International Conference on Human Factors

28-29 September 2016, RINA Hq, London, UK

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in a number of suggestions about the best possible use of the ergonomics discipline in naval projects: tools and methods but also ergonomists themselves.
THE TRAINING SYSTEM: DEVELOPING CREW COMPETENCE WITHIN THE VIRTUAL AND REAL WORLDS, J Hill; Trident Marine, UK, T Brand; StrongWade, Canada, T Dobbies; STResearch, UK. Fast craft operations are high risk operations and the crew need to be well trained. To improve the required performance whilst managing the inherent risks and possible disastrous outcomes. The crew operates as part of a Joint Cognitive System (JCS), the interaction of the crew and technical components working together within the harsh environment. The demo will demonstrate how human factors and simulators can be used to support the training of the crew.

HUMAN CENTERED DESIGN FOR AN INNOVATIVE TRAINING SYSTEM USING VIRTUAL REALITY: NAVAL HETELEHANDLING, Chantal MAIS, Yann BOUJU DCNS, France, Lucie LEMONNIER, Alexandre BOUCHET, CLARTE, France. This paper presents the Human Centered Design approach used for the development of an innovative training system using virtual reality (HVT). The system is aimed to train helicopter crews to flight deck operations on naval ships. Firstly, we present why HVT is needed for this kind of training and how content can start from the student's world and fill it with experiences. In a second chapter, the system developed by CLARTE and DCNS is detailed. This paper presents the Human centered approach to design the HVT solution for the training of naval handling. The training is based on the development of scenarios and the virtual reality simulation for training purposes. In a third chapter, the evaluation of this solution is presented, especially the “Virtual Reality” aspects. This evaluation is performed with the future users (marines professionals) and also with a larger sample of peoples. Goals and protocol are described including different scenarios, sessions lengths, and tasks to be performed. Finally, the results of this evaluation are described based on performance and balance observations during and after the test. The main characteristics of the simulation for helicopter and flight deck are described, relevant to the Virtual Reality.

FROM REACTIVE IN TRAINING TO PROACTIVE IN DESIGN: APPLYING STANDARD MARITIME DESIGN, Margareta Lutzhoft, Michelle Grech, University of Tasmania Australian Maritime College, Australia; Min Jung, Korean Institute of Maritime and Fisheries Technology, Korea. As technology advances, are increasingly being implemented on ships, variability and complexity in design and use also increases. Traditionally, so does training requirements. With some more than 4 decades of experience, this paper presents a new approach to the design and train crews that have the skills and ability to be productive and to provide safety in the operational environment.

THE ROLE OF NAVIGATIONAL ASSISTANCE IN MANAGING UNCERTAINTY AND SAFETY AT SEA, Linda de Wries, Chalmers University of Technology, Sweden. Navigational assistance services aim to improve maritime safety. Traditionally these services have been provided on board the vessel, but continuous technological advancement has created new possibilities. A more proactive approach on board and from shore. This paper explores the contribution of navigational assistance, as provided on board by maritime pilots and from shore by Vessel Traffic Services Operators, towards safety at sea. Starting from the sociotechnical perspective that safety is facilitated through the interaction between humans, technology and the environment in which they operate, the paper investigates how uncertainties in the ship-shore system may be identified and managed to create successful outcomes. The paper will also present a case study of a potential close quarters situation between three vessels, together with a model of navigational assistance developed using the Functional Resonance Analysis Method (FRAAM). In the case study, a large bulk carrier will enter the port of a congested shipping basin. The vessel will enter a narrow entrance to a deep water channel. Uncertainty regarding the vessel’s draught restricts its maneuvrability, increasing the risk of collision and grounding. Analysis of this case indicates that the potential for a dangerous situation exists, particularly if the ship, unmanaged, continues heading towards the narrow channel entrance. The risk is resolved by the interation between vessels and shore, thereby improving safety in everyday operations. Furthermore, it shows how FRAAM may be used effectively both for operational purposes and for competence development level, and also for understanding how work is conducted safely in a specific situation.
International Conference

Human factors

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