KISH P&I CLUB

Human Element Issues KISHPNI-HEI-07-2020
(Fatigue Risk Management)

►Proposed Maritime Fatigue Management Framework:

A proposed maritime fatigue risk management framework was developed based on the principles agreed at the IMO, namely that:

- It should be risk based;
- It should consider ship design, company and operational aspects;
- It should consider the impact of fatigue at all levels; and
- The outcome should provide practical tools for fatigue management (suggested tools that can be easily applied in managing the risks of fatigue in practice).

As shown in figure on the next page, the proposed framework includes multiple layers of defences and associated control measures, primarily based on the "defences in depth". This is composed of two important processes which are critical for its success and include Fatigue Risk Management (FRM) controls and FRM safety assurance, within which are included appropriate layers of defences.

1-The FRM controls, effectively deal with the first two layers which are the principle mitigation strategies required to control and manage fatigue related risks:

A. The first layer requires effective company support and commitment for managing and controlling the risks of fatigue;
B. The second layer requires that seafarers are provided with adequate opportunity for sleep. This ensures that both duration and quality of sleep are considered.

2- The FRM safety assurance provides the data driven feedback (assessment and evaluation) through monitoring, to assure that the FRM controls are working effectively:

C. The third layer ensures that any issues affecting seafarers' duration and quality of sleep, even though adequate opportunities for sleep have been provided, are being effectively captured. This entails monitoring and assessing sleep obtained and provides for the implementation of risk mitigation controls when issues are identified;
D. The fourth layer ensures that seafarers obtain what is considered, on average, sufficient sleep and are able to maintain adequate alertness and performance while performing their duties. This entails monitoring and assessing levels of fatigue and fitness for duty;
E. The fifth layer ensures that formal processes are in place for identifying and assessing fatigue related events or incidents. This layer relies on having an effective safety reporting culture (i.e., just culture).

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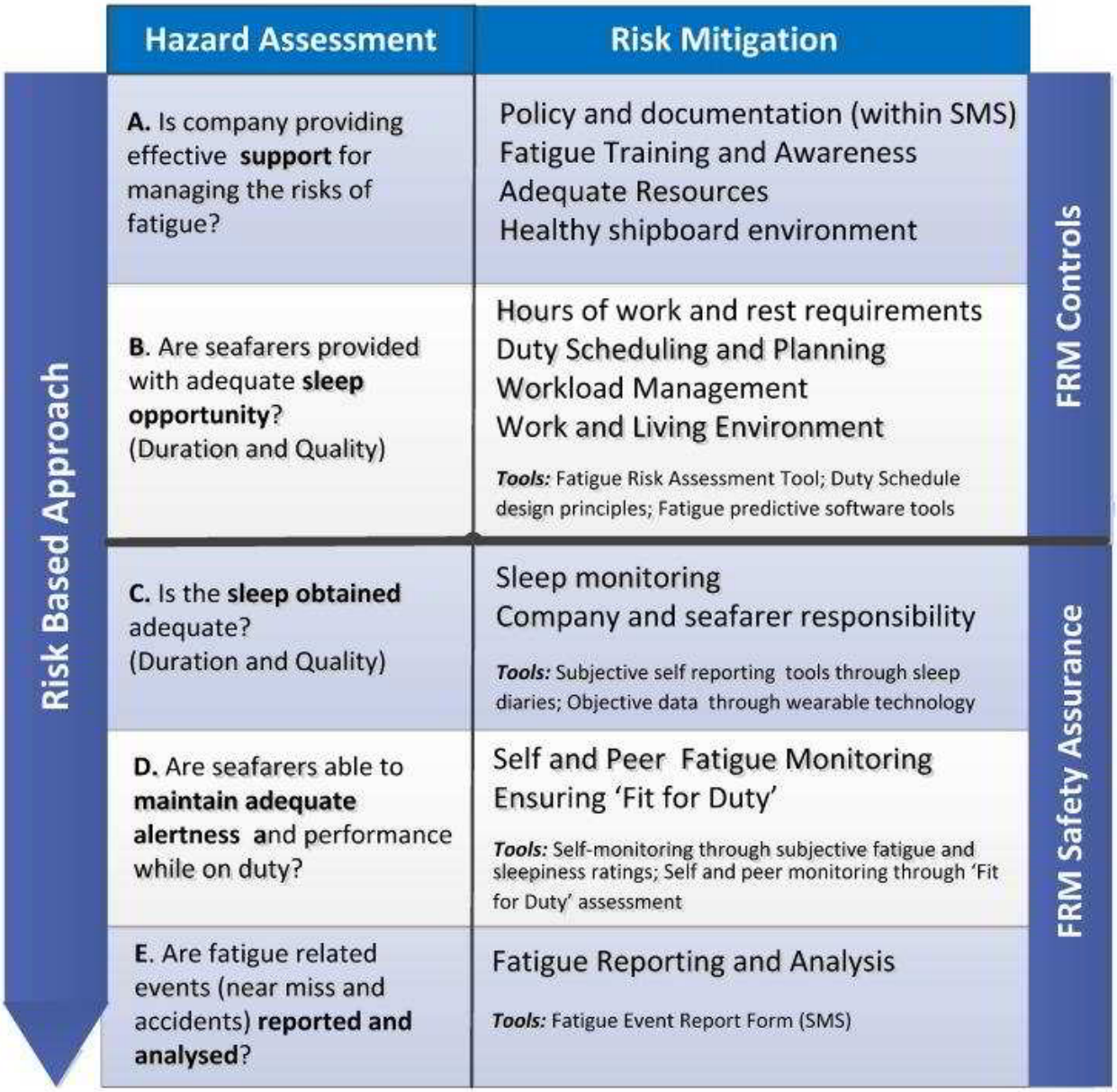

As shown in the next figure, the combination of FRM controls and FRM safety assurance allows for continuous improvement within the maritime fatigue risk management framework. This is the same PDCA cycle approach, namely; a Plan, Do, Check, Act approach. In general, if the controls perform to an acceptable standard (that is they bring the risk to as low as reasonably practicable) they become part of normal operations and are monitored and evaluated by the FRM safety assurance.

If the controls do not perform to an acceptable standard, then it will be necessary to re-evaluate the controls at the appropriate step. As the company's understanding of its own fatigue risk grows, through experience, it needs to be able to adjust and use the feedback driven by the safety assurance to improve the fatigue risk management processes to better manage fatigue.

►Integrating within Shipboard Safety Management Systems:

Fatigue risk management should not be standalone. As it has a safety function it should be integrated within existing shipboard Safety Management Systems (SMS). The International Safety Management (ISM) Code states that the safety management objective should be to: (1) "Provide for safe practices in ship operation and a safe working environment"; and (2) "Assess all identified risks to its ships, personnel and the environment and establish appropriate safeguards".

As fatigue is an operational safety risk then appropriate control measures should be implemented, managed, and assessed in accordance with the ship's SMS objectives. Considering the current experience and level of maturity with shipboard safety management systems this allows fatigue to be managed within existing company safety structures, ensuring resources are appropriately distributed across the systems, maximizing the effectiveness and efficiency of fatigue risk management.