



Board of Examinations for Seafarers Trust



Personal Safety and Hazard Identification



Simplifying

SAFETY

S: **SPOT** the Hazard

A: **ASSESS** the Risk

F: **FIX** the Problem

T: **TRACK** your escape

E: **ESTABLISH** proper procedures

Y: Safety starts with **YOU**



SAFETY AT SEA

Why it is Important?

How it can be attained?

What it includes?



HOW Safety can be achieved?

Safety is about doing the right thing, even if no one is looking or monitoring you! "Safety starts with me!"

4 out of 10 seafarers meet with an accident every month

DON'T BE A STATISTIC.



To ensure that you take the right course towards personal safety, follow these 5 important checks before carrying out any operation or work on board ships.



HOW Safety can be achieved?

- Awareness of Your Surroundings
- Calculation of Risk- Includes surety and suspicion
- Work on Risks before Working on the Job
- Checking Your Personal Protective Equipment (PPE)
- Escape Route



WHAT Safety includes?

To be safe, you must know these following points:

- **Follow Safety Policies:** Every company has its own safety policy as per the rules of SOLAS (ISM code).
- **Situational Awareness:** Awareness of any situation involves knowing your surroundings and working environment.
- **Knowhow and Training:** Correct operating knowledge of different equipment tools and systems on ships , proper training and practice
- **Use of PPE:** Every person onboard ships must know what personal protective equipment to be used and when.
- **Help Yourself First:** When you and your colleagues are trapped in a dangerous situation, help yourself first to get out of the situation, and then help others.
- **Know Your Ship Inside-Out:** On joining a new ship, seafarers should familiarize with every nook and corner of the ship.
- **Know Your Emergency Duties:** Every crew member should know what to do and how to do it in case of an emergency situation.
- **Avoid Panic Attacks:** One should know ways to control emotions, to maintain mental cool, and to act in a quick and smart manner under the pressure of an emergency situation



JOINING A SHIP!!!!

Ship is like a floating factory full of risks,
make sure you are well prepared before boarding it.

FIRST thing first- Take a Tour

CHECK the checklists

ENSURE Personal safety



Safety Tour

- ✓ Check if life jacket and immersion suit are kept in their designated lockers in your cabin
- ✓ Check the location of the nearest fire extinguisher from your cabin
- ✓ Check the emergency escape located nearest to your cabin
- ✓ Check the location of Emergency Escape Breathing Device (EEBD)
- ✓ Check your duties posted in the Muster list along with your lifeboat station
- ✓ Check the nearest fire hose in the accommodation area
- ✓ Check the general layout of your accommodation from each deck
- ✓ Check different ways to approach the muster station
- ✓ Check fore-castle and aft of the ship and arrangements of escape routes provided also check location of life raft and lifebuoy provided on the ship.



Engine Room Checks

- ✓ Check if life jackets and immersion suits provided in the engine room are in proper condition and well in number
- ✓ Check EEBD in the engine room
- ✓ Check Medical First Aid Box
- ✓ Check emergency escape routes from the engine room and also find out where it leads on the deck
- ✓ Check all the life saving appliances for their starting and stopping procedures, including those of emergency generator, lifeboats, emergency compressors, and emergency fire pumps
- ✓ Check all engine room machines for abnormal operations
- ✓ Check location of water tight doors and their operation and working
- ✓ Check location of fire hoses and fire hydrants



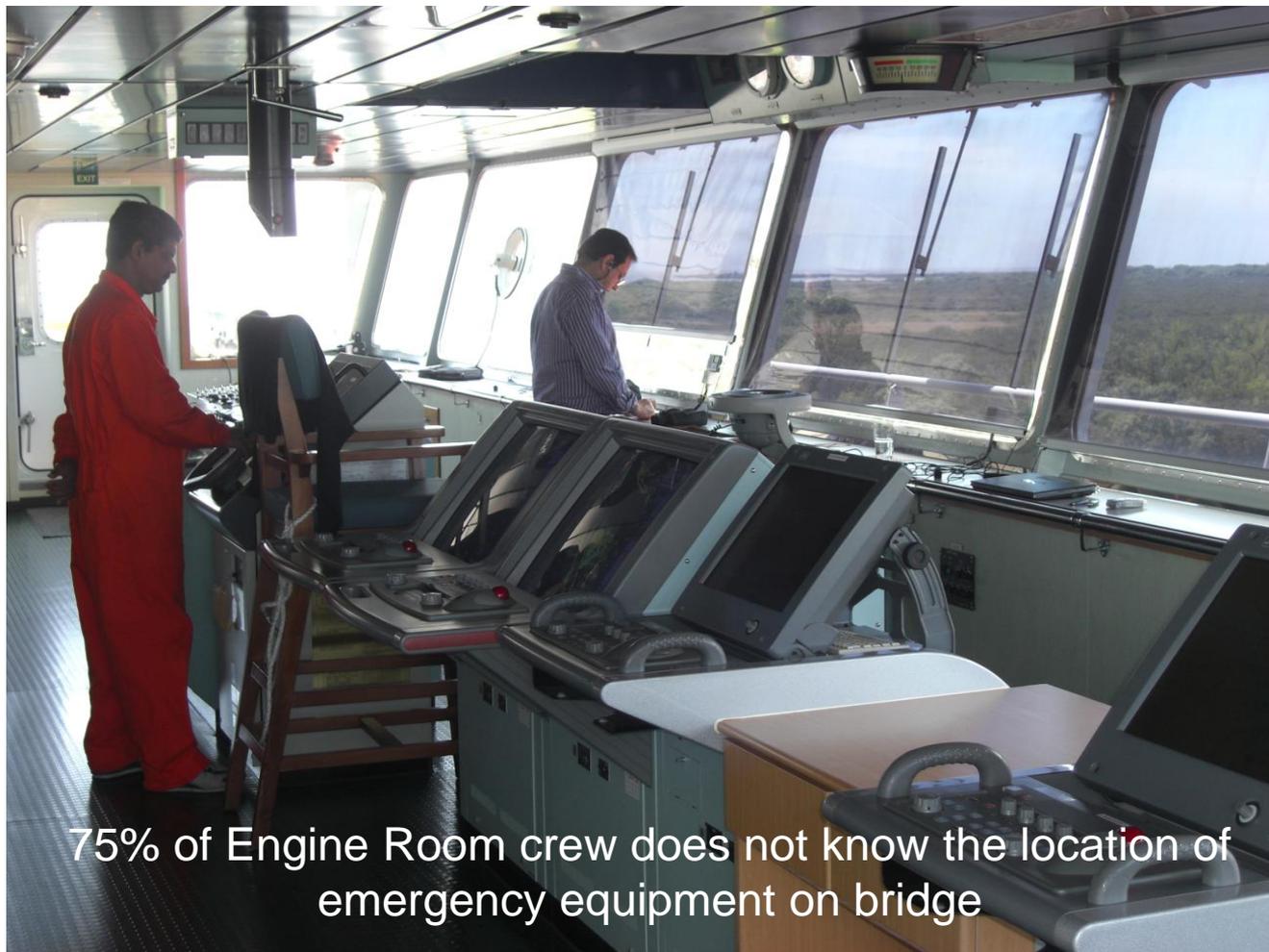
Deck Checks

- ✓ Check gangway of the ship for proper lifting and lowering arrangement
- ✓ Check net and railing in the gangway
- ✓ Check all the railings and freeways on the deck
- ✓ Check all life saving appliances provided on the deck
- ✓ Check location of fire hoses and fire hydrants
- ✓ Check location of fire plan
- ✓ Check location of international shore coupling and connection
- ✓ Check fire line on deck with main valves
- ✓ Check the bunker station on deck for remote stopping of pumps



Bridge Checks

It Does Not matter if you are deck or engine crew- Emergency don't see the department before occurring



75% of Engine Room crew does not know the location of emergency equipment on bridge



Bridge Checks

- ✓ Check location of lifejackets and immersion suits
- ✓ Check EEBD location on bridge
- ✓ Check location of lifebuoy
- ✓ Check location of nearest fire extinguisher
- ✓ Check location for storing EPIRB and SART
- ✓ Check location of emergency fire pump switch
- ✓ Check location of distress signal button on bridge
- ✓ Check emergency escape route from bridge and ways to approach the muster station



Galley Checks

- ✓ Check location of the nearest fire extinguisher
- ✓ Check location of fire blanket
- ✓ Check location of fire alarm button
- ✓ Check location of fire damper
- ✓ Check location of nearest fire hose
- ✓ Check location of nearest escape route and ways to approach muster station from the galley
- ✓ Check all electrical plugs and fitting for overheating or burning
- ✓ Check all equipment for safe and accidental free operation
- ✓ Check the local fixed fire fighting system operation



CHECKLISTS & FORMS

Manuals, checklists and forms are there to remind you of those steps which you might miss and make an operation unsafe





Checklists and Forms

Ensure you fill these forms after joining the ship:

- ✓ Pre-Familiarisation Form
- ✓ Department Familiarization Form
- ✓ MARPOL Declaration Form
- ✓ Personal Duty Form

Read and Sign these manuals after joining the ship:

- ✓ Safety Manual
- ✓ Fire Fighting Manual
- ✓ Personal Safety Checklist



So... What You GAIN from Ensuring SAFETY??

- ✓ Protection against occupational hazards
- ✓ Ensures Smooth and Safe operations
- ✓ Ship and Crew Protection
- ✓ Saves Time, Efforts, and Money
- ✓ Better Decision Making
- ✓ Better Interpersonal Work Relationship
- ✓ Creates a Good Impression
- ✓ And most important.....It ensures a safe return back home.



SAFETY @WORKPLACE

- **Engine Room**
- **Deck**
- **Galley**
- **Accommodation**
- **Cargo Hold**



Engine Room

- ✓ Follow the hand rule- One hand for yourself and one hand for ship
- ✓ Always wear safety gears provided to you, especially safety helmet when working in the engine room
- ✓ Be careful of machines running at high RPM.
- ✓ Always keep an eye on oil leaks and maintain good housekeeping.
- ✓ Never run in the engine room in the event of alarm to avoid trip hazard
- ✓ Never touch the fuel line with naked hand .Be careful when working on steam systems
- ✓ Never lift heavy load alone .Never ignore any abnormality in the machinery. Always check, report and repair
- ✓ Make sure you take all the precautions necessary before working on electrical systems to avoid electrical shock



Deck

- ✓ The deck area is exposed to open weather and thus water is always present on the surface. Make sure you walk carefully to avoid slips, or falls
- ✓ When in port, keep an eye on the port's gantry, crane, and gangway
- ✓ Never walk under lifted cargo or crane grab.
- ✓ Know the location of the nearest fire fighting equipment, life buoys , international shore connection, fire plan, fire hydrant, and hoses on the deck
- ✓ When ship is at the sea, rough weather always inform someone before coming out on the deck alone, even during off duty hours.
- ✓ When working at fore or aft part of the ship, beware of ropes, chains and machines, especially when they are under operation in ports
- ✓ Never lean on the ship's side or on the side railings
- ✓ Always use all necessary personal protective equipment (PPEs) .
- ✓ When setting up the gangway , always wear safety harness and life jacket



Galley

- ✓ Always maintain hygiene and cleanliness no insects and pests in the galley
- ✓ Wear apron and other safety clothing when working in the galley
- ✓ Secure all utensils and sharp objects (knife, fork etc.) when not in use as rolling and pitching of the ship may lead to accident
- ✓ Emergency escape must always be clear and marked
- ✓ Take precaution when using hot water and oil for scalding
- ✓ Be careful when working on hotplate, especially with cooking oil
- ✓ Make sure you know the location and operation of extinguisher in the galley
Know the location for operating fire flaps of the galley

“Galley staff is at the same risk level as crew from the deck and the engine departments”



Cargo Hold

- ✓ Always try to enter the hold in company or with one person standing by at the entrance of the hold
- ✓ Ensure that you are wearing necessary PPEs and the communication gear (walkie-talkie) is working properly
- ✓ When entering a dry ship cargo hold (container/bulk carrier etc.), ensure that it is well ventilated and the blowers for that hold are running .
- ✓ When entering tanker cargo hold (oil tanker/gas tanker), ensure the hold is empty, gas free. Also make sure it is certified as “safe” to entry by the management of the ship.
- ✓ Ensure you are carrying approved lights and torches prior to entry
- ✓ If inside the container hold, do not go in-between the container racks when the ship is sailing.
- ✓ For all operations inside the hold (cleaning, welding, hot work painting etc.) take prior approval and fill the necessary checklists.



Accommodation

- ✓ Make sure your room is clean and hygienic to keep it disease-free
- ✓ Ensure that the access door of your cabin has only inside locking system .
- ✓ Ensure that your port hole rubber gasket and hinges are working correctly and have required water tightness property to avoid ingress of water
- ✓ Do not smoke cigarette sitting or lying on the bed and do not keep or throw live smoking buds in the dust bins
- ✓ Never use hot plate or heater for cooking purpose inside your cabin
- ✓ Never use loose or open wire (without plug or naked wire) in the cabin
- ✓ Always make sure that electrical circuit is never overloaded i.e. too many connections are not put in one socket
- ✓ Never put your clothes near or on room heater or lamps
- ✓ Do not bring in the cabin oily rags inside your boiler suit pocket
- ✓ Never leave iron unattended when ironing clothes in laundry room



Accommodation

- ✓ If any welding or gas cutting operation is carried out inside accommodation, all the precaution that are necessary must be taken
- ✓ In tanker ships, accommodation ventilation suction should be away from cargo holds as cargo vapor can enter inside the accommodation area and create a flammable atmosphere



**Overloading an electrical panel
will break the safety channel**



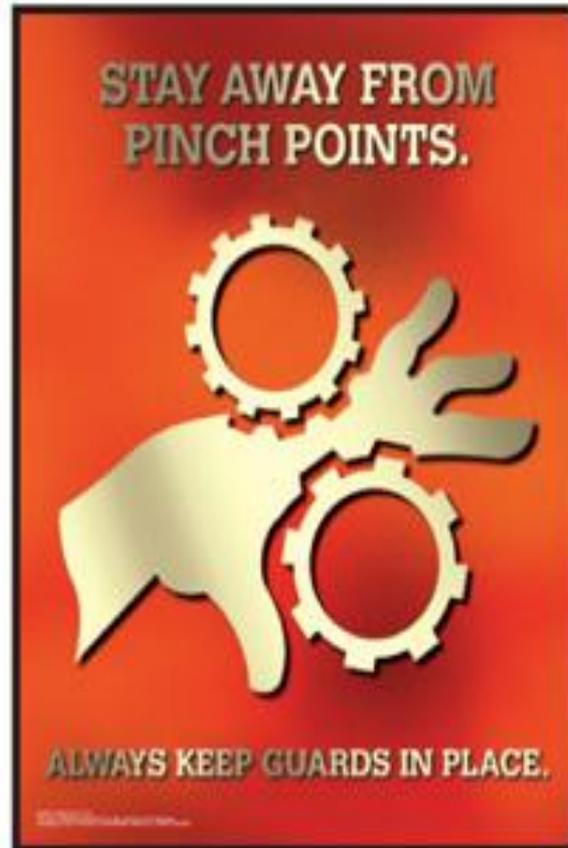
SAFETY @ SHIP OPERATION

- **Engine Room Operations**
- **Deck Operations**
- **Galley Operations**
- **Accommodation**
- **Cargo Hold Operations**



Engine Room Operations

Each machinery and equipment will have specific safe working and maintenance procedures, which must be well known to the person who is working on that particular system.



Engine Room Operations



MACHINERY MAINTENANCE

- ✓ Always use all necessary personal protective equipment while doing maintenance work on machinery
- ✓ Fill risk assessment forms and insist for tool box meeting to understand the requirement and procedure of maintenance
- ✓ Ensure all required valves and lines are closed for the maintenance work
- ✓ Never wear loose overall, jewelry etc. when working on the machinery
- ✓ Never carry out a job when you are not sure about the safety procedure
- ✓ Try to work in pair and use placards/warning signs/notice wherever require
- ✓ Always check the tool for any damage- hydraulic tools (e.g. hydraulic jack), load lifting tools (e.g. chain block or crane) etc.
- ✓ Never do your work in hurry, take time to follow all safety procedures



Engine Room Operations

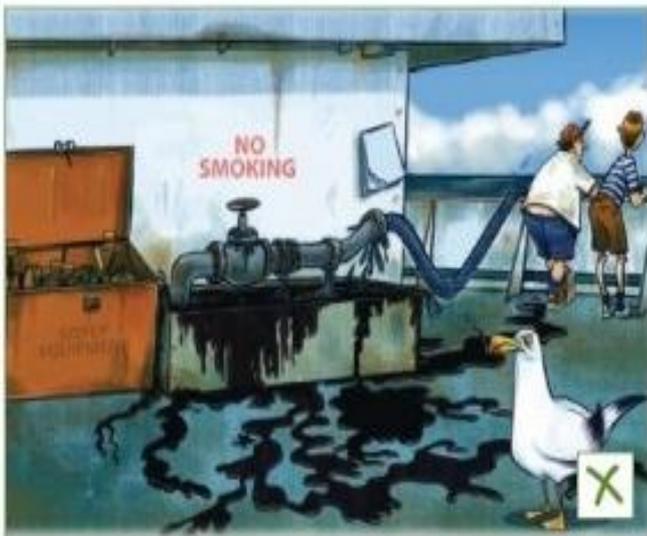
BUNKERING AND OIL TRANSFER

- ✓ Wear all PPEs such as helmet, oil or rubber gloves, goggles, safety shoes etc.
- ✓ When arranging the pipeline or connection, use correct size of tools
- ✓ While going down to oil supply barge, always use ship's gangway whenever possible with all safety precautions such as use of safety net etc.
- ✓ Do not carry extra tools with you while using ladder. Use rope and bucket to lower the tools
- ✓ Use ship crane or extra assistance to pull or lift heavy bunker pipe on ship
- ✓ Read complete Material Safety Data Sheet supplied by the bunker provider
- ✓ Wash your skin immediately with plenty of water if it comes in contact with the oil. Remove contaminated shoes and clothing in case they have oil over them
- ✓ Keep the bunker area clear off all tools and equipment to avoid slip, trips and fall



Engine Room Operations

- ✓ Never lean on the railings of the ship to check or communicate with bunker barge





Engine Room Operations

CHEMICAL HANDLING

Handling toxic chemicals pose a great threat of injuries and adverse health effects to seafarers because of manual handling and/or exposure to chemicals.

- ✓ Read and understand the Material Safety Data Sheet for the chemical to be used
- ✓ Know the fire fighting requirements for particular chemical through MSDS
- ✓ Wear chemical suit, goggles, rubber gloves, and other recommended safety protection gears while using chemicals
- ✓ Ensure no hot work is carried out in the space where chemical is being used
- ✓ If chemical comes in contact with skin, thoroughly wash exposed parts of the body after work, before eating, drinking ,or smoking
- ✓ Ensure medical first aid, especially eye wash, is readily available at all time
- ✓ Ensure the space where chemical is being used is properly ventilated



Deck Operations

CARGO HANDLING

- ✓ Personal protective equipment must be worn during cargo operation which includes safety shoes, safety helmet, overall, gloves, etc.
- ✓ Safety of the personnel involves correct lashing procedure to avoid back injuries and sprains
- ✓ All the lashing bars and lashing equipment must be in place and not be left lying on the lashing bridge floor
- ✓ The deck and even the cargo holds should be free from oil or greasy materials. If the deck is found oily, it must be cleaned up immediately
- ✓ Emergency exits and escape routes must be clear off of all obstructions
- ✓ One must never stand or walk under a working spreader or port crane.

“Always wear high visible vest when working on the deck during Cargo Operation and never walk or pass through the lifted cargo. Wait for the cargo to clear.”



Deck Operations

MOORING OPERATION

- ✓ Use of old and damaged wires and ropes
- ✓ Mooring ropes are not fastened but stored at winch drum end
Mooring equipment are not maintained properly
- ✓ Supervisor of operation is involved with some other work as a result of less crew members. Undersized and untrained operating staff
- ✓ Over painting of drum including corners, causing rope damage
- ✓ No warning marks painted
- ✓ Non slip deck is not available
- ✓ Personal Protective Equipment are not used

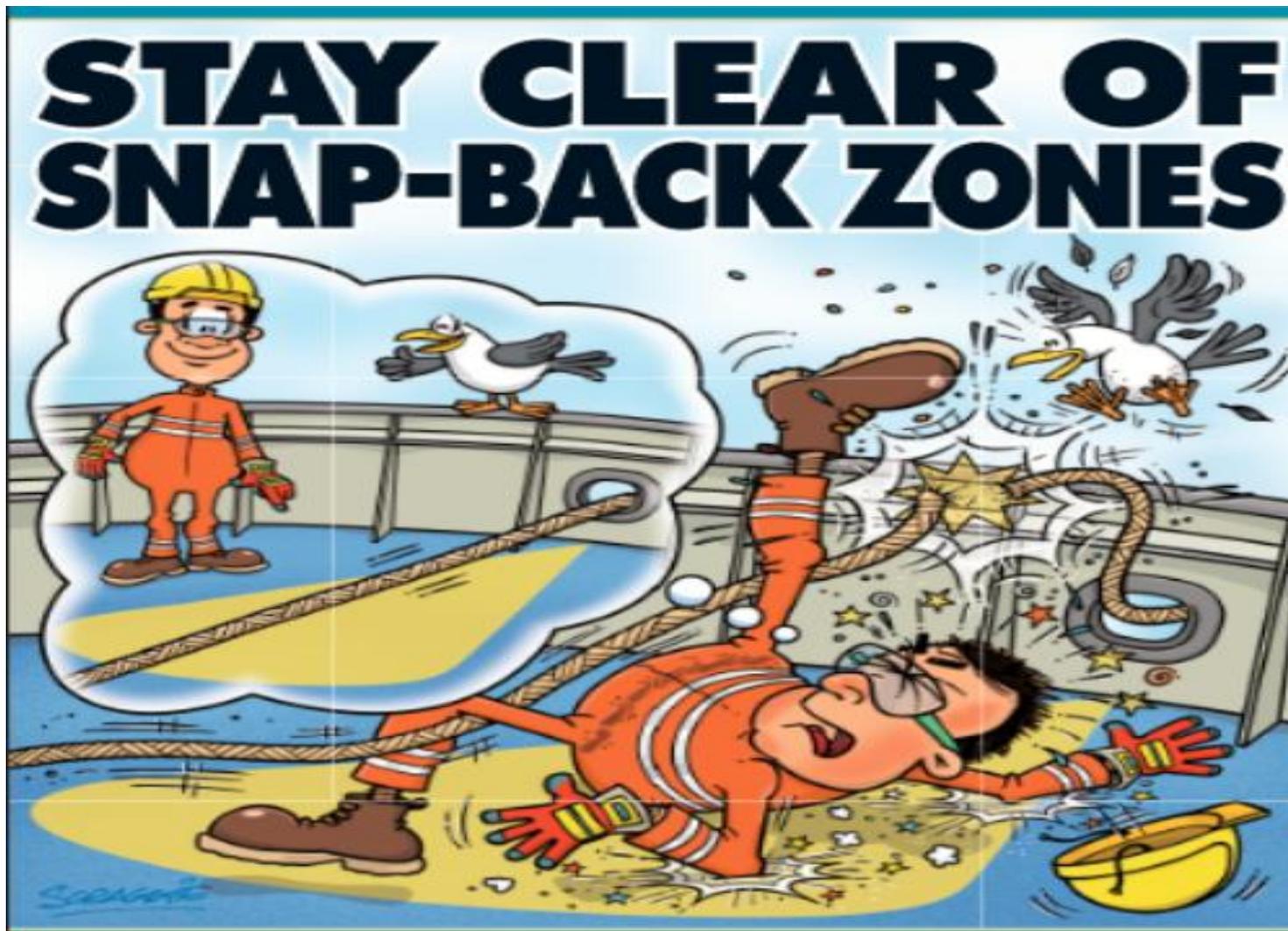


Deck Operations

- ✓ Inspection and tests of mooring machinery and ropes are not carried regularly.
- ✓ Rope and metal line are joined directly without using thimble which may lead to parting of ropes
- ✓ Ropes are not arranged on split type drum correctly. The smaller drum must have 4-5 turns and rest of it should be on larger drum
- ✓ Crew not aware of Snap Back Zone
- ✓ Crew not aware of dangers of rope bight



Deck Operations





General Operations

CRANE OPERATION

- ✓ Know the Crane Dimensions i.e. total lift, boom specifications etc.
- ✓ Wear a hard hat and safety glasses during crane operation
- ✓ Know the crane capacity i.e. SWL – Safe Working Load
- ✓ Never allow the operator to exceed the specified SWL
- ✓ Know the emergency stop button of the crane
- ✓ Always inspect the crane operation area before using the crane. It must be clear off any obstacles
- ✓ When operating the Cargo Crane, always have assistance on deck to streamline the operation of loading/unloading



General Operations

- ✓ Know the basics of required parameters in the crane system i.e. temperature, pressure etc.
- ✓ Determine the safest route and destination of loads
- ✓ Ensure that the load is tied at the centre of gravity with strong rigging and lashing equipment
- ✓ Never leave a suspended load unattended
- ✓ Keep an eye on the wire of the crane and the lifted load
- ✓ Keep clear from the hydraulic system of the crane when under operation
- ✓ Inform the operator if you see any abnormality



General Operations

ENCLOSED SPACE SAFETY

- ✓ Risk assessment to be carried out by a competent officer as enclosed or confined space entry is deficient in oxygen and is a potential life hazard
- ✓ The confined space has to be well ventilated before entering
- ✓ All fire hazard possibilities should be minimized if hot work is to be carried out
- ✓ This can be done by emptying the fuel tank nearby the place of hot work
- ✓ The enclosed space has to be checked for oxygen content and other gas content with the help of oxygen analyzer and gas detector
- ✓ The oxygen content should read 21% by volume. Percentage less than that is not acceptable and more time for ventilation should be given .
- ✓ Enough lighting and illumination should be present in the enclosed space
- ✓ A proper permit to work has to be filled out and checklist is to be completed so as to prevent any accident that can endanger life



General Operations

- ✓ Men at work sign boards should be provided at required places.
- ✓ Duty officer has to be informed before entering the enclosed space
One person should always be at the standby position.
- ✓ Carry oxygen analyzer inside the enclosed space and the oxygen level should be monitored all the time.
- ✓ The number of persons entering the enclosed space should be constrained to the adequate number of persons who are actually needed inside
- ✓ The rescue and resuscitation equipment are to be present outside the confined space.
- ✓ Means of hoisting an incapacitated person should be available
- ✓ After the work is finished and when the person is out of the enclosed space, the after work checklist has to be filled

General Operations



WORKING ALOFT SAFETY

- ✓ Always wear all personal protective equipment
- ✓ Always inspect and test all ropes, safety lifeline, gantline, or stage rope
- ✓ Use a Jacob's ladder, gangway, or accommodation ladder to reach or to lower from the work platform. Never “ride the hoist” or use rope to reach the work area
- ✓ Inform the mate on watch for the need to go aloft, stating the nature of the work.
- ✓ The climber shall hook into the fall-arrest rail at a strong point and remain attached to it at all times when aloft
- ✓ Do not take extra weight with you, Wear a tool belt
- ✓ Tools and stores can be sent up or lowered by line in suitable containers. Instead
- ✓ If working aloft near the funnel or whistle, ensure that bridge and engine room are informed about the same



General Operations





General Operations

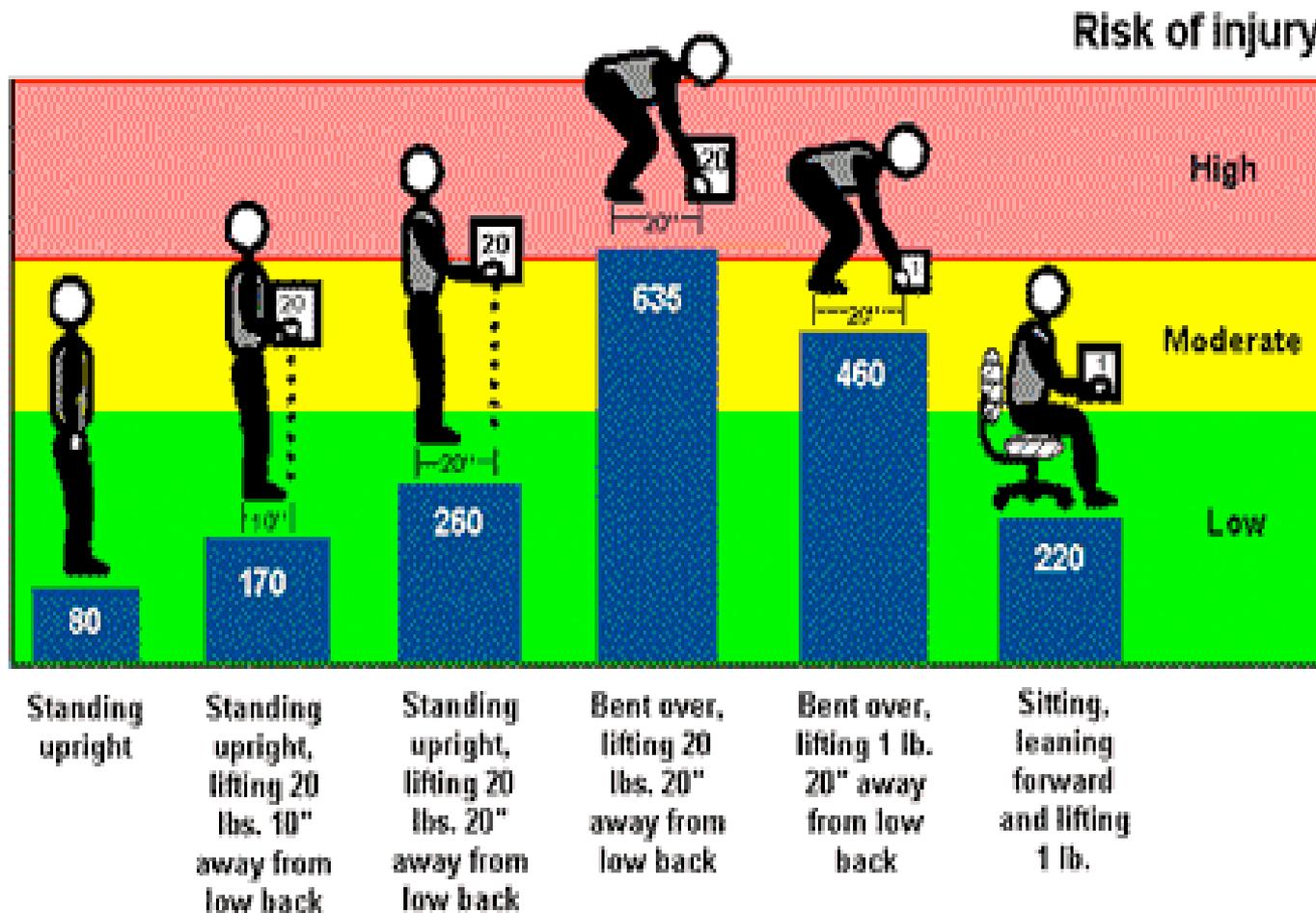
LIFTING LOAD

- ✓ Always warm up your body before lifting any kind of load involving stretching of muscular parts
- ✓ Check the size and weight of the load. If it's out of your strength call for help and never lift the load alone
- ✓ Sit with bended knees to lift the load .
- ✓ Wrap one entire arm over the object and other in appropriate position to lift the load
- ✓ Keep you back straight nearly vertical and chin tuck inside
- ✓ Put your steps on a level floor and take firm stance to place your legs apart from each other with one leg behind the other.



General Operations

Pounds of compressive force on lower back





Thank You



Board of Examinations for Seafarers Trust

Collaborative Unit of IMEI and CMMI

ISO 9001-2008 Certified under The Indian Register of Shipping

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