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HUMAN RELIABILITY ASSESSMENT, THE SOPHISTICATED TOOLS FOR MINIMIZING HUMAN ERRORS IN MARITIME DOMAINS

CAPT. SAMEH KABARY RASHED

Teaching Staff Member, Department of Nautical, Arab Academy for Science and Technology and Maritime, Transport-AASTMT, College of Maritime Transport and Technology, Egypt

ABSTRACT

Although, the maritime modernization and shipping technological improvement, maritime accidents still occur and according to European Maritime Safety Agency EMSA report 2015, accidents moderately increased during the last four years. Therefore, great efforts exerting to improve the ship construction and whole system reliability. Over decades, diversity of researches and reports proposed that human errors are the major reason contributing to maritime casualties. This promote a great concern to the research and improvement of innovative safety assessment regardless the availability of human failure statistics in the maritime domains, which is scarce.

Human reliability assessment HRA tools/ methods, which proven valuable tools since they used in nuclear industry and aviation, involves the use of qualitative and quantitative methods to assess the human contribution to risks in maritime safety "critical" domains, typically like nuclear industry and aviation, and they aimed to minimize the probability of accidental events. The paper reveals the contraption of human element in marine accident, and reviews widely used HRA tools of first and second generations, which developed by human reliability experts and by carrying out a comparison based on elastic criteria, it reveals a vision for assessors to extricate the proper tool for a task assessment. In addition, to describes why HRA second-generation tool "CREAM" is appropriate for maritime domains.

KEYWORDS: HRA – CREAM – THERP - Common Performance Conditions