Human factors and everyday routine in the maritime work domain

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Abstract

The traditional approach to the study of human factors in the maritime work domain is the analysis of accidents. These analyses provide valuable information, but they are not sufficient to get insight in the causal relationship between factors that shape performance and actual human performance in everyday routine work. A more suitable approach to the study of human factors of everyday routine work in the maritime domain is the quasi-experimental field study where variations in performance can be observed as a function of natural variations in performance shaping factors (for example workload demand). In this paper it is demonstrated how these natural variations of workload demand very easily can be observed as a function of the different stages or phases of a voyage on one out of four selected Roll-on Roll-off (Ro-Ro) ferries in regular service. A very simple method for measurement of crew attention through the measurement of communication at the bridge of the ship is suggested. This method was used in a pilot study of the relationship between workload and attention and some interesting mechanisms were found. These findings could lead to development of hypotheses about the causal relationship between workload and attention, and the hypotheses could be tested by means of quasi-experimental field studies as suggested in this paper.

Introduction

The traditional way in which human factors in the maritime work domain are studied is by the analysis of accident reports, or, better, by the in-depth analysis of accidents. This approach is quite reasonable since it is generally accepted that the majority ─around 70-75%─ of accidents are actually caused by human factors or human error (Fahlgren 1999). The advantage of accident reports is that they are relatively easy to get hold of. It is possible to download reports for free from several databases on the Internet. The advantage is further that the accident report usually is written by a domain expert, who has the ability to set off human performance in that particular case against the crew performance standard that one could expect in that given situation. However, this traditional approach has also disadvantages, since it does not cover the human factors that did not lead to reported accidents or

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