

Shared Research Project

Optimising Offshore Working Patterns



Personnel working on offshore installations are exposed to remote and potentially hazardous environments and extended work schedules. Due to recent industry pressures, many offshore operators have made changes to their offshore shift patterns. Evidence suggests that long working hours and adverse environmental conditions are associated with cumulative sleep loss and fatigue, leading to an increased risk of accidents and injuries. However, sleep and fatigue problems during current offshore shift rotations are not yet well understood. Specifically, there is no clear evidence into the effects of different types of offshore tours on fatigue, health, performance and accidents on offshore installations.

This shared research project seeks to improve understanding of the impact of different types of offshore working patterns on fatigue and associated health and safety performance by establishing a body of evidence relating to shift design, intershift recovery and fatigue risk management practices. This will allow for the development of a suite of educational materials aimed at offshore managerial, operational and support functions that will serve to minimise safety risks associated with fatigue and impaired performance, optimise alertness and promote health and well-being.

HSE SHARED RESEARCH PROGRAMME

HSE has a longstanding history of supporting science and research to address a range of cross-sector safety issues. Building on this heritage, the HSE Shared Research Programme provides a platform to identify and co-fund applied research projects that are of interest to both industry and regulatory bodies.



Overview of Technical Work Packages

The work packages present an overview of the work to be completed and the proposed deliverables. The technical detail of each work package will be defined and agreed on a collaborative basis via the steering group which will be formed when the project commences. The group is expected to be a partnership of operators, trade bodies, unions and the regulator (HSE). The project comprises a range of activities including reviews, practical offshore trials, data analysis, human factors studies and production of evidence-based reports.

APPROACH

To shape this Shared Research Project, HSE hosted a workshop attended by operators, contractors and regulatory bodies. Knowledge gaps were identified and following a prioritisation exercise, several key subject areas requiring further study were identified. These have been converted into a series of distinct but interrelated work packages for the current proposal.

Work package 1: Current Alertness Management Practices

The aim of this work package is to assess the maturity of current practices to promote and manage alertness offshore.

Relevant documentation on the management of working hours and alertness for offshore workers will be reviewed. These will include risk assessments, policies, metrics, training materials and accident investigation procedures from across different operators. In parallel, offshore workers, supervisors and managers will be consulted to learn how management systems work in practice and identify key challenges for industry. This will be through a mixture of face-to-face consultation, telephone interviews and survey methods. The results will be assessed against cross-sector good practice and pertinent research on alertness and fatigue risk management.

Deliverables:

- Baseline assessment of working patterns and fatigue
- Report on the status of alertness management practices in the offshore sector outlining key strengths and challenges

Work package 2: Shift Design

The aim of this work package is to quantify the impact of different tour lengths/shift patterns on fatigue risks.

Different types of data for a representative set of shift patterns will be acquired and compared. Several different roles will be considered to take account of workload and the differing mental and physical demands of safety critical work offshore. Empirical data will be gathered from offshore personnel using equipment to monitor sleep quality and from perceptions of fatigue and mental health/wellbeing. This will be complemented by an analysis of key metrics such as production upsets and incident data. Self-report data will be collated with options for electronic and paper data collection methods and will include use of sleep diaries and activity logs. The chosen measures will be compared with a view to forming an evidence base of the effects of different types of offshore working pattern.

Deliverables:

- Evidence-based report on trials and key conclusions

Work package 3: Intershift Recovery and Shared Responsibility

The aim of this work package is to identify good practice for optimising recovery between tours and consecutive shifts and for delivering a positive culture of shared responsibility.

A range of sectors that are associated with shift working patterns (including petrochemical, rail and aviation) will be consulted. Their current approaches for optimising intershift recovery will be reviewed to identify cross-industry best practice. Approaches to embedding a culture of shared responsibility between employer and employee on alertness management will be explored. These tasks will involve gaining an understanding of the human factors that support or hinder intershift recovery and positive shared responsibility.

Deliverables:

- Report summarising good practice in intershift recovery and shared responsibility

Work package 4: Intervention/s to Optimise Alertness

The aim of this work package is to identify and trial intervention/s designed to optimise alertness offshore.

The specific direction and deliverables of this work package will be identified by the project steering group following a review and consolidation of the knowledge developed through the other work packages. The options are likely to involve: (i) the identification and design of an intervention to optimise alertness offshore, implemented and evaluated in a small pilot study; and/or (ii) training needs assessment for offshore managerial, operational and support functions.

Deliverables (tbc):

- Evaluation of a pilot study
- Training needs assessment for pertinent staff

PRICE AND DURATION

The total funding required for this Shared Research Project is estimated to be c.£500k. It is therefore anticipated that with financial support from HSE, each project sponsor would need to contribute £40k over 2 years (£20k pa). The project is anticipated to commence mid-2020.

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