



## HUMAN ERROR ARE THE REAL CAUSE OF MARINE ACCIDENTS?

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### ABSTRACT :

*The maritime industry is considered to be a huge and high risk industry. There is a great concern in this industry for collaborative risk reduction and improving maritime security. Several factors contribute to improving maritime security and reducing the risk of accidents. Most of these parameters are related to modification of the ship's letter and system design; the use of advanced technology equipment and machinery; And enforcing laws to ensure safe ship operation. Humans are one of these factors, which can be considered as a key component of ocean security. This is the only life parameter, which interacts with and controls most other parameters. Therefore, human actions have a profound impact on the safety of ships, and most marine accidents are the result of human error. An increase in the number of maritime accidents and accidents rather than a major improvement in shipbuilding, the use of advanced technology equipment and the enforcement of stringent maritime security rules, and human error are clear examples.*

**KEYWORDS :** Human Error, maritime industry.

### INTRODUCTION

Marine Industry is one of the oldest industries. It started when the man started to sail, somewhere in mid of 19<sup>th</sup> century. It is considered to be the world largest industry for transportation of total volume of goods from one coast to another. Global economy depends upon the marine industry as it is having the lowest cost of transportation.

Marine Industry follows a very strict rules and regulations which are either regarding the protection of the marine environment or for the enhancement of personal safety of crew on board ships. These rules and regulations are very strict in nature. Seafarers who are present in ships are extremely disciplined and polished professional not only during working hours but also during the spare time on ships.



International Maritime Organization (IMO) following strict policies related to training like standards of training, certification and watchkeeping (STCW), strict rules like- The International Convention for the Prevention of Pollution from Ships (MARPOL), The International Convention for the Safety of Life at Sea (SOLAS), International Safety Guide for Oil Tankers and Terminals (ISGOTT) etc. International Maritime Organisation implemented International Safety Management (ISM) codes 1998 related to HUMAN

ERROR still the Industry experiencing substantial number of accidents.

In shipping industry most of the accidents are caused by human error. Many of the studies says that approx 75-80% of accidents are due to human error and the main reasons for human error are:-

- One of the most important reasons is fatigue, stress and boredom.
- Working condition (Too hot/ too cold/ sever sea condition)
- Design of equipment and tools
- Inadequate of knowledge or skill
- Inaccurate procedure
- Pressure of following the rules and regulation all the time
- Lack of motivation
- Inter-departments relationship and stress
- Inter-departments team work

It is very clear that most of the accidents are due to human mistake or the decision they have taken. But if we think in a different way or take it in a different direction, then we come to realize that not a single seafarer comes to ship with intention of making mistakes, get injured or lose his or his colleagues life. All the seafarer who are working onboard comes with a positive thought of doing safe job, get good name and earn money and go back to see their families.

Shipping industry had grown over the last 40 years into highly reliable and advanced with technologies. The industry has improved ship structure and the reliability of ship systems in order to reduce causalities and increase efficiency and productivity of industry. But still the question is same Why? these developments, improvements, trainings have not significantly reduced the risk of accidents by human.

However statistics shows human error is the greatest cause of accidents. According to the studies one of the biggest reason of accident are crews which are working on board ship. Is Seafarer are the easiest target to blame? What are the reasons of blaming seafarers for accidents-?

- They are away from the land.
- There are less number of people onboard ships. Mostly Captain communicates to the office from ship. Again question arise, Is captain understands technical obstructions of the job.
- Is office communicating to all crew members directly or only filter information reaching to ship crew.
- Is Shore office looking deep into the ship issues?
- Is shore office understands the ship technical issues, maintenance matters and so on. Do they understand how the ship is functioning .what all hurdles crew faces during their job performance?

#### REVIEW OF RESEARCH:

**Majid Mousavi and Mehdi Jafari (2017)** are concluded in their study 'Marine Accidents Investigation methods based on the role of human factors in accidents' that Accident detection methods should be comprehensive in order to ensure that their underlying causes are clearly defined and the activities needed to correct the problem are effectively implemented. Despite the sensory issues, we can look at models, trends and root causes and get basic information about single events and accidents. Direct study of human error is impossible and can only be studied indirectly through the study of human behavior. As explained, there is a causal and consequential relationship between human error and accident, and incident reports have quick and easy access to information about human error because this information has already been collected, described, and analyzed. It is important to take notes when analyzing. First, no single method can provide all the necessary analysis to calculate the cause of the accident. Many methods can complement each other and their rotation estimates should be used to achieve the desired results. Second, analytical methods cannot be applied mechanically and without thought, if the tools and analytical tools are not cumbersome and ineffective, unless used in special circumstances and not in conformity with those terms.

**Nayef F.S.H Al-Shammari and Jin-Seok Oh (2018)** are concluded in their study 'Effects of Human Error on Marine Safety: Case Study' that Shipping companies should consider having an expert and

knowledgeable crew when working in areas with high collision risk. A review of the operation and emergency instructions and guidelines for such areas are required. Therefore, the captain of the ship must ensure the awareness of these police personnel. In addition, ships are advised to maintain contact with the port authorities regarding maritime and climatic conditions, report any incident and receive advice and take necessary notice once.

**OzkanUgrulu, UmutYildirim and ErsanBasar (2015)** are concluded in their study 'Analysis of Grounding Accidents Caused by Human Errors' that Shipmasters and executives make many decisions that determine the people's ship, the ship, and the environment of their career: The Costa Concordia accident recently saw that wrong decisions can lead to sea accidents. Therefore, in order to reduce their numbers, it is necessary to determine the cause of the accidents. As a result, this study determines the significance level of each cause and the preventive measures to cause the accident, and determines the most relevant measures identified for that reason. The AHP method was used to analyse accidents and to determine preventive measures, especially against grounding. According to AHP results, the most notable causes of grounding accidents related to human error are lack of communication in BRMs, position fixing application errors, lookout errors, interpretation errors, use of inappropriate charts, inefficient use of bridge navigational equipment, and fatigue.

Shore people can theoretically understand the ship problem but practically only the seafarers who are onboard ship can really understand the problem. Most of the people working at shore are non-seafarer and they are assisting highly skilled crew on technical and logistical expertise. Are these people working at shore able to justify the views of seafarers? As the number of seafarer at shore are very less as compared to non-seafarer, so according to my point of view it is practically very difficult to make them aware of the problems which might lead to accidents onboard ship.

Let's take an example, if you tell a non-seafarer that ship is having its own water generator and purifier system. What you will imagine or make picture in your mind of this water generation system? It is plant something like RO or water purifier. No, But in reality there is a huge system called "FRESH WATER GENERATOR." It generates fresh water from sea water and removes the salts and impurity from sea water. Imagining this plant system is very tough for non-seafarer. Therefore understanding the accident which occurs onboard ship is practically not possible.

Finding the solution to avoid accidents in ship especially at shore is quite irrelevant as people working in this industry are not fully aware of the difficulties and challenges faced by seafarer.

Another problem of this industry is that seafarer keeps changing from time to time and from ship to ship as their tenure finishes. And the accident report is discussed and analysis by shore staff in the absence of seafarer who actually faced the particular accident. The final conclusion made by the shore people are mostly pointing towards seafarer.

This seafarer mostly itself not aware that the accidents which occurred in their previous vessel, the root cause of accidents was analysis as human error. 80 to 90% of accidents can easily be analyzed as human error, because human factor are always involved as 'HUMANS' are handling the situation.

## CONCLUSION:

To avoid accidents, it is more important to train non-seafarer at shore working for this industry to understand the SHIP and its difficulties involved not only theoretically but practically also. 'Sea never tells what will come next'. So not only seafarer need good training and skills but person assisting them needs the same with strong rules and regulations to follow. Hence the marine accidents will reduce when both the staff (Land and ship) comes together at same level of understanding. Redistribution, this test introduces the concept of human error and the marine safety rules established to deal with this problem and possibly reduce the risk of accidents. We have seen that human errors (and most errors by most people) contribute a large proportion (70-90%) to ocean accidents, preventing paramount importance for human errors if you want to reduce their numbers and severity in Marine accident.

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