessed education and training are vital elements to meet this demand and expectations of the shipping industry. STCW convention adapted by IMO in 1978 and revised in 1995, defines standards for training, certification and watch keeping for seafarers. According to the STCW 95 convention, all Maritime Education and Training MET shall be monitored by the administration through a quality standards system and the STCW Code A-1/8 states that an independent evaluation should be conducted at periods of not less than five years.

1- Introduction

Some ship-owners, who are required to operate under restrictive legislation and/or union agreements covering the nationality of their crews, have been obliged to transfer their ships to more flexible systems of the open registers if they were to stay in the business. As a result, the whole question of ownership, operation, management and the control of ships have become more complicated. These changes have introduced a new concept.

One attraction of using international seafarers from newer sources of supply is the low cost and that the seafarers union tend to be more flexible.

International seafarers supplied to the development of the shipping industry from the sixties to the seventies, and then, as consequences, of lack control of training and certification of international seafarers the problem followed.

The growing concern about the responsibility of management for safe ship operation and the size of the financial penalties now imposed for pollution of the environment, it is essential that more direct and/or indirect attention international seafarers employed on-board. The manning of ships has been a major topic for debate and concern over the past decades.

The quality of seafarers is a key factor for the safe operation of ships and the protection of the marine environment. SOLAS, ISM Code and STCW 95 have been developed to ensure the quality and competence of the international seafarers. These instruments require government authorities, training centers, maritime academies, shipping companies, and ship managers responsible for ensuring the quality seafarers.

2. Quality of Seafarers

The qualifications of personnel, who man the world fleet, are the single most important issue in achieving higher safety standards on board ships. The attention of the industry has been focused on "qualified seafarers", rather than merely looking at the total availability of manpower since the beginning of 90's. There is no corner of industry, afloat or ashore, that will be unaffected by the great shortage of lack of training and failure to recruit. Research done by the P&I clubs, classification societies, and other the P&I clubs, classification societies, , and others, , into the causes of accidents has established that perhaps as much as 80% of all accidents at sea are the result of human error.

Thereby a reduction in the ratio of human error offers considerable economic incentives. The definition of qualified seafarers probably is very comprehensive and difficult to give. It is not enough to define a "qualified seafarers" that only holds a valid certificate and employed under an agreement.

The challenge today is multi-faceted, with modern technology and economics creating the paradoxical situation of required skilled seafarers who are experts in their particular field while also decreasing the number of seafarers on-board. A deck officer today does not need to use the sextant and calculate the average error of a magnetic compass. He has to understand how to use the complex "ARPA" system, to operate the electronic chart and to be familiar with the GMDSS to send and receive integrated messages. A qualified container ship officer has not the same qualifications as a qualified bulk carrier or log carrier officer. The definition of "Qualified Seafarers", from the point of view of the ship owner, should be a comprehensive concept which includes: valid licenses and certifications, good health, good maritime education and training, proper experiences and good acknowledgement background, initiative, co-ordination, disciplinarian, and with creativity.

The basic education is very important and necessary before young people enter the industry. Poor basic education normally causes a slow improvement and is a barrier to seafarers in renewing their knowledge and technical skills. It is difficult to train a junior officer who has not got enough education to be a master or chief engineer. This is a truth known by many, not only in the shipping industry, but in all other industries. If the primary and secondary education systems are not fully established, it is almost impossible to create a quality tertiary or professional education system.

Experience of the sea is also important in order to be a qualified seafarer. It is generally said that at least a ten-year period is needed to develop a master and a chief engineer. And then a substantial period is required giving fresh hands on their new ranks, the necessary experience before they become a qualified master or chief engineer.

To be a qualified seafarer, it is not enough to have good education and rich experience. Training and retraining is also necessary, especially today where the technology is changing very fast. Seafarers need training and retraining in each step in their sea-life to renew their knowledge and skills. Clearly a high level training and continue training can be taken to indicate to the reduction of human error, the main reason for maritime casualties.

The average level of education and training of seafarers, both officers and ratings, is not good enough. The weakness of elementary and theoretical education is one of the reasons. There is no intergovernmental co-operation in elementary education between the supplying countries and demand countries while some individual and private maritime academy programs have been established in Singapore, Philippines, India, Vietnam, China. Compared with the profit the owners make from their seafarers, the investment in the aspect of education and training of seafarers where their national governments could not provide enough elementary education for them, can not be realised to be sufficient.

In conclusion, the lack of investment in proper education and training unquestionably today is one of a major reasons for a shortage of qualified seafarers. "A perception that recruitment and training level had peaked and were beginning to decline below those necessary to ensure an adequate future supply of seafarers" as mentioned in BIMCO/ISF.

3. Human Error in Maritime Industry

Qualified seafarers have become more and more valuable because ships have become bigger, faster and more complex to handle. An indication of the quality of seafarers today can be seen from the number of maritime incidents, accidents and disasters.

One of the most common understanding in the shipping industry is that most incidents/accidents are caused by human error. In accordance with "shipping causality statistics" issued annually by the International Underwriting Association, total losses are attributed to six different causes: collision or contact, fire or explosion, grounding, machinery failure, weather and other reasons. If a further analysis is made to find the real reasons, another simplification will be exposed that about 80% of accidents at sea are caused by human error.

Actually, the industry has realised the importance of the human error in maritime incidents and has adopted several measures to prevent and reduce human error in maritime operations. The STCW95, as well as the ISM code, could be considered most successful.

4. Maritime Universities and Quality Management Systems

Regarding the main approach of the ISO 9000 standard, the "organization" receive supplies from the "supplier" and provides "products/services" to the customer" (ISO,2001:2:3.

When the standard is applied to higher maritime education process, the term "organization/product/services" will stand for "higher maritime education process which is

provided by the university/faculty/school". The term customer will stand for the "student, industry, society". The term "supplier" will remind "the physical infrastructure, the learning resources, organization and management of the system" that serve the higher maritime education process.

Supplier Organization/Products/Services Customer Physical Infrastructure, Higher maritime education process students, industry learning resources, and the society organization and management of the system.

5. Quality System

5-1 Quality Planning

Quality planning is very important part of the quality system but people often ignore it. The management of the agency shall define and document how to meet specific requirements for seafarers and related services from customers.

The quality system is likely to be a generic system, not specific to any particular project or contract other than the range of the services the agency supplies are concerned in the system. The quality documentation will not specify everything the agency needs to do for every job, especially new requirements, contracts and projects. So the quality plans are needed to deal with the particular or new requirements, projects and contracts. In a crew manning agency, maybe the quality system has regulated how to arrange recruitment and how to form the complement under the customer's requirements. Quality planning shall be documented in a format to suit the operation of the agency. When a particular requirement is required, the management should react as follows:

- Prepare the quality plan.
- Organize the necessary personnel, training programmes, subcontractors or other resources to implement the plan.
- Ensure the requirements to be satisfied with the compatibility of the daily operation of the company.
- Clarify that the company has the capability to satisfy the requirements.

5.2 Contract Review

In general, each occurrence of the despatch of seafarers to the customers shall be restricted and secured by an agreement. The crew manning agency agreement between the agency and the principles defines the responsibilities, authorities, obligations and services of both parties. In this section, the agency shall explain how the contracts have to be reviewed before signature.

5.3 Document and Data Control

This section of the manual explains that all documents and data affecting the quality of seafarers and related services are under proper control. The agency identifies that the documented procedures have been established and maintained under ISO 9002.

5.4 Purchasing

In shipping companies, these requirements can be understood as the requirements and employment of seafarers. The company explains briefly how the seafarers are to be recruited or employed by the agency on behalf of the principal and how to verify the qualifications of the seafarers according to the requirements of the contract. The company state that documented procedures of recruitment of seafarers have been established and marinated.

5.5 Product Identification and Tractability

Under these requirements, the company shall establish and maintain documented procedures for identifying the seafarers by suitable means during selection, verification, recruitment, training, despatch, working on-board, repatriation and vacations. The identification of each seafarer must be unique during all stages.

It is not very complicated to identify the seafarers so that theses requirements can be included in other procedures such as the procedures of recruitment of seafarers, the procedures of control of quality record. In this case, procedures of seafarers identification and tractability are not needed.

5.6 Process Control

Be4sides the requirements of ISO9002, other operational process directly affecting the quality of seafarers and related services have to be identified and planned to ensure that those processes are carried out under controlled conditions.

The agency shall explain what additional processes are particularly needed. Two critical processes in the agency need to identify specially. They are the process of communication and the process of emergency.

5.6.1 Communication

Communication is a very important process in the shipping industry that is not specially required in ISO9002. The agency shall define lines of communication experience, feedback between the crew manager, the ship manager, the ship(s) and the subcontractors, including, but not limited to the following:

- Accident and near miss report
- Training scheme, seminars etc.
- Assessment reports or evaluation of seafarers forms
- Emergency replacement
- Other urgent cases

For this purpose, full addresses of customers, subcontractors, ships, even seafarers are to be listed and up-dated.

5.6.2 Emergency

The agency ensures that an emergency plan has been established. The purpose of this plan is to ensure that the crewing manager or other person in charge can respond to the emergencies in a co-ordinated and efficient way. The emergency plan shall include, bu not be limited to the followed items:

- The compositions, responsibilities and authorities of the emergency response team.
- Procedures to assemble the emergency response team.
- Procedures for set up contract between the ship and the crewing manager.
- Procedures for obtaining the details of seafarers on-board the vessel.
- List of name, telephone, and mobile-phone numbers, including the after hour numbers of personnel and organisations who must be notified.
- Procedures for notifying and liaising with the next of kin for seafarers on board ships.
- An up-to-date list with personal details of all employed seafarers on-board.
- An up-to-date list personal details (including full addresses) of all available seafarers ashore.

All the information the emergency treatment needs must be obtained easily by the member of the team. Emergencies an agency may encounter include:

- Frequency of the ships where the seafarers on-board.
- Personal injury of seafarers on-board.
- Sickness of seafarers on-board.
- Injury and sickness of seafarers on the way to departure and repatriation.
- Deserting and calling next of kin.
- Travelling troubles of seafarers.
- Other emergencies.
- Death of seafarers.

The company shall make arrangement to protect and secure documents and data including electronic data of, of vital importance to the business, from theft, fire, water damage, failure to operate, and computer viruses.

6. Training

The company shall explain how to provide training to the employees and the seafarers to prevent unqualified personnel from performing activities affecting quality under these requirements

7. Servicing

These requirements only apply where the customer-supplier agreement includes post-delivery support for products or services.

The core business of a crew manning agency is to supply qualified seafarers to the customers to work on-board. In accordance with the contract between the agency and the principal, if the principal makes a demand on the agency to replace the seafarer(s) who are unfit for their duty or are lacking qualifications, the agency shall make immediate replacements available. These activities can be defined as "servicing" after delivery in ISO 9002.

7.1 Recruitment of Seafarers

The management of the company human resources shall establish and maintain procedures for selection and recruitment of seafarers. The procedures are written to ensure that the following, but not limited items, are conducted during the recruitment of seafarers:

- Confirmation of the qualifications and experience requirements for each position on-board under the manning agreement and the specified requirements of the principal
- Confirmation that each seafarer supplied to the principal has appropriate qualifications according to mandatory rules and regulations including national/international regulations, flag state regulations, conventions etc.
- Verification of the good health of each seafarer in order to perform his duty on-board.
- Verification that the seafarers can adequately understand key instruction in English and/or the commanding language.
- Verification that the seafarers can adequately understand the ISM code.
- Verification of the correctness of the personal documents of the seafarers.
- Ensure that the terms and conditions of the employment contract or crew contract have been explained to the seafarers and defined in the agreement between the company and the crew.

When the principal requires an interview with the seafarers(s), the company is to provide assistance. In the case that the seafarer(s) has been interviewed and accepted by the principal, the company also has the responsibility to verify, or to guarantee the qualifications of the seafarer(s).

To perform these verification activities, an appraisal system for the assessment of seafarers checklists, form, and schedules is useful.

7.2 Training of The Seafarers

Considering the concept of training in the ISO 9000 series, this topic could not be included in this section because the training requirements in ISO 9000 are only meant for personnel who execute activities governed by the quality system.

Training of seafarers is not covered by the ISO 9000 series but it is covered by the ISM code. However, the agency shall make provisions for adequate seafarer training according to the requirements stated in the manning agreement.

- Use of approved or recognised shore-based training facilities or training programs.
- Motivating seafarers to improve and update their qualifications related to their present position on-board
- Encouraging seafarers to up-grade their current qualifications (for example, the agency shall provide assistance to the seafarers to organise relevant seminars about safety and environment prevention, navigation and cargo handling skill.
- Ensuring that the quality manual and documented procedures for on-board familiarisation with ship's machinery, equipment and systems are provided before the seafarers take responsibility on-board.
- Ensuring that employment contract, or crew contract regarding to the working conditions, working hours, and responsibilities are agreed and understood by the seafarers.
- To ensure that the training centres are approved by the maritime administration to comply with STCW95 and accepted by the company.
- The training need to be assessed by the crewing manager or other authorised personnel.

8. Training Categories

8.1 Mandatory Training Course

These courses depend on trade, position and type of ship:

- Basic safety course (STCW, MARPOL, SOLAS, ISM Code ETC.)
- Advanced fire-fighting course for officers
- Radiotelephone course for deck officers.
- ARPA course for deck officers
- COW course for deck officers working on tankers
- GMDSS course for deck officers
- Familiarisation course for working on gas, oil and chemical tanker
-
- Crowd management training for working on Ro-Ro Passengers ships
- English language courses
- Other courses as appropriate

8.2 Voluntary Training Courses

There are a variety of courses offered in the market. Some of these additional courses are often part of the manning agreement with the principal or may also be from the market strategy of general or individual requirements by the agency to the seafarers.

8.3 On-Board Training

On-board training is a major factor in effectively improving the qualifications of seafarers. The agency should pay more attention to this and keep relevant records.

9. International Conventions

The STCW conventions, adopted by IMO in 1978, define standards for training certification and watch keeping for seafarers. In 1995, Convention was completely revised and updated to clarify the standards of competence required, introduce qualifications requirements for trainers and assessors, provide effective mechanism for enforcement of its provisions and allow greater flexibility in the assignment of functions on-board ship.

The convention reinforces the criteria for eligibility of seafarers and requires proof of the effectiveness of measures introduced to satisfy the intentions of the conventions. It seeks to establish a baseline standard for the training and education of seafarers throughout the world and, by placing an emphasis on quality control and competence-based training, the STCW seeks to ensure the highest standards for functions and processes relating to a mariner's competence. To do this, all training, assessments of competence, certification, endorsement and revalidation activities regarding STCW certificates must be monitored by a quality standards system (QSS).

Under the section A-1/8 "Quality Standards" of STCW\code; Parties are required to ensure that all training, assessment of competence, and certification activities are continuously monitored through a quality standards system to ensure achievement of defined objectives. An "independent evaluation" of the knowledge, understanding, skills and competence

acquisition and assessment activities, as well as of the administration of the certification system, is to be conducted at intervals of not more than five years. The evaluation must be conducted by persons who are not themselves involved in the activities concerned to verify that (IMO, 1996):

- Internal management activities comply with planned arrangements and documented procedures, and are effective in achieving defined objectives;
- The results of independent evaluation are documented and brought to the attention of those responsible for the area being evaluated; and
- Action is taken to correct deficiencies.

Section B-I/8 of the STCW Code that provides guidance on applying a quality standards system to training and assessment activities states that each party should incorporate the following key element (IMO, 1996):

- An expressed policy regarding quality and the means by which such policy is to be implemented
- A quality system incorporating the organizational structure, responsibilities, procedures, processes and resources necessary for quality management;
- The operational techniques and activities to ensure quality control
- Systematic monitoring arrangements, including internal quality assurance evaluations, to ensure that all defined objectives are being achieved,
- Arrangements for periodic external quality evaluations.

10. Conclusion & Recommendations

- To ensure that seafarers are safety and health conscious through continuous training and education.
- To deploy competent, qualified and properly certificated seafarers in compliance with national and international requirements.
- To employ fit-to-work seafarers with physical, medical, dental and mental fitness.
- To effectively manage crew performance, health care and safety meetings on-board.
- To evaluate the previous performance and current health and safety awareness of crew before re-employment.
- To efficiently comply with company instructions and immediately address complaints by coming up with appropriate corrective and preventive actions.
- To enhance employees' technical skills and personal development through periodic training program and team building.

Reference

1. Angas, G (1999). How have the changes in technology effected the quality and training of crew. Ship management forum 1999. London: IBC UK.
2. BIMCO(2004). The impact of ISM on Limitation of Liability. BIMCO Bulletin No.5, December. <http://www.bimco.dk/html/membership-area.htm>
3. Dovles, G (1995). A 10 minutes guide on the IMO's ISM code.
4. Glen, D (1998). The ISM code compliance dying species. Lloyd's Shipping Economist.

5. Hoyle, D (1998). ISO 9000 Pocket Guide. Oxford: Butterworth Heinemann.
6. Stebbing, L (1993). Quality Assurance-the route to efficiency and competitiveness.
7. Hughes, D (1997). Ship management: no turning back from ISM code. Shipping safety measures. Lloyds' list Feb.13.
8. International Chamber of Shipping (2003). Guidelines on the application of the IMO International Safety management code=ISM Code. London. ICS/ISF.
9. Lloyd's List on Disk (2006). ISM certification needs enforceable rules. Lloyd's List on Disc, Sep 06.
10. Lin Y.M (2002) Seafarer training and ship performance: a ship owner's view.
11. International Manning and Training Conference, Manila. London: Lloyd's of London Press.
12. Martyr, P (2004). Enforcing the ISM code –today's the big day. Lloyd's.
13. MARNA (1999). Ship management: living with ISM is rough on the little guy. Marine Log 104 (3) 51.
14. Morris.A.P (1998\9). The ISM code compliance and thereafter New Ship & Marine Technology into the 21st Century. 06,451.
15. Pekcan , C(1999). Crew retention: How and why. Ship management forum 1999. London: IBC.
16. SOLAS, (2001) Consolidated Edition, 2001.