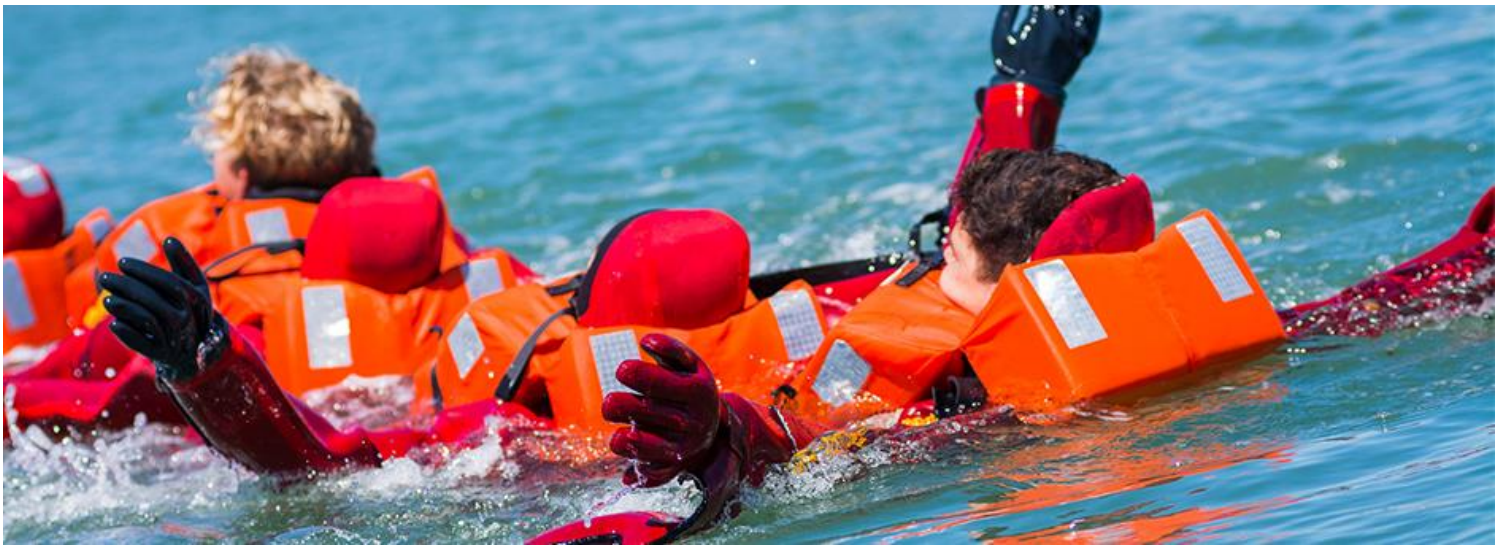
COURSE HANDOUT

PERSONAL SAFETY AND SOCIAL RESPONSIBILITIES & MLC2006



NAVIGATOR MARITIME ACADEMY

Plot No – 342, Fathepur Sikri Road, Patholi, Agra, Uttar Pradesh

Tel No: +91-8006891234

E-mail: training@navigatormaritime.ac.in

Web: www.navigatormaritime.ac.in

PERSONAL SAFETY AND SOCIAL RESPONSIBILITY COURSE OUTLINE

S.No.	Subject area with learning objectives	TOTAL Time Hours
1.	**Introduction** ➢ Importance of the courses ➢ Ship familiarization	1.0
2.	**Comply with emergency procedures** ➢ Types of emergency which may occur, such as collision, fire, foundering ➢ Knowledge of shipping contingency plans for response to emergencies ➢ Emergency signals and specific duties allocated to crew members in the muster list; muster stations; correct use of personal safety equipment ➢ Actions to take on discovering potential emergency, including fire, collision, foundering and ingress of water into the ship ➢ Action to take on hearing emergency alarm signals ➢ Value of training and drills ➢ Knowledge of escape routes and internal communication and alarm system	2.0
3.	**Take precautions to prevent pollution of the marine environment** ➢ Basic knowledge of the impact of shipping on the marine environment and the effects of operational or accidental pollution on it. ➢ Basic environmental protection procedures ➢ Basic knowledge of complexity and diversity of the marine environment	4.0
4.	**Observe safe working practices** ➢ Importance of adhering to safe working practices at all times ➢ Safety and protective devices available to protect against potential hazards Aboard ship ➢ Precautions to be taken prior to entering enclosed spaces ➢ Familiarization with international measures concerning accident prevention and occupational health* ****The ILO code of Practice on Accident prevention on board ship at sea and in port***	4.0
5.	**Contribute to effective communication on board ship** ➢ Understand the principles of, and barriers to, effective communication between individuals and teams within the ship ➢ Ability to establish and maintain effective communication	3.0
6.	**Contribute to effective human relationship on board ship** ➢ Importance of maintaining good human and working relationships aboard ship ➢ Basic team working principles and practice, including conflict resolution ➢ Social responsibilities; individual rights and obligations; dangers of drug and alcohol abuse, eliminating harassment and bullying on board	3.0
7.	**Understand and take necessary actions to fatigue** ➢ Importance of obtaining the necessary rest ➢ Effects of sleep, schedules, and the circadian rhythm on fatigue ➢ Effects of physical stressors on seafarers ➢ Effects of environment stressors in and outside the ship and their impact on	2.0

	seafarers ➢ Effects of schedule changes on seafarers fatigue	
8.	**Maritime Labour Convention** ➢ Purpose, Applicability to types of ships, Rights of seafarers ➢ Minimum age, Medical fitness, Certification and training, Recruitment ➢ Agreement, wages, Hours of work and rest, Leave, Repatriation ➢ Accommodation, recreational facilities, food and catering ➢ Medical care, Health protection, Welfare, Social security ➢ Complaint Procedure, Grievance handling mechanism	**3.5**
	TOTAL	**22.5**
9.	**Evaluation**	**1.5**
		24.0

COURSE TIME TABLE

TIME TABLE	SUBJECT	L	D & P
	DAY 1		
0845-0900	Course Entry Formalities		
0900-1000	Introduction to the personal safety and social responsibilities course and its importance to the prospective seafarer and ship familiarization.	1.0	
1000-1030	Comply with emergency procedures	0.5	
1030-1045	***TEA-BREAK***		
1045-1145	Comply with emergency procedures (Cont.)	0.1	
1145-1215	Comply with emergency procedures (Cont.)		0.5
1215-1245	Take precautions to prevent pollution of the marine environment	0.5	
1245-1330	***LUNCH-BREAK***		
1330-1500	Take precautions to prevent pollution of the marine environment (Cont.)	1.5	
1500-1515	***TEA-BREAK***		
1515-1615	Take precautions to prevent pollution of the marine environment (Cont.)	1.0	
	DAY 2		
0900-1000	Take precautions to prevent pollution of the marine environment (Cont.)	1.0	
1000-1100	Observe safe working practices	1.0	
1100-1115	***TEA-BREAK***		
1115-1245	Observe safe working practices (Cont.)	1.5	
1245-1330	***LUNCH-BREAK***		
1330-1500	Observe safe working practices (Cont.)	1.0	0.5
1500-1515	***TEA-BREAK***		
1515-1615	Contribute to effective communication on board ship	1.0	
	DAY 3		
0900-1000	Contribute to effective communication on board ship (Cont.)		1.0
1000-1100	Contribute to effective communication on board ship (Cont.)	1.0	
1100-1115	***TEA-BREAK***		
1115-1245	Contribute to effective human relationships on board ship	1.5	
1245-1330	***LUNCH-BREAK***		
1330-1500	Contribute to effective human relationships on board ship	1.5	
1500-1515	***TEA-BREAK***		
1515-1615	Understand and take necessary actions to control fatigue	1.0	
	DAY 4		
0900-1000	Understand and take necessary actions to control fatigue	1.0	
1000-1100	MLC-2006	1.0	
1100-1115	***TEA-BREAK***		
1115-1245	MLC-2006 (Cont.)	1.5	
1245-1330	***LUNCH-BREAK***		
1330-1430	MLC-2006 (Cont.)	1.0	
1500-1515	***TEA-BREAK***		
1445-1615	Assessment	1.5	
	Total Hours	22.0	***2.0***
	Grand Total Hours	**24.0**	

INTRODUCTION

Welcome to the Personal Safety and Social Responsibilities (PSSR) Course at J Sons Merchant Navy Institute.

There will be persons amongst you who have never seen a ship from close range, but have aspiration to do so, with some funny ideas such as relaxing in the sum, under the shade of beach umbrella, glass of scotch on the rock in hand. Sorry to say, but life is not like this, you will have to take this course seriously if you really want to walk off the ship with smile on your face, instead of being carried away on a stretcher or in a box.

For others, who are already been at sea in various capacities, and are familiar with the terms accidents, emergency, pollution and team work. It will be easier for us to convey the importance of this course material that would help you to attain as safe, clean healthy and amicable work atmosphere on board.

This course is very useful in developing comradeship feeling amongst the ship mates by understanding the other persons in a better way by communication correctly as every individual is different from others.

OBJECTIVES OF THE COURSE

1. To comply with the Training requirements laid down in Regulation VI/1, Paragraph 2.1.4 and 2.2 of Section A-VI/1 and Table – A-VI/1-4 of STCW Convention as amended in 2010.

2. On completion of the course Trainee should be able to identify potential areas of emergencies and handling them.

3. To take effective steps to observe "Safe Working Practices" and eliminate personal injuries and accidents to self and shipmates.

4. To prevent pollution "Safer Ships and Cleaner Oceans".

5. To create a health atmosphere through behaviour Interpersonal relationship, Co-operation and belongingness.

CHAPTER – 1

EMERGENCY PROCEDURES ON BOARD

What is an Emergency?

1. An emergency may be defined as "a generally unexpected occurrence, demanding immediate action, to avoid any possible loss or damage."

Types of Emergency

2. The various types of emergencies that could occur onboard are as follows:-

(a) Collision / Imminent Collision

(b) Grounding / Stranding

(c) Foundering

(d) Fire

(e) Main Engine Breakdown

(f) Man Overboard

(g) Oil Spill

(h) Gas Leakage

(i) Explosion

(j) Pollution

Contingency Planning

3. At sea the responsibility for an action rests with the master and his operating management. Where a casualty occurs in territorial waters or port limits, the national authority or the port authority may be involved and the master's and his operational management's freedom of action may be thereby constrained. This would be particularly so if the hazards relevant to the casualty could put the parties at risk. In these latter circumstances, contingency plans may need to be adapted quickly to take account of the requirement of the shore authorities. However, the basic consideration in these circumstances are still of the same nature as those when the ship is at sea.

4. When a ship is berthed alongside a cargo terminal, the responsibilities for action in the event of an accident are more complex, for the terminal management must also be involved in the protection of terminal facilities and in the provision of remedial action. Furthermore, the likely circumstances of the

casualty and the hazards which may result are of a different nature or have a different emphasis from those when underway.

5. Contingency planning can only be based upon an understanding of :-

(a) The type of accidents which may occur.

(b) The possible consequences.

(c) The action that can practically be taken.

(d) The requirements relating to a suitable location or locations in which to take that action.

(e) The possible reaction of the media and other bodies to the casualty, its handling and consequence.

6. The aim of the plan should be to ensure the most timely response, adequate in scope to meet the size and varied nature of such accidents and thereby, as quickly as possible, to remove any threat there may be of a serious escalation of the situation. In addition to speed and adequate resources in men and equipment, the plan should reflect the need for the assured flow of accurate information and for the constant control of action being taken. The plan should acknowledge priorities which, in turn, protect life, environment and property.

7. The personnel to be involved must be familiar with the procedures of the plan and understand what may be required of them. This necessitates that the plan be fully documented and available to those who would be concerned. Opportunity should be taken to exercise personnel in the planned procedures in order that they may gain experience and the effectiveness of the plan tested.

Emergency Procedures

8. Muster and Drills

(a) Musters and drills are required to be carried out regularly in accordance with Merchant Shipping Regulations. The guidance contained in this chapter should be read in conjunction with information and guidance on these regulations issued in the relevant Merchant Shipping Notices.

(b) Musters and drills have the objective of preparing a trained and organised response to situations of great difficulty which may unexpectedly threaten loss of life at sea. It is important that they should be carried out realistically, approaching as closely as possible to emergency conditions. Changes in the ship's function and changes in the ship's personnel from time to time should be reflected in corresponding changes in the muster arrangements.

(c) The muster list should be conspicuously posted before the ship sails and, on international voyages and in ships of Class II A and III should be supplemented by emergency instructions for each crew member (e.g. in the berths or bunks). These instructions should describe the allocated muster station, survival craft station and emergency duty and all emergency signals and action, if any, to be taken on hearing such signals.

(d) An abandon ship drill and a fire drill must be held within 24 hours of leaving port if more than 25% of the crew have not taken part in drills on board the ship in the previous month. As soon as possible but not later than two weeks after joining the ship, onboard training in the use of the ship's life saving appliances, including survival craft equipment, should be given to crew members. As soon as possible after joining the ship, crew members should also familiarise themselves with their emergency duties, the significance of the various alarm signals and the locations of their life boat station and of all lifesaving and fire fighting equipment.

(e) All the ship's personnel concerned should muster at a drill wearing lifejackets properly secured. The lifejackets should continue to be worn during lifeboat drills and launchings but in other cases they may subsequently be removed at the Master's discretion if they would impede or make unduly onerous the ensuing practice, provided they are kept ready at hand.

(f) The timing of emergency drills should vary so that personnel who have not participated in a particular drill may take part in the next.

(g) Any defects or deficiencies revealed during drills and the inspections which accompany them should be made good without delay.

9. Fire Drills

(a) Efficient fire-fighting demands the full co-operation of personnel in all departments of the ship. A fire drill should be held simultaneously with the first stage of the abandon ship drill. Fire-fighting parties should assemble at their designated station. Engine room personnel should start the fire pumps in machinery spaces and see that full pressure is put on fire mains. Any emergency pump situated outside machinery space should also be started; all members of the crew should know how to start and operate the pump.

(b) The fire parties should be sent from their designated stations to the selected site of the supposed fire, taking with them emergency equipment such as axes and lamps and breathing apparatus. The locations should be changed in successive drills to give practice in different conditions and in dealing with different types of fire so that accommodation, machinery spaces, store rooms, galleys and cargo holds or areas of high fire hazard are all covered from time to time.

(c) An adequate number of hoses with the assumed fire should be realistically deployed. At some stage in the drill, they should be tested by bringing them into use, firstly with water provided by the machinery space pump and secondly with water from the emergency pump alone.

(d) The drill should extend, where practicable, to the testing and demonstration of the remote controls for ventilating fans, fuel pumps and fuel tank valves and the closing of openings.

(e) Fixed fire extinguishing installations should be tested to the extent practicable.

(f) Portable fire extinguishers should be available for demonstration of the manner of their use. They should include the different types applicable to different kinds of fire. At each drill, one extinguisher or more should be operated by a member of the fire party, a different member on each occasion. Extinguishers so used should be recharged before being returned

to their normal location or sufficient spares should otherwise be carried for demonstration purposes.

(g) Breathing apparatus should be worn by members of the fire – fighting parties so each member in turn has experience of its use. Search and rescue exercises should be undertaken in various parts of the ship. The apparatus should be cleaned and verified to be in good order before it is stowed; cylinders of self – contained breathing apparatus should be recharged or sufficient spare cylinders otherwise carried for this purpose.

(h) Fire appliances, fire and watertight doors and other closing appliances and also fire detection and alarm systems which have not been used in the drill should be inspected to ensure that they are in good order, either at the time of the drill or immediately afterwards. Additionally the relevant statutory requirements should be complied with.

10. **Survival Craft Drills.**

(a) Arrangements for drills should take account of prevailing weather conditions.

(b) Crew members taking part in lifeboat or liferaft drills should muster wearing warm outer clothing and lifejackets properly secured.

(c) Where appropriate, the lowering gear and chocks should be inspected and check made to ensure that all working parts are well lubricated.

(d) When turning out davits or when bringing boats or rafts inboard under power, seamen should always keep clear of any moving parts.

(e) The engines on motor lifeboats should be started and run ahead and astern. Care should be taken to avoid overheating the engine and the propeller shaft stem gland. All personnel should be familiar with the engine starting procedure.

(f) Hand – operated mechanical propelling gear, if any, should be examined and similarly tested.

(g) Radio equipment should be examined and tested, with the aerial erected, by the Radio Officer or another trained person and the crew instructed in its use.

(h) Water spray systems, where fitted, should be tested in accordance with the lifeboat manufacturer's instructions.

(i) When a drill is held in port, as many as possible of the lifeboats should be cleared and swung out. Each lifeboat should be launched and maneuvered in the water at least once every three months. Where launching of free-fall lifeboats is impracticable, they may be lowered into the water provided that they are free-fall launched at least once every six months.

(j) When rescue boats are carried which are not also lifeboats they should be launched and manoeuvered in the water every month so far as that is reasonable and practicable. The interval between such drills should not exceed three months.

(k) Where simultaneous off-load/on-load release arrangements are provided great care should be exercised to ensure that the hooks are fully engages before a boat is recovered, after it has been stowed and prior to launching.

(l) Where davit-launched life rafts are carried then on-board training, including an inflation, must be carried out at intervals not exceeding four months. Great care should be taken to ensure that the hook is properly engaged before taking the weight of the raft. The release mechanism should not be cocked until just prior to the raft landing in the water. If the raft used for the inflation is part of the ship's statutory equipment and not a special training raft, then it MUST be repacked at an approved service station.

(m) Where the handle of the lifeboat winch would rotate during the operation of the winch, it should be removed before the boat is lowered on the brake or raised with an electric motor. If a handle cannot be removed, personnel should keep well clear of it.

(n) Personnel in a rescue boat or survival craft being lowered should remain seated, keeping their hanks inside the gunwale to avoid them being crushed against the ship's side. Lifejackets should be worn. In totally enclosed lifeboats seat belts should be secured. Only the launching crew should remain in a lifeboat being raised.

(o) During drills, lifebuoys and lines should be readily available at the point of embarkation.

(p) While craft are in the water, crews should practice manoeuvering the vessel by oar, sail or power as appropriate and should operate the water spray system where fitted on enclosed lifeboats.

(q) Seamen should keep their fingers clear of the long-link when unhooking or securing blocks on to lifting hooks while the boat is in the water, and particularly if there is a swell.

(r) Before craft in gravity davits are recovered by power, the operation of the limit switches or similar devices should be checked.

(s) A portable hoist unit used to recover a craft should be provided with a crutch or have an attachment to resist the torque. These should be checked. If neither device is available, the craft should be raised by hand.

(t) Where liferafts are carried, instruction should be given to the ship's personnel in their launching, handling and operation. Methods of boarding them and the disposition of equipment and stores on them should be explained.

(u) The statutory scale of lifesaving appliances must be maintained at all times. If the use of a liferaft for practice would bring equipment below the specified scale, a replacement must first be made available.

11. **Action in the Event of Fire**

(a) The risk of fire breaking out on board a ship cannot be eliminated but will be much reduced if the advice given elsewhere in the Code is conscientiously followed at all times.

(b) Training in fire-fighting procedures and maintenance of equipment should be assured by regular drills. It is important that access to fire-fighting equipment should be kept unimpeded at all times and that emergency escapes and passage ways are never obstructed.

(c) A fire in its first few minutes can usually be readily extinguished; prompt and correct action is essential.

(d) If a fire breaks out, the alarm should be raised and the bridge informed immediately. If the ship is in port, the local fire authority should be called. If possible, an attempt should be made to extinguish or limit the fire, by an appropriate means readily available, either using suitable portable extinguishers or by smothering the fire as in the instance of a fat or oil fire in a galley.

(e) The different types of portable fire extinguishers on board are appropriate to different kinds of fire. Water extinguishers should not be used on oil or electrical fires.

(f) Opening to the space should be shut to reduce the supply of air to the fire and to prevent it spreading. Any fuel lines feeding the fire or threatened by it should be isolated. If practicable materials adjacent to the fire should be removed.

(g) If a space is filling with smoke and fumes, personnel not properly equipped with breathing apparatus should get out of the space without delay; if necessary, escape should be effected by crawling on hands and knees because air close to deck level is likely to be relatively clear.

(h) After a fire has been extinguished, precautions should be taken against its spontaneous re-ignition.

(i) Personnel, unless wearing breathing apparatus, should not re-enter a space in which a fire has occurred before it has been fully ventilated.

General Emergency Alarm

12. **Signal**

(a) At lease seven short blasts followed by one long blast on ship's whistle/siren and on electric bell.

(b) Audible throughout the vessel.

(c) Capable of being operated from bridge, engine room, accommodation and other strategic points.

(d) Mains and emergency source of power.

13. **General Procedures**

(a) Anyone may initiate an emergency alarm by simply pressing the Emergency Switch. This will bring the Emergency Party to the Emergency Headquarters and alert the remaining members of the Emergency organisation.

(b) A person having sounded the Emergency Alarm must report the location and nature of the emergency to the Bridge, and / or the emergency Headquarters or if in port, to the cargo control room (if manned).

14. **Actions that Follows.**

(a) Emergency Squad musters at the Emergency Headquarters with the utmost speed.

(b) The fire officer to arrive at the Emergency Headquarters will contact the Bridge to advise or enquire about the nature of the emergency.

(c) Communication must be established with the Master.

(d) Emergency squad will collect the necessary equipment and proceed to the scene of the emergency.

(e) On leaving the Emergency Headquarters the Emergency Party will use portable transceivers for communication.

(f) Personnel assigned with Special duties will proceed to their stations.

(g) The First Aid and Provision squad will proceed to their muster point.

(h) The support squad will muster and await instructions.

(i) Supernumeraries and now crew are to report to bridge for instructions.

(j) Communication is to be established between Bridge and Engine Room.

15. **Action to be taken by the Individual.**

(a) Put on additional clothing (warm)

(b) Put on lifejacket.

(c) Drink plenty of water.

(d) Rush to muster stations (as mentioned in muster list).

Muster List

16. The emergency signal, abandon ship signal, fire signal, fire alarm signal and any other signals e.g. man over board signals.

17. **Action to be taken by the Crew**.

(a) Officers in charge of different groups or squads. Duties of members of the crew.

(b) Officers in charge of maintenance of various life saving equipment.

(c) Substitutes for key persons.

(d) Location of muster stations.

18. **Alarm Signals.**

(a) **General Emergency Alarm**. At least 7 short blasts followed by one long blast on ship's whistle and electric bell.

(b) **Fire Alarm**. Continuous ringing of bell.

(c) **Man Overboard Alarm.** 3 long lasts on ship's whistle.

(d) **Abandon Ship Signal.** Verbal order by Master.

19. **Emergency Stations.**

Bridge Party
Master-Overall i/c 3/O-Navigation A.B-Steering R/O-communication

E/R Party
C/E-overall I/C 3/E-assist ERR-assist ERR-assist

Lifeboat Party
2/O-in-charge 4/E-Asst.I/C A.B A.B Cook

Emergency Squad 1
C/O –in-charge Bosun Cadet A.B A.B G.S G.S

Emergency Squad 2
2/E –in-charge E/O ERR ERR ERR ERR Fitter

Correct Use of Personal Safety Equipment

20. Protective clothing is provided for crew member's safety. It is a folly not to use it, as many seamen have found to their cost. For head protection there is proper safety helmet which protects against knocks and also serious risks in case of fall etc. Goggles should always be worn to protect our eyes when welding, grinding and scaling or when there is a risk of splashes from chemicals. When working is noisy environments such as the engine room, proper hearing protection should be worn. Earmuffs are generally more effective than ear plugs. Dust masks, respirators or breathing apparatus of an appropriate type should be worn when working in dusty or toxic atmosphere.

Action To Be taken On Discovering Potential Emergency

21. Any crew member who discovers potential emergency should warn others by raising an alarm & informing bridge as appropriate. Thereafter he should take all means to contain the damages / spread of potential emergency.

22. On hearing emergency alarm signal, all crew members should muster at their muster stations as mentioned in muster list and await for orders from bridge with reference to type of emergency and measures to adopt to contain same.

Know Your Ship Well

23. Every person joining ship must as soon as possible get familiar with his ship. Following are some of the points for your guidance:-

(a) Get to know your emergency stations (Boat station, Fire station etc.) and what are your duties if there is an emergency situation. For example, if it is your duty to bring a stretcher, you should know where it is kept and if it is under 'lock & key', you must know who has the key.

(b) Is there a Fire extinguisher near the cabin allotted to you. What type of extinguisher is it ? (Foam, powder etc.) Can you operate it ? Read the instructions carefully.

(c) Which is the nearest Fire hose and connection and how to get there as soon as possible.

(d) In case of Fire or smoke in accommodation which is the shortest route you would choose to get to safety. Can you get out of a Porthole?

(e) What are the escape routes through alleyways / engine room?

(f) Where is your life jacket?

(g) Where are the lifebuoys kept?

(h) Where is the main switch for the power supply in your cabin ?

Action to Take in Various Emergencies

24. **Man Overboard.** On seeing a man falling overboard at sea :

(a) Throw the nearest life-buoys to the man.

(b) Shout "Man overboard" indicating the side man has fallen, at the top of your voice to alert others.

(c) Inform bridge immediately and the master.

(d) Get Rescue-Boat ready for lowering.

(e) Inform engine-room.

25. **Fire.**

(a) On seeing a "Fire" onboard the ship :-

(i) Shout "Fire" at the top of your voice to alert othes.

(ii) Ring the alarm

(iii) Check if somebody is trapped

(iv) If small fire, try to extinguish it with portable fire extinguisher.

(v) Otherwise close the compartment's ventilation, portholes etc.

(vi) Await ship's fire-fighting team to relieve you and then you go to your emergency station.

(vii) In port, inform fire-brigade / port authorities.

(b) On heating Fire alarm or general emergency alarm :-

(i) Put on your life-jacket

(ii) Drink plenty of water

(iii) Rush to your Muster station (mentioned in muster list)

(iv) Carry out your task allotted in muster list.

26. **Abandon Ship.** On hearing Abandon-ship signal as per muster list :-

(a) Put on life jacket

(b) Put on additional warm clothing.

(c) Drink plenty of water

(d) Rush to embarkation station of your lifeboat and carry out instructions.

(e) Avoid panic

(f) Time permitting take additional quantity of water, provisions, blankets etc.

Emergency Drills

27. **Practice Drills.** Practice drills must be held as follows :-

(a) On Cargo Vessels.

(i) At least once in a month, not exceeding 15 days.

(ii) If 25% crew changes, then within 24 hrs. of change of crew.

(iii) Muster with in 24 hrs. of sailing.

(b) **On Passengers Ships.**

(i) At least once a week.

(ii) Within 24 hrs. of embarkation.

28. **Drill Quality**. Drills must :-

(a) Cover all emergencies.

(b) Be as realistic as possible.

(c) All crew must participate.

Value of Training and Drills

29. Safety of Life at Sea is paramount. During ship board emergencies a lot of lives have been lost due to lack of training / drills. On board training is very important as it opens wide horizons of learning / understanding which is not possible to achieve by referring to books only. Drills keep crew members prepared at all times for ship board emergencies if drills are not conducted regularly and reviewed then during actual emergencies results are chaotic.

Type of Escape Routes and Internal Communication and Alarm System.

30. On all ships escape routes are paint marked so that in case of emergency no time is lost in case the place has to be evacuated. On joining a crew member must familiarise himself with ship's escape routes - Internal communication is very important during emergencies. Blind spots should be ascertained while communicating from various places inside ship to bridge. These are the places from where it is difficult / not possible to establish contact with bridge. All these places should be written down & crew members made aware of same. All alarm systems onboard should be tested periodically to confirm that they are functional. All crew members should have knowledge of same.

CHAPTER – 2

POLLUTION PREVENTION

Introduction

1. During the past 25 years, pollution of world oceans has become a matter of increasing international concern. Most of it is from land based sources tough a significant amount of pollution is caused by shipping and maritime activities. It was estimated in 1980 that as much 3.54 million tons of oil enters the sea every year of which 1.5 million tons results from transport by sea.

POLLUTION OF ANY MEDIUM SIMPLY MEANS TO CONTAMINATE IT AND THEREBY MAKE IT IMPURE, UNHEALTHY OR FOUL AND THUS DIRECTLY OR INDIRECTLY HAZARDOUS TO HUMAN LIFE.

2. Today pollution is one of the biggest hazards to life. Survival of Human beings is in danger due to pollution. Many diseases like asthma and certain skin ailments happen because of air pollution. Water pollution causes typhoid, cholera, dysentery and other gastro enteric diseases. In addition to that even the soil is polluted by addition of excessive fertilisers, pesticides and so on which pollute the fruits, vegetables and grain.

3. Marine Pollution may be of three types :-

   (a) Noise Pollution

   (b) Air Pollution

   (c) Sea Water Pollution

4. **Noise Pollution.**

   (a) Our ears are extremely sensitive.

   (b) Ships have many places of high noise level viz. Engine Room, Steering Gear Compartment, Emergency Gen. Room, AC & Refrigeration Plant, Cargo Pump Room, Anchor Work, Chipping and Chipping Machines on Deck.

   (c) Exposure to high Noise Levels causes damage to the eardrums.

   (d) This damage may be temporary or permanent.

   (e) Protection from Noise Pollution is very through use of Ear Muffs, Ear plugs or just cotton.

5. **Air Pollution**

   (a) Air pollution on board ships may occur due to the following:-

      (i) Enclosed Spaces.

(ii) Cargo Oil Operations.

(iii) Bunkering.

(iv) Tank Cleaning.

(v) Painting

(vi) Special Types of Cargo.

(c) Protection from Air Pollution. The protection from air pollution is possible in two ways :-

(i) Good ventilation.

(ii) Protective Measures.

6. **Sea Water Pollution.** There are primarily three types of sea water pollution. They are:-

(a) Sewage Pollution

(b) Garbage Pollution

(c) Oil Pollution

The Annexes to **MARPOL** set out in the actual preventive regulations are :

(a)	**Annex I**	**Pollution by Oil**
(b)	**Annex II**	**Pollution by Noxious Liquid Substances**
(c)	**Annex III**	**Pollution by harmful substances carried in packaged form, portable tanks, freight containers, or road or rail tank wagons.**
(d)	**Annex IV**	**Pollution by sewage from ships.**
(e)	**Annex V**	**Pollution by garbage from ships.**
(f)	**Annex VI**	**Air Pollution**

Annex I Oil Pollution.

7. **Effects of Oil Pollution on the Marine Environment.**

(a) It blankets the surface interfering with oxygen exchange between the sea and the atmosphere.

(b) Many constituent elements are toxic and get into food chain.

(c) Oil on beach interferes with recreational uses of that beach.

(d) Oil may enter seawater-distilling inlets and it may be deposited on tidal mud flats, with detrimental results.

(e) Oil sticks to the wings of the seabirds and they become helpless casualties of oil spillage.

8 **Causes of Marine Oil Pollution.**

(a) Marine Pollution at sea can occur as a result of :-

(i) Collision

(ii) Lightening operations

(iii) Tank washing and line flushing

(iv) Deballasting.

(b) Marine Pollution in port can occur as a result of :-

(i) Leaking hoses and loading arms

(ii) Over flow from tanks

(iii) Equipment failure

(iv) Improperly set sea valves.

9. **Prevention of Marine Oil Pollution**. The general principles to be observed to prevent Marine oil pollution can be summarized as follows:-

(a) Regulatory requirements for discharge of oil into sea must be observed.

(b) LOT procedure must be observed during deballasting decanting and tank cleaning operations.

(c) Crude carriers must crude oil wash their cargo tanks to minimize oily waste.

(d) Ship movement alongside must be restricted by adjusting moorings.

(e) All pipelines joints and valves must be kept under observation whilst handling cargo.

(f) Drip trays must be placed at vulnerable points.

(g) Strict control must be exercised whilst loading to prevent tank overflowing.

(h) All scuppers must be closed to prevent discharge of oil from deck overboard.

(i) All valve and blanks must be checked prior to cargo operations.

(j) Valve not used should be secured if possible.

(k) Sea connection not in use should be closed by double valves or blanked off. If oil is split, cargo operations must be stopped and warnings given to all involved.

Oil Pollution Regulations

10. General concern over oil pollution appears to have originated in the first decade after World War I when, first the United States, and then the League of Nations undertook to obtain explicit international agreement on measures to combat oil pollution. Very few states had, in the past, sought to extend legislation regarding pollution beyond their territorial sea, and no states had, until the present, sought to apply prohibitory regulations beyond this area. It can, therefore, be said that almost all-prescriptive activity has taken the form of international agreements.

11. In 1926, at the International Maritime Conference in Washington, the problem was discussed in both technical and legal terms, but the convention failed to be ratified by any nation.

12. Oil pollution, particularly on the shores of the Atlantic Ocean was very considerable during and after World War II as a direct result of the many torpedoed, sunken and otherwise damaged vessels. By the 1950's a rising world economy, resulted in an ever-increasing demand for hydrocarbon fuels, and also contributed to a renewed concern over the pollution problem. Nothing concrete however was achieved until 1954 when the International Convention for the Prevention of oil Pollution was concluded after a conference in London. This convention, known as OIL POL54, entered into force in 1958 and prohibits the discharge of oil mixtures from certain vessels in specified ocean area. Although it has contributed to cleaner seas, it did not establish any enforcement system other than flag state enforcement. The OILPOL Convention has been superseded by MARPOL 73/78.

13. The original 1973 MARPOL, convention attempted to eliminate ship-source pollution from all sources almost at one stroke. Unfortunately a number of very complex technical problems, primarily related to measures designed to prevent pollution from chemicals, were such that many states could neither accept nor implement the new convention in the very ambitious time-frame originally planned. However, added incentive for accepting and even further strengthening MARPOL arose due to the series of the very grave tanker accidents, which took place in 1977/78. This led the IMO to convene an international conference on tanker safety and pollution prevention in 1978. There is, of course, a very real relationship between major marine disasters and new international measures.

14. **Salient Points of MARPOL (Annex I)**

(a) "Oil" has been defined to mean petroleum in any form, including crude oil, fuel oil, sludge, oil refuse and refined products (other than petro-chemicals).

(b) Certain enclosed seas of the world have been called "special areas", because they are considered particularly vulnerable to pollution. These seas are Mediterranean sea, Baltic Sea, Black Sea, Red Sea, Persian Gulf and Gulf of Oman.

(c) All parties to the MARPOL are required to provide adequate facility for reception of residues and oil mixtures at oil loading terminals, repair ports etc.

(d) The term "clean ballast" means ballast in a tank which since oil was last carried there in, has been so cleaned that the discharge from it does not produce visible traces of oil on the water's surface, when discharged from a stationary ship. Ballast with an oil content less than 15 ppm is considered clean.

(e) The term "segregated ballast" means ballast water introduced into a tank completely separated from the cargo oil and oil fuel system and permanently allotted to the carriage of ballast.

(f) MARPOL Annex 1 applies to all tankers above 150 GRT and all other vessels above 400 GRT.

(g) Within a special area, within 50 Nautical Miles from land, no discharge except clean or segregated ballast is allowed from the cargo tank areas of an oil tanker.

(h) Outside a special area, within 50 Nautical Miles from land, no discharge except clean or segregated ballast is allowed from the cargo tank areas of an oil tanker.

(j) Outside a special area, more than 50 nautical miles from land, an oil tanker is permitted to discharge oily water mixture or oil under the following circumstances:

  (i) The ballast is "clean" or "segregated" or

  (ii) Tanker is en route and the instantaneous rate of discharge of oil does not exceed 30 litres per nautical mile, and

  (iii) The total quantity rate of discharged does not exceed 1/15000 (for existing tankers) or 1/30000 (for new tankers) of the total quantity of cargo which was carried on the previous voyage and

  (iv) The tanker has in operation an oil discharge monitoring and control system and slop tank arrangement as required by MARPOL.

(k) New tankers over 20000 DWT must be provided with segregated ballast tanks (SBT) of sufficient capacity to enable safe operation on ballast voyages without the necessity to use cargo tanks for ballasting. Operations in severe weather conditions is the only exception. Since SBT's are not used for carrying oil, no oil and water mixtures are produced and no pollution can be caused.

(l) Sub-division and stability requirement are designed to ensure that tankers can survive assumed hull damage to a degree specified on the ship's length.

(m) All ships must carry on Oil Record Book in which all operation involving oil and ballast are recorded. This book may be inspected by any state, which is a party to MARPOL.

(n) SBTs must be "protectively located" that is they must be positioned in such a way that they would protect the cargo tanks in case of stranding or collision.

(o) Crude Oil Washing (COW) is accepted as an alternative to SBT s on existing tankers, and is an additional requirement for new tankers. With COW, tanks are washed with the crude oil cargo itself. The solvent action of crude oil provides a very effective cleaning mechanism. Although there is usually a final water rinse the amount of water used is very low.

(p) Existing crude oil tankers are provided with an option. This is the clean ballast tanks (CBT) system, which dedicates certain tanks only for ballast purposes.

(q) Tank stripping, drainage and discharge arrangements should provide efficient drainage of tanks and lines.

15. Special Area. Means a sea area where for recognised technical reasons in relation to its oceanographical and ecological condition and to the particular character of traffic the adoption of special mandatory methods for the prevention of sea pollution by oil is required. Special areas include the followings:-

(a) Mediterranean sea

(b) Baltic sea

(c) Red sea

(d) Gulfs sea

(e) Black sea

(f) Gulf of Aden

(g) Antarctic area south of 60^{o}s

(h) Gulf of Mexico and Caribbean sea

(i) N.W. European waters – including north sea

(j) South of South Africa.

Nearest Land ---- MARPOL contains the term "from the Nearest Land" which means from the baseline from which the territorial sea of the territory in question is established in accordance with international law.

Discharge criteria for tankers and all vessels of 400 GRT and above.

Oil tankers Outside Special Area	**Oily waste from cargo tanks**	**More than 50 nautical miles from the nearest land; and** **Tanker is proceeding en route; and** **Instantaneous rate of discharge < 30 litres per nautical mile; and** **Total quantity discharge does not exceed 1/15,000 or 1/30,000 of the total cargo (depending on the age of the vessel); and** **Oil discharge monitoring and control system and slop tank arrangement to be operating.**
Special Area	**Oily waste from cargo tanks**	**No Discharge Allowed.**
All vessels ≥ 400 gross tons	**Machinery space bilges**	**Oil and all oily mixtures retain onboard for on shore disposal** **OR**

All waters		**Proceeding en route; and** **Oil content less than 15 parts per million; and** **Oil discharge monitoring and control system and oil filtering equipment to be operating** **Note: 15ppm discharges can be anywhere at sea (not within port limits) including the Great Barrier Reef Marine Park and Marine Protected Areas. Vessel must not be stationary when undertaking discharge.**

Control of Oil Discharge from Machinery Space Bilges and Oil Fuel Tanks

16. Vessel is to be provided with oily water separating equipment (100 ppm) and oil filtering equipment (15 ppm). In the event of malfunctioning of equipment (oil content > 15 ppm) alarm is sounded and also an automatic stopping device (for discharging in special area).

17. **Oil Record Book**. Following entries are required to be made:-

(a) For Machinery Space Operations.

(i) Ballasting or cleaning of oil fuel tanks.

(ii) Discharge of dirty ballast or cleaning water from tanks referred above in (i).

(iii) Disposal of oily residues (sludge)

(iv) Discharge overboard or disposal otherwise of bilge water which has accumulated in machinery spaces.

(b) For Cargo / Ballast Operations (Oil Tanker)

(i) Loading of oil cargo.

(ii) Internal transfer of oil cargo during voyage.

(iii) Unloading of oil cargo.

(iv) Ballasting of cargo tanks and dedicated clean ballast tankers.

(v) Cleaning of cargo tanks including crude oil washing.

(vi) Discharge of ballast except from S.B.T.

(vii) Discharge of water from slop tanks

(viii) Closing of all applicable valves or similar devices after slop tank discharge operations.

(ix) Closing of valves necessary for isolation of dedicated clean ballast tanks from cargo and stripping lines after slop tank discharge operations.

(x) Disposal of residues.

18. Methods for the Prevention of Oil Pollution from Ships While Operation In Special Area. Any ship of 400 tonnes gross tonnage and above and tankers: Processed bilge water from machinery spaces may be discharged provided that all the following conditions are satisfied:-

(a) The bilge water does not originate from cargo spaces.

(b) The bilge water is not mixed with oil cargo residue.

(c) The ship is proceeding enroute.

(d) The oil content of effluent without dilution does not exceed 15 p.p.m

(e) The ship has in operation oil filtering equipment.

(f) The filtering is equipped with a stopping device to ensure that the discharge is automatically stopped when the oil content of the effluent exceeds 15 p.p.m.

Annex – IV -- Sewage. Sewage is :-

(a) Drainage and other wastes from any form of toilets, urinals and W.C. scuppers.

(b) Drainage from medical premises (dispensary, sickbay etc.) via wash basins, wash tubs and scuppers located in such premises.

(c) Drainage from spaces containing living animals or

(d) Other waste waters when mixed with the drainage defined above.

19. **Discharge of Sewage**. The discharge of sewage into the sea is prohibited, except when:-

(a) The ship is discharging comminuted and disinfected sewage at a distance of more than 4 NM from the nearest land.

(b) Sewage which is not comminuted and or disinfected at a distance of more than 12 NM from the nearest land.

(c) Sewage stored in the holding tanks shall be discharged at a moderate rate when the ship is en route and proceeding at not less than 4 knots. OR

(d) The ship has in operation an approved sewage treatment plant.

20. Today ships are compulsorily required to have an approved ISPP (International Sewage Pollution Prevention) Certificate. The Sewage is treated by first gathering the sewage to a holding tank. Thereafter it is treated. The liquid treated part is discharged and the solid residues are processed through the incinerator and ejected.

Annex – V -- Garbage

21. **Pollution by Garbage from Ships.**

"Garbage means all kinds of victual, domestic and operational waste excluding fresh fish and parts thereof generated during the normal operation of the ship."

22. **Disposal of Garbage Outside Special Area.**

Discharge Criteria – Outside Special Areas

When ships are outside one of the MARPOL Annex V special areas they will be permitted to discharge:

- Food waste that has been comminuted or ground (ie able to pass through a screen or mesh with holes of no larger than 25mm) when as far as possible, but at least 3 nautical miles, from the nearest land and "en route" (defined by the regulations as being underway at sea on a course which will cause the discharge to be spread over as great an area of the sea as is reasonable and practicable).
- Food waste that has not been comminuted or ground when as far as possible, but at least 12 nautical miles, from the nearest land whilst en route.
- Cargo residues including wash water residues which cannot be unloaded using commonly available means and which are not harmful to the marine environment when as far as possible, but at least 12 nautical miles, from the nearest land whilst en route.
- Animal carcasses in the maximum possible depth of water en route provided the ship is at least 100 nautical miles from the nearest land. If animal carcasses are discharged into the sea they must be split or otherwise treated so that they sink immediately. If a ship cannot comply with this requirement due to a passage where the vessel will not sail more than 100 nautical miles from the nearest land, disposal of the carcasses will be permitted at least 12 nautical miles from the nearest land if the Master determines that retaining the carcasses will create a health and safety risk to the personnel and live animals on board during periods of high heat and humidity. It will also be necessary to note the circumstances in the Garbage Record Book. The regulations encourage Masters to provide copies of such entries to the vessel's Flag State and to the Administration of the State where the ship commenced the voyage. Should the number of animal mortalities exceed the level normally expected due to, for example, the failure of a watering system or an outbreak of

disease, an unusually large amount of animal carcasses will not be considered to be garbage and will therefore not be subject to the provisions MARPOL Annex V. Should such a situation arise, the Guidance on Managing Spoilt Cargoes prepared by the Joint London Convention/MEPC Working Group should be followed.

- Cleaning agents and additives contained in wash water from cargo holds, decks and external surfaces provided that such products are not harmful to the marine environment. If non-harmful wash water is to be discharged, no minimum distance from the nearest land is specified and there is no requirement for the vessel to be en route.

Discharge Criteria – Within Special Areas

The MARPOL special areas are the Baltic Sea, North Sea, Mediterranean, Black Sea, Red Sea, the Gulfs Area, Wider Caribbean Region and the Antarctic Area. However, due to a lack of shore reception facilities in the Black Sea and Red Sea, these regions will not be classified immediately as special areas for the discharge of garbage when the new regulations enter into force.

When ships are within a MARPOL Annex V special area the following discharges will be permitted:

- Food waste that has been comminuted or ground (ie able to pass through a screen or mesh with holes of no larger than 25mm) when as far as possible, but at least 12 nautical miles, from the nearest land or ice shelf whilst en route. However, in the Antarctic Special Area the discharge of avian (bird) products including poultry will not be permitted unless made sterile beforehand.
- Cargo residues and cleaning agents and additives contained in cargo hold wash water which are not harmful to the marine environment when as far as possible, but at least 12 nautical miles, from the nearest land or ice shelf whilst en route. Such an operation may only take place if the departure port and the destination port are situated within the same special area, that no suitable reception facilities are available at either port and that the ship will not proceed outside the special area when sailing between them.
- Cleaning agents and additives contained in deck and external surfaces wash water that are not harmful to the marine environment. The regulations do not specify a minimum distance from the nearest land or ice shelf or require the vessel to be en route.

23. **Garbage on Board can be :-**

(a) Incinerated

(c) Compacted and stored for discharge to shore reception facility.

Chemicals Pollution

24. **Pollution Hazards of Chemicals**. Like in the case of oil, chemicals transported across the sea also pose pollution hazards to marine environment and aquatic life. Accidental spillage of substances might occur from collision at sea. Chemical tanker operation may require tanks to be washed and washings pumped overboard. All these factors constitute pollution hazards to the marine environment.

25. **Bioaccumulation and Tainting.**

(a) Bioaccumulation occurs if an aquatic organism takes up a chemical to which it is exposed so that it contains a higher concentration of that substance than is present in the ambient water. Exposure to chemicals over a prolonged period may result in poisoning and damage to the organism due to accumulation. Further, once accumulated, organisms higher I the food chain, including man, could be adversely affected. This process is known as bio-magnification. Examples are mercury compounds and DDT.

(b) In some cases there may be no adverse effects but the palpability of the fish or shellfish is affected through tainting of their flesh. This aspect of pollution by chemicals could affect commercial fishing industry. Example. Methylpyridine, camphor oil, carbolic oil.

26. **Hazards to Human Health**. As a consequence of pollution of the sea a chemical might pose a hazard to humans :-

(a) By ingestion of fish or shellfish which have accumulated toxic substances.

(b) By ingestion of the water containing the substances.

(c) From the adverse action of the substances itself on the skin, eyes, or respiratory tract. Example : Benzene, Hexanol.

27. Reduction of Amenities. Presence of poisonous, irritant or foul smelling substances that may be released by the ships, near the beaches affects the recreational use of aquatic environment objectionable slicks or other floating materials on the sea surface or beach spoiling their appearances and visual appeal. Example; Benzene, 2-Methylpyridine, 1-Hexanol.

Ballast Water Management

28. Since the introduction of steel hulled vessels around 120 years ago, water has been used as ballast to stabilize vessels at sea. Ballast water is pumped-in to maintain safe operating conditions throughout a voyage. This practice reduces stress on the hull, provides transverse stability, improves propulsion and manoeuvrability, and compensates for weight lost due to fuel and water consumption.

While ballast water is essential for safe and efficient modern shipping operations, it may pose serious ecological, economic and health problems due to the multitude of marine species carried in ships' ballast water. These include bacteria, microbes, small invertebrates, eggs, cysts and larvae of various species. The transferred species may survive to establish a reproductive population in the host environment, becoming invasive, out-competing native species and multiplying into pest proportions.

In order to avoid transfer of species, IMO recommends water ballast management system to be implemented on all ships.

Anti Fouling System

29. Anti-fouling paints are used to coat the bottoms of ships to prevent sealife such as algae and molluscs attaching themselves to the hull – thereby slowing down the ship and increasing fuel consumption.

The new Convention defines “anti-fouling systems” as “a coating, paint, surface treatment, surface or device that is used on a ship to control or prevent attachment of unwanted organisms”.

In the early days of sailing ships, lime and later arsenic were used to coat ships' hulls, until the modern chemicals industry developed effective anti-fouling paints using metallic compounds.

These compounds slowly "leach" into the sea water, killing barnacles and other marine life that have attached to the ship. But the studies have shown that these compounds persist in the water, killing sealife, harming the environment and possibly entering the food chain. One of the most effective anti-fouling paints, developed in the 1960s, contains the organotin tributylin (TBT), which has been proven to cause deformations in oysters and sex changes in whelks.

The adoption of the new Convention marked the successful outcome of the task set by Chapter 17 of Agenda 21 developed by the 1992 Rio Conference on Environment and Development. Chapter 17 called on States to take measures to reduce pollution caused by organotins compounds used in anti-fouling systems.

The harmful environmental effects of organotin compounds were recognized by IMO in 1989. In 1990 IMO’s Marine Environment Protection Committee (MEPC) adopted a resolution which recommended that Governments adopt measures to eliminate the use of anti-fouling paint containing TBT on non-aluminium hulled vessels of less than 25 metres in length and eliminate the use of anti-fouling paints with a leaching rate of more than four microgrammes of TBT per day.

In November 1999, IMO adopted an Assembly resolution that called on the MEPC to develop an instrument, legally binding throughout the world, to address the harmful effects of anti-fouling systems used on ships. The resolution called for a global prohibition on the application of organotin compounds which act as biocides in anti-fouling systems on ships by 1 January 2003, and a complete prohibition by 1 January 2008.

This instrument was adopted as the International Convention on the Control of Harmful Anti-fouling Systems on Ships

CHAPTER – 3

SAFETY PHILOSOPHY AND SAFE WORKING PRACTICES

Importance of Adhering to Safe Working Practices

1. Accidents have Causes. They do not just happen; most can be foreseen and prevented. All crew members should encourage safe working practices to avoid accidents. No matter how routine the job could be, make a habit of adopting the safe working procedures, which are recommended. In particular ensure that you always have regard for the safety of yourself and of others.

2. **Safety and Protective Devices.**

(a) **Safety Helmet**. Wear a safety helmet on deck, engine room and in cargo ballast and void spaces.

(b) **Safety Shoes**. Wear safety shoes while working. Never wear flip flops or training shoes on deck.

(c) **Safety Goggles**. Use safety goggles when grinding, chipping etc.

(d) **Gloves**. Wear gloves during mooring operation and while handling wire ropes.

(e) **Ear Defenders**. Use ear defenders in high noise areas, machinery spaces, pump rooms etc.

(f) **Safety Harness**. Use a safety harness when working aloft or over side.

(g) **Boiler Suits / Overalls.** Wear boiler suits/overalls when working in machinery spaces, pump rooms or on deck.

Enclosed Spaces

3. **Definition**. An enclosed space is :-

(a) Any space which has been closed or unventilated for some time.

(b) Any spaces that may be unsafe because the cargo carried gives off contain harmful gases.

(c) Any place which may be contaminated by leaking gases through a bulk head or pipe line or by cargo itself.

(d) Any store room containing harmful items.

(e) Any place which may be deficient of oxygen.

Entry into an Enclosed Space

4. Enclosed spaces should not be entered unless you have been given authority by master or in charge. Before entering find out if it is safe to do so. When it is known to be safe follow these procedure after obtaining proper authority :-

(a) Ventilate the space.

(b) Test the atmosphere for toxicity and oxygen deficiency.

(c) Continue ventilation.

(d) Have breathing apparatus standing by.

(e) Have resuscitation unit at the entrance.

(f) Have rescue equipment at the entrance.

(g) Have rescue team properly led readily available.

(h) Have a man standing near by watching for trouble and to raise the alarm.

(i) Agree on a system of communication before entry (preferably, a walkie talkie).

(j) Continue to ventilate and test the atmosphere frequently.

(k) Have adequate illumination.

(l) When you are in the compartment signal your condition at regular intervals.

(m) If you feel unwell come out at once.

(n) If you are instructed to come out do it immediately.

Entering Enclosed Space Suspected to Be Unsafe.

5. When the atmosphere is known or suspected to be unsafe, follow the safety precautions already listed above and in addition following precautions should be taken while using the breathing apparatus :-

(a) Ensure wearer is properly trained to use the breathing apparatus.

(b) Check the equipment thoroughly.

(c) Check that the face mask fits properly.

(d) Stand by man should check the time of entry and ensure that the wearer leaves the space in proper time.

(e) Check that air cylinders are fully charged.

(f) When in the compartment, leave if the low pressure audible alarm sounds. Do not rely on it, look at the gauge frequently.

(g) Never take off your mask in an enclosed space.

(h) Establish communication before entering.

(i) Never attempt to rescue alone.

Work Permit System

6. Entering enclosed spaces involves permit to work system. The authorizing officers should indicate the sections applicable by ticks in the boxes provided.

CHAPTER – 4

SAFE THINKING AND ACCIDENT PREVENTION ON BOARD

1. Accidents have causes-they do not just happen. Most can be foreseen and prevented. This chapter is written to encourage you to avoid accidents simply by taking due care. No matter how routine your job, make a habit of adopting the safe working procedures, which are recommended. In particular, make sure that you always have regard for the safety of yourself and of others.

2. **Did you know that ?**

(a) 80% serious accidents are due to human error. Taking chances risk life.

(b) 35% of serious injuries are back injuries. Life with care.

(c) 5% of serious accidents happen in enclosed spaces.

(d) Enclosed space can kill.

(e) 10% of serious accidents happen in machinery spaces.

(f) 20% serious accidents happen inside cargo holds or when opening closing hatch covers.

(g) Enter holds & operate hatch covers with caution.

(h) 15% of serious falls happen on gangways or accommodation ladder.

(i) Rig gangway safety.

(j) 15% of serious falls happen while working aloft.

(k) Take proper precautions while working aloft.

(l) 95% of serious injuries happen while doing routine tasks.

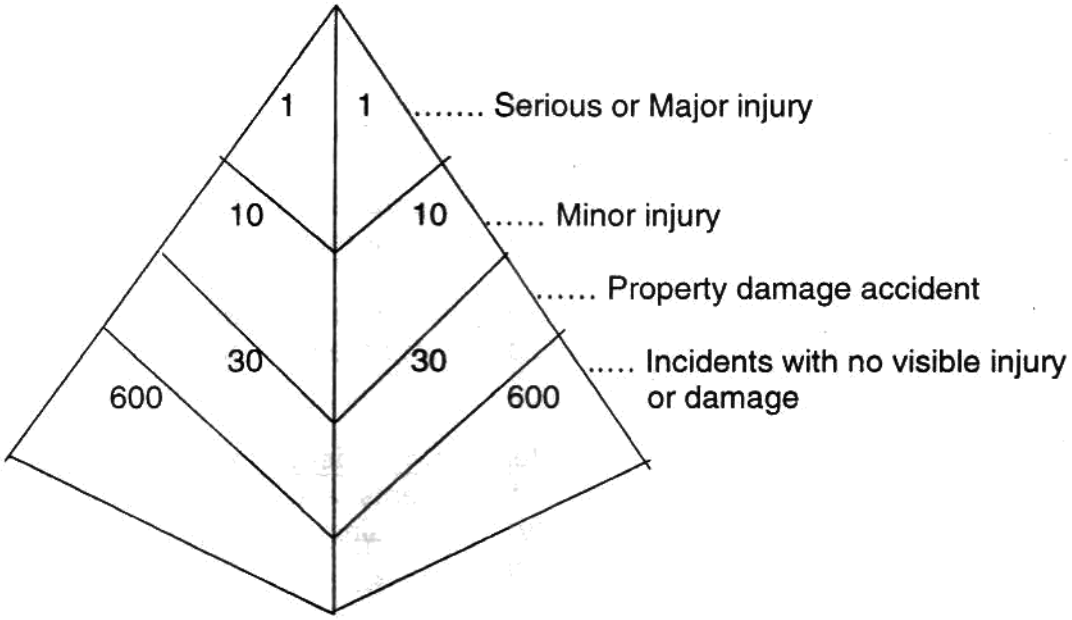
(m) Accidents happen when least expected.

Accidents / Incidents and Near Misses

3. Accidents have often resulted from seemingly minor causes and the seriousness of the consequence is often a matter of chance.

4. Studies of accidents show that for every one serious accident, there have been six hundred near misses.

5. Carelessness, lack of concentration, in a hurry to get the job done are some of the major causes of accidents/incidents. From ignoring recognized safe working practices to lapses in concentration or mis-judgment or even in-experience are listed as the various causes. (Over confidence may lead to carelessness).



ILO Code of Practice on Accident Prevention On Board Ship

6. The objective of this code is to provide practical guideline on safety and health in shipboard work with a view to :-

(a) Preventing accidents, diseases and other harmful effects on the health of seafarers arising from employment on board ship at sea and in port.

(b) Ensuring that the responsibility for safety and health is understood and remain a priority for all concerned with maritime transport, including governments, shop owners and seafarers.

(c) Promoting consultation and cooperation among government, as well as ship owner and seafarer's organisation in the improvement of safety and health on board ship.

7. The code also provides guidance in the implementation of the provision of the prevention of occupational accidents to seafarers convention 1970 (no. 134) and recommendation, 1970 (no. 142) as well as other applicable ILO convention and recommendations.

8. Following are the major highlights of the code :-

(a) **Safety Officer**. An officer designated by the ship owner or the master is responsible for carrying out certain tasks associated with ship board safety and health.

(b) **Safety Policy**. A written document produced by a ship owner indicating in broad terms his commitments, aims and objectives.

(c) Safety Program. A detailed plan designed to implement the ideals and intentions expressed in the safety policy.

(d) Safety Representative. A member of the crew elected or appointed by and from the members of the crew to serve on the shipboard safety and health committee.

(e) Ship Board Safety and Health Committee. A committee which examines and deals with all aspects of ship board safety and health and related issues.

(f) Reporting of Accidents. The principal purpose of accident investigation reporting and analysis is to minimize the potential for a recurrence of such accidents.

(g) Permit to work Systems. It is a method whereby safety procedures are specified in writing on a form issued to seafarers who are entrusted with a task which may involve work of a hazardous nature.

(h) General Ship Board Safety and Health Consideration. The importance of good house keeping in the prevention of accidents and conditions likely to be injurious to health should be given priority in the training of every member of the crew until its acceptance becomes second nature.

(i) Ship Board Emergencies and Emergency Equipment. National and International requirements governing equipment, muster drills and training should be strictly complied with.

(j) Carriage of Dangerous Goods. The provision of the International Maritime dangerous goods (IMDG) code and any national law and regulation are to be observed.

9. **Dangers of Static.**

(a) While discharging oil cargo inert gas should be used to pressurize tanks as static electricity would provide a source of ignition resulting in possible fire and explosion.

(b) If empty tank is being filled, never allow the water to fall from a height. Lower the hose till it is resting on the tank top. However, this should be connected to ship's structure. Initially the tank should be filled up slowly and when the end of the hose is fully immersed the rate should be increased slowly.

(c) Before putting a tank cleaning machine in the tank, water hoses should be electrically earthed and water supply opened for filling the hoses.

(d) Before disconnecting the hose between hydrant and machine, machine should be first removed from the tank.

(e) Temperature of hot water used for washing the tank should not be more than 49^{o}C.

(f) Number of machines should be limited as higher the water out put in a tank the greater is the operation of water mist which could retain static charge and create an explosion.

(g) Sounding rods and ullage tapes should be made of plastic.

(h) A static charge in a tank may take as long as 6 hours to decay after tank washing.

(i) If the wash water is taken from slop tanks, oil contaminated water can create higher static charges.

(j) When the ship rolls and pitches, ballast water from slack tanks can splash about and create statically charged mist in the ullage space.

10. **Gangway**. It is the duty of the ship to provide a safe gangway to persons who wish to come on the ship or leave the ship. A net must be made fast under the Gangway. If you see that Gangway is not safe or the gangway net is not in its place, you should inform the duty quartermaster immediately.

(a) The gangway net should be made fast before anyone goes ashore. The net provides safety in case of accidental falling of any person while crossing the gangway.

(b) Gangway net must cover the entire length of the gangway. The net should be made fast in such a way that no person falls from the gangway in the water.

(c) Gangway must have proper lighting arrangements.

(d) Gangway must be kept free from oil, grease, garbage, cargo etc. and should always be clean. In the event of rain or any other reason if the gangway is slippery, a warning notice must be displayed.

(e) Gangway/boat/accommodation ladder should be put out in such a place where there is no possibility of cargo falling on a person using the ladder.

(f) Gangway railings and ropes should be always kept tight.

(g) Gangway should be adjusted and tied properly catering to the change in tides i.e. high tide and low tide.

(h) All wires used for the gangway should be periodically checked and be in good condition. All block sheaves should also be checked.

(i) If a handle is used to heave or lower gangway it should be immediately removed, after use.

11. **Painting**. All paints give out harmful gases. They can be inflammable and cause explosions.

(a) The place which is being painted should be well ventilated. When a tank or poorly ventilated space is being painted blowers should be used.

(b) If you are painting a tank or a poorly ventilated space or when you are using a spraying machine use a mask (Paint respirator).

(c) Never use naked light or smoke in a place which is being painted or in a paint store.

(d) Goggles and gloves should be worn when applying / working with chemicals such as paint removers and rust removers.

(e) Before painting machinery, ensure that it is switches off.

(f) When working with high pressure spray guns, goggles should be worn.

(g) Right sizes nozzles should be used with spray machines.

(h) Paint hose should be covered by a plastic pipe to prevent any damage in the event of breaking under pressure.

(i) When painting shipside wear a life jacket and safety harness. Lifebuoy must be kept handy.

(j) When painting the after part, keep E/R informed so that the propeller is not used.

(k) If a raft is used for painting, make sure that a safety railing is provided.

CHAPTER – 5

COMMUNICATION ON BOARD

Fundamentals of Communication

1. STCW 95 requires that all persons assigned to shipboard duties shall be able to communicate with other persons onboard on elementary safety matters and understand safety information symbols and signs etc.

2. Communication is a process of transferring/exchanging / understanding information, ideas, knowledge and feelings between two or more persons.

3. For communication to be successful, both persons must understand each other in order to know why the communication is taking place.

4. The following diagram shows the process of communication:

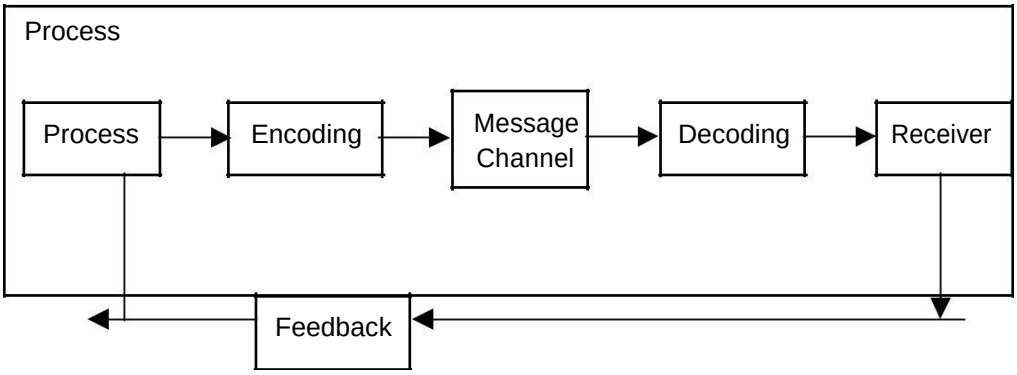
(a) Communication

(b) Sender

(c) Media

(d) Receiver

(e) Feedback



Levels of Communication

5. **Communication with Self.**

(a) A human being not only interacts with others but also interacts with oneself. This form of interaction is subtle and precedes any interaction with others. It may not be a conscious effort.

(b) The thought process of a human being is the interaction with oneself which is termed as intra – personal communication. Effective intra-personal communication is a prerequisite for enhancing our communication skills with others. A positive self image enables a person to relate better with others. Our self image is reflected through our thoughts, feelings, attitudes and body language.

(c) Hence, Self awareness (Knowing oneself) and Self acceptance (accepting oneself) enables a person to relate with others also.

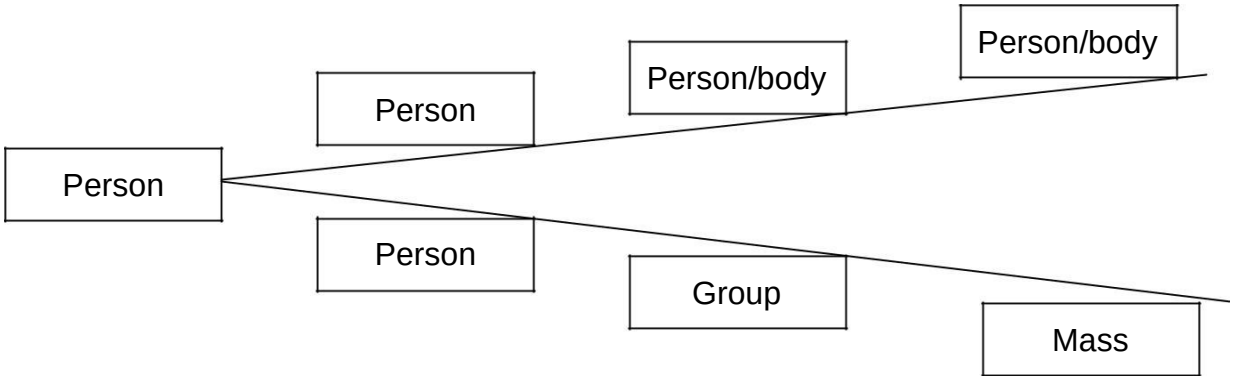
6. **Communicating with Others.**

(a) Interaction between a minimum of two people is called 'Inter – personal Communication'.

(b) Interaction between a person and a group of people can be termed as 'Group Communication'.

(c) Interaction between a person or a body (group of people) with the larger groups (masses) is termed as ' Mass Communication'.

(d) As the level increases, the distance between the sender and the receiver widens.



(e) The medium of communication may vary according to the nature of the audience. With a large audience i.e. 'Group Communication', a need may arise for external aids to facilitate communication. These external aids which are used as tools of communication are called 'media aids' or the 'media'.

Types of Communication

7. There are four types of communication :-

(a) Oral / Verbal (Speaking).

(b) Written (Signs and Symbols)

(c) Audio – Visual (T.V.)

(d) Non-Verbal (Body Language)

Parts of Communication

8. The various components of communication add up as follows :-

(a) Speaking = 30%

(b) Listening = 45%

(c) Reading = 16%

(d) Writing = 9%

9. The whole purpose of communication is to obtain a feedback – Reply / Response/Action.

Standard Marine Navigational Vocabulary Procedure

10. **Format**. Message 'Please use the Standard Marine Navigational Vocabulary'. Reply 'I will use the Standard Marine Navigational Vocabulary'.

11. **Standard Verbs**. One of the following verb forms must be used to start a sentence.

Imperative. For mandatory orders – 'MUST'

Indicating	Negative	Interrogative
I must	Do Not	Must I
I require	I do not require	Do I require
I am	I am not	Am I
You are	You are not	Are you
I have	I do not have	Do you have
I can	I cannot	Can I, Can You, Is it possible
I wish to	I do not wish to	Do your wish to
I will	I will not	Will you
You may	You need not	May I (Permission)
Advise	Advise not	When Recommendations / suggestions are being given.

12. **Responses**

Affirmative = Yes ..... suitable phrase in full.
Negative = No ..... appropriate phrase.

(a) Information is not immediately available but will soon be – "Stand-by"

(b) Where information is not available – 'No information'

(c) Where message is not properly heard – 'Say again'.

(d) Where message is not understood – 'Message not understood'.

Various Aspects of Body Language

13. **Personal Appearance**. The first impact on the audience / listener is created by the personal appearance of the speaker. Even before the speaker utters the first syllable, the audience / listener begins to form an opinion about the speaker and visualize the way he / she is going to talk.

14. **Posture**. The way a person is sitting, standing, walking etc. gives meaning or denotes the person's state of mind like enthusiasm, confidence, uncertainty, hostility, eagerness etc. It also reveals an individual's personality.

15. **Facial Expression**. Laughter, raised eyebrows, eye movements twitching nose etc. expresses a range of feelings. It is said that facial expression can denote surprise, fear, anger, sadness, happiness, enthusiasm and disgust.

16. **Body Movement and Gesture.** Gesture plays a significant part in making communication effective. A well timed gesture can drive a point home. Oral communication is accompanied by gestures. Open and free gestures denote the comfort of the speaker. Gestures add value to what is being said. However, gestures need not be always accompanied by oral communication. Gestures on their own are used to communicate certain elementary and short messages such as 'no', 'come here', 'go there', 'keep sitting', etc.

17. **Touch**. Touch provides intensity to the communication. Touch also reveals the closeness in a relationship. Where words fail, touch plays an important role in communication e.g. Embracing, handshake, patting on the back etc.

18. **Eye Contact**. Eye contact helps a speaker to obtain the attention of the audience/listener and also gather nonverbal feedback of the audience/listeners. Eye contact also shows the comfort ability of a communicator with the other person.

Body Language or Non-Verbal Communication

19. Body language is the language spoken by your body in the form of

(a)	Gestures	=	Signs, which a person can read and understand
(b)	Postures	=	Positions of your body – the way you sit, Stand, walk or hold yourself.
(c)	Facial Expressions (related to eyes)	=	Changes in the appearance of the face i.e. anger, happiness, sadness, hate etc.

Un-assertive (Not Sure)	**Assertive (Sure)**
Rounded shoulders, head down, eyes down, holding hands tightly, shuffling walk, no gestures, touching hair, face, body parts, fingers in mouth, scratching.	Straight shoulders, head straight up, relaxed arms & hands. Fast walk, standing straight, gestures, head movements.
Un-assertive	**Assertive**
Shifting eyes, not looking at the person, looking into space, biting lips, covering mouth. When talking, serious, worried face, licking lips, putting out tongue, nervous laugh and cough.	Looking directly at others when speaking, smiling, relaxed face, interested eyes.
Un-assertive	**Assertive**
Speaking too softly, slowly, starting loud, fading away, whispering, saying something negative, as if asking a question, crying voice, no expression, stammering, saying a-a-a- you know, 'I mean', laughing etc.	Speaking with expression, loudly, clearly, speaking surely, briefly, positively, using correct words, ending positively.

20. **Distance.** Effective distances in various interactions are :-

(a) When talking to a person – Not too close

(b) Not too far – Comfortable distance – Handshake

(c) Don't touch another person – unless required.

Checklist for Interpersonal Communication

	Yes	No	Sometimes
is it easy for you to speak to others ?			
If you don't understand a question, do you ask for explanations?			
When speaking, do you find it easy to use correct words?			
If someone does not agree with you, do you stop talking?			
When speaking, do you really try to understand the other?			
In conversation, do you do most of the talking?			
If somebody says he does not like your work, do you accept it?			
If you have hurt someone, do you later say sorry?			
Do you avoid disagreeing with others, because you feel they will get angry?			
Are you able to trust others generally ?			
When a problem arises between you and the others, are you able to discuss it without getting angry ?			
If you make a mistake, do you try to hide it from others?			
In conversation, do you let others talk and finish without interrupting?			
Do you really listen or pretend you are listening?			
When you are wrong, do you admit you are wrong?			

Communications in English

21. An old joke goes like this :-

Q. What do you call a person who speaks three languages?
A. Trilingual.

Q. And What do you call a person who speaks two languages?
A. Bilingual

Q. And one who can speak only one language?
A. English

22. English is widely accepted as the international language of shipping and, in fact, the International Convention on Standards of Training. Certification and Watch keeping for Seafarers, 1995 (STCW 1995) requires the master and all deck officers to be capable of speaking English. However, the Convention does not require engineer officers and chief stewards to speak English and yet chief stewards have to negotiate with ship chandlers. For the commercial efficiency of ships, it is just as important for chief engineers and chief stewards to speak English as it is for the master and deck officers.

23. In the past, when certain British liner companies had long-terms policies of employing Indian ratings, officers were encourages to learn Hindustani. But today, when officers may sail with ratings from different countries in successive ships, it is difficult if not impossible to encourage them to learn to speak the language of any rating who might be employed.

24. For the day-to-day management of the ship it is a common and quite acceptable-practice to appoint a leading rating (e.g., bosun) to act as translator between the chief mate and the ratings. However, this is a dangerous way of manning a ship for, in a crisis situation, the one translator may not be at the scene of the crisis, or worse still, may have been killed or injured.

25. Another aspect of this dangerous practice of employing a single translator is that a rating may call out a warning in a ship with multi-lingual crew. Ways of upgrading safety standards in multi-language crews will be discussed in the conclusions but, at this stage, let us address the issue of helping future seafarers to become bilingual.

26. Once the recruitment and employment policies have been decided by a ship owner or ship manager, there are various practical steps he could take to improve the linguistic capabilities of his seafarers in English and Greek, Japanese, French, Spanish or any other language as follows:-

(a) Financially and ‘politically’ support the teaching of English (plus, if necessary, some other chosen language) in the nautical schools of the country of recruitment. The teaching of maritime English should be- and widely is- based on the Sea speak Programme, developed and produced at Plymouth and marketed by Pergamon Press.

(b) Provide a “mini” language laboratory on each ship (cost about US$ 840).

(c) Provide language tape packages.

(d) Encourage and train officers to teach English (and other chosen languages) to the junior officers and ratings.

(e) Encourage officers to learn to speak and use the language of the ratings.

27. As mentioned earlier, most modern are now calculatively involved in their ships or employment companies; thus, steps (d) and (e) at para 26 will be effective if fluency in an additional language caries with it a bonus payment.

Transactional Analysis

28. When people interact with / deal with each other, there is a social transaction in which one person responds to another. The study of this interaction is called 'Transactional Analysis' (eric Berne 1950).

29. The objective of T.A. is to provide a better understanding of how people relate to each other whey they do so. This will help to develop improved communication and human relationships.

30. People interact with each other from one out of thee psychological EGO (mental) states – the 'Parent ego', the 'Adult ego' and the 'Child ego'.

(a) The Parent Ego State

(i) Sees life as it is taught. It is a reflection of our experiences with our own parents / elders.

(ii) The Ego state can be protective, nurturing and helpful or critical and instructive side takes precedence, the result could be 'bossiness'.

(b) The Adult Ego State

(i) Sees life as it is thought. It is the reflection of the experience of growing up, with various inputs requiring analysis of thought.

(ii) This Ego state can be rational, calculating, factual, truthful and unemotional (not letting feelings dominate).

(iii) Being in this Ego state helps one to see situations rationally, weigh all aspects and have consideration and understanding.

(c) The Child Ego State

(i) Sees life as it is felt. It is the reflection of our own childhood experience and the feelings generated by these experiences.

(ii) This Ego state can be spontaneous, creative, curious or dependant, rebellious, wanting immediate approval and rewards and against criticism / disapproval.

31. T.A. involves a mix of all three states but we can detect which Ego state is in control by carefully observing not only the words, but also the body language. T.A. can be complementary, non-complementary or ulterior.

32. The most effective transaction is Adult to Adult as it encourages problem solving, treats people as adults and improves understanding.

Life Positions

33. People also interact with themselves and others from 4 basic life positions :-

A. – I'm not OK – you 're OK
B. – I'm not OK – you're not OK
C. – I'm OK – you're not OK
D. – I'm OK – you're OK

34. The life position of 'A' gives rise to an inferiority complex, dependence, lack of motivation, depression, hopelessness.

35. The life position of 'B' gives rise to rebellion, hatred, disharmony and a desire to give tit for tat.

36. The life position of 'C' gives rise to a superiority complex, a tendency to be bossy, and lack of respect.

37. The life position of 'D' is the best position as it gives rise to a mutual regard and respect, understanding, confidence, motivation, harmony and inter-dependence.

Games Analysis

5038. A psychological game has been defined as a recurring set of transactions, often repetitive, leading to a pay-off. Games are played from all ego states, but the adult ones are most calculative in nature. They are played either to fill time, to reaffirm life positions to draw attention etc. Some common games are – "Kick me", "I got you "SOB", etc

Script Analysis

5039 Script get embedded into our psyche in the early years of our life. As he grows up, the child becomes adept at playing his role. In order to facilitate the play of his own role, he gets or manipulates others to play complementary roles.

CHAPTER – 6

RELATIONSHIPS

Human Relationships – General Aspects

1. Human relationships have existed since early (primitive) man began to congregate in groups, initially for reasons of self-preservation from attack by animals or other humans but subsequently because of a desire for social reasons, such as food gathering, companionship, etc.

2. The formation of such groups progressed and developed into a more structured society whose members lived closely together because of a commonality of cultural attitudes and beliefs in society, religious, political aspects and the desire to live and work within a framework of "rule of law".

3. The social systems that have developed in the course of history may differ considerably. Depending on culture and environment, but are now generally felt to require an organized structure, based on a democratic self-governing philosophy, which respects human dignity and accepts that human relationships are an important factor that must be taken into account when human beings form groups for living and working together.

4. Groups of people eventually evolved and developed into nations possessing a unique behaviour pattern within their own individual systems which derives from their own cultural background, representing an amalgam of beliefs, practices and knowledge which has accrued over many centuries. Within their own culture, people generally live in reasonable harmony and equilibrium. Changes, if they occur, would normally take place over long periods of time, and such gradual changes would not present too much difficulty to people concerned.

5. However, if changes in culture are abrupt and sudden they will produce a trauma termed "culture shock", which can result in much disharmony and unhappiness among the people involved.

6. Forming groups of people from different cultural backgrounds who are then expected to live and work in close contact can also produce comparable traumas unless effective preparation has been carried out to prepare the people concerned for their new multinational lifestyle.

7. The "industrial revolution" which commenced and developed in the eighteenth and nineteenth centuries in Britain brought about large changes in the way society lived and worked. People who had lived for centuries in a largely agricultural environment, mainly in small hamlets and villages, began to move to those areas where industry was being developed and obtained employment at higher wages. Towns and cities began to form and advance in science and engineering allowed industry to develop at an ever-increasing rate. Social changes were immense and brought education and medical and transport facilities to the masses. Laws relating to employment were enacted for the protection of workers and trade unions and employee associations developed to negotiable on behalf of employees with employers.

8. The effect of trade unions in generally improving working conditions has been immense, and this has led to human dignity becoming a prime consideration in any negotiations.

9. Each human being is a unique individual and, normally, no two people are exactly alike physically and mentally (discounting multiple births such as twins). The nature of a human being is often considered

to be an inborn characteristic, dependent to a large extent on biological make-up and inheritance, but also greatly influenced by the environmental and cultural background into which the human being is born and raised to be an adult. This will eventually be tempered by knowledge and experience

10. Human nature reveals itself as a state of mind and as feelings which are often expressed in some or all of actions, words (oratory), literature (writing), pictures, music etc., and which is often identified to be of a particular kind, through emotion, habit, learning, memory sentiment, intelligence, etc.

11. Human nature will tend to govern the manner in which people react to one another in particular situations. Such reaction will usually be different between people from the same culture from that between people from different cultures.

12. To function cohesively and effectively, a group must operate within a properly constructed framework of direction and control which is acceptable and agreed to by all members. The way, in which people react to situations and behave when under imposed constraints (such as rules and regulations), is not easy to predict or to understand. This is particularly so under the impact of technology, and the rate at which it advances, is imposed on to cultural factors involving social, religious and political feelings / beliefs.

13. A modern merchant ship, with a multinational crew, presents a situation in which difficulties and problems will arise stemming from the way in which the ship must operate with a group of people from different cultural backgrounds, with a high probability of communication problems involving language being present.

14. It should be remembered that it is a "whole person" who is employed, not one with certain separate, but desirable, characteristics. When dealing with personnel, the whole person must be taken into account and an attempt made to develop a better person through growth and fulfillment. Motivation should be encouraged by demonstrating how, by following specified courses and by certain actions; a person's sense of fulfillment can be increased.

15. "Role" can be defined as an "a pattern of actions expected of a person in activities involving others". It reflects a person's position in the social system, with its associated rights, obligations, power and responsibilities.

16. "Role conflict" can be defined as "others having a different perception or expectation of a person's role". Role conflict is a fairly common problem where large groups live and work in close proximity.

17. "Status" can be regarded as the social rank of a person within a group that lives and works in close proximity.

18. Loss of status is akin to "losing face", and for many people represents a serious event. In order to protect status, man people develop a high sense of responsibility.

19. **Higher Status Provides.**

(a) Power and influence.

(b) More privileges.

(c) Larger participation in group activities.

(d) Greater interaction with other persons in the group.

(e) The opportunity to have a more important and responsible role.

20. Lower status often means that people feel isolated from mainstream activities and there is a tendency to show symptoms of stress.

Human Relationships in a Ship Society.

21. Shipping management differs from management in an industry based ashore in a number of ways, some of the more important being :-

(a) The shipping company comprises a number of small mobile industrial units (the ship) which may at any particular moment be distributed over large distances throughout the world, compared to a shore industry which operates in a fixed location.

(b) When making a voyage, the ship can undergo considerable climatic change, which can adversely affect personnel.

(c) The ship is operating in a hostile environment and has to cope with extreme conditions of weather.

(d) The personnel operating the ship will be subject to other hazards consequent upon the concentration of machinery and equipment in confined spaces.

22. The shore industry will be operating under relatively stable conditions, with personnel being located reasonably close to their work and having all facilities and resources of modern around it from which to recruit personnel, with access to education and training facilities for the provision of appropriate courses.

23. The shipping industry may have difficulty in recruiting suitable people for a career at sea, and with the wide use of foreign flag registries and crewing agencies may meet many difficulties in obtaining crews of the proper caliber, qualifications and experience. Maritime education and training facilities are not as readily available as those for other disciplines and may mean that is necessary for ship's personnel to travel for or to attend residential causes.

24. A shore-based industry probably works to a number of constraints, either because of national or state legislation or because of local agreements with trade unions or worker associations. Examples are minimum wage agreements, limits on hours or days worked, etc. Most of the constraints are designed to benefit the employee, and have very often been arrived at after many years of industrial strife.

25. Ships are operational for 24 hours in each day, and the crew must be organized in a regulated shift system for the whole 24 hours while the ship is in operational service.

Team Building

(a) A team is any set of individuals who co-operate in accomplishing a single overall result.

(b) **Definition of a Group / Team**. A group or team consists of two or more individuals who :-
   (i) Interact with one another.
   (ii) Become interdependent.

(iii) Have a common goal/task.

(c) Many activities cannot be carried on and many problems cannot be solved on an individual basis or in two person relationship and therefore the need for effective team work.

(d) A merchant ship has an organised structure, with the master of the vessel having supreme authority, normally conferred by a legal act or status.

(e) Relationship always spells harmony. On board a ship it is a small family and the achievement of the family depends upon how good they interact with each other. This interaction can be successful if the inter-personal relationships are strengthened.

Human Feelings IPR (Inter-Personal Relationship)

26. Inter Personal Relationships means the relationship between different individuals as person to person. It is not merely the official or business linkage; it is the human feelings you put into your daily transactions.

27. Are you not familiar with words like "love", "friendship", "respect", "loyal", etc. these are some of the words that spells a positive IPR. In the normal run, thee get changed because of a number of influences internal as well as external. The internal influences are the "likes and dislikes", "preferences and prejudices", "assertions and desertions", etc.

28. The climate and spirit of togetherness on board depends greatly on the IPR values of the individuals. Hence it is essential that all try to improve their IPR values. Psychological methods as well as daily trying of the individual can modify him to be a better one with higher IPR value day by day.

Building Relationships

29. There are a number of areas where a relationship can be sowed, created and nourished. Let us look into the facts first. How do individuals come together ? What is the basis for start of a relationship? Many people do come across, but they do not form friendship. But few of them very easily form friendships that some times last forever. How far they go together will depend on the individuals behavior patterns.

30. There are mainly two conditions to be satisfied to fall into a relationship :-

(a) The sociological factors.

(c) The psychological factors.

31. The two factors specified above influence the attitude and working of people on board ships, directly or indirectly. Too much of its influence on working people can nurture adverse effects in their relationships with others. Therefore these two factors must be understood by all and must be kept in check or control so that they do not hamper interpersonal relationships and the work being done as a team / group.

32. **Stages of Team Building**

(a) **Stage 1 : The Underdeveloped Team**. Here people come together to complete a task but have little or no time in considering how they should operate. This stage is referred to as the 'The King and the Court stage', because the team resembles the old concept of 'Court' who would never dare to seriously challenge the judgment of the 'King'. This team is effective only if the boss or 'King' has wisdom, energy and time to make all the decisions. Individual members conceal their feelings and do not express opinions freely for fear of 'rocking the

boat'. The established norm prevails and attempts are made to cover up individual's weaknesses for fear of criticism. The objectives are unclear and there is low involvement in planning.

(b) **Stage 2 : The Experimenting Team**. This stage begins when the team decides it seriously wants to review its operating methods and undertake activities which will improve its performance. The problems are faced more openly, and wider options are considered before decisions are made. Personal issues are raised, feelings begin to be considered and personal animosities begin to be dealt with. More concern is shown for the views and problems of colleagues, with a consequent increase in real listening and often, for the first time, people begin to understand other members of the team. Meetings are characterised by more listening and thinking and less talking. But the team still lacks the capacity to act in an economic, unified and methodical way.

(c) **Stage 3 : The Corso Dating Team**. This stage is characterised by the team deciding to adopt a more systematic approach which leads to a more cleaner and more methodical way of working. Rules and procedures laid down are the rules of the team which everyone has had a part in framing and to which everyone is committed.

(d) **Stage 4: The Mature Team**. The openness, concern and improved relationship of stage 2 and the systematic approach of stage 3 can now be used to complete the task of building a really mature team. Flexibility is the key note with different procedures being adopted to meet different needs. Everyone's energies are used for the team, because individual's commitment to team success exists. Development becomes an increasing priority because all members realize that continued success depends upon continued development. Trust, openness, co-operation, confrontation and continual review of results become part of the way of life.

33. **The Characteristics of Effective Team Work.**

(a) The atmosphere tends to be informal, comfortable and relaxed.

(b) Lot of discussion is generated, virtually everyone participates in the same, but the discussions remain pertinent to the task of the group.

(c) The task or the objective is well understood and accepted by the members.

(d) The members listen to one another.

(e) There is no 'tyranny of the minority'.

(f) Decisions are reached by a kind of consensus in which it is clear that everybody is in general agreement and willing to go along.

(g) Criticism is frequent, frank and relatively comfortable.

(h) When action is taken, clear assignments are made and accepted.

(i) The issue is not 'who' controls, but 'how' to get the job done.

34. **Symptoms of Bad Team Work.**

(a) There is a feeling of frustration.

(b) Unhealthy competition – trying to run others down.

(c) Unhappy expressions on the faces of members.

(d) Going to enormous lengths to avoid telling the truth.

(e) Meetings involve the participation of only one or a few people, or where managers use the occasion as an opportunity to lay down rules rather than utilize the resources of the team.

35. **Some Points that Can Help.**

(a) Be a good communicator.

(b) Be a genuine person.

(c) Congruence between your inward feeling and outward communication.

(d) Consider all as your friends to start with.

(e) Be open and welcome others.

(f) Manage yourself and your time well.

(g) Empathy.

(h) Be sincere.

(i) Positive regard for others.

(j) Look into your own behaviour and learn.

36. Situations may differ, but you will always be involved in the relations. Hence learn how to gain some of the above qualities. They can help you to form a good relationship. Here is some thing from "One minute Manager".

(a) Take a minute to look out at the people with you.

(b) The results depend on people – care for them.

(c) Catch them doing something good.

(d) And invest at least a minute in people.

Practice them, and you will find the world cheering at you.

CHAPTER – 7

SOCIAL RESPONSIBILITIES

Social and Work Environment

1. The need to avoid conflict between employer and employee should have the highest priority, and to this end there should be a properly negotiated agreement which is clearly and explicitly documented on all matters connected with the social and work environment. Seafarers work within the conditions stipulated in their Maritime Articles of Agreement.

2. An example of where it is imperative to have agreement is in the area of the conduct of an employee. Such situations are not simple and clear-cut: the matter could be concerned with four basic situations :-

(a) On-the-job.

(b) Off-the-job

(a) Job-related.

(b) Not job-related.

3. The seriousness with which the matter is to be viewed can have a whole range of values from very high to very low and there needs to be some guidelines, which will allow the matter to be settled fairly and without rancour. This aspect is sometimes referred to as 'legitimacy of interest'.

4. Properly negotiated agreements will ensure a measure of satisfaction on both sides because power will not be tipped too heavily against one party – a power balance being the goal to be aimed at.

5. In most cases today a formal contract is used which will specify what the employer will provide and carry out in return for the employee's commitment to the service of the company in a specified role carrying out specified duties and tasks.

6. Personnel, in turn, will have a duty to protect the interests of the employer as far as they ate able to, providing that, in doing so, no national or international requirement is infringed. All actions must be within the bounds of the law, and as far as possible employees should not be required to make moral judgments.

7. Some examples of privacy rights are :-

(a) **Information**. Only information that is relevant should be provided and stored, with periodic review to remove obsolete data.

(b) **Personal Data**. No personal data should be stored which is unknown to personnel.

(a) **Access**. Personnel should have access to their own personal records.

(b) **Confidentiality**. No personal information should be disclosed to a third party without the prior consent of the employee.

(c) **Security**. All personal information should be maintained secure against unauthorized access.

(d) **Surveillance**. No surveillance system (audio or visual) should be used of which personnel are unaware.

8. Actions which may invade privacy usually relate to private life or to the unauthorized release of information, and such activities would include :-

(a) Personal data compiled by an organization (employer or other body).

(b) Confidential service, medical or other secret record.

(c) Investigations of personnel for purposes of appraisal.

(d) Treatment for alcohol or drug abuse.

(e) Searches of cabins etc. for contraband or drugs, etc.

Alcohol and Drug Abuse

9. Alcohol is used by many people during social occasions to help them relax and have an enjoyable time; the same cannot be said of drugs. Immoderate use of alcohol, particularly if it makes it unpleasant for others, can be termed abuse.

10. Alcohol and drug abuse is found in all walks of life and spans all age groups and classes of society.

11. Contributing factors to alcoholism include :-

(a) Job environment.
(b) Personal habits.
(c) Personal problems.

12. Alcoholism should be treated as an illness and medical treatment should be sought. Once the illness has been identified the seafarer should seek medical treatment ashore to alleviate or correct any physical problems, and help should be sought through counseling and/or support bodies such as Alcoholics Anonymous, to develop a programme of rehabilitation. The International Medical Guide for Ships (WHO) contains information and advice on how to deal with alcohol and drug abuse.

13. The drugs mainly used are marijuana, heroin and cocaine, in one form or another. Prolonged use of tranquilizers, without medical supervision is probably one contributing factor to addiction; other factors are the same as listed for alcoholism. Treatment is a form of programme similar to that used for alcoholism, although the traumas related to cessation are more severe than for alcohol, particularly for the hard drugs.

14. The main consequences of these abuses for seafarers is the hazard presented to the safe operation of the ship and the safety of other crew members. In a job situation, alcohol and drug abuse can be disastrous.

HIV and AIDS

15. The Human Immune-deficiency Virus (HIV) causes AIDS. The virus attacks certain white blood cells called T-cells, and weakens the body's immune system.

16. Acquired Immune-deficiency Syndrome (AIDS) occurs when an HIV-infected person develops a life-threatening condition or their number of disease fighting T-cells becomes dangerously low.

17. [Among persons of ages 25 to 44 years, HIV infection is now the leading cause of death in men and third leading cause in women in the U.S. In 1995, approximately 40,000 Americans contracted HIV. Worldwide, a million people died from AIDS last year – and reported cases increased by 19%]. Medical officer may kindly update figures worldwide & in India.

How Do You Know If You'are Infected

18. If you, a friend or a family member have reason to be concerned about being infected with HIV, get tested. The HIV Antibody Test (a simple blood test) can tell if a person's body has produced antibodies to HIV, a sign of possible infection.

The Benefits of Getting Tested

19. Some people at risk for HIV/AIDS don't get tested. However, the earlier HIV/AIDSis detected, the sooner treatment can begin. Certain medicines can help delay the development of serious symptoms.

Transmission of AIDS

20. HIV is transmitted by :-

(a) Unprotected sexual intercourse with infected person.

(b) Transfusion of infected blood or blood products.

(c) Use of infected needless & instruments.

(d) From infected mother to baby, during pregnancy or birth process.

21. HIV is not transmitted :-

(a) Through touch, handshakes or hugging.

(b) Through embracing, cuddling, kissing and dancing.

(c) Through sharing toilets, clothes, utensils.

(d) Through droplets after cough and sneezes.

(e) Through mosquito bite or other insect bite.

(f) Through working, travelling, playing, learning, swimming in common pools.

22. HIV infected person may remain without any symptoms for a period of about 8 to 10 years, but he or she can spread HIV infection to others. To know whether the person is infected by HIV or not, the only way is to do Blood test for HIV antibodies.

Symptoms

23. After a few years, HIV infected person develops symptoms of AIDS which are :-

(a) Unexplained and intermittent diarrhoea.

(b) Loss of weight about 10%

(c) White blotches in the mouth or on the tongue.

(d) Fever of month's duration

(e) Skin cancer.

(f) Neurological disturbances.

Prevention

24. Prevention is possible by :-

(a) Safer sex using condom (Nirodh).

(b) Safe blood transfusion tested HIV Negative.

(c) Sterile needles and instruments.

(d) M.T.P. for HIV infected pregnant woman with her consent after counselling.

CHAPTER-8

FATIGUE

Importance Of Fatigue At Sea

The investigation reports of most marine accidents occurring worldwide considers fatigue as one of the main contributing factors toward these disasters leading to many fatalities. With regard to this issue, the biggest concern currently by the maritime organization is the loss of lives resulted from maritime accidents. Seafarers' lives are endangered every day and many of them have died due to the maritime disasters caused by fatigue factors onboard ship. Another issue which emphasizes the importance of fatigue at sea is that accidents caused by the latter are having a negative impact on the environment. In other words, oil pollution caused by the groundings or collisions of ships due to fatigue factors is damaging the maritime environment and causing a huge financial impact on the coastal countries and companies. Finally, the importance of fatigue at sea stands also in the fact that property is being damaged heavily or lost because of fatigue's contribution to accidents. Regarding this matter, ships and cargoes in a case of accident are totally lost or useless causing to the shipping companies huge financial impact and sometimes bankruptcy. On the whole, the above concerns indicate that fatigue at sea is of a great importance to all the parties interested in the maritime affairs.

Working on ships isn't one of the easiest jobs in the world. It is a taxing profession that needs every ounce of energies at all time. That is why fatigue on ship is one of the major concerns for seafarers. And that is why ship working hours become a very important aspect of not only a vessel's working but efficiency of its crew and officers too.

To begin with, according to IMO, Work hours are defined as the number of hours for which a seafarer is required to be on duty, on account of the vessel where he/she is employed or to be at disposal of a superior outside the crew's quarters.

Hours of rest on vessels are defined as hours outside hours of work. These hours do not include the intermittent breaks.

As per STCW Convention 2010, "Manila 2010 Amendments" following Rest Hours are defined:

1- Administrations shall take account of the danger posed by fatigue of seafarers, especially those whose duties involve the safe and secure operation of a ship.

2- All persons who are assigned duty as officer in charge of a watch or as a rating forming part of a watch and those whose duties involve designated safety, prevention of pollution and security duties shall be provided with a rest period of not less than:

. 1 a minimum of 10 hours of rest in any 24-hour period; and
. 2 77 hours in any 7-day period.

3- The hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length, and the intervals between consecutive periods of rest shall not exceed 14 hours.

4- The requirements for rest periods laid down in paragraphs 2 and 3 need not be maintained in the case of an emergency or in other overriding operational conditions. Musters, fire-fighting and lifeboat drills, and drills prescribed by national laws and regulations and by international

instruments, shall be conducted in a manner that minimizes the disturbance of rest periods and does not induce fatigue.

5- Administrations shall require that watch schedules be posted where they are easily accessible. The schedules shall be established in a standardized format* in the working language or languages of the ship and in English.

6- When a seafarer is on call, such as when a machinery space is unattended, the seafarer shall have an adequate compensatory rest period if the normal period of rest is disturbed by call-outs to work.

7- Administrations shall require that records of daily hours of rest of seafarers be maintained in a standardized format*, in the working language or languages of the ship and in English, to allow monitoring and verification of compliance with the provisions of this section. The seafarers shall receive a copy of the records pertaining to them, which shall be endorsed by the master or by a person authorized by the master and by the seafarers. (Multi-language support is now available)

8- Nothing in this section shall be deemed to impair the right of the master of a ship to require a seafarer to perform any hours of work necessary for the immediate safety of the ship, persons on board or cargo, or for the purpose of giving assistance to other ships or persons in distress at sea.

Accordingly, the master may suspend the schedule of hours of rest and require a seafarer to perform any hours of work necessary until the normal situation has been restored. As soon as practicable after the normal situation has been restored, the master shall ensure that any seafarers who have performed work in a scheduled rest period are provided with an adequate period of rest

* The IMO/ILO Guidelines for the development of tables of seafarers' shipboard working arrangements and formats of records of seafarers' hours of work or hours of rest may be used.

Exception clause

9- Parties may allow exceptions from the required hours of rest in paragraphs 2.2 and 3 above provided that the rest period is not less than 70 hours in any 7-day period. Exceptions from the weekly rest period provided for in paragraph 2.2 shall not be allowed for more than two consecutive weeks. The intervals between two periods of exceptions on board shall not be less than twice the duration of the exception.

The hours of rest provided for in paragraph 2.1 may be divided into no more than three periods, one of which shall be at least 6 hours in length and neither of the other two periods shall be less than one hour in length. The intervals between consecutive periods of rest shall not exceed 14 hours. Exceptions shall not extend beyond two 24-hour periods in any 7-day period.

Exceptions shall, as far as possible, take into account the guidance regarding prevention of fatigue in section B-VIII/1.

Alcohol

10- Each Administration shall establish, for the purpose of preventing alcohol abuse, a limit of not greater than 0.05% blood alcohol level (BAC) or 0.25 mg/l alcohol in the breath or a quantity of alcohol leading to such alcohol concentration for masters, officers and other seafarers while performing designated safety, security and marine environmental duties.

CHAPTER 09

MLC 2006

INTRODUCTION

The Convention, known as "MLC, 2006" came into force on 20 August 2013 – effectively becoming binding in international law – and established minimum working and living standards for all seafarers on those ships. What's more, it is also an essential step toward ensuring fair competition and a level-playing field for quality owners of ships flying the flags of ratifying countries.

Maritime Labour Convention (MLC) 2006, which is considered as the "fourth pillar" of International Maritime Law and 'bill of rights' for the seafarers provides them not only their fundamental rights as workers, but also provide minimum international standards for living and working conditions. The convention came into force with effect from 20.08.13. The convention has been ratified by India on 9th October, 2015. For implementation of the provisions of MLC, 2006 as amended Merchant Shipping (Maritime Labour) Rules, 2016 have been promulgated

PURPOSE OF MLC 2006

Enforced seafarers' rights

1. Fair competition for ship owners
2. One comprehensive set of global standards
3. Also referred to as the CONSOLIDATED Maritime Labour Convention, 2006
4. Almost all of the existing maritime labour instruments were included into the new MLC 2006
5. Updates to the requirements, where applicable

The MLC 2006 is intended to be:

1. Globally applicable
2. Easily understandable
3. Readily updateable
4. Uniformly enforced

Ships MLC applies to all ships, publicly or privately owned, ordinarily engaged in commercial activities.

Excludes ships that navigate exclusively in:

1. Inland waters
2. Waters within sheltered waters
3. Waters closely adjacent to land
4. Areas where port regulations apply

Excludes

1. Ships engaged in fishing
2. Ships of traditional build such as dhows and junks
3. Warships or naval auxiliaries

TITLE 1: MINIMUM REQUIREMENTS FOR SEAFARER TO WORK ON A SHIP.

REG 1.1 MINIMUM REQUIREMENTS FOR SEAFARER TO WORK ON A SHIP.

The employment, engagement or work on board a ship of any person under the age of 16 shall be prohibited.

1. Night work of seafarers under the age of 18 shall be prohibited. For the purposes of this Standard, "night" shall be defined in accordance with national law and practice. It shall cover a period of at least nine hours starting no later than midnight and ending no earlier than 5 a.m.

2. An exception to strict compliance with the night work restriction may be made by the competent authority when:

    a) The effective training of the seafarers concerned, in accordance with established programs and schedules, would be impaired; or
    b) The specific nature of the duty or a recognized training program requires that the seafarers covered by the exception perform duties at night and the authority determines, after consultation with the ship owners' and seafarers' organizations concerned, that the work will not be detrimental to their health or well-being.

3. The employment, engagement or work of seafarers under the age of 18 shall be prohibited where the work is likely to jeopardize their health or safety. The types of such work shall be determined by national laws or regulations or by the competent authority, after consultation with the ship owners' and seafarers' organizations concerned, in accordance with relevant international standards.

Safety and health education of young seafarers

1. Safety and health regulations should refer to any general provisions on medical examinations before and during employment and on the prevention of accidents and the protection of health in employment, which may be applicable to the work of seafarers. Such regulations should specify measures which will minimize occupational dangers to young seafarers in the course of their duties.

2. Except where a young seafarer is recognized as fully qualified in a pertinent skill by the competent authority, the regulations should specify restrictions on young seafarers undertaking, without appropriate supervision and instruction, certain types of work presenting special risk of accident or of detrimental effect on their health or physical development, or requiring a particular degree of maturity, experience or skill. In determining the types of work to be restricted by the regulations, the competent authority might consider in particular work involving:

a) The lifting, moving or carrying of heavy loads or objects;
b) Entry into boilers, tanks and cofferdams;
c) Exposure to harmful noise and vibration levels;
d) Operating hoisting and other power machinery and tools, or acting as signalers to operators of such equipment;
e) Handling mooring or tow lines or anchoring equipment;
f) Rigging;
g) Work aloft or on deck in heavy weather;
h) Night watch duties;
i) Servicing of electrical equipment;
j) Exposure to potentially harmful materials, or harmful physical agents such as dangerous or toxic substances and ionizing radiations;
k) The cleaning of catering machinery; and
l) The handling or taking charge of ships' boats.

3. Practical measures should be taken by the competent authority or through the appropriate machinery to bring to the attention of young seafarers information concerning the prevention of accidents and the protection of their health on board ships. Such measures could include adequate instruction in courses, official accident prevention publicity intended for young persons and professional instruction and supervision of young seafarers.

4. Education and training of young seafarers both ashore and on board ships should include guidance on the detrimental effects on their health and well-being of the abuse of alcohol and drugs and other potentially harmful substances, and the risk and concerns relating to HIV/AIDS and of other health risk related activities.

REG 1.2 MEDICAL CERTIFICATE

International guidelines

The competent authority, medical practitioners, examiners, ship owners, seafarers' representatives and all other persons concerned with the conduct of medical fitness examinations of seafarer candidates and serving seafarers should follow the ILO/WHO Guidelines for Conducting Pre-sea and Periodic Medical Fitness Examinations for Seafarers, including any subsequent versions, and any other applicable international guidelines published by the International Labour Organization, the International Maritime Organization or the World Health Organization.

1. The competent authority shall require that, prior to beginning work on a ship, seafarers hold a valid medical certificate attesting that they are medically fit to perform the duties they are to carry out at sea.

2. In order to ensure that medical certificates genuinely reflect seafarers' state of health, in light of the duties they are to perform, the competent authority shall, after consultation with the ship owners' and seafarers' organizations concerned, and giving due consideration to applicable international guidelines referred to in Part B of this Code, prescribe the nature of the medical examination and certificate.

3. This Standard is without prejudice to the International Convention on Standards of Training, Certification and Watch keeping for Seafarers, 1978, as amended ("STCW"). A medical certificate issued in accordance with the requirements of STCW shall be accepted by the competent authority, for the purpose of Regulation 1.2. A medical certificate meeting the substance of those requirements, in the case of seafarers not covered by STCW, shall similarly be accepted.

4. The medical certificate shall be issued by a duly qualified medical practitioner or, in the case of a certificate solely concerning eyesight, by a person recognized by the competent authority as qualified to issue such a certificate. Practitioners must enjoy full professional independence in exercising their medical judgment in undertaking medical examination procedures.

5. Seafarers that have been refused a certificate or have had a limitation imposed on their ability to work, in particular with respect to time, field of work or trading area, shall be given the opportunity to have a further examination by another independent medical practitioner or by an independent medical referee.

6. Each medical certificate shall state in particular that:

    a) The hearing and sight of the seafarer concerned, and the colour vision in the case of a seafarer to be employed in capacities where fitness for the work to be performed is liable to be affected by defective colour vision, are all satisfactory; and
    b) The seafarer concerned is not suffering from any medical condition likely to be aggravated by service at sea or to render the seafarer unfit for such service or to endanger the health of other persons on board.

7. Unless a shorter period is required by reason of the specific duties to be performed by the seafarer concerned or is required under STCW:

    a) A medical certificate shall be valid for a maximum period of two years unless the seafarer is under the age of 18, in which case the maximum period of validity shall be one year;

    b) A certification of colour vision shall be valid for a maximum period of six years.

8. In urgent cases the competent authority may permit a seafarer to work without a valid medical certificate until the next port of call where the seafarer can obtain a medical certificate from a qualified medical practitioner, provided that:

    a) The period of such permission does not exceed three months; and
    b) The seafarer concerned is in possession of an expired medical certificate of recent date.

9. If the period of validity of a certificate expires in the course of a voyage, the certificate shall continue in force until the next port of call where the seafarer can obtain a medical certificate from a qualified medical practitioner, provided that the period shall not exceed three months.

10. The medical certificates for seafarers working on ships ordinarily engaged on international voyages must as a minimum be provided in English.

REG.1.3 TRAINING AND QUALIFICATIONS

1. Seafarers shall not work on a ship unless they are trained or certified as competent or otherwise qualified to perform their duties.

2. Seafarers shall not be permitted to work on a ship unless they have successfully completed training for personal safety on board ship.

3. Training and certification in accordance STCW 2010. STCW courses i.e *PST*, *FPFF*, *EFA*, *PSSR*, *STSDSD* are mandatory instruments adopted by the International Maritime Organization shall be considered as meeting the requirements of paragraphs 1 and 2 of this Regulation.
4. Special Training is must for persons on certain types of ships: BTOC, GTFC, Passenger ships, lGF.

REG. 1.4 RECRUITMENT AND PLACEMENT

Before MLC 2006 Convention was ratified – there were many ILO Maritime conventions, laws and standards pertaining to seafarers welfare - varied in acceptance and enforcement across the world.

1. **MLC, 2006 Convention** - An instrument which incorporates general fundamental principles, to ensure decent working and living conditions for all seafarers. Maritime Labour Convention (MLC, 2006) - entered into force internationally on 20 August 2013.
   For Govt. of India – entered into force on 09 October 2016.

MCL 2006 Convention is considered the fourth "pillar" in addition to STCW, SOLAS and MARPOL having been adopted by the International Maritime Organization (IMO).

2. **RPS License**: *RPSL* stands for Recruitment and Placement Services License is given to licensed recruiters and agents by the Directorate General of Shipping in India.

http://220.156.189.33/esamudraUI/rpslSummaryList.do?method=summaryDetailsOfRPSL

3. NO Charges for recruitment or employment or retaining employment other than cost of sea farer obtaining Medical Certificate, CDC or Passport.

4. NO VISA fees from seafarer

5. Agent Responsible for WAGES and REPATRIATION of seafarer, Examine and respond to seafarers complaint, Maintain up to date of Register of all seafarers recruited, inform seafarers of their Rights.

6. Establish a system of protection, by way of insurance or an equivalent appropriate measure, to compensate seafarers for monetary loss that they may incur as a result of the failure of a RPS or the relevant ship owner under the SEA to meet its obligations to them.

TITLE 2 : CONDITIONS OF EMPLOYMENT

REG. 2.1 SEAFARERS EM PLOYM ENT AGREEMENTS

1. Minimum contents of Agreement as per MLC and FLAG state requirements
    a) Signed by both Seafarer and Shipowner or his authorised representative
    b) Seafarer shall have ORIGINAL signed Copy. Contract should be ENGLISH language only.
    c) Opportunity to review agreement and seek independent advice.

2. CBA (COLLECTIVE BARGAINING AGREEMENT) copy available on board- should contain following points

    a) Type of Ship, Trading area (Foreign going / Coastal/Near coastal voyage / Harbour).
    b) The overtime allowance – whether on fixed monthly basis (in hours) OR on basis of actual overtime hours worked.
    c) National holidays are to be taken into account.
    d) Other allowances payable to seafarer.
    e) The CBA must have express provisions in respect of contributions towards Seafarer's Welfare Fund Society (SWFS) and Seamen's Provident Fund Organization (SPFO) which shall be made by shipping companies and same shall not be deducted from the wages payable to the seafarer.
    f) CBA agreed between ship-owners association and seafarer's organizations including wages as determined under the CBA shall be strictly implemented by the individual members, however such shipowners association and seafarer's organisations should be duly registered in accordance with the Indian laws.

3. Record of EMPLOYMENT to be given to seafarer and the record should NOT state WAGES or QUALITY of WORK.

REG. NO. 2.1 WAGES

1. Paid NOT more than Monthly interval.

2. Paid in Full (lf NOT paid in Full DUES shall be reflected in Account of Wages) and paid Regularly.

3. Monthly Account of Wage statement Signed by Master issued to seafarer.

4. Wages means 08 hours of work per day and NOT more than 48 Hours per week or as per CBA.

5. Any hours worked in excess of weekly specified will be treated as Overtime. Records of overtime to be maintained.

6. Allotment of wages facility should be available.

7. Rate of Foreign Exchange shall be prevalent market rate.

8. NO deductions of wages permitted except as allowed by FLAG State or CBA.

REG. 2.3. HOURS OF WORK & HOURS OF REST

1. Working hours is EIGHT hours day with ONE day Rest per week & Rest on public holidays declared by FLAG State.
2. Maximum hours of work: 14 Hours in any 24 hour period or 72 Hours in any SEVEN day period.
3. Minimum hours of Rest: 10 Hours in any 24 hour period & 77 Hours in any SEVEN day period.
4. 10 Hours Rest period can be split in NO more than 2 periods. One period of Rest Minimum 06 hours, & Interval between TWO Rest hours NOT to exceed 14 Hours.
5. Short breaks and MEAL breaks are NOT treated as REST period.
6. Ship board working arrangement to be posted in an easily accessible place.
7. Drills and Musters shall be conducted in a manner that minimizes disturbance of rest period and does NOT induce FATIGUE.
8. Sea farer shall receive a copy of records pertaining to rest and work hours endorsed by MASTER.
9. Masters right to suspend the rest hour scheduled.

REG. 2.4. ENTITLEMENT OF LEAVE

1. Annual leave with pay entitlement shall be Minimum 2.5 Calendar days per month of employment or Pro Rata.

2. Period of Service includes: Absence from work on account of illness or injury or maternity, attend an approved maritime vocational training course, service OFF Articles as defined by FLAG State or CBA.

3. Following do NOT count as part of Leave: Public Holidays as declared by FLAG state, whether worked or Not worked, shore leave, period of incapacity due illness, injury or maternity.

4. Any Agreement to forgo Annual leave with pay is to be PROHIBITED.

5. Seafarer can be recalled from leave earlier only when urgent.

REG.2.5- REPATRIATION

1. Right to be repatriated at NO cost to seafarer
2. Maximum service for Repatriation at Owners cost to be LESS than 12 Months
3. Seafarer entitled for Repatriation under following cases:

    i. Expiry of employment agreement
    ii. Termination of Agreement by either parties
    iii. Seafarer unable to carry out their duties
    iv. Seafarers do NOT consent to go to WAR ZONE.

4. Expenses borne by owner :

    i. Accommodation and food till seafarer reaches destination as per Agreement
    ii. Pay and Allowance
    iii. 30 Kilograms of Luggage allowance.

5. Repatriation destination: place of Signing Contract or Place of Residence or Mutually agreed destination.

6. Trainees/Cadets if they prefer may be allowed to continue on board for longer period (i.e. more than 12 months) months to complete sea time required for CoC examinations.

TITLE 03 : ACCOOMMODATION, RECREATIONAL FACILITIES, FOOD

REG 3.1 - ACCOMMODATION AND RECREATIONAL FACILITIES

To ensure that seafarers have decent accommodation and recreational facilities on board following points are to be maintained:

1. Accommodation is constructed as per the applicable ACCOMMODATTON Rules.

2. Accommodation inspected by MASTER weekly basis w.r.t:

    i. Cleanliness, Hygiene, decently habitable and maintained in good state
    ii. Ventilation and Heating arrangements if required
    iii. Lighting Natural and Electrical
    iv. Sanitary Facilities; Hygiene, Sanitary fittings, drainage, exhaust, lighting separate sanitary facilities for men and women seafarers.
    v. Hospital accommodation
    vi. Noise and Vibration factors.

3. Reasonable access to telecommunication facilities on board.

4. Consideration should also be given to including the following facilities at no cost to the seafarer, where practicable:

    (a) a smoking room;
    (b) television viewing and the reception of radio broadcasts;
    (c) showing of films, the stock of which should be adequate for the duration of the voyage and, where necessary, changed at reasonable intervals;
    (d) sports equipment including exercise equipment, table games and deck games;
    (e) where possible, facilities for swimming;
    (f) a library containing vocational and other books, the stock of which should be adequate for the duration of the voyage and changed at reasonable intervals;
    (g) facilities for recreational handicrafts;
    (h) electronic equipment such as a radio, television, video recorders, DVD/CD player, personal computer and software and cassette recorder/player;

(i) where appropriate, the provision of bars on board for seafarers unless these are contrary to national, religious or social customs; and

(j) Reasonable access to ship-to-shore telephone communications, and email and Internet facilities, where available, with any charges for the use of these services being reasonable in amount.

REG 3.2 - FOOD AND CATERING.

Ensure seafarers have access to good quality food and drinking water.

i. Quantity commensurate with number of crew.
ii. Quality to be monitored, Varied Menu, having regard to religious requirements and Cultural practices
iii. Nutritious meals served in hygienic conditions
iv. Free of Charge
v. Ship's cook shall be trained and certified.
vi. Catering staff shall be trained and instructed
vii. Frequent inspections by Master of Supplies of food and Drinking water, Spaces used for storage and handling of food and water, and Galley equipment

TITLE 04 – HEALTH PROTECTION, MEDICAL CARE, WELFARE & SOCIAL SECURITY

REGULATION 4.1- To protect health of seafarers and ensure their prompt access to medical care.

1. Right of seafarer to visit a medical Doctor or Dentist without delay in ports of call.
2. Prompt and adequate medical care, free of Cost Standard Medical Form. On board hospital and medical care facilities Medical guide, have at least one seafarer on board who has to be in charge of medical care.
3. Medical advice by Radio or Satellite communication to ships is available 24 hours.

REG 4.2. SHIP OWNERS LIABILITY

1. Liability of the ship owner to defray expenses to be NOT less than 16 weeks.
2. Sickness or injury leads to incapacity to work: Seafarer to be paid full wages till seafarer is on board, wages to be paid as per FLAG State law or CBA till Repatriation.
3. Ship owner is excluded from liability if:

    i. Injury incurred otherwise in service of the ship.
    ii. Injury or sickness due to willful misconduct
    iii. Sickness or infirmity intentionally concealed at time of engagement.

REG 4.3- HEALTH AND SAFETY PROTECTION

1. Implement and follow Occupational Health and Safety Programs.
2. Take Precautions to prevent occupational accidents, use of Personal Protective equipment.
3. Inspection and reporting of unsafe conditions.
4. Safety Committee to be established on board.
5. Accident reporting procedure adopted on board.

TITLE 5- COMPLIANCE & ENFORCEMENT

REG 5.1.5- ON BOARD COMPLAINT PROCEDURE.

1. Procedure in working language of ship
2. All seafarers provided with copy of procedure
3. Guide or Mentor on board to advice seafarers (To be identified in the procedure)
4. No Victimisation of Seafarer
5. Right to be accompanied by a witness
6. Complaint to be recorded in Official register and a Copy issued to seafarer.
7. Complaints to be resolved at lowest level possible.
8. Right to complaint directly to MASTER/Ship Owner or even External Authorities.
9. Identity of Seafarers who have filed complaints ashore shall NOT be revealed.
10. Right to approach Competent authority through Grievance handling mechanism.

REG. 5.1.3. MARITIME LABOUR CERTIFICATE

1. Applicable to ships 500 GT or over
2. Exempted Ships:
   Naval vessels and their Auxiliaries, Fishing Vessels, Traditionally built ships- Dhows or Junks Vessels under lV Act or Governed by Port
3. Regulations/sheltered waters, Vessels < 200 GT and NOT on international Voyage.
4. Valid for 05 Years with ONE intermediate verification.

ARTICLE III- FUNDAMENTAL RIGHTS OF SEAFARER

1. Freedom of Association and Right to Collective bargaining.

2. Effective Abolition of Child Labour Elimination of all forms of forced or Compulsory labour.

3. Elimination of Discrimination in terms of employment and Occupation.

ARTICLE IV - EMPLOYEMENT & SOCIAL RIGHTS

Right to:

1. Safe and Secure Workplace
2. Decent work and living conditions on board Fair terms of employment
3. Health Protection, Medical Care welfare measures and Social security.

APPENDIX

Tank / Enclosed Space Entry Permit

Vessel:	Tank/enclosed Space :	Date :

This permit is valid only for the conditions stated below and is automatically cancelled upon the activation of any emergency alarm.

Work to be carried out:						
Ventilation is being maintained throughout entry	Yes		No		N/A	
Adequate lighting and safe access have been provided	Yes		No		N/A	
Emergency equipment is ready for use at entrance	Yes		No		N/A	
Standby personnel nominated and briefed	Yes		No		N/A	
Communication procedure agreed	Yes		No		N/A	
Space has been effectively ventilated and gas freed.	Yes		No		N/A	

Time Tank Check	Test Tube No. + Result	Oxygen Test OK (min.20,8%)	Explosion Test Yes/No	Entry Permit Yes/No	Signature
Initial					
+ 2 hrs.					
+ 4 hrs					
+ 6 hrs.					

Protective Clothing / Safety Equipment Required :

Special Precautions: After any interruption of work for longer period remeasurements have to be taken

Period of Validity

I have checked the above conditions and consider it safe to enter during the following period provided that the conditions laid down are followed.

From:	Hours:		Date:	
To:	Hours:		Date:	
Print Name: Officer / Qualified Employee			Signature	

Entry Authority:

Permission to enter is granted subject to the conditions above.

Print Name : Master/Chief Officer		Signature:	

Cancellation

This permit is hereby cancelled

Print Name: Person in charge of work		Signature:	
Print Name: Master/Chief Officer		Signature:	

Hot Work Permit

Vessel:	Work Location :	Date :

This permit is valid only for the conditions stated below and is automatically cancelled upon the activation of any emergency alarm.

Work to be carried out:						
1. Working area free from combustible	Yes		No		N/A	
2. Adjacent areas and spaces free from combustible material	Yes		No		N/A	
3. Working area free of thermally sensitive equipment	Yes		No		N/A	
4. Working area ventilation adequate	Yes		No		N/A	
5. Fire precautions provided at work location and any risk area	Yes		No		N/A	
6. Common scuppers sealed	Yes		No		N/A	
7. Safe access provided	Yes		No		N/A	
8. Combustible gas test taken and area gas free	Yes		No		N/A	
9. Combustible % LEL (low explosive limit) reading						
10. Hot work equipment in good condition and prepared	Yes		No		N/A	

Protective Clothing / Safety Equipment Required :

Special Precautions: After any interruption of work for longer period remeasurements have to be taken

Period of Validity

I have checked the above conditions and consider it safe to enter during the following period provided that the conditions laid down are followed.

From:	Hours:		Date:	
To:	Hours:		Date:	
Print Name: Officer / Qualified Employee			Signature	

Work Authority: - Permission to carry out the work is granted subject to the conditions above.

Print Name : Master/Chief Officer		Signature:	

Cancellation

This permit is hereby cancelled

Print Name: Person in charge of work		Signature:	
Print Name: Master/Chief Officer		Signature:	

General Work Permit No./Year

Vessel: **Date :**

1. General Activities that require a General Work Permit must be completed when any member of the ship's Company, supernumeraries or contractors are required to undertake any of the following tasks or work activities in a given area;

2. Type of Permit:

Note : For Hot Work, use "Hot Work Permit" and for entering tanks/ enclosed spaces use "Tank" / Enclosed Space Entry Permit" forms in addition to the General Permit if appropriate.

3. This form shall be completed by the officer responsible for supervising the work.

4. When completing the form, this instruction pages is to be omitted.

5. This form is completed.
   By : Chief Officer or Chief Engineer, as appropriate
   When : Before entering undertaking any work over the side, under water, aloft, etc.

Description of Work :
Location of Work :
Names / Ranks of Crew Employed :

Safety Checklist: To be completed by the Responsible Officer before the work activity begins.

Duty officer (Deck and Engine) Notified:
Appropriate Warning Notices Displayed:
Electric Power Isolated Where Appropriate:
Hydraulic Power Isolated Where Appropriate:
Alarm Systems Operative Where Fitted:
Required Tools and Equipment Adequate and Available:
Required Safety Equipment Adequate and Available:
Communications Link Established and Tested:
Access to and from work location adequate:
Protective Clothing and Equipment in use by Persons engaged in work activity
Safety Helmet ☐ Safety Shoes ☐ Goggles ☐ Gloves ☐ Safety Harness ☐ Buoyancy Aids ☐

Others :
Special Precautions to be taken :

Duration (max. 24 hrs) from: to:
To be completed and kept at the Work Site until completion, then filled.

Responsible Officer: Rank: Signature:.....