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Seafarers and digitalisation

Investigating the Increased Use of Digitalisation On board and Possible Benefits/Improvements to Shipboard Safety and Welfare



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Executive summary

In the context of the EU co-funded WESS project¹, ECSA and ETF are committed to assessing shipboard living and working conditions with a view to taking action to contribute to an *“attractive, smart and sustainable environment onboard”*. As part of this project, they wanted to investigate the increased use of digitalisation on board and possible benefits/improvements to shipboard safety² and welfare. This was the purpose of this particular research.

The starting point of the research was a desk-based exercise to map out and analyse existing research findings. Further to this, to get detailed insights as regards life on board, and the impact of increased digitalisation, the cornerstone of the research entailed reaching out to those with firsthand experience through online surveys. These surveys were circulated to a wide audience to gain a broad range of insights, targeting individual seafarers (791), as well as companies and interest representatives (45), named “stakeholders” in the research paper. The aim was to hear about digitalisation experiences, positive or negative, and ask for suggestions for improvement (if needed).

The study found that an increased use of digital tools on board ships is generally perceived as a positive development (e.g. increased personal safety, enhanced efficiency), but that attention needs to be given to a number of elements (e.g. risk of over-reliance, better training) to ensure the industry reaps all the benefits of these tools.

On a positive note, digital tools are seen by seafarers as having a positive impact on efficiency at work by reducing administrative burden and time spent on tasks, as well as allowing them to engage in more complex and high-level tasks. Seafarers also overwhelmingly believe that digital tools improve their personal safety on board, and a wide majority feel qualified to operate them. They are however less convinced that time saved leads to more rest time. They are also quite concerned about new risks (such as cyberthreats and malfunctions) created by the digitalisation of work tools.

The survey also shows that stakeholders are satisfied with the positive effect of increased digitalisation on personal safety on board, reducing errors, exposure to risk (e.g. to the properties of the cargo) and enabling seafarers to reduce physically challenging daily tasks. Stakeholders also believe digital tools reduce administrative burden, allowing seafarers to focus on other relevant tasks, in turn leading to a better optimisation of resources. Turning to elements that need improving, stakeholders are less positive about the adequacy of training provided to seafarers, highlighting that updated training is needed to re-skill and up-skill crew with digital skills.

Looking to the future, more than half of the seafarers believe that digitalisation will lead to a reduction in ship crew size, while a smaller share of stakeholders believes this will be the case. When asked the overarching question about whether the increased use of digital tools on board ships is a positive development, both seafarers and stakeholders mainly responded affirmatively.

¹ <https://www.ecsa.eu/WESS>

² The term “safety” refers here to occupational safety/safety of the working environment of the seafarers

In the analysis looking at the results of the survey per category of seafarers (by age, rank, type of ship) a number of trends appeared. It can be noted that the younger the seafarers, and the lower their rank, the more positive they are about digital tools. The younger generation of seafarers are less concerned about new risks created by the digitalisation of work tools, and put more trust in these tools. Also, considering the results of the surveys based on ship type, a difference of opinion appeared between those sailing on cruise vessels and tankers (overall relatively positive about digital tools), and those sailing on ferries (much less enthusiastic about digital tools). The seafarers working on board ferries are also the ones who most firmly take the view that digitalisation will lead to a reduction in ship crew size and move more tasks on-shore.

Building on these results, the following recommendations are made:

1. Ensure that all tools are suited for on board use, by involving seafarers in the decision-making process, ideally at the stage of tool development and calibration
2. Give special attention to the user-friendliness of tools, and prefer tools with built-in familiarisation training modules or user manuals
3. Ensure that tools are properly tested and refined before full rollout
4. Avoid double tasking/reporting (paperwork + digital procedure) by decreasing, wherever possible, traditional paperwork
5. Ensure continuous updated training to re-skill/up-skill crew
6. Adapt seafarer training in maritime schools to the digital reality, while maintaining traditional seafarer training (to avoid loss of essential skills and practical seamanship)
7. Be cautious of over-reliance/trust in digital tools (ashore and on board) and stress importance of human cross-check and oversight
8. Be mindful of differences in level of familiarity with digital tools on board (depending on level of experience/training) and adapt training accordingly to avoid some seafarers being left behind
9. Ensure that new risks created by increased use of digital tools (e.g. cybersecurity risks) are appropriately taken into consideration, and reassure/inform seafarers of measures taken to minimise risks (e.g. training, manual override protocols)
10. Carefully consider the burden of responsibility when digital tools result in a shift of tasks from ship to shore. Responsibility should follow the task.
11. Be mindful of isolation of crew members – ensure that opportunities remain on board for seafarers to socialize together where they wish to do so
12. Ensure that advances in digitalisation also provide benefits for seafarers, e.g. in the form of improved possibilities to communicate with family and friends
13. Remote inspections are only to be used when physical inspections are not possible

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