

Fatigue Causes, effects and mitigation



Mitigating fatigue

Seafarer

- Try to get deep, uninterrupted sleep 7 to 8 hours per 24-hour day
- Take strategic naps (up to 20 minutes)
- Develop pre-sleep routine, eg: warm shower, light reading, write up personal diary, meditation/yoga
- Ensure dark, quiet, cool sleeping environment & comfortable bed
- Avoid interruptions during extended period of sleep.
- Eat/drink lightly before bed
- Visit toilet before trying to sleep
- Avoid alcohol & caffeine prior to sleep
- Avoid caffeine at least 6 hours before bedtime
- Minimize disturbance of rest/sleep periods
- Take break between work periods
- Get sufficient sleep before high activity periods
- Maintain fitness for duty
- Eat regular, well-balanced meals
- Exercise regularly
- Accurately record hours of work & rest

Master

- Implement Company's fatigue management plan in respect of:
 - ISM Code requirements for clear, concise guidance on operational procedures
 - Adequate rest for joining crews before assuming duties
 - Allowing time for proper hand over on crew change
 - Language barriers, social, cultural and religious isolation
 - Interpersonal relationships, stress, loneliness, boredom, social deprivation & increased workload as a result of small crew numbers

- Shore leave, onboard recreation & family communication
- Workable & safe watchkeeping arrangements
- Job rotation
- Crew education & training to recognise & mitigate fatigue
- Monitoring & effective management of crew hours of work & rest
- Create open communication environment for reporting fatigue
- Establish procedures for scheduling shipboard work & rest periods
- Rotate tasks requiring high physical or mental demand with low-demand tasks
- Schedule potentially hazardous tasks for daytime hours, & ensure crew adjusted for working in their day time
- Ensure that adequate rest is received by all - encourage napping
- Promote individual record keeping of hours rested/worked.
- Re-appraise traditional work patterns & areas of responsibility to establish most efficient utilization of resources
- Ensure adequate heating, ventilation, air-conditioning & lighting
- Minimize noise & vibration
- Establish shipboard practices for dealing with fatigue incidents
- Encourage healthy lifestyle

Shipowner/Shipmanager

- Develop fatigue management plan to cover:
 - ISM Code requirements for clear, concise guidance on operational procedures
 - Adequate rest for joining crews before assuming duties
 - Allowing time for proper hand over on crew change
 - Voyage length, time in port, length of service & leave ratios
 - Language barriers, social, cultural and religious isolation

- Interpersonal relationships, stress, loneliness, boredom, social deprivation & increased workload as a result of small crew numbers
- Provision for shore leave, onboard recreation & family communication
- Workable & safe watchkeeping arrangements
- Job rotation
- Crew education & training to recognise & mitigate fatigue
- Monitoring & effective management of crew hours of work & rest
- Provide adequate & comfortable accommodation (including bunks)
- Provide adequate quality & quantity of food for proper nutrition
- Modify ship designs to minimize fatigue stressors
- Keep telephone calls & e-mails to the Master to a minimum & have due regard for time zone differences

Naval Architect/designer

- Provide for adequate and comfortable accommodation, galleys, messrooms & recreational spaces, having due regard for variations in size, shape & gender of seafarers, and for the various environmental stressors such as noise, heat, cold, humidity & vibration
- Minimize fatigue inducing environmental stressors including ship movement, excessive noise, vibration, inadequate ventilation, poor lighting, excessive heat or cold, too much/too little humidity & poor air exchange in enclosed working & accommodation spaces. Minimize unnecessary sustained exertion (physical or mental) in the workplace
- Design operational maintenance tasks to be rapid, safe and effective to allow equipment & systems to achieve a specified level of performance, with the minimum of sustained exertion

- Design control centres, machinery control rooms, cargo control rooms etc, bearing in mind the integration of people with equipment, systems and interfaces, & the need to avoid boredom monotony, reduced vigilance and mental overload

Keeping awake & alert

- Bright lights, cool dry air, obtrusive or loud music, and some invigorating aromas (such as peppermint) may temporarily increase alertness
- Caffeine may combat sleepiness but only for short periods
- Running, walking, stretching & chewing gum can stimulate levels of alertness
- Active conversation can help you stay awake
- Mixing tasks requiring high physical or mental work with low-demand tasks can be beneficial

NB: Alcohol, caffeine and some over-the-counter medications DISRUPT sleep