HUMAN ELEMENT, TRAINING AND WATCHKEEPING

Information on the training developed in the CyClades Project: Integrating and disseminating human element knowledge through e-learning for crew-centred design

Submitted by the World Maritime University (WMU)

SUMMARY

Executive summary: This document provides information concerning the dissemination and the integration of human element knowledge in the design of ships and operations

Strategic direction: 5.4

High-level action: 5.4.1

Planned output: No related provisions

Action to be taken: Paragraph 13

Related documents: Resolution A.947(23); MSC-MEPC.7/Circ.1, MSC-MEPC.7/Circ.3, MSC-MEPC.7/Circ.4; MSC/Circ.982 and HTW 2/INF.6

Introduction

1 The Marine Environment Protection Committee at its fifty-third session (18 to 22 July 2005) and the Maritime Safety Committee at its eighty-first session (10 to 19 May 2006) agreed that, when developing and amending mandatory and non-mandatory IMO instruments related to safety, security and protection of the marine environment, proper consideration should be given to the human element. In this context a checklist to ensure that the human element has been addressed should be developed.

2 MEPC 53 and MSC 81 approved the checklist as set out in the annex to MSC-MEPC.7/Circ.1, and further agreed that this checklist should be completed by all relevant bodies before approving or adopting amendments to mandatory and non-mandatory IMO instruments. Member Governments were encouraged to complete this checklist before submitting proposals for development or amendments to IMO instruments.
MEPC 53 and MSC 81 noted that reports indicated more than one out of five personal injuries reported were the results of slips, trips and falls. The Committees agreed that a significant reduction of accidents and incidents can be achieved by consideration of ergonomics and the mariner's work environment aboard. The Committees approved an initial framework for the consideration of ergonomics and the working environment in order to reduce the incidents of personal injuries and human error.

MEPC 53 and MSC 81 agreed that, in order to achieve the visions, principles and goals set out in resolution A.947(23) on Human element vision, principles and goals for the Organization, it was imperative to develop a strategy to address the human element. The Committees approved the Organization's strategy to address the human element as set out in the annex to MSC-MEPC.7/Circ.4, including its appendix, which forms a specific action plan. The Committees agreed that the Organization's strategy to address the human element and the action plan should be subject to continuous review and revision when necessary (MSC-MEPC.7/Circ.4).

This document is intended to provide information about a research project – CyClaDes – focusing on user/crew centred design of shipboard equipment. This project addresses vital issues related to the human element strategy of the Organization.

CyClaDes project

The CyClaDes research project focuses on the human element in the design and operation of ships throughout the life-cycle. The project is funded by the European Commission under its 7th Framework Research Programme and is led by BALance Technology Consulting and DNV-GL. The project has a consortium comprising 14 partners hailing from academia and the industry, including the World Maritime University's Maritime Risk and System Safety (MaRiSa) Research Group.

In the CyClaDes research project, a multi-disciplinary team has worked together to suggest an approach on how to best locate, produce, disseminate and apply human element knowledge within the design and operation of ships. Barriers to the integration of human element knowledge in the key stages of the lifecycle of a vessel have been identified through case-studies, and accident and incident analyses, to emphasize the need to better address and integrate mariners in the design and development of the working environment onboard in accordance with the identified need in the MSC-MEPC circulars.

The CyClaDes Project has addressed the identified barriers through adopting a human-centred perspective and developed qualification and training concepts to help key stakeholders (designers, ship operators, rule-makers and regulators, and end users) understand and use human element knowledge to improve the design and operation of ship systems.

The project acknowledges the challenges in addressing the human element in shipping as a multi-dimensional issue and aims to provide guidance in the form of knowledge, tools and means that can inspire stakeholders to develop regulatory and non-regulatory solutions and assessment measures on the basis of the human element principles (resolution A.947(23)).

A major outcome of the project is the development of an e-learning platform comprising specific training packages dedicated to five different stakeholder groups in the form of e-learning intending to qualify and raise the awareness of the identified stakeholders. The e-learning acknowledges specific settings of the maritime domain, and training and qualification concepts have been developed with the objectives to:

1. raise awareness of the importance to integrate human element knowledge;
provide concepts, tools and measures to understand how to integrate human element knowledge; and

show the limitation of state-of-the-art approaches and highlight how new approaches can help stakeholders to understand the positive impact of the human operator as the last safeguard of maritime safety in onboard operations.

The objectives outlined above compliment the MSC-MEPC.7 circulars by emphasizing how new knowledge can be provided to the key stakeholders as each of the stakeholder groups is addressed in a specific learning package on the CyClaDes Learning Platform (elearning.cyclades-project.eu) below:

Common Training Elements is a training package to demonstrate the need for crew-centred design, to introduce state of the art approaches to design and their limitations, and to explain the suggested framework for crew-centred design, as presented in document HTW2/INF.6;

Training for Designers is a training package to raise awareness for human element knowledge, and to show a set of methods and means to integrate this knowledge in the design and the evaluation process;

Training for Operators is a training package to make ship operators aware of the consequence of work environment design for safe operations onboard, and provides information on how and when human element knowledge can be crucial to achieve maritime safety;

Training for End-Users is a training package to enable seafarers to become proactive in providing feedback on the design of the work environment and procedures, and to learn how to best identify, present and express their user needs; and

Training for Rule-Makers and Authorities is a training package to enable flag State Authorities or classification societies to approve technical solutions on board ships and certify compliance with applicable international instruments. The stakeholder group should be able to understand crew centred design, its application in the design of ships and its assessment.

Potentially interested parties can see a first version of the output of the project including qualification concepts and training packages through the CyClaDes website (www.cyclades-project.eu) and the CyClaDes online Learning Platform (elearning.cyclades-project.eu). These will be further updated and made available to maritime stakeholders at the end of the CyClaDes Project (October 2015).

Action requested of the Committee

The Committee is invited to note the information provided.