Fatigue Causes, effects and mitigation

Lack of sleep
Insufficient rest time between work periods
Stress
Noise / vibration
Ship movement
Food timing, frequency, content & quality
Medical conditions & illnesses

Causes

Poor quality of sleep
Poor quality of rest
Boring / repetitive work
Inadequate ventilation, poor lighting, excessive heat / cold, poor air exchange
Effects of alcohol, drugs & caffeine
Excessive work load
Poor workspace design

Inability to concentrate
Slow response
Loss of control of bodily movements
Mood changes
Headaches
Heart palpitations / irregular heart beats
Rapid breathing

Effects

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

Naval Architect/designer
- 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 mono tony, reduced vigilance and mental overload

Seafarer
- 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 bunk)
- Keep telephone calls & e-mails to the Master to a minimum & have due regard for time zone differences
- 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 bunk)
- Provide adequate quality & quantity of food for proper nutrition
- Mix task requiring high physical or mental workload 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/working.
- Re-approve traditional work patterns & areas of responsibility to establish most efficient utilisation of resources
- Encourage adequate heating, ventilation, air-conditioning & lighting
- Minimize noise & vibration
- Establish shipboard practices for dealing with fatigue incidents
- Encourage healthy lifestyle
- Design 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
  - 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
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