

# **A Study On Workplace And Environment Of Seafarers With Special Reference To Occupational Risks And Challenges**

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**Abstract:** The aim of this article is to present the current and most important hazards in seafaring which includes recommendations on measures or how to deal with those problems or issues in the seafarer's workplace environment. In spite of recent advances in injury prevention and accidents due to harmful working and living conditions at sea and onboard ship and of non observance of safety rules remains as a main cause of injury and death. Mortality rate increases in seafaring from cardiovascular diseases (CVD) and is mainly caused by increased risks and impaired treatment options available for CVD at sea.

Further, the work stress caused onboard and high demand of multi-tasking labour may lead to fatigue and isolation. Stress plays an impact on the health of onboard seafarers. Communicable diseases in seafaring remain an occupational health hazard. Exposures to hazardous substances and UV-light are considered to be an important health risks faced by the seafarer onboard ships. Because of the tough working conditions which prevail onboard including environmental factors, adequate recreational activities are essential for the seafarers' to compensate both onboard and ashore. On the other hand, in reality there is often a lack of leisure time possibilities in the workplace environment of a Seafarer. Still seafaring is an occupation with specific and so much of work-related risks.

## **1. INTERNATIONAL LABOUR STANDARDS ON SEAFARERS:**

The 90% of world trade is carried on ships and it requires seafarers as workmen to operate ships. Seafarers are essential for the development of international trade and the international economic system. Shipping and seafarers are one of the earliest of the "globalized" industries. To protect and safeguard the world's seafarers and their contribution to international trade, the ILO has adopted some 70 instruments (41 Conventions and related Recommendations) over the years through special maritime sessions of the International Labour Conference. The ILO's international standards for this shipping sector establish the minimum conditions for "decent work" and concentrates on almost all aspects of work including minimum requirements for work on a ship (such as minimum age, medical fitness and training) provisions on the conditions of employment such as wages, working hours and rest, leave, repatriation, accommodation, recreational facilities, food and catering, occupational safety and health protection, medical care, welfare and social security protection. In addition, they also concentrate on issues such as pensions and an internationally recognized document for the seafarers (a seafarers' identity document) to help every Seafarer in border control matters.

## **2. CONSOLIDATION OF ILO MARITIME STANDARDS**

Maritime Labour Convention 2006 revised and consolidated 37 existing Conventions and its related Recommendations. Those Conventions are at present closed for any further ratification, although ILO Members have ratified any of those earlier Conventions but they didn't ratify the MLC, Rather than being open for ratification, those Conventions are now "consolidated" into one instrument, the MLC, 2006, which uses a new format with some updating, wherever necessary, to reflect modern conditions and language. MLC 2006 provides, the comprehensive rights of the world's 1.5 million seafarers and their decent conditions of work on all the aspects of their working and living conditions which includes,

- Minimum age,
- Employment agreements,
- Rest hours,
- Minimum wages,
- Paid annual leave,
- Repatriation,
- On board medical care,
- Accommodation and living condition Onboard ship,
- Food and catering services onboard ship,
- Health and safety protection
- Accident prevention and

- Complaint handling.

### **3. OCCUPATIONAL RISKS AND CHALLENGES IN SEAFARING:**

International Maritime Organization (IMO) statistics reveals that about 80% of accidents onboard ships are caused by the human factor. The major causes of mortality in shipping were,

- Suicide due to Work stress coupled with Family issues,
- Vessels foundering in typhoons, storms and heavy gales,
- Explosions in cargo holds and collisions due to poor visibility.

Many of the fatal work-related accidents happen among deck ratings and deck officers and such as

- Falls into or inside cargo holds,
- Falls overboard or
- Being struck by heavy seas on deck.
- Fatal injuries during off-duty hours are often associated with alcohol consumption.

The highest death rates, up to 400 per 100,000 seafarer-years, were found among fishermen due to

- Rough weather,
- Inadequate awareness of safety,
- lack of use of personal protective devices
- lack of experience

### **4. PSYCHOSOMATIC DISORDERS:**

The Maritime Labour Convention (2006), all the ships must have an adequate number of seafarers working onboard to make sure that ships are operated safely and efficiently. However, nowadays the number of crew members onboard has minimised considerably. Reduction of Safe Manning Level leads to the risk of accidents with possible severe, life-threatening, environmental and economic consequences. Fatigue High stress and isolation may cause psychosomatic disorders including burn-out syndrome and fatigue.

There are several reasons for fatigue among seafarers and it has become a major occupational problem onboard in almost many of the modern ships. The Maritime Labour Convention (2006) insists the minimum rest hours should be 10 hours in any given 24-hour period. Environmental factors such as noise, vibration and unpleasant weather conditions disturb the quality of sleep. Crews become more exhausted and tired due to long working hours, Sleep requirements and habits may differ individually but everyone needs uninterrupted periods of rest.

### **5. HAND ARM VIBRATION SYNDROME:**

Hand transmitted vibration is considered to be one of the major hazards that several seafarers undergo during their work onboard. Power tools such as chipping machine (rust bust), needle guns and hand held grinder's remains the main reason for Hand arm Vibration syndrome. It may lead to permanent disability of the seafarer if not treated on time. The common symptoms of this hazard are irritation of fingers, lack of sensation and blanching and even pain in the arm and wrist. The main reason for this syndrome turns out to be Lack of awareness and improper guidelines on safe limits of machinery, along with some other common factors which includes smoking; circulatory problems and improper diet etc.

### **6. CARDIO VASCULAR DISEASE: (CVD):**

In the Mortality Analysis, the CVD mortality rate is found to be from 27 to 45 per 100,000 seafarers. Cardio-vascular disease is as commonly found in the seafarers as in the general population. To a large extent of mortality analysis it has been revealed that the percentage of seafarers who die because of cardio vascular diseases is because of common factors and mainly of a combination of genes, age, smoking and other reasons influenced by conditions aboard such as stress, diet, lack of exercise etc. With a reduced number of crew on board ships,

- Multitasking,
- Lack of leisure,
- Recreation facilities,
- High stress levels prevails

Although medicines such as isosorbidedinitrate, glycerol –tirnirate for acute chest pain and metoprolol tartrate, adrenaline, atropine for heart rhythm disorders are available on board, for the seafarers in case of a severe heart stroke, which may require immediate medical assistance, or evacuation to the shore becomes difficult or sometimes impossible.

### **7. CANCER:**

Seafarers are prone to many types of cancers. The most common among them are

- Lungs cancer,
- Renal Cancer,
- Leukaemia
- Lymphoma.

The hazardous substances such as asbestos, benzene, benzidines are removed or substituted on ships; new potential carcinogens such as beryllium (used on Product tankers), cadmium, lead etc are being introduced in the work place. Both the Officers and the crewmembers working on both

deck side and engine side are prone to this deadly disease due to continuous contact with the toxic substances.

Either the Officer or a crewmember working on oil tanker, or chemical tankers are majorly exposed to chemicals and are at the risk of developing various types of cancer, that includes brain cancer and leukaemia, other factors such as smoking, UV radiation, lack of sleep etc. also make worse the conditions leading to cancer. Exposure to sunlight has been found to be associated with significantly elevated incidences of lip cancer among seafarers. The causes of the prominent risk of many of the cancers among seamen are not yet very clear, but life-style related factors such as alcohol, smoking and diet have been regarded as causative agents. Further, it is said that exposure to UV-light from the sun during voyages signifies the risk of skin cancer (particularly near the equator where exposure is 2 to 4 times higher than in Northern-Europe).

#### **8. SEXUALLY TRANSMITTED DISEASE: (STD):**

Sailing to different countries makes the seafarers more vulnerable to sexually transmitted diseases such as HIV/ AIDS and venereal diseases like gonorrhoea and syphilis. AIDS plays a major role because it results into serious consequences or death. In recent days, seafarers does not fit into the stereo type of having a woman in every port, but due to long term isolation, from home and lack of leisure and recreation facility and availability of strong sex industry in almost every port , seafarers are easily prone to unsafe sexual activities and make them a victim of fatal diseases. The only way to prevent is to create awareness among seafarers about sexually transmitted diseases that can minimize and prevent the risk of transmission; however only self-discipline and control of a person can completely eradicate the disease.

#### **9. HYPERTENSION:**

Hypertension is proved to be one of the major occupational hazards prevails onboard merchant ships and offshore fleets. Excessive stress, Fatigue, Loneliness, Smoking, Consumption of alcohol, Lack of physical activity etc remains as the major cause for Hypertension. Hypertension can also lead to other illnesses such as stroke, renal failure etc. Seafarer must have a Change in lifestyle and food habits, and quitting of smoking and alcohol, engaging in physical activities such as exercises, swimming, yoga etc may reduce hypertension to a greater extent. Due to the nature of the work at sea onboard for a seafarer, the possibilities of completely eradicating these diseases and disorders are practically impossible.

#### **10. ENVIRONMENTAL STRESSORS:**

Environmental stressors are not only prevails in the working hours of a seafarer on board but also during leisure hours seafarers are constantly exposed to ship-related environmental stress factors such as:

- Ship motion,
- Noise
- Continuous Vibration
- Drastic temperature variations
- Air pollution especially on tankers.

These factors are apparently stressful (especially during sleeping hours) and can specifically bang the recreational value of leisure time. Reduction of the exposure levels to noise in all accommodation, recreational and catering facilities onboard is not at all possible. Seafarers should be aware of the adverse effects of exposure to excessive noise on the hearing and must be instructed about the proper use of noise protection devices and equipments available for their safety.

#### **11. PIRACY**

The International Maritime Organization has taken effort and summarized all the incidents of piracy and armed robbery against ships reported to the Organization since 1948. The number of acts of piracy and armed robbery against ships are being reported to have occurred from 1984 until December 2009 was 5,224. It is recorded that in the year 2009, 403 incidences took place with a rising tendency from 1990s. It is observed that worldwide, the most affected areas by piracy are the South China Sea, the coasts of East and West Africa and the Indian Ocean.

- In 2008, 774 crew members were taken hostage or kidnapped
- 38 crew members were still unaccounted for;
- 1 vessel - still unaccounted for,
- 51 ships - hijacked.

The IMO implements an anti piracy project, and it focuses on a number of regional seminars and workshops that can be attended by Government representatives from countries in which piracy-infested areas are located in the world.

#### **12. CONCLUSION:**

Seafaring or a Seafarer's life is characterized by several occupational risks such as accidents and maritime disasters, piracy, impaired treatment options for CVD, high shipboard stress levels including fatigue and isolation, communicable diseases and exposures to hazardous substances etc. Despite improvements in professional safety standards onboard, seafaring is still considered to be an occupation that is filled with high risks of

many factors not only during working hours but also during leisure time. The most important measure to reduce the occupational health risks of a seafarer and seafaring includes primary and secondary prevention of work-related hazards which arises from unsafe practices and toxic substances, psychological stress and lifestyle risks. The measures should be focused on improving the awareness of first-aid education among crews, and the optimization of medical care and also to improve the hygiene conditions of both the Seafarer and also the vessel.

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