



## Contents:

- 2 – How well do you know your ship?
  - Keeping a safety culture



- 3 – Slips, trips and falls
  - Knowing risks on board

- 4 – Danger zones: deck and engine room
  - Avoiding injury
  - Respect procedures

- 5 – Food for thought: safety in the galley



- 6 – Trial by fire
  - Chemical world

- 7 – Enclosed spaces: don't die of ignorance
  - Procedure for entry into an enclosed space
  - What is an enclosed space?
  - Main causes of accidents in enclosed spaces

- 8 – Sign of the times
  - Assessing risk
  - Human error
  - Kitted out

# Planning for prevention



## Dear Seafarer,

### Welcome to Issue 3 of Health Watch.

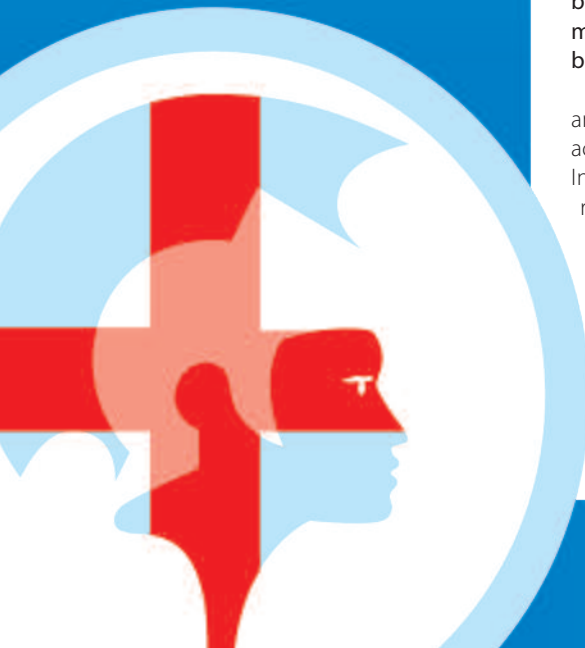
In this edition we are concerned with accident prevention and health and safety. In Issue 2, we emphasised that health and safety is not just about how you do your job in order to avoid accidents; it is also about how you live your life. We continually refer to accidents as unfortunate events - "accidents happen" - but, with a little foresight and planning, the most hazardous job should be capable of being performed safely and without mishap.

Careful risk assessment and job hazard analysis are key to safety. The most tragic of accidents can be avoided by simple planning. In this issue of Health Watch we discuss the risks associated with entry into enclosed, unventilated areas on board ship. They are well known yet we still hear of cases where a seafarer has entered an enclosed space, has become unconscious because of oxygen depletion and a shipmate or shipmates suffer the same fate while instinctively trying to save him. Often in such cases, the breathing apparatus that

should have been worn is either defective or empty.

The simplest of injuries can be avoided by a little forward planning. One of the most common injuries is to the back, usually caused by lifting heavy objects. The spinal column consists of a number of bones called vertebrae, separated by discs of soft tissue that act as cushions between the vertebrae. As we get older, the back becomes less flexible and the discs degenerate, so that they can slip out of alignment (a slipped disc) or the outer covering can rupture, causing the disc to press onto the spinal nerve. In many cases this can cause severe pain and may require surgical correction. Attention to the correct method of lifting heavy objects can reduce considerably the potential for damage to the discs, thus limiting the risk of a debilitating back injury.

We hope you find this issue of Health Watch both interesting and informative. Please do let us know if you have any comments about any of the articles in this issue. You will find our email address on the back page.





Working on board ship can be hazardous and dangerous but accidents can be avoided if proper safety procedures are followed.

As a seafarer, you should ask yourself: "How comfortable am I with my ship?" Are you trained and prepared enough to avoid

personal injury and do you know the likely accident hot spots on board? Are you willing to step out of your comfort zone to make sure that safety comes first?

Your health and safety at sea is very important in order to keep you and your fellow seafarers safe and well.

## Keeping a safety culture

Assessing risk on board ship is an important step in developing a strong and effective safety culture, so take time to study your surroundings and your work place to see where the likely risks to safety are.

A piece of hot machinery, a slippery surface or even noise and vibrations can be a health risk as you go about your daily tasks, so carrying out a safety risk assessment can mean the difference between being safe and suffering from an accident or health risk.

Some everyday tasks, such as carrying a steaming pot of soup from the galley to the mess area, or simply using tools and equipment, can be a recipe for disaster if you trip over. If you don't use the right protective equipment this can also cause health and safety problems – if you fail to use eye protection when working with hazardous materials, or if you don't wear safety boots when lifting heavy objects, you could suffer from an unnecessary injury.



## SLIPS, TRIPS AND FALLS

Most accidents on board ship are caused by slips, trips or falls but by taking some extra care you can decrease the chances of these kinds of accidents.

You should be careful of slippery patches, obstructions on deck, trailing leads and unguarded openings. On stairs, keep one hand free to grasp the handrail. When climbing vertical ladders, you should carry equipment on an equipment belt, leaving your hands free to climb. Wearing proper safety shoes will also help prevent slipping or tripping.

Prevention is better than cure, so always try to keep the decks clear and uncluttered. You should properly secure or stow away all loose equipment. Clean up spillages and spread sand over icy or slippery areas. Wear proper industrial footwear with slip-resistant soles and reinforced toe caps. Casual shoes such as sandals, moccasins and flip-flops are dangerous on board because they offer little protection and add to the risk of tripping or slipping on ladders.

If you are wearing wet or oily gloves these may be slippery and you should take extra care, especially when climbing ladders.

### KNOWING RISKS ON BOARD

#### Fire risk

Always be aware of the potential for fire on board ship. A discarded match or cigarette can be the simple cause. Do you know where the nearest fire extinguisher is?

#### Lifting and carrying

Each year, many seafarers are injured through incorrect lifting, carrying, pulling and levering of loads. Remember, your legs are much stronger than your back and so they should take the strain in any lifting operation.

#### Access to the ship

Statistics show that seafarers are more likely to drown in port than at sea and the danger is greatest when they are returning from a night ashore. But accidents can happen at any time if gangways or accommodation ladders are not properly rigged, secured and fenced, with adjustments made to take account of tidal movements or changes of trim and freeboard. Wherever possible, rig a safety net.

#### Falling or moving objects

Falling and moving objects are common causes of serious injury on board. The general

rule is to be aware of such possibilities wherever you are working and find the safest place you can.

#### Working with machinery

All dangerous parts of machinery should be securely guarded and you should make sure that these guards are in position before the equipment is used.

#### Electrical hazards

When working on electrical or electronic equipment on a ship, the risks of electric shock are usually much greater than they are ashore because wetness, high humidity and high temperature (inducing sweating) reduce the contact resistance of the human body. In such conditions, severe and even fatal shocks may be caused at voltages as low as 60V. Before starting work on electrical equipment, always isolate it from the power supply by removing the plug from the socket, removing fuses or locking circuit-breakers open. Always test the circuit to make sure that it is dead.

## DANGER ZONES

### Deck

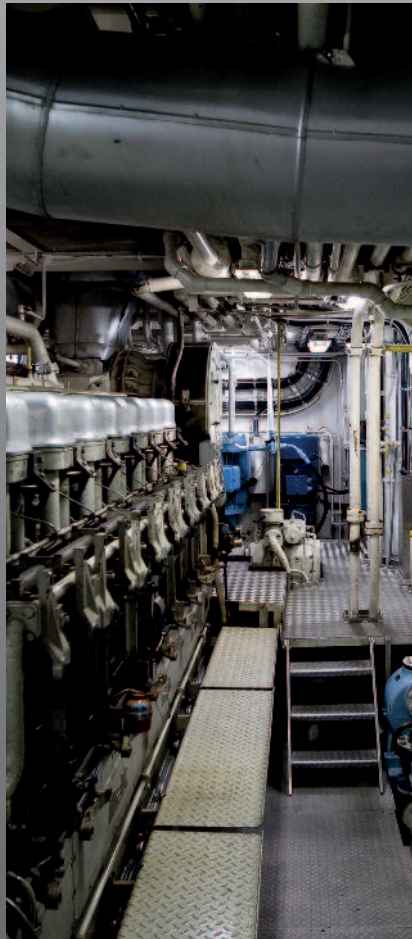


Ships can be dangerous working environments but the deck can be an extremely slippery place to be when it is continually made wet by the sea - meaning there is a greater chance of accidents occurring on this part of the ship.

Aside from slips and falls, there are also many other types of accidents on deck, including injuries from falling objects, rigging, cables and winches, which can result in broken bones, head injuries or even death.

There are many dangers which you should be aware of, but if you follow these basic guidelines they should help you steer clear of misfortune:

### Engine room



In engine rooms, engineers can face many dangers, with hazards including falls from ladders in staircases into the engine room, entanglement in machinery, cuts and exposure to exhaust gases. But as a responsible seafarer, you can prevent such accidents by following some basic advice.

### Avoiding injury

Inspect ladders before climbing and NEVER climb on a shaky ladder or a ladder with broken or slippery rungs.

Ventilate the work station site and, if necessary, wear a gas mask.

Use personal protection equipment and do not enter the engine room with loose clothing or hair.

Wear gloves to avoid skin contact with sharp edges, lubricating or cleaning products.

Store all heavy spares securely.

If floor plates have been temporarily removed, the openings should be protected and if lifting handles are not available use a sensible lever, NOT your fingers!

Take care when using flammable materials, particularly near exhaust pipes and hot surfaces - two thirds of all fires are said to start in the engine room and most can be avoided. They are often caused by small things going wrong so safety and good housekeeping are crucial.

### Respect procedures

Always follow the proper notification process if you are alone in the engine room. Know the meaning of alarm signals and the location of safety equipment.

Check electrical equipment for safety before use.

Do not enter poorly lit spaces and, if necessary, use portable light sources.



## *Food for thought:* **safety in the galley**



Seafarers working in the galley should be extra vigilant and retain high standards of cleanliness, tidiness and hygiene but most injuries sustained by catering staff are as a direct result of slips, trips and falls, meaning it is crucial to be vigilant and careful when moving about this area of the ship. Floor surfaces should be kept clean, dry and clear of rubbish and sensible shoes with non-slip soles should be worn. Keep reading to learn more about dangers and safety precautions in the galley.

### **Be sensible with sharps**

It is important that any bladed tools, such as knives, are kept clean as a greasy handle could lead to an accident. Knives should also be kept visible and not left unattended on work surfaces or in a sink full of water where someone else could injure themselves by grasping at a blade. When using knives, meat cleavers or chopping machines, pay close attention to what you are doing and don't get distracted – hold the blade away from yourself and ensure that your thumb is overlapped by your forefinger and your fingers are bent in towards your palm.

### **Managing machines**

The use of machinery and equipment in the galley, particularly if machine guards are not correctly put in place, is potentially dangerous. It's also important to keep clean, dry hands when operating electrical equipment and when cleaning or unblocking a catering machine it is essential this is switched off from the mains first.

### **Refrigerators: keep it cool**

When working with refrigerators and store rooms always inform a colleague that you are going to these rooms beforehand and make sure the door is secured in the open position while you are inside. Also, regularly check that the refrigerant is not leaking and if you believe it may be, do not enter the room.

Also take care when using water to wash equipment in the galley – efforts to hose equipment may save time, but if electrical equipment is nearby, this can spell disaster, so isolate all electrical equipment from its power supply prior to beginning such work.

### **Health and hygiene**

High standards of hygiene must be kept up at all times, including both environmental and personal hygiene and cleanliness, in order to ensure all those on board are protected from bacterial contamination of food.

### **Stoves: keep your distance**

When lighting stoves and burners in the galley keep clear of these to avoid flashbacks. When working with gas stoves, it is also important to use caution if relighting the stove – ventilate the stove to free it of excess gas prior to relighting and make sure all valves and controls are set correctly. It's also essential to keep a distance from hot equipment, such as ovens – do not stand directly in front of an oven when opening it as escaping heat can cause burns injuries.

Take care when melting certain foodstuffs, such as fat or grease, as this can catch fire if left unattended inside an oven. Also, the use of water to extinguish a grease fire could be dangerous – water will turn to steam and the grease will be projected and can cause burns or start a fire. Grease fires should be extinguished using a fire blanket or a lid or, if available, a foam, carbon dioxide or dry powder type fire extinguisher.

## TRIAL BY FIRE

The old fashioned phrase that prevention is better than cure is definitely still important when it comes to fire safety. Some of the most common causes of fires on board can be prevented quite easily, by avoiding leakages of hazardous materials such as lubricating oil, fuel oil and exhaust gases. This is especially true in the engine room, where leakages from a high pressure fuel pipe could prove hazardous.

Leakages may be caused by broken or aging pipes, leaking fittings etc. and the need to hold regular checks of such equipment cannot be overemphasised. Laggings are also an important tool in fire prevention, particularly when applied to hot surfaces such as steam pipes.

It is also important that fire safety equipment, such as smoke, heat and/or flame detectors, are checked regularly to ensure they are in good working order.

Some further points to consider for fire prevention on board include:

- Keep electrical equipment in good order, including that which is found in the galley.

- Immediately attend to exhaust and steam leakages. Also, ensure that short sounding pipes are kept shut through the use of plugs to prevent oil spills from such equipment.

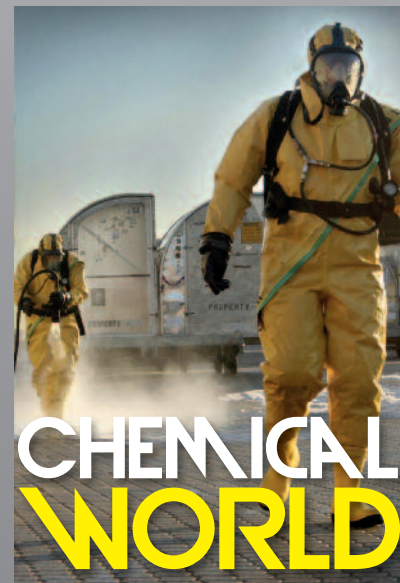
- If smoking is permitted on board, take great care to dispose of all cigarette waste carefully. Smoking in bed is an especially risky practice.

- Making sure waste bins are covered with a lid and that oily rags and other flammable materials are not left out.

Overall, the most effective prevention against fire is regular monitoring.

Cargo fires may also occur when loading or offloading a product such as coal and so it is vital that the characteristics of such cargo are known to those working with it and that relevant safety drills are performed.

Care should also be taken when working with high pressure fuel oil pipes. These should not be tightened to control leakages if the engine is running and it is also important that oil is not put into turbochargers when the ship is operating.

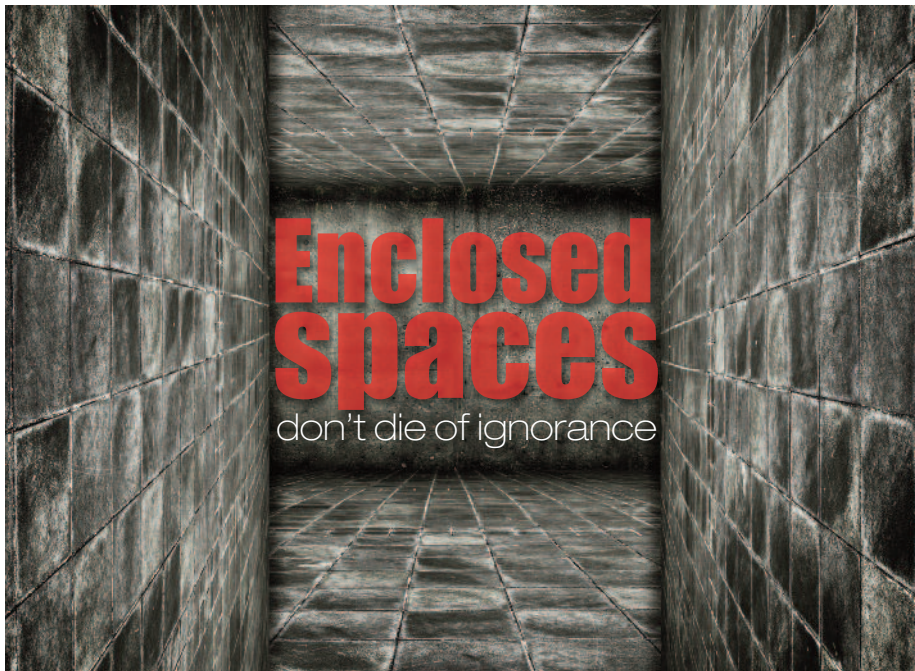


According to the UK Maritime and Coastguard Agency, seafarers working with marine chemicals should follow some important procedures to decrease the risk of accident and injury.

The design and organisation of work systems on the ship should be reviewed and protective equipment for work with chemical agents must be provided. Efforts must also be made to reduce the number of seafarers who are exposed to chemical products and reductions in the duration and intensity of exposure are also important.

Hygiene measures and reductions in chemical quantities may also assist, depending on the kind of work which is taking place. Proper working procedures, including those to ensure the safe handling, storage and transport of hazardous chemical agents (and related waste) on board are also essential and health surveillance should also be carried out.

Employers should be responsible for the control of substances that are hazardous to health (COSHH) but seafarers must help with this by acting responsibly. Some further techniques which may assist are; discovering what the health hazards of a particular chemical are; putting control measures in place to reduce potential harm (and keeping such measures up); taking part in health monitoring and surveillance and planning for emergencies involving chemicals.



Accidents in enclosed spaces happen all too often and can be fatal, but most importantly they are avoidable.

It is vital to know the correct procedures before entering an enclosed space and unfortunately a failure to do this has led to the death of many seafarers.

Last November, the International Maritime Organisation (IMO) adopted a resolution to amend the Safety of Life at Sea (SOLAS) Convention, with the aim of reducing deaths in enclosed spaces. The amendments require crew members to take part in an enclosed space entry and rescue drill at least once every two months.

Each drill should include the checking and use of PPE (Personal Protective Equipment), communication equipment and procedures, rescue equipment and procedures and instruction in first aid and resuscitation.

Britannia recently handled a claim where a stevedore died in an enclosed space after going into a cargo hold while the ship was discharging a cargo of coal. A fully enclosed spiral ladder was fitted at the aft bulkhead of the hold and the lower opening of the ladder was immersed in cargo with harmful gases entering the ladder space. The stevedore was overcome by the toxic gases and lack of oxygen and died.



## Procedure for entry into an enclosed space

1. Carry out a Risk Assessment.
2. Permit to Work: ensure the company's Approved Enclosed Space Entry Form or Checklist is available and completed by authorised personnel, including the Master.
3. Safety Briefing: ensure you are aware of work being undertaken.
4. Atmosphere: ensure ventilation is available as necessary. Ensure the space has been tested for the presence of gases and oxygen content and is tested regularly thereafter, with a certificate issued by a qualified person when appropriate. The atmosphere in nearby spaces should also be checked if there are any doubts.
5. Communications: ensure communication with the Duty Officer has been established and permission obtained for entry into the enclosed space.
6. Rescue: ensure recovery equipment is available at the entry/exit point and enough qualified crew personnel are present to assist.
7. Competency: personnel entering the space must be qualified to do so or accompanied by qualified personnel. An attendant, who is suitably trained within the safety management system, must be present to keep watch and maintain communication with the person entering the enclosed space.
8. Personal Safety: ensure you are wearing the right safety equipment.
9. Check In and Out: personnel entering the space must be checked in and out.
10. Secure: ensure the space has been closed and/or fenced off as appropriate after everyone has exited.
11. Documentation: maintain, as required, records of entry into enclosed spaces. Audits must be carried out to ensure procedures are compliant.

## What is an enclosed space?

In the IMO's Recommendations for Entering Enclosed Spaces, an 'enclosed space' means a space which has any of the following:

- Limited opening for entry and exit
- Inadequate ventilation
- Is not designed for continuous worker occupancy

Examples of enclosed spaces include: fuel tanks, cargo spaces, boilers, ballast tanks, cargo pump rooms, cargo compressor rooms, cofferdams, chain lockers and void spaces – each ship should keep a list identifying enclosed spaces on board.

## Main causes of accidents in enclosed spaces



- Complacency and a failure to follow procedures
- Lack of knowledge
- Potentially dangerous spaces not being identified
- Rescuers acting on instinct and emotion rather than knowledge and training



In the maritime industry, where often many different nationalities sail under one command, the potential for language barriers has led to signage systems of a more global nature than those found on land.

Symbols with clear meaning are required and regulations from the International Organization for Standardization mean there is now a global, standardised appearance for safety signs designed for emergency evacuation, fire protection, accident prevention and health hazard information.

## Assessing risk

Signs can be useful for seafarers in helping to maintain safety standards, but the process of risk assessment is still an important element towards ensuring safety on board. When working in a space such as an engine room, a risk assessment, particularly concerning how you would get out of that space in an emergency, could determine what signs are required and will help others to know what hazards there are. It is important to have a plan, to know your escape route and to know where safety and rescue equipment is kept.

It is essential to have safety signage which, under all possible conditions, will allow for the quick location and operation of all means of emergency equipment. This is also why it is important that safety signage speaks a universal language, with imagery which gives no doubt as to a sign's meaning – whatever part of the world you come from, there should never be any doubt about a sign's meaning.

## Human error

Human error is a major factor in accidents on board but signs can play an important role in minimising this through instructions and information, particularly where emergency equipment is concerned and for fire and evacuation plans, escape routes and prohibition signs, such as "No Smoking".

Whether an emergency situation stems from human error or mechanical failure, photo luminescent signs can be especially useful as ships can lose power and electricity in emergency situations and so emergency lighting, along with glow in the dark signs and instructions, are vital to assist those on board to find a route to safety.

Following the World Trade Center bombing of 1993, photo luminescent paint to show

directions was commissioned inside the Twin Towers, particularly within the stairwells, which assisted the escape of a number of individuals inside the towers during the 11th September attacks in 2001.

Ultimately, it's important to keep things simple and clear, as putting up a large number of signs could be rather confusing, especially in an emergency – so choose signage carefully and always perform a risk assessment.

## KITTED OUT

The International Safety Management Code states that shipping companies "should ensure that each ship is manned with qualified, certificated and medically fit seafarers in accordance with national and international requirements" and a comprehensive medical kit is essential to ensure continued adherence to this regulation.

This responsibility should be respected but in practice it can prove challenging for individual masters to keep abreast of the contents of their ship's first aid kits, particularly when one considers the quantity

of items which must be included in ship medical stores.

The World Health Organization's international scale-A list of ship's medicines features over 200 individual items of medical equipment and treatments, including everything from disposable syringes and bed pans to diazepam and cotton wool. An extensive list, but thankfully, a well-organised kit can mean the difference between life and death in an emergency situation – so ensure your medical bags and kits are kept clean and tidy and that it is easy to locate individual medical items.

The problem of outdated supplies also emphasises the value of reputable advice and services when purchasing medicines, but it is important to follow the specific rules and regulations of the Flag State before medical bags can be properly supplied. This will depend on how many crew are on board, where it is sailing and what it is carrying.

With the development of advanced medical management systems, seafarers should not feel daunted by procurement processes for ship medical kits. By regularly keeping up to date with kit contents, seafarers will benefit from a simplified approach to stock replenishment, kit inspections and satisfying regulations, while ensuring seafarer health and wellbeing remains a leading priority.

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