

What makes the difference in decision making in high reliability organizations – Profession or Work Experience?

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Abstract. Automation can be a curse but also a blessing for the human operator (Onnasch et al. 2014). According to Onnasch et al. (2014) there is an increased likelihood of negative influences on the operator and as a result a greater likelihood of incidents in which more automation is present. This can be explained by the deduction of the operator's involvement and leaving the operator out of the loop in cases of system failure (Onnasch et al. 2014). As a consequence, the decision-making ability is impaired even in the presence of salient cues leaving the operator in an elusive safety of having control (Lützhöft & Dekker 2002). Both industries, the maritime and the aviation industry, are highly automated. However, there is a longer history of training critical incidents and skills including decision-making in the aviation industry (Helmreich & Foushee 2010). Further, experienced people have more resources to reach appropriate decisions under high dynamicity and uncertainty (Klein, 2008). Therefore, the aim was to investigate the relation between adaptive decision-making in critical incidents for the maritime and the aviation industry and it was further assessed whether decision-making could be predicted by work experience.

A quantitative online study was implemented and 235 participants (N = 125 from the shipping industry, N = 110 from the aviation industry) completed the questionnaire. The questionnaire regarded the demography, adaptive decision-making, and work experience of participants. Two simple linear regression models were conducted to investigate the relations between adaptive decision-making as dependent variable and experience and profession as independent variables separately. Both experience and profession were contributing significantly to adaptive decision making, however, the explained variance was small. Further, no change in adaptive decision-making could be predicted by whether someone had an aviation background or a maritime background. A discussion of the results and valuable implications for training designs in high reliability organizations regarding automation can be derived.

Keywords: high reliability organisation aviation, maritime, critical situations, adaptive decision-making, work experience

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