Within the last decade there has been an increased interest in the “human factor” within seafaring, especially in relation to safety. Past attempts to improve safety have often concentrated on mechanical and practical solutions, ranging from early low-tech solutions such as loading limits defined by plimsoll lines, to modern hi-tech solutions such as radar to assist in collision avoidance. Although these measures undoubtedly have increased safety, they ignore one of the most important factors in ensuring safety: the crew that operate and work within these vessels.

Contemporary crews are undoubtedly has been an increased awareness in relation to fatigue. Fatigue not only has an effect on the physical and mental wellbeing of crew members, but it may also have important implications for safety, and the efficient operation of vessels. Such potential effects of fatigue were, for example, graphically illustrated by the grounding of the passenger vessel Star Princess in which the main fuel pipe exploded. In the incident was considered to be the chronic fatigue of the pilot.

Although many shipping companies, management agencies, and ship operators, recognise that fatigue may have important implications for the safe and efficient operation of their vessels, few have a proper understanding of what causes fatigue, or how to address this. To date, there has been limited academic research into fatigue in the maritime industry. However this deficit is currently being addressed by a study headed by Professor Andrew Smith at the Centre for Occupational and Health Psychology at Cardiff University, which was initially developed in collaboration with the Seafarers’ International Research Centre. This research uses two methods to study fatigue in the short sea and ro-ro industry. One of the most sophisticated studies of fatigue in the industry to date. Firstly, a questionnaire was sent out to seafarers through unions and companies which examined factors such as work schedules, rest periods, health and wellbeing, sleep patterns, and reported fatigue. Secondly, a number of onboard measures were employed to assess fatigue, including daily diaries which recorded work patterns, sleep patterns and perceived fatigue. Crews also completed computerised performance tests, and wore “sleep watches” which were measured sleep efficiency.

The findings of the study showed that there are a number of factors which may be linked to fatigue. Not surprisingly, the type of vessel on which the seafarer was serving was found to be associated with fatigue, with highest levels being found on ferries. This finding probably does not relate solely to ship type, but to a number of factors relating to ferries, such as quick turnaround times, shift patterns, and having to deal with passengers and maritime-related duties. Length of tour was also found to relate to fatigue. However, surprisingly, those on longer tours fared better, which could be attributed to habituation to these systems. This seems feasible as sleep patterns, and reported fatigue. In fact these factors were shown to be cumulative, with the number of fatigue factors the individual was exposed to being positively correlated with increased risk of fatigue. For example, those working short tour lengths combined with long hours on certain ship types were shown to be at a much greater risk of fatigue. In fact these factors were shown to be cumulative, with the number of fatigue factors the individual was exposed to being positively correlated with increased risk of fatigue.

This cumulative effect on fatigue has a number of important implications. Firstly, it suggests that seafarers who work on ferries, or in the industry, may be suffering from a combination of factors. For example, those working short tour lengths combined with long hours on certain ship types may be more vulnerable to fatigue. Environmental factors such as noise and vibration, and the physical work environment were also found to relate to increased fatigue.

Although these individual factors have an effect on fatigue, the study showed that the best predictor for fatigue was not any single factor, but a combination of factors. For example, those working short tour lengths combined with long hours on certain ship types were shown to be at a much greater risk of fatigue. In fact these factors were shown to be cumulative, with the number of fatigue factors the individual was exposed to being positively correlated with increased risk of fatigue. In fact these factors were shown to be cumulative, with the number of fatigue factors the individual was exposed to being positively correlated with increased risk of fatigue.

Another important implication of the combined factors approach is that it may be used to measure fatigue by shipping companies and managers who wish to monitor the wellbeing of their crews, and by authorities such as port state control. Such parties may employ checklists of the factors which they have not received any training in recognizing or dealing with fatigue. Investment in such training is essential and not only would it benefit companies by improving safety, but it could also have a knock-on effect of improving the operational efficiency of the crew. However, blame for lack of fatigue training should not be attributed solely to companies because, although many shipping companies and managers seem to be taking active measures to address fatigue onboard, it could have important consequences for the costs, as well as the safety of the crew. The study showed that the best predictor for fatigue was not any single factor, but a combination of factors. For example, those working short tour lengths combined with long hours on certain ship types were shown to be at a much greater risk of fatigue. In fact these factors were shown to be cumulative, with the number of fatigue factors the individual was exposed to being positively correlated with increased risk of fatigue.

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