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Dear Seafarer,

Previous issues of *Health Watch* have concentrated on what you can do to improve your health and minimise the risk of illness. In Volume 1: Issue 3 we emphasised the importance of planning in order to prevent accidents. In this issue we return to the subject of accident prevention, particularly the importance of ensuring that you wear the appropriate personal protective equipment (PPE), even when performing routine tasks.

While the number of accidents involving injury that have been reported to us in recent years has substantially reduced, there are still some that could have been avoided by the accident victim wearing suitable PPE. Formula One racing drivers are physically fit and extremely good at what they do. None of them expect to have an accident, but you will not see them wearing T shirts, shorts and flip flops to drive around the track. Instead they wear fireproof suits, helmets and goggles to ensure they are protected, so far as is possible, against the potentially disastrous consequences of an accident.

While we are not suggesting that your job as a seafarer is in any way

comparable to driving a racing car, the point we are making is that, if you do have an accident, you are less likely to be seriously injured if you are wearing the appropriate protective equipment, rather than if you are wearing a T shirt, shorts and flip flops. On page 7 we refer to a case recently reported to us, of an O/S who suffered a serious injury to his foot. Had he been wearing working boots, instead of a pair of trainers, he would not have been injured.

The safety culture on most ships is extremely good. We know of a number of companies that operate league tables and benchmark the safety records of each ship in the fleet. Even if your company does not operate such a system, you should always have your own safety in mind and, also the safety of your colleagues. If you see someone doing something that appears dangerous, either because he is being complacent or is not wearing the appropriate safety equipment, don't ignore it, do something about it. An accident avoided is one less statistic and one less life destroyed by serious injury or, even worse, death. Don't be a statistic!



Be prepared

The MCA (Maritime and Coastguard Agency) Code of Safe Working Practices Chapter 4 'Personal Protective Equipment' (PPE) states that it is the responsibility of the employer to ensure that crew members are provided with suitable PPE where it is needed and, in general, it should be supplied at no cost to the worker.

All crew members should also be properly trained in its use and equipment should be checked by wearers each time before use. Overalls, gloves and suitable footwear are the basic proper working attire for most work on board ship but other equipment can be required for particular jobs.

Here is a list of what you might have to wear:

Head Protection

Safety helmets: A helmet can offer protection against falling objects and can also guard against crushing or sideways blows and splashes from chemicals.

Bump caps: This is an ordinary cap with a hard, penetration-resistant shell, useful in protecting against bruising and abrasion when working in confined spaces such as in the bottom of a tank. However, it is only intended to protect against minor knocks.

Hair nets and safety caps: These are needed to keep hair from getting tangled when working with machinery.



Hearing Protection

This is necessary for all crew members exposed to high levels of noise such as in machinery spaces.

Ear plugs: These are useful but only offer limited noise level reduction.

Ear muffs: Provide a more effective form of protection, especially in noisier environments.



Face/Eye Protection

Eyes are the most sensitive parts of the body and in daily operations the chances of an eye injury are high if protective eyewear is not used.

Wearing the wrong type of eye protection, such as glasses with no sides, also contributes to a significant number of accidents.

The main causes of eye injuries are infra-red rays (from gas welding), ultra violet rays (from electric welding), exposure to chemicals and exposure to particles and foreign bodies.

Welding shield: Protects eyes against high intensity sparks and UV rays.

Full face protection: A full face visor is often the best protection in work areas where there is risk of flying particles and chemical splashes.

Goggles: Offer more protection than glasses because they form a seal around the eye area and are useful in protecting against chemical splashes, vapour and dust particles.

Safety glasses: Offer less protection, as they do not have sides, but have impact-resistant frames and lenses and may have prescription or non-prescription lenses. Proper fitting is essential, so they fit close to the face and therefore there is less risk of an object reaching the eye.

Face mask: Protects against breathing in harmful substances when painting or cleaning.



Respiratory Protective Equipment

This is essential protection when working in conditions where there is irritating, dangerous or poisonous dust, fumes or gases. A respirator filters the air before it is inhaled while breathing apparatus supplies air or oxygen from an uncontaminated source.



Hand and Foot Protection

Gloves: The type of gloves you need depends on the type of work you are doing. Leather - for handling rough or sharp objects. Heat-resistant - for handling hot objects. Rubber, synthetic or PVC - for handling acids, alkalis, various oils, solvents and chemicals.

Footwear: Most foot injuries result from wearing unsuitable footwear such as sandals or plimsolls. Injuries are commonly caused through impact, penetration through the sole, slipping, heat and crushing.



Body Protection



There are various types of overalls which can protect the body from hazards such as hot oil, water, welding sparks and chemicals.

High visibility clothing should be worn when it is important to be seen such as during loading or unloading cargo.

Safety harnesses should also be worn by those at risk of falling from a height whether above or below deck.

Don't slip up

Working on deck



Dangers:

Most accidents on board ship are caused by slips, trips and falls – be careful of slippery patches, obstructions on deck, trailing leads and unguarded openings. There are also many other types of accidents on deck, including injuries from falling objects, rigging, cables and winches, which can result in fractures, head injuries or even death.

Advisable Precautions:

Always wear high visibility clothing during cargo handling operations.

Bridge watchkeeping officers should be informed at all times of all work being carried out on deck or in deck spaces.

Wearing proper safety shoes will also help to prevent slipping or tripping.

Keep the deck clear and uncluttered.

If there is heavy weather, lifelines should be rigged in appropriate places along the deck.

No crew member should be on deck during heavy weather unless it is absolutely necessary for the safety of ship or crew.

Anyone required to go on deck during heavy weather should wear a life jacket, waterproof PPE and carry a portable transceiver.

Take a seat

Cradles, stages & bosun's chair

Dangers:

Designs without permanent rail guards can bring more risk of falling. Defective, old or untested products can be dangerous and lead to accidents, so it is important to check your equipment regularly and before every use.

Advisable Precautions:

Use a quality, modern design such as a cradle stage with permanent guard rails but if you must use a traditional, plank shaped stage it's important that before use you check that it is sturdy and in good condition, with no chance of breakage. Before use, inspect chairs and gantlines and do not use if there are any signs of wear or tear. When using a chair, make sure the bow of the shackle is correctly positioned and that it rides the wire, rather than the pin.

Follow proper guidelines for rigging the stage and always work with a responsible crewmate when raising a stage and when lowering it back in, so they can help you with the process and make sure all safety lines are properly secured and that all procedures are properly followed. You should also keep cradles, stages and bosun's chairs in a safe place where they will not be damaged by excess moisture or heat. When hauling a person on a bosun's chair you must never use a winch, only use your hands.

Safe place

Working in machinery spaces



Dangers:

Machinery spaces are often areas where there are high levels of noise, so hearing can be affected or damaged if the right protection is not worn. Areas such as the engine room can also be very hot places with the potential for burns and exposure to exhaust gases.

The machinery itself can also pose a risk if left unsecured or not properly guarded and the maintenance and repair can also pose health risks.

Advisable Precautions:

Wear suitable hearing protection, whether ear plugs or ear muffs.

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

Use PPE and keep long hair covered or tied up so it does not become entangled in machinery.

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

Any spare gear in machinery spaces should be stowed away securely and any items of machinery that are being worked on should be safely secured so they do not break loose and injure anyone.

Know the meaning of alarm signals and the location of safety equipment.

Take care when using flammable materials, particularly near exhaust pipes and hot surfaces.

Heady heights

Safely working aloft or overside



Dangers:

If you fall from a height, whether overboard or onto the deck, this could be fatal or you could be seriously injured. If you don't follow proper procedures, or if you use faulty or old equipment, this could result in a fall. You could also put yourself and people working below you at risk if tools or other objects are not secured properly and are dropped from a height.

Advisable Precautions:

Before working aloft or overside, it's important to make sure you have the correct permit-to-work, have performed a risk assessment and that you consider any potential hazards (this could include bad weather or strong currents). It's also safe practice to inform crewmates of your plans to carry out such work, both verbally and by putting warning signs in place, and to ensure any equipment nearby (such as the whistle, funnel, radar scanner or radio antenna) is switched off and made safe.

If you are a seafarer with limited experience, you should not work aloft or overside, unless supervised by a more experienced crewmember – but whatever your experience level, you should always have a responsible crewmember keeping watch on deck. You must make sure all safety equipment is properly worn or rigged (including a lifejacket, harnesses, nets etc). If you are working overside, the crewmember keeping watch should hold a lifebuoy and line, which can be thrown to you immediately if need be.

It is vital that all equipment and tools are examined prior to commencing work, to ensure they are of the right quality and in good condition, and tools should be carried on a tool belt or other suitable container – not in your pockets! You must also be careful to make sure any secured equipment, such as gantlines are fastened to permanent fixtures only. Also, make sure all ropes and ladders you intend to use are load tested beforehand (perform tests with at least four times the weight which the rope will actually be expected to carry) and you should also perform visual tests for quality and condition of ropes and equipment.



Going up

Portable ladders and scaffolding

Dangers:

If a ladder or scaffolding isn't secured properly, it could move while you are on it, making you fall and also potentially injuring people working nearby or below you. A faulty or broken ladder could also cause you to have an accident, for example, if a step breaks while you are on it.

Advisable Precautions:

Ladders should always be secured firmly, on a flat base and with not too wide an angle between the top and bottom of the ladder. Always check the ladder or scaffolding is in good condition before you use it. When you are on a ladder or scaffolding, you should always carry tools in a tool belt or other suitable container. You must never overreach when using a ladder or scaffolding – take care not to lose your balance by leaning or stretching out too far. You should also always use both hands to climb a ladder or scaffolding – never use just one hand.



Breathe easy

Correct breathing apparatus

The Club has recently handled a claim where a master died in an enclosed space. "Enclosed spaces – don't die of ignorance" - was a feature of *Health Watch* Volume 1:3 July 2012. Accidents in enclosed spaces happen all too often and can be fatal, but most importantly, they are avoidable. As a seafarer, it is vital you know the correct procedures before entering an enclosed space and unfortunately the failure to do this has led to the death of many seafarers.

The incident handled by the Club was triggered at a discharge port by a cargo sampler used to test the quality of a cargo of crude oil accidentally being dropped into a cargo tank. On the subsequent ballast passage, the cargo tank was ventilated before two crew members were dispatched to retrieve the cargo sampler from the tank. A risk assessment and a permit to work for entry into an enclosed space was conducted and the atmosphere was tested.

The two crew members who entered the tank were equipped with Emergency Escape Breathing Devices (EEBD's) but were not wearing full self-contained breathing apparatus (SCBA). Both succumbed to the toxic atmosphere in the tank and the master rushed to assist but he too was only equipped with an EEBD. Unfortunately the master died.

Whilst errors in shipboard procedures with respect to the risk assessment, work permit, ventilation and testing of the atmosphere contributed to this fatality, there is no doubt that the wearing of incorrect apparatus was a major contributory factor.

According to The Code of Safe Working Practices, 17.2.4: 'An EEBD is a supplied air or oxygen device, only to be used for escape from a compartment that has a hazardous atmosphere. They should not be worn by a rescuer to attempt a rescue of persons in any circumstances.' 17.2.5 also states: 'EEBDs shall not be used to fight fires, entering oxygen

deficient voids or tanks, or worn by fire fighters. In these events, a self-contained breathing apparatus, which is specifically suited for such application, should be used. If it is found that it is not possible to enter a tank wearing a self-contained breathing apparatus the bottle harness can be removed and passed through the access but the face mask must always be worn.'

As outlined in our previous article, and reinforced by this incident, the main causes of accidents in enclosed spaces are due to:

- + 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

Clearly, wearing the correct breathing apparatus would have saved the life of the master.



Facing the facts

The Club has also handled a claim which demonstrates the importance of wearing the correct face mask and shoes. In this case, an ordinary seaman (O/S) was assisting with the greasing of the ship's mooring winches.

The O/S was standing on the winch frame trying to clean grease on the top of the winch. The other O/S involved in the work did not notice that his colleague was standing on the frame and started the winch. He was

wearing trainers and sustained injuries to three of his toes. The chief officer gave first aid, but two days later, it was noted that the toes had become infected and the ship diverted to secure emergency medical treatment.

In another incident, a crew member was sprayed with sodium methylate solution whilst disconnecting a hose following the blowing of the cargo line. The injured crew

member was not wearing a face mask as required by the material safety data sheet (MSDS), which could have prevented the solution splashing on his face and into his eyes and mouth. After receiving first aid on board, the crew member was dispatched for shore medical attention and was later discharged with prescription medicines.

The correct PPE could have prevented the injuries sustained in both of these incidents.



Quality matters

As a seafarer, it's important that you ensure all PPE is safe to use and fit for purpose because faulty or poor quality equipment can potentially be just as dangerous as not using any PPE at all.

Check mate

Before using any PPE, you should always take time to properly check over it to make sure it is fit for purpose and in good condition. If you have any doubts over a product's condition, do not use it and inform your crewmates of your concerns. Check for signs such as rips, frays or tears in material, rust and broken fastenings. Some products, such as ropes, may look safe and in good condition but could actually be in poor condition inside and so physical checks, such as load testing, are important in order to check such products are safe to use.



Mark making

Any PPE you use should be of high quality and supplied from a reputable source. You should check for special quality marks on the product which can prove a product meets quality standards. However depending on where you are operating or where the PPE products were bought from, different marks may be used. Safety marks from different regions include the CE mark (Europe), CCC (China), USA Product Safety Compliance, GOST-R (Russia) and CSA (Canada). The presence of a quality mark can give peace of mind in knowing the PPE is of high quality but you must always still make visual and physical checks to ensure any product is in good condition before you use it.

Kitted out

As a seafarer, you will often be working in potentially dangerous situations and so it is vital that any PPE you use fits you correctly. If PPE is too loose or too tight, whether a pair of gloves or a whole protective suit, this could be dangerous in restricting your movements and preventing you from doing your job safely. If PPE is poorly fitting and uncomfortable, the wearer may be less likely to use it, but don't be tempted to go ahead with a job without PPE simply because it doesn't fit you properly. If you have existing health problems you may also be uncomfortable wearing standard PPE equipment if it is too heavy – it is important that as an individual you carefully consider if your PPE is comfortable enough for you to work safely.



One hit wonder

If an item is intended for single use only (such as latex gloves or ear plugs) make sure you dispose of such items safely after use. Re-using these products can be dangerous because they will lose their effectiveness and strength after first use. Also, soiled items such as gloves could contaminate other work areas or, in the case of ear plugs, sharing these products could be unhygienic.