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## Using of International Standards of Quality in the Vocational Training of Employees of Marine Profile on Their Workplaces

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## **Using of International Standards of Quality in the Vocational Training of Employees of Marine Profile on Their Workplaces**

### **The relevance of the problem**

The formation of Ukraine as a highly developed European country defines the primary goal for the society: to achieve high economic performance and competitiveness of products and services on a global level, the priority economic goals as the stability conditions of the enterprise. All this makes the employer and the state to train workers according high standards.

Professional training of staff in workplace is regarded as the optimal form of interaction between employer and employee, which is an effective tool for strengthening competitiveness and, as a consequence, the employment of the individual, the solution of social problems, contributes to the preservation of personnel potential of enterprises to create new jobs, becoming a career employee.

Improving the quality of services provided in the maritime complex necessitates international cooperation at European level in the field of vocational training staff in the workplace. Become necessary open and clear approaches to the formation of professional competence of employees of maritime profile and criteria for the quality of its training. Improving the quality of vocational training of workers in the workplace of marine profile contributes not only to the competitiveness of the services provided shipping company, but also has a great influence on the improvement of their social and professional mobility of workers. Therefore, common approaches to training of personnel in the workplace become necessary, which are declared in the International Convention on „Training, Certification and Watchkeeping for Seafarers 1978” (STCW) [2012].

Rule 1/8 „Quality Standards” of the STCW Convention clearly states that all training activities, competency assessment, Certification, validation and revalidation of diplomas, which is carried out the necessary organization, was held under constant surveillance through a system of quality standards in order to ensure achieve certain goals, including those related to not only the assessment of competence of seafarers, but also the qualifications and experience of instructors and examiners [STCW..., 2012]. Therefore there is a need for radically new approaches to the determination of the parameters in the content of vocational training of workers in the workplace of marine profile.

## **Analysis of recent research and publications**

The problem of the quality of education is represented in dissertations of domestic and foreign scientists (O.L. Anufrieva, L.I. Danilenko, V.P. Panasiuc, L.M. Petrenko, V.P. Stelmashenko and others), monographs (V.A. Kal'nei, H. Ostroverkhova, S.E. Shishoff), scientific publications (V.O. Golovinova, V.P. Golovinov, N.V. Zhytnyk, O.I. Lyashenko, O.YA. Savchenko, A.I. Sevruc, A.I. Subetto, O.YA. Shcherbak and etc.). It is proved that the quality of education significantly affects the outcomes of education and its implementation in the professional training of personnel is a significant step forward compared to the situation when schools were content with only quantitative characteristics of the results. However, this approach is more aimed at improving the quality of vocational education in VET schools of different accreditation. For educational institutions of vocational training staff in the workplace, the implementation of this task is a powerful thing that needs to be closely related to the structure of the entire production process of training skilled workers.

Therefore, **the purpose of the article** is to examine the relationship between quality management system service of shipping company and management of quality of workers' vocational training in the workplace of marine profile as a planned development cooperation, from which depends largely on the technical level of production, quality of services, as well as the increase in the share of highly qualified specialists.

## **Statement of the material**

To achieve this objective it is necessary to consider the process of quality management in the shipping company that performs the selection and assembly of ships' crews. In the first place, the organization defines and documents the steps for the implementation of quality requirements. To meet the requirements to service, the shipping company:

- Develops programs (plans, schedules) of quality;
- Identifies and acquires the necessary control (including Testing tools and programs) and technology including hardware, computer, software, information and communication equipment, as well as skills that may be needed to achieve the required quality;
- Provides compatibility for the selection, verification, coordination and direction of interns – trainees in crews, in order to implement the requirements established programs shipboard training;
- Establishes requirements for appropriate verification services at a particular stage of its implementation;
- Defines the rules and criteria to the appropriate procedure for selecting candidates for the crews of ships, their documents and evidence, including those that contain elements of subjectivity;

- Assess and predict future demands of the shipping company for skilled workers and graduates;
- Defines the requirements for the identification, preparation, storage and access to quality data.

In addition to this, it should also be noted that the shipping company is interested in that at all levels of its structure, including life-support system of the company (service fleet management, human resources, finance, and others) everybody was interested in a clear idea of the importance of the requirements of international conventions, IMO Resolutions and compliance with the quality management system at their workplace [IBO-9001-2008].

Implementation of these requirements to the staff of the company can be provided:

Correct and clear policy for Human Resources, which takes into account the features of the selection and qualification of personnel in manning of vessels and timely respond to changes in external conditions for their training;

- Staff of the company, which is necessarily a major factor in the growth of professional sailor, increasing its competitiveness and mobility;
- Planning for staffing fleet associated with the process of training, retraining and advanced training of seafarers and promotion of promising specialists.

Accordingly, the successful implementation of eight quality management principles leads to the fact that the staff of the company is experiencing a positive attitude to the problems of management of the company ships seafarers who acquires self-confidence, desire to organize their labor, to perform at a high level of quality and in the perspective of tasks, while receiving the material and moral satisfaction from the work done.

The study on this issue (in the Ukrainian Danube Shipping Company, as the only state-owned enterprise maritime complex of Ukraine and the national carrier №1) showed that actual implementation in practice of the company's transport services in the international transport market, provides, in the first place, the process of training with taking into account the peculiarities of the functioning of the enterprise and obtain the final result of its activities. Therefore, the role and place of training department of the shipping company (in this case – Training Centre UDP) are clearly defined in all its organizational structure, as well as in the relations of the shipping company with the International Maritime Organization.

The shipping company is developing documented procedures consistent with the requirements of the Quality Management System (QMS) and the establishment of the quality policy and, at the same time, developing and implementing the company's policy on professional competence and training of personnel in the educational division of the company, indicates that properly prepared and trained Staff will affect the quality of the service provided, as well as the willingness and desire to show how you can better meet the needs of the customer. Documented policy on the quality of training of seafarers includes:

- Improving the quality of vocational training specialists at all levels in accordance with the requirements of the International Convention on Training, Certification and Watch keeping for Seafarers, 1978 (STCW);
- Increasing the prestige and recognition of the institution of the shipping company at the national and international market;
- Formation of professional competence of marine specialists to meet the requirements of scientific and technical progress and by the application in the educational process simulators;
- Reduction of „bad quality” in the preparation of seafarers, widely using methods for demonstrating competence specified in the relevant tables and sections of minimum standards of competence of the STCW Convention.

Thus, we find that the main figure of the shipping company is the sailor, whose work depends on the company's image and its welfare. Being the reason of all ship accidents, the human factor has long gone to the forefront of the marine community. Lack of skill level, psychological unpreparedness overload, loss of self-control in emergency and non-standard situations, lack of support and constant monitoring by shore-based, multinational Crewing – these are just some of its components. Therefore, to minimize its impact on the emergency fleet can only be an introduction to the activities of the shipping company's safety management system and quality. It means that each member of the crew sufficiently understood the instructions and requirements of the system to the level of his professional knowledge and skills, experience in each judicial office, the necessary qualifications in terms of mandatory rules and regulations (the minimum standard of competence), was suitable for medical condition at the time of appointment to the ship. The implementation of this approach is through the controlled formation of professional competence through the use of simulators in training and simulator systems for safety assessment in determining the risk and management at the stage of making responsible decisions in emergency and non-standard situations.

Prevention or significant reduction of accidents is possible by the introduction of safety and quality management, as evidenced by the current policy of the International Maritime Organization, reflected all the safety requirements of the International Management Code for the Safe Operation of Ships and pollution prevention (ISM). Execution of actions aimed at protecting human life and limit losses from the effects of accidents, as well as risk management in an irregular situation are the basis of trouble-free operation of the fleet.

Transparent system of responsibility and authority specified in the ISM Code, presupposes the existence of clear and understandable principles of shipping safety and quality of services, as well as in the development of the technical characteristics of simulators. In addition to these, the International STCW install the appropriate requirements for the use of simulators, which are set out in section A-I/12 „Standards governing the use of simulators” [STCW..., 2012: 102–103].

The decision of the Maritime Safety using simulators provides activities whose minimum regulated International Safety Management Code ships and pollution prevention (ISM) to perform the following steps:

1. Identification of the problem, which is inherent in the operation of the simulator.
2. Assessment of the relevance of the work carried out in the process simulator based on professional experience sailor.
3. Limitation of the problem the task of protecting the life of the crew and passengers, cargo and the environment is carried out based on the fact that the vessel is a high risk, the change in mass production and dangerous.
4. Determination of objectives, in the form of bringing the requirements of the ISM Code in the work of the crew of the vessel and the solution of the problem situation in the mining simulator.
5. Formation of the eligibility criteria and the proper operation of the quality management system and the Security Council on the simulator, according to the principle of complete supplement that consists of two differentiated sub-criteria: „inconsistencies” and „significant inconsistencies” that can be applied only in respect of objective evidence, based on identified in the course of inspections on the vessel.

This separation into individual steps provides a clear sense of its structural construction, and in the process allows simulator training to find the optimal solution in terms of intermediate results and alternatives. Moreover, the main activity of the shipping company management quality system and Security Training Center has consciously perform the functions consisting of the actions of members of the crew and procedural operations by the design of the system simulator [*Regulations...*, 1999].

In this case, the ISM Code identifies three categories of persons in UTC:

- Management Training Center and safety policy and quality in teaching staff of the company on simulators and training complexes;
- Appointed persons UTC, which are obliged to monitor compliance with the requirements of safety and quality of training in the gym, where the training of company personnel;
- The crews of ships passing training in UTC and are required to implement a policy of safety and quality by performing further their professional duties to the company's ships.

Thus constructed system has a linear relationship, referred to security features and quality with the use of proven standards of control that allows you to concentrate all the problems on these issues in the form of individual training modular units, and with maximum efficiency to solve them using simulators.

Scientific maritime training centers are under the control of the Maritime Administration of Ukraine and the State Inspectorate of Ukraine on Safety at Sea and River Transport („Ukrmorrechinspektsiya”), which according to the Regulation on Inspection of Organizations and their Enterprises and Institutions that

conduct training of seafarers, approved by the Ministry of Transport and Communications of Ukraine dated 25.11.2004 №1042, registered with the Ministry of Justice of Ukraine 13.12.2004 for №1577/10776 [holds the actual review by checking the status of logistics, personnel, documentation, information and educational software NTZTS for compliance with the requirements of applicable law to the appropriate areas of training, monitoring the conditions of seafarers training. „Ukrmorrechinspektsiya” in 2014 audited the 49 SEC to assess compliance with the level of training of seafarers in the SEC requirements of the International STCW Convention, as amended by resolutions and other documents of the International Maritime Organization, the national requirements.

Special attention in the implementation of a comprehensive inspection was paid to the presence of SEC policy of quality management system at all levels of production and learning processes, condition and quality of teaching and program documentation, training and methodological support of the educational process, compliance with minimum standards of competence in the preparation of the sailors, the presence of certificates of conformity for exercise equipment that uses NTC learning and knowledge control instructors and teaching staff, their qualifications and expertise for training and control of knowledge, skills and professionalism in the simulators; availability of quality standards and systems, providing control over their support.

The carried out inspections showed that the present time software simulator are obsolete and needs to be updated, and the requirements for technical and operational performance simulators should be brought into line with the requirements of the STCW Convention. In most SEC (about 70%) use simulator training on a rented basis, which significantly reduces the quality of training of seafarers, as most of these simulators do not create a real perception of transactions processed, and serve only specific complement to the theoretical part of the training of seafarers. Also noted that there are no clear psychological and pedagogical recommendations for the development of appropriate tasks instructors and teaching staff, and this reduces the role of the simulator as a technical means of education, is not conducive to an objective assessment of professional competence of trained seafarers.

At the conclusion of inspections SEC „Ukrmorrechinspektsiyey” decision was made about the need to conform in accordance with accepted requirements of the STCW Convention to simulators, to enhance their practical orientation and quality of processed tasks, as well as research to provide psycho-pedagogical content of simulator training and to improve the Teaching Excellence.

New documents that should empower educational institutions that conduct simulator training of seafarers are defined:

1. A clear definition of training and simulator training centers in the system of training of seafarers, their role in providing fleet qualified professionals who will ensure trouble-free operation of the fleet at the national and international levels.

2. Appointment of simulators for mandatory training, special and specialized training in accordance with their quality certificate.
3. The terms of the introduction of new technical and operational, psychological and pedagogical requirements when working in the simulators, and terms of using of old simulators.
4. Allocated minimum equipment simulator teaching aids, sufficient to complete students' perception presented problems.
5. Determine the minimum and maximum configuration simulators to optimize the tasks and the quality of training of seafarers.
6. Supplemented requirements for psychological and pedagogical training instructors and teaching staff, as well as the requirements for each of the mandatory training programs.
7. Adoption of the restriction on the number of students in the workplace and duration of training simulators based on psycho physiological requirements for this type of training.
8. Develop and recommend the use of simulator training with a list of training, teaching and reference materials, the availability of the workplace trainer mandatory normative literature, including requirements for a quality management system and the Security Council.
9. A clearly defined name and composition of the equipment, its software for each type of professional, special and specialized simulator training.
10. Strictly described and recommended a mandatory function of instructional space for each type of simulator.
11. Recommendations on general requirements for the simulation of emergency situations (including those of swimming, types of ships, bound by documentary evidence of professional competence of the members of the ship's crew).

Based on the requirements of simulators, which are defined the International STCW Convention, have developed national requirements for use in training simulators in the STC:

1. The documents used in the simulator should be reduced to a single form in all directions simulator training to meet the requirements of the QMS and Sat.
2. There must be given the full transcript of the basic terms and definitions used in the simulator training.
3. Clearly should be limited to the scope of the simulator and its purpose for the training or supervision.
4. Determine the minimum composition and configuration of the equipment, which worked through appropriate exercises.
5. The requirements for workplace instructors and trainees jobs, so as to ensure:
  - Enable or disable the simulator, or termination of any action, simulating emergency process;
  - Implementation of a training exercise scenario;
  - Operational management of the entire process of working out the exercises;
  - Backup progress exercises for further analysis.



Updated and expanded requirements for instructors teaching staff STC, namely for each type and direction of simulator training staff STC must be equipped with at least two instructors (teachers) working in the SEC and have, as a minimum:

1. Higher Diploma (level of Specialist or Master).
2. Work degree not lower Master (First Officer) or Chief Engineer.
3. Experience of working on appropriated vessels not less than five (5) years;
4. Certificate instructor (teacher), issued by the competent authority in the field of maritime transport, the right to conduct training on the appropriate course of simulator training.
5. The certificate of attendance psycho-pedagogical minimum professional activity, issued by an authorized institution of vocational training.
6. Essential knowledge, skills and practical experience in accordance with the minimum standards of competence specified in the International STCW Code, with respect to the relevant type of training or assessment.
7. Documents confirming an internship on ships in the position of Master (First Officer) or Chief Engineer for at least two months during the last five (5) years.
8. Required knowledge in the field of quality management system and SUB, which operate in the shipping company.

## **Conclusions**

The work in the SEC for the implementation of quality management system and the Security Council, which acts as a shipping company, showed that the organized system of control procedures and QMS SC provides prompt corrective and preventive actions to eliminate or prevent identified during the audit discrepancies. Moreover, corrective and proactive action on the part of both the shipping company and the SEC, is made to eliminate the causes of actual and potential inconsistencies that must correspond to the problems identified and be proportionate encountered by or alleged types of risk during the work of crews at sea.

A very important aspect of maintaining the QMS and Security is developed and implemented procedures for internal audits, which provides a constant readiness and effectiveness of the Quality Management System and Security in terms of service quality and operational safety of the fleet and, as experience has shown, these checks should include the following items:

- Discrepancies;
- Documented analysis of the damage caused by a specific person, cases of complaints and claims;
- The effectiveness of the control system as a whole to achieve the goals left;
- Suggestions for improvement of the system due to changes in the Navy, in the area of new rules, conventions, codes, market strategies, social situation or environmental conditions;
- The degree of satisfaction of customer requirements, administrations;
- Changes in the (nationality) candidates in the crews' database.

This joint line of work in the field of QMS and Security of the shipping company and SEC enhances the quality of professional training company, determines the close relationship between the agencies and departments of the company and the SEC to introduce in the educational process of new educational technologies using simulators raises the image of the shipping company to international level, ensures the competitiveness of Ukrainian seafarers on ships not only domestic companies, but also on ships of other countries.

## **Literature**

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## **Abstract**

It is proposed to improve the quality of services, professional training of employees of Maritime profile on workplaces, implementation training centers quality standards according to the Rules 1/8 „quality Standards” of the STCW Convention, to ensure the formation of professional competence, competitiveness sailor impact on increasing the level of social and professional mobility, as well as achieving certain goals prepare professionally-trained workers, instructor-teaching staff and examiners. Examined the influence on the quality of personnel training of Maritime profile employees, who operate in the shipping company; from the standpoint of encouraging the organization of training, re-training and refresher training that meets the needs of production in shaping the priorities of workplace learning.

Determined that the involvement of employees in decision-making in emergency and hazardous situations from the perspective of advanced education with the use of simulators is the deliberate and systematic process of ensuring trouble-free operation of the fleet and the link between education, science and production.

**Keywords:** quality system, training, international Convention and the STCW Code, simulator training, shipping company, marine work profile.