Personal Protective Equipment Most Critical to Safety of Seafarers

Herndon, Va. (August 26, 2019) - The shipping industry is vital to the existence of the global trade economy, yet seafarers face one of the highest risks of workplace injury or death. Understanding the causes and reducing the frequency of occupational injuries not only benefits the seafarers but directly benefits the shipping companies by reducing premiums, liabilities and legal costs. A new article published in Risk Analysis: An International Journal investigates the causes of these injuries and accidents and finds that injury reduction campaigns focused on personal protective equipment (PPE) would be most effective at reducing risks to workers.

The study, “Quantitative risk assessment of seafarers’ nonfatal injuries due to occupational accidents based on Bayesian Network modeling,” was conducted by a team of Singapore-based researchers. The team conducted an extensive survey to collect data on seafarers’ working practice and their injury records.

A survey was designed to test the following potential risk factors: sex, age, experience, nationality, ship type, position, time in position, tour duration, change of ship, familiarity, training, adequate rest, distraction, job risk awareness, job risk assessment, risk communication, procedure design, shortcut, housekeeping, defective equipment/tools, PPE availability, PPE training, PPE usage, reasons not using PPE, shore visit frequency, maintenance, accident feedback loop and injury during latest tour. The researchers collected 354 responses from seafarers in Singapore, China, South Korea and Vietnam. These countries were selected because of their high representation in the international seafaring market.

The survey results indicated that:

- Fourteen percent of seafarers suffered at least one injury during their latest tour of duty.
- The biggest influential risk factors were age, risk awareness, sea experience and PPE availability.
- Four percent reported not having received proper PPE training, yet the injury rate among those respondents was as much as 33 percent higher.
- PPE availability was shown to have the greatest potential to decrease injury probability.
- The ‘risk awareness’ factor could be improved through training and ‘accident feedback loop,’ but 18 percent of respondents reported that their company did not always share the accident lessons with the crew.

Since PPE availability is the most significant factor, it is suggested that:

- Management could focus on improving the supply and stock of proper, nondefective PPEs aboard their vessels.
• For companies looking to implement a new safety campaign, periodic review of the need for PPE for each task and subsequent updates of the PPE type, size and quality could be introduced.
• Companies need to ensure that all workers are receiving training on the proper use of PPE as that is as important as the supply of equipment itself.
• The risk awareness of employees could be improved by frequent sharing of common injuries, communicating risk assessment results and posting warning signs at the sites of potential hazards.

In situations where PPE was readily available, seafarers identified that the equipment’s ‘impact on efficiency’ was the top factor that could hinder the use of PPE, followed by unavailable, uncomfortable and don’t feel necessary. Management could improve upon these factors during the selection of PPEs and aim to develop a workplace culture that promotes PPE usage at all times.

“Shipping is the lifeblood of world trade and its viability depends on the key workforce – seafarers, who are competent and have their occupational health and safety assured at work. This research reveals key findings related to factors that have been shown to have the greatest potential to decrease injury probability of seafarers – the key element in the eco-system that contributes to IMO’s goal of ‘Safe, secure and efficient shipping on clean oceans,’” states Vinh Thai, associate professor at RMIT University, Australia.

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