Sleep, sleepiness and performance on the bridge and in the engine room during a simulated voyage under a 6h on/6h off maritime watch regime

Wessel van Leeuwen1, Claire Pekcan1, Margareta Lützhöft1, Mike Barnett2, David Gatfield2, Göran Kecklund1, Torbjörn Åkerstedt1

1Stockholm University, Stockholm, Sweden, 2Warsash Maritime Academy, Warsash, United Kingdom, 3Chalmers University of Technology, Gothenburg, Sweden.

Introduction

Fatigue among watch keepers is a growing concern in the maritime industry. This study investigated sleep, sleepiness, and performance on watch in a simulated 6h on/6h off watch system on the bridge and in the engine room.

Results

Sleepiness (KSS) increased with hours in watch (p<.001) and was higher during night/morning watches than during afternoon/evening watches. Furthermore, it increased over the course of the week, but only on the bridge (p<.01).

Conclusion

Sleepiness peaked at the end of night and morning watches. About a quarter of participants slept on duty. This poses a potential safety risk for longer voyages adopting a 6h on/6h off watch keeping regime.

Method

40 seafarers participated in bridge (n=20) or engine room (n=20) simulators on a 1 week voyage through North Sea and English Channel. Sleepiness (Karolinska Sleepiness Scale, KSS) was rated hourly and waking EEG was recorded during 4 watches. The 6h on/6h off watch keeping regime is illustrated to the left.