

# HEALTH AND SAFETY HANDBOOK

Edition May 2016



Maritime  
Offshore  
Onshore  
Ship Delivery

# 10 safety tips

- 1** Safety is not achieved automatically.
- 2** Always lead by good example.
- 3** Safety is your responsibility.
- 4** Follow the rules.
- 5** Immediately report unsafe situations.
- 6** Keep your work place tidy.
- 7** Use personal protection equipment.
- 8** Be familiar with emergency procedures.
- 9** Quality increases safety.
- 10** People create safe situations, as well as unsafe ones.

# PERSONAL

## Personal details

Name \_\_\_\_\_

Private address \_\_\_\_\_

Telephone number \_\_\_\_\_

Employer

### **TOS**

Waalhaven O.Z. 77  
3087 BM Rotterdam  
The Netherlands  
+31 10 436 62 93

Warn in case of  
accident

24/7 service TOS  
+31 6 5574 85 09

Private tel. no. \_\_\_\_\_

Blood type \_\_\_\_\_

Medication \_\_\_\_\_

Passport number \_\_\_\_\_

Valid until \_\_\_\_\_

Seaman's book no. \_\_\_\_\_

Valid until \_\_\_\_\_

Personal safety

logbook no. \_\_\_\_\_



# WELCOME

## Welcome to TOS!

We are pleased to welcome you to TOS and hereby provide you with our health and safety handbook.

This handbook offers you a brief insight into the health and safety organization of TOS, as well as the accompanying health and safety regulations. You can regard the contents of this book as an **addition** to the specific rules and regulations of the company where you are being deployed.

All TOS employees will receive this book. We expect you to study it and act according to its regulations when performing your working activities.

During your activities, you must pay appropriate attention to your own working conditions as well as those of others. In practice, you are just as likely to be involved in an accident due to the activities of others, as you are due to your own activities. Thus, your colleagues may also be at risk from your activities. It is important for you to be aware of this.

If you have any questions about health and safety issues at work, you can convey them to your supervisor. This allows us all to work together in ensuring the health and safety of all our employees and any other persons involved.

*Kees Wagenaar*  
*Managing Director TOS*

# Policy statement concerning health and safety

TOS does a great deal to continuously ensure health and safety in the operational activities of the company where you are employed. Arrangements concerning this matter have been established in this health and safety handbook.

By carefully safeguarding health and safety, TOS wants to ensure that

- clients, company employees, agency employees and the social environment are satisfied with the services of TOS;
- health and safety risks, which could cause damage and/or injury to employees or third parties, are minimised;
- all legal rules and regulations are adhered to;
- personal injury, as well as material and environmental damage, is prevented;
- efforts are continuously being made to improve health and safety;
- the priorities of health and safety are clearly established within internal operations.



# Responsibility

Continuous improvement processes are needed to realise the above mentioned objectives. This requires the input of all employees: each employee is responsible for helping the organisation to improve in the field of health and safety. The established health and safety policy has been communicated to all company employees and agency staff by distributing this handbook.

As stated above, policy can only be implemented if all employees are prepared to contribute and share their thoughts on the matter. The Board will ensure that everyone is familiar with this policy. This policy statement will be evaluated on an annual basis and will, if necessary, be updated by the undersigning party.

The Board and all office staff at TOS continuously attempt to improve operating processes and we hope you will be able to deliver a positive contribution.

Rotterdam,



*TOS  
Kees Wagenaar,  
Managing Director*

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## 1.1 Introduction for new employees

All employees who come to work for TOS will receive a thorough introduction, which consists of a general section and a specific section focussing on their specific activities.

The general section addresses some of the following aspects: the activities of TOS, reporting illness and the rights and obligations of employees.

The section about health and safety addresses risk factors that play a role in the maritime sector. TOS will contribute by supplying all (safety) information it has at its disposal concerning the employee's activities. The supervisor at the hiring company will afterwards provide an introduction in the work place, which relates to the job and the working environment.

## 1.2 Reporting illness and recovery

If you are ill, you must report your illness by phone to the TOS office in Rotterdam, before 09:30 o'clock on the first day of absence. Always mention the nature of the illness and the suspected period of absence.

Once you have recovered, you must report this to the office in Rotterdam in the morning before starting your activities, at the latest, or preferably, the previous day. If the company doctor declares you fit for work, you must immediately report this to the TOS office in Rotterdam.

If an accident has occurred, this must be reported immediately to TOS. The company can always be reached outside office hours by calling the following 24-hour number:

**+31 6 5574 85 09**

### **1.3 Identification requirement**

A legal identification requirement applies within the Netherlands. The aim of this is to prevent fraud and criminality. Therefore, when starting work, you must be able to present valid proof of identity (passport or identity card). TOS will retain a copy for its records. In addition, you must always be able to prove your identity on the work floor. A driving license can also be used for this purpose. However, for travelling abroad you will need of course all required documents, such as a valid passport, a visa, compulsory vaccinations etc.

### **1.4 Safety passport**

A personal safety logbook (PSL) is mandatory in some companies. Such a PSL contains your qualifications and the training you have followed. You must have this with you at all times and show it to clients upon request.

### **1.5 Company doctor**

If you are ill, you must comply with the request to visit the company doctor during consultation hours. If you are unable to meet this request, you must mention this to the company doctor along with your care address and the reason for non-compliance.

You are entitled to a periodic occupational health exam (POH). However, participation in this examination is not mandatory. You can also visit our company doctor during occupational health consultation hours (OHC).



## 1.6 Order, tidiness and behaviour

Your behaviour in the work place can have an impact on the health and safety of everyone else. Most incidents are caused by the so-called 'NIC' formula:

**Negligence**  
**Inattention**  
**Carelessness**

Measures to prevent accidents:

- ✓ Make sure that the work place, tools and buildings are always neat and tidy
- ✓ Do not eat or drink in the work place
- ✓ Always be hygienic, keep toilets and sinks clean and wash your hands before each pause and after each visit to the toilet
- ✓ Store dangerous substances and tools so that no one can come into contact with them involuntarily
- ✓ When leaving the work place, ensure that people can enter in a safe manner
- ✓ Gather waste immediately and clean spillages immediately
- ✓ Store flammable material in the allocated location
- ✓ Store material in a stable manner and check on a regular basis
- ✓ Ensure that pipes cannot roll away and check on a regular basis
- ✓ Only use tools and machines for their designated purposes and use all mandatory personal protection equipment

## 1.7 Personal Protection Equipment

All employees must acquire a package of personal protection equipment (hereafter referred to as PPE) and safety clothing. This does not apply if other arrangements have been made with the client.

Package contents are determined by the day-to-day activities. During the introduction, you will be informed about which PPE must be used during your work activities. In this case, follow the instruction sheets, if they have been supplied.

The effectiveness of the PPE is primarily determined by the condition of the equipment. You are responsible for maintaining and cleaning your work clothing (wherever possible), tools and footwear. Therefore, you should take good care of the PPE you acquire. Perform maintenance in accordance with the instructions/manual that accompanied the equipment.

If you think you do not possess the appropriate personal protection equipment, or if it is insufficient to perform your work in a safe manner, you must immediately contact your TOS consultant.

## 1.8 Access pass

At some locations, an access pass (temporary) is issued to allow people to visit a work place or perform particular activities at the company premises. Activities cannot be carried out without this pass. In most cases, the client will issue the pass and explain its workings. Unless stated otherwise, access passes are valid for a maximum period of 24 hours.



# CHAPTER 02

## Mooring and Unmooring

### 2.1 Mandatory Personal Protection Equipment



### 2.2 Checklist for employees

- ✓ Always use an adequate number of crew when mooring/unmooring
- ✓ Make each other aware of unsafe situations
- ✓ Familiarise yourself with the equipment used in order to be able to spot any wear and tear at an early stage
- ✓ Provide supervision at stem and stern whilst mooring/unmooring
- ✓ Has the mooring plan been discussed?
- ✓ Use well-working communication equipment
- ✓ Do not carry out more than one aspect of the job at any one time (like manning winch and handling ropes)

### 2.3 Be vigilant

In many instances accidents do not happen because of the complicated nature of a manoeuvre, but rather because of lack of care and attention whilst carrying out a (simple) job.

Please keep in mind that: **You have a legal obligation to point out unsafe routines and/or incorrect usage of protective equipment to the people you work with.**

## 2.4 Organisation and safety

- ✓ Communication equipment has been tested and agreement has been reached on the division of labour; the crew has been briefed on the mooring plan
- ✓ All supervising officers are familiar with the nature of the equipment used. Experience and vigilance are vital in the prevention of accidents
- ✓ Supervision over and operation of winches and capstans should be in the hands of experienced crew
- ✓ Officers in charge should have an overall picture of the situation at all times
- ✓ Preparation of the work space is vital to safety at work
- ✓ Work should only be carried out by authorised persons

## 2.5 Equipment

- ✓ All tools and equipment used should be inspected and maintained regularly
- ✓ All of the mooring gears movable parts should be current
- ✓ The surfaces of all hawser fair leads, cable guides, bollards and warping ends should be kept clean and in good working order
- ✓ Ropes and warps should be in good condition and should have been inspected
- ✓ Care, control and maintenance are of prime importance, however, always be aware that ropes may snap at any time
- ✓ Lay-out and equipment—and therefore the mooring plan too—are different on every ship. For that reason make sure to study a ship's lay-out on boarding
- ✓ The operational direction will have been clearly marked, both on the drum and the handle
- ✗ Unclear marked workspaces increase the risk of accidents



## 2.6 Mooring and unmooring

- ✓ An adequate number of experienced crew will be available
- ✓ Do not carry out more than one aspect of the job at any one time (like manning winch and handling ropes)
- ✓ Whilst moored, regular checks should be carried out to ensure that the vessel is still alongside safely (“mooring rounds”)
- ✓ Crew will take into account the effects of:
  - the wind
  - the current
  - suction from passing ships
  - waves and swell
  - the tide
  - the ships movements as a result of cargo operations
- ✓ Always maintain a safe distance from warping ends/drums to prevent becoming trapped (keep hands and fingers free)
- ✓ Sound communication between ship and shore (and tug if and when applicable) is of the essence
- ✓ Wear stout protective gloves to ensure a strong grip as rope burns and steel cables have burrs
- ✓ Be vigilant of observers whilst mooring and unmooring: ropes may snap at any time
- ✗ Do not ever lay ropes and warps around sharp corners. When using a winch, the angle to the hawsole should be as large as possible
- ✗ Do not ever stand close to taut ropes or warps and stay clear of the snap-back zone
- ✗ As much as possible, stand behind the warping end when handling ropes; avoid the side of the taut rope
- ✗ Do not ever stand inside a bend or loop of any rope or warp
- ✗ Stay clear of moving parts
- ✗ Beware of heaving lines being thrown aboard from tugs or shore

## 2.7 Stopping and belaying ropes

- ✓ For preference, do not just belay a rope by using figures-of-eight: instead first hitch it twice around the lower side of the bollard
- ✓ Using a winch to handle ropes and warps should never be done by one single person
- ✓ Level out stress on ropes as much as possible
- ✓ Be aware of the different elasticity of the various materials
- ✗ Do not leave stoppers attached to rope after use
- ✗ Avoid too many turns on the drum
- ✗ Steel cables must not be belayed on top of ropes.
- ✗ When using 'split drum' never allow a double layer on the working part to avoid fouling and/or trapping/damaging ropes

## 2.8 Steel cables

- ✓ Steel cables must be stopped with chain stoppers which should run in the opposite direction to that of the cable in question
- ✓ Steel cables must not kink whilst being ran out or heaved up
- ✓ Only special shackles should be used to connect steel cables to ropes (e.g. Tonsberg)
- ✗ Beware of burrs: use stout leather gloves

## 2.9 Physical strain and storage

- ✓ When using mooring gear, the availability of sufficient manpower to reduce physical strain is vital
- ✓ After use, ropes should be stored clear of the deck
- ✗ Avoid manual pulling on ropes as much as possible to avoid straining – and possibly injuring – the back



# CHAPTER 03

## Hatch cover cranes/ gantry cranes

### 3.1 Mandatory Personal Protection Equipment



### 3.2 Checklist for employees

- ✓ Hatch cover cranes should always be operated by at least two crewmembers
- ✓ Check that no people, cables or other equipment are on or near the track
- ✓ Check the working order of the bell, the lighting, the signal lights and the emergency stop
- ✓ Ensure that the wheels are properly on the track.
- ✓ Only use appliances that are suitable for the job, and that are in good working order
- ✓ Evaluate the degree of trim and list before and during hatch cover crane activities

### 3.3 Working safely with hatch cranes

- ✓ Before use, check that all parts, safety devices and signals are in good working order
- ✓ Whilst operating hatch cover crane carriages always ensure that the manufacturer's requirements are complied with
- ✓ Specific cargos may cause crane tracks to be slippery, which may seriously limit the use of the hatch cover crane, especially in case of trim

- X Hatches, tweendecks and bulkheads should not be removed when work is being carried out underneath or on top of them
- X Do not use the hatch cover crane if the ship has a trim or a list exceeding the manufacturer's indicated limits
- X Do not use the hatch cover crane if the hatch crane carriage has visible defects
- X Hatches should never be handled by a single person. Make sure that the job is performed by at least two people –one on each side of the hatch– who are in continuous communication with each other

### 3.4 Opening and closing hatches

- ✓ Check that all wedges and securing pins have been removed
- ✓ Bring the hatch cover crane into position and check that the hooks are inserted in line with the hoisting points before lowering the spreader
- ✓ Ensure that the hooks on both starboard and portside have been attached properly to the hoisting points before starting to hoist
- ✓ Check the movements of the power cable
- ✓ Move the hatch cover crane slowly and with consideration
- ✓ Move hatch covers as low as possible and avoid all obstacles
- X Do not move and hoist at the same time

### 3.5 Use as hoisting device

- ✓ Prevent the hatch cover crane from toppling over
- ✓ Only use suitable equipment that has been specifically designed for this purpose
- ✓ Ensure that the hoisting points SWL (Safe Working Load) cannot be exceeded
- ✓ Free hanging loads should only be moved at the lowest possible speed and in a flowing movement
- ✓ Sound preparation is half the job



# Working safely under a crane

## 4.1 Mandatory Personal Protection Equipment



## 4.2 Checklist for employees:

- ✓ Only use approved hoisting equipment like straps, chains, pulleys, clamps, harnesses, etc. (damaged hoisting equipment should NEVER be used and must be handed in immediately)
- ✓ Check safeties, latches, etc. prior to use
- ✓ Never walk under the hoisted load and cordon off the work place
- ✓ When using two/three or multiple hooks, the top angle between parts may never exceed 120°
- ✓ Fit hoisting equipment to the right part of the load and use a control line if necessary
- ✗ Never walk under the hoisted load and cordon off the work place

## 4.3 Communication

If you need to perform activities under a crane, you must always wear a safety helmet, in addition to other prescribed PPE. **It is very important to maintain effective communication with the crane operator. This means you must be familiar with the required communication equipment and the agreed signs.**

# CHAPTER 05

## Hoisting activities

### 5.1 Mandatory Personal Protection Equipment



### 5.2 Checklist for employees:

- ✓ Only use certified hoisting equipment
- ✓ Visually inspect all hoisting equipment for damage, prior to use
- ✓ Are you and your colleagues wearing safety helmets?
- ✓ Has the load been effectively strapped and is it hanging in a stable manner?
- ✓ Are there any loose objects on the load or can components fall from the load?
- ✓ Ensure that the load is lowered in a stable manner
- ✓ Ensure that hoisting hooks are in good condition and that clamps have been closed
- ✓ Ensure no other objects are being “dragged” by the load
- ✓ Ensure that the load has been tied to the pallet hook
- ✓ Ensure that you give the correct hoisting instructions; communicate with the crane operator
- ✗ Do not use damaged materials



## 5.3 Hoisting

Hoisting involves transporting a free-hanging load, for which (in principle) a crane is needed. A maximum capacity has been marked on all cranes. Therefore, check in advance the loads you want to transport and mention this when ordering the crane, or consult with the crane operator.

Every crane has a crane booklet. This mentions whether the crane has been approved during the annual inspection, as well as its capacity.

## 5.4 Code of conduct re chains

- ✓ Check for damage
- ✓ When in doubt: do not use
- ✓ Tighten all nuts
- ✓ Check hook load capacity
- ✓ Protect against sharp corners
- ✓ Apply longitudinal stress only
- ✓ Ensure dry storage
- ✓ Check hook's safety catch
- ✗ Do not ever apply loads to the hook's point
- ✗ Do not use a hammer in rigging chains

## 5.5 Code of conduct re pulley blocks

- ✓ Check for damage
- ✓ When in doubt: do not use
- ✓ Inspect/repair after overloading
- ✓ Check safety catch's condition and working order
- ✗ Do not overload suspension
- ✗ Do not extend handle
- ✗ Never apply lateral stress
- ✗ Do not ever apply loads to the hook's point

## 5.6 Code of conduct re steel cables

- ✓ Store in a dry place
- ✓ Only apply non-acidic lubricants
- ✗ Do not knot
- ✗ When hosting; Do not use cables with grips
- ✗ Avoid all contact with acids and/or caustic substances

## 5.7 Steel cables to be discarded:

- ✗ Frayed splices
- ✗ Burrs
- ✗ Broken strands
- ✗ Bends or kinks
- ✗ Visible rust/corrosion or wear

## 5.8 Code of conduct re hoist straps

- ✓ Store in a dry place
- ✓ Labels must be legible
- ✓ Check for damage
- ✓ Beware of sharp corners
- ✓ Avoid excessive (direct) sunlight
- ✓ WLL/SWL must be clearly visible
- ✗ Keep clear of chemicals
- ✗ Do not knot hoist straps

## 5.9 Hoist straps and/or circular straps to be discarded:

- ✗ Labels missing
- ✗ Visible heat damage
- ✗ Damage to load-bearing fabric
- ✗ Damage to loop
- ✗ Damage by acid and/or caustic substances

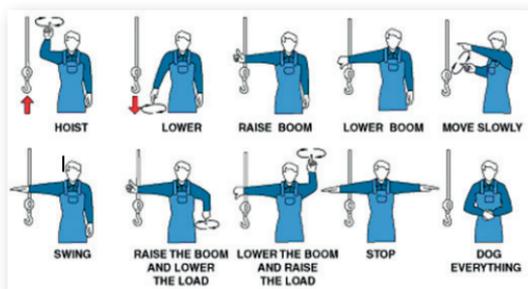


## 5.10 Lifting safely with small devices

- ✓ Sound preparation, Job-Risk Analysis
- ✓ Ensure that the WLL/ SWL cannot be exceeded
- ✓ Mark permanent attachment sites with WLL/SWL
- ✓ Use spider or beam when hoisting large items
- ✓ When using a spider: the safe top angle is  $90^{\circ}$
- ✓ Check condition and working order prior to use
- ✓ Ensure that the load cannot fall or become unsecured
- ✗ Do not hoist/swing over personnel (or anyone else)
- ✗ Never exceed WLL/SWL
- ✗ When using a spider: never exceed a top angle of  $120^{\circ}$
- ✗ Do not return damaged or overloaded equipment to stores
- ✗ Do not extend pulley blocks handles
- ✗ Do not attach lifting gear to pipes and/or railings
- ✗ Do not use any equipment that has not been specifically designed for lifting
- ✗ Do not use any homemade equipment for lifting
- ✗ Do not place unsecured items on top of a load to be lifted
- ✗ Do not paint over WLL/SWL markings on permanent points of attachment and hoisting booms

## 5.11 Signalling

Use the standard signals whilst operating the crane.



## 6.1 The various risks

The first distinction that can be made in terms of electrical risks, is the one between the risks to humans (burns, electrocution) and the risks to the environment (fire, explosion, etc.).

### Risks to humans

There can be a variety of consequences when the human body comes into contact with electrical current:

- A shock reaction (jumping up), which can result in a fall or another accident
- Muscle cramp that prevents one from loosening one's grip, whereby contact-time is extended and the consequences for the human body are worsened
- Impact on the workings of particular vital organs (e.g. the heart)
- Damage to tissue and organs
- Death

### Risks to the environment

In addition to consequences for the human body, electricity can also have far-reaching consequences for the environment. A fire or explosion may be caused by excessive heating in a device or circuit, due to overload or a short circuit. In order to prevent these risks, or to limit them, it is necessary to take preventive measures that include; a safe installation, appropriate information and training for employees, use of correct equipment and performing work in accordance with safety regulations.

### Work permits

On several occasions a work permit is needed to work on electrical circuits. Use the guidelines which apply for this type of work.



# CHAPTER 07

## Electrical equipment and machines

### 7.1 Checklist for employees

- ✓ Keep your tools in good condition: clean, undamaged and sharp
- ✓ Never perform repairs yourself; hand the tool in immediately
- ✓ 'Hold' buttons should be deactivated
- ✓ Remove the plug from the socket if device is not being used
- ✗ Do not place extension plugs on moist surfaces
- ✗ Do not perform work above the tool's capacity

### 7.2 Use of electrical equipment and machines

Each piece of equipment has been designed for a specific purpose, so you should only use the tool for its intended purpose. Each piece of equipment also requires maintenance – bear this in mind. All electrical equipment must, prior to work activities, be inspected for good condition and operation, in accordance with the Work Equipment Guidelines and NEN 3140. You can check this on the inspection sticker.

Inspection stickers state until which year or month the equipment can be used, or for how long it has been approved. Equipment cannot be used if the re-inspection date has expired or if the inspection took place longer than a year ago. In this case, you must submit the equipment to your supervisor and report it for repair.

# CHAPTER 08

## Working at height

### 8.1 Introduction

If activities are performed at a height above 2.50 meters, this is regarded as working at height.

The law dictates that a safe scaffold, platform or work-floor must be implemented when working at height, or that the risks must be countered by implementing a collective anti-fall device (effective cage, railing) or an individual anti-fall device. If you have been issued with a personal anti-fall device, you must use it for activities above 2.50 meters.

If there are no railings, these must first be placed before work can be carried out within two meters of an (roof) edge.

### 8.2 Work containers

If work needs to be carried out at height and the use of other equipment, such as ladders, scaffolding or extending platforms is inappropriate, it is possible, under strict conditions, to work from a work container hanging from a hoisting crane. However, this work container must not be seen as a standard solution for difficult to reach work locations.

#### 8.2.1 Checklist for employees

- ✓ There must be eye contact between the crane operator and the crew of a work container. Verbal communication must also be maintained, using walkie-talkies, for example. Clear agreements must be made about this in advance



- ✓ Instructions to the crane operator must only be given by one crew member
- ✓ Each crew member must wear a harness belt, which is fastened to the work container
- ✓ A work container must be hung with a four-way intersection, using high quality chains or steel cable;
- ✗ If a work container is going to be used to transport people, who will step out of the work container, permission must be obtained from the Work Inspectorate.

### **8.3 Work permits**

For working at heights a 'high work permit' may be mandatory. Use the guidelines which apply for this type of work.

# CHAPTER 09

## Stairs and ladders

### 9.1 Checklist for employees:

- ✓ Always check the ladder yourself before using it
- ✓ Keep an eye on tears, fixing rods, anti-slip rubber on ladder base, loose rungs, loose or missing hooks
- ✓ Use ladders up to a maximum height of 7.5 meters
- ✓ Set up the ladder at an angle between 65° and 75°
- ✓ There must be at least 20 cm of foot space behind the ladder
- ✓ Use supports or safety devices when working on sloping surfaces
- ✓ Place the ladder against a strong surface
- ✓ Place sliding and extending ladders with the climbing side in the right direction
- ✓ If necessary, cordon off the area (traffic, pedestrians)
- ✓ Stay at least 2.5 meters from uninsulated electrical wires
- ✗ Never leave a ladder unattended
- ✗ Do not use ladders in winds above wind force 6
- ✗ Do not climb above the fourth rung from the top
- ✗ Never place a ladder on a soft surface; use a stable tile block, or a temporary support plank or stabilisation beam
- ✗ Avoid sudden loads
- ✗ Do not lean too far; move the ladder more often (annoying, but safe)
- ✗ Never place a ladder in front of a door

### 9.2 The ladder

A ladder is intended to help you to move up and down, during brief activities. Use scaffolding or an extending platform for longer activities.



A ladder must only be used for activities:

- X Which last less than 4 hours
- X Which are not higher than 7.5 meters
- X Which require forces less than 100N
- X Which do not require people to reach further than an arm's length

# Physical load

## 10.1 Checklist for employees

- ✓ Think in advance about the best way for you to lift the object
- ✓ Is lifting equipment available or can a colleague help with heavy or difficult to handle objects?
- ✓ Lift slowly
- ✓ Lift with both hands in front of the body
- ✓ Use handles if possible
- ✓ Make sure the under-surface is flat and sturdy
- ✓ Use tools like pliers, magnets, suction grips or lifting systems (construction lift, hoisting crane, trolley)

## 10.2 Overload

The back, neck, arms and legs can be overloaded by constantly performing the same movement. The amount of overload is determined by a combination of posture, force and frequency of actions. But other factors also play a role, such as vibrations, the cold and a forced tempo. Due to this combination of factors, it is often difficult for specialists to find a clear relationship between work and complaints.

## 10.3 Tips

The **best way to lift a load** is to keep one's back straight and ensure that weight is directly above the back. However, in practice, many objects must be picked up and carried in front of the body. This creates many forces within the body. The capacity of a body varies greatly from person to person. This can be attributed to age, sex, build and fitness. Therefore, wherever possible, try to lift using the muscles in your (upper) legs.



# CHAPTER 11

## Enclosed spaces

### 11.1 Checklist for employees

- ✓ Make sure there is enough oxygen in the air
- ✓ Ensure that there are no combustion engines near the entrance to the area
- ✓ Make sure there is surveillance at the entrance as long as someone is in the room
- ✓ Measure the presence of harmful substances
- ✓ Ensure sufficient ventilation, also prior to the activities
- ✓ Ensure extra ventilation for welding activities
- ✓ Ensure there is a way to evacuate someone from the area
- ✓ Check whether work instructions or a work permit is needed

### 11.2 Chapter 11 Term 'enclosed spaces'

Enclosed areas are places where, due to the conditions, risks are higher than normal for such activities. A combination of risks often causes heightened levels of risk. The following can be regarded as enclosed spaces: a crawl space in a building, an enclosed space in a ship, etc.

The risks in enclosed spaces are not always the same, which is why measures also differ from situation to situation. Whether the space has been cleaned in advance, and which activities are about to be carried out, are of great importance. The risks and measures that should be taken for enclosed spaces have been described in the risk inventory and evaluation. You must read this before performing the activities.

# CHAPTER 12

## Dangerous substances

### 12.1 Mandatory Personal Protection Equipment

On page 55 the International Maritime Dangerous Goods (IMDG) Code is displayed.



### 12.2 The use of dangerous substances

It is no longer possible to avoid using dangerous substances in societies of today. This means all employees will encounter them. Thus, all employees must be certain how to act in this case.

### 12.3 Labels

All dangerous substances are labelled with danger symbols and user instructions, and feature a safety information sheet.



You can read the handling instructions on the label. The safety information sheet indicates the product's properties, which preventive and repressive measures must be taken when using the product, as well as how the product must be stored and disposed of.

## **12.4 Storage**

These substances must only be stored in an appropriately allocated location. When storing these substances, you must bear in mind that some substances have low tolerance and can react aggressively when they come into contact with each other, can cause fire or fumes or can even displace oxygen. Thus, for gases, you must bear in mind that they can be heavier than air and thus displace oxygen, but can also cause an explosive situation in, for example, a trench or pit.

## **12.5 Finally**

Only use dangerous substances as prescribed in the user instructions and always consult the dangerous substance's safety information sheet.

# CHAPTER 13

## Organic solvents

### 13.1 Mandatory Personal Protection Equipment



### 13.2 Solvents

Here are a few examples of well known solvents:

- toluene
- xylene
- benzene
- terpentine
- hexane
- thinner
- kerosene
- white spirit
- ether
- alcohol

Due to their volatility and fat solubility, they are used on a large scale in, for example, degreasing products, paints, pickling processes, glues and thinners. Solvents are released during use. This means harmful vapours are inhaled by employees, or find their way into the body via the skin.

### 13.3 Organic solvents

Organic substances are known for their neurotoxic (poisonous) properties.



Of all organs in the human body, the brain is the most sensitive to organic solvents. Exposure to these solvents can result in sleeplessness, nightmares and extraordinary irritability. This pattern of problems can become so severe that one can develop Organic Psychosyndrome.

### **13.3.1 Organic Psycho syndrome**

Organic Psychosyndrome (OPS) occurs when people are exposed to toxic substances in their professional lives. In everyday language, OPS is often referred to as 'painters' disease'.

### **13.3.2 Prevention**

In order to reduce the risk of OPS, it is important to always carefully read and adhere to the product's user instructions. Furthermore, it is essential to wear a mouth mask when working with the mentioned substances, certainly when using them in enclosed spaces. In addition, treatment in an early stage is essential to limit damage to the nervous system. Therefore, be aware of the mentioned symptoms (also in colleagues) and consult a doctor in good time.

## 14.1 Mandatory Personal Protection Equipment



## 14.2 Checklist for employees:

- ✓ If a permit system is in place, work in accordance with the permit
- ✓ Remove and protect flammable components
- ✓ Make sure there is a fire extinguisher in close proximity to the activities
- ✓ Bottle opener on bottle
- ✓ Welding trolley in a safe location
- ✓ Use (source) extraction and/or ventilation
- ✓ Clean the welding surface
- ✓ Use personal protection equipment, such as safety goggles (wide view), breathing protection, work clothing and work gloves
- ✓ Make sure the work place is neat and tidy
- ✓ Use hearing protection



# CHAPTER 15

## Cutting activities

### 15.1 Mandatory Personal Protection Equipment



### 15.2 Checklist for employees:

- ✓ Check electrical (hand) tools for defects
- ✓ Prevent unwanted operation by using the safety feature and by using a foot switch
- ✓ Use bending tools
- ✓ Make sure the work place is neat and tidy
- ✓ Use personal protection equipment, such as safety goggles (wide view), breathing protection, work clothing and work gloves
- ✓ Limit the period of exposure
- ✓ Use lifting tools and select an appropriate location
- ✓ Use hearing protection
- ✓ Take necessary precautionary measures and make sure waste is disposed of
- ✗ Avoid enforced (incorrect) work postures

# Pneumatics and hydraulics

## 16.1 Mandatory Personal Protection Equipment



## 16.2 Checklist for employees:

- ✓ Short work periods should be implemented for work with heavy vibrations; so interchange with other work and pauses
- ✓ Ensure that maintenance has been correctly performed
- ✓ Wear soft leather gloves that have an absorbing effect, whereby reducing vibrations somewhat
- ✓ Hearing protection is often needed
- ✓ If necessary, use dust goggles, safety goggles or a face screen

## 16.3 Pneumatic hand tools

Pneumatic hand tools are used when it is too dangerous to use electrical tools. A compressor supplies compressed air, which is passed to the tool via a hose. Light tools or heavy machines may be involved. The risk of serious health complaints is primarily presented by long-term use of heavy tools.



## 17.1 Introduction

Piracy is a serious and growing problem in the 21st century. Piracy exists and will, unfortunately, never disappear. Piracy can be encountered in various forms, including:

- Hijacking a ship in order to obtain ransom money
- Theft of property (money, laptops, cameras etc)
- Theft of goods from the ship (cargo, stocks, life buoys, etc)

## 17.2 Risk of piracy

Every form of piracy presents a risk to the ship and the crew. It is thus important to deal with the matter as effectively as possible.

The best way to do this is self-reflection. This means: good seamanship and consideration of various situations!

Naturally, TOS is also aware of the dangerous situations caused by piracy and their impact on day-to-day affairs. Dealing with piracy is also part of TOS's internal communication plan for emergency situations. Furthermore, rescuers will also ensure that such plans and anti-piracy procedures are on board.

## 17.3 Tips

Here are a few useful tips for dealing with piracy:

- Maintain contact with the TOS office, agent, local authorities and the coastguard when you travel through an area where piracy can be expected
- In consultation with TOS and the ship's engineer, install protection measures on board (such as barb wire fencing)
- Make sure there is extra surveillance for the entire duration of the passage
- Make sure that doors, etc. are closed, whereby limiting easy access
- Use the various available handbooks, guidelines and hand-outs about piracy
- Make sure pirates have difficulty getting on board. If they get on board, make sure they do not have access to all areas.
- Follow training and hold anti-piracy exercises on board so that everyone is familiar with the tasks and what each person must do
- Be vigilant



# CHAPTER 18

## Fire prevention

### 18.1 Checklist for employees:

The first step towards fire prevention is order and tidiness. Further, the following points are also important;

- ✓ It is best to keep oily rags in metal drums and to immediately clean spilt oil and similar products
- ✓ When storing paints, thinners, grease and oil, one should ensure that packaging is closed properly
- ✓ Make sure that thinners are not placed next to warm pipes
- ✓ When paint, thinner, grease or oil is transported, storage should already have been arranged
- ✓ Be familiar with the location of fire extinguishers and the types of fire for which they should be used
- ✓ Fire extinguishers must be easy to access. Thus, there should be no blockages

## 19.1 Checklist for employees:

The following action must be taken in case of accidents:

- ✓ Look after potential victims, never leave a victim alone
- ✓ Take people at risk to a safe location
- ✓ Report the situation (or have it reported) to people in the immediate environment and company first-aid staff
- ✓ In case of fire: try to extinguish the fire, if possible, using available fire extinguishers
- ✓ Close windows and doors
- ✓ Immediately follow instructions from company first-aid staff/emergency staff



# (Near) accident and incident reports

## 20.1 Reporting accidents

At TOS, all accidents, near accidents and incidents must be reported, irrespective of the consequences.

To report them, you must complete a (near) accident and incident form. **Please note:** (near) accidents also include unsafe work situations and unsafe working activities.

For this purpose, you can use the form used by the client. If this form is unavailable, you can request a 'F2 Accident Report form' from your TOS consultant.

You can then send this form, in consultation with your supervisor, to the consultant. TOS investigates all reported (near) accidents or incidents. During this investigation, an important role is played by your opinion about the circumstances that caused the accident. So please complete the form as comprehensively as possible.

TOS will send you an information letter to inform you about the relevant outcomes of the investigation.

## 20.2 Absence caused by an accident

Not only does TOS always try to prevent accidents from happening, we also try to minimise any period of absence from work due to such accidents. Therefore we provide professional medical supervision by our company doctors. We will together with the medical experts and you cooperate to ensure that you will be fully fit for duty as soon as possible. That way we hope to create the best possible solution for all parties involved.

# CHAPTER 21

## Communication in the event of accidents

Do not talk to the press if an accident has occurred. You must also not communicate with the family members of accident victims – leave this to the directors of TOS. Ensure that TOS always has a telephone number for people who need to be informed in the event of an accident.



Personal hygiene is important, certainly in tropical countries. The following points are important when maintaining a suitable level of hygiene:

- ✓ Keep washing areas and toilets as clean as you would when at home
- ✓ Do not leave food or packaging lying around in mess rooms and canteens.
- ✓ It is critical to have clean and appropriate water on board. This helps to prevent contamination via illness. Tanks and pipes must also be rinsed on a regular basis.

# Environment

## CHAPTER 23

Protection of the environment is an important topic that has been addressed in shipping for many years. This includes the reduction of waste flows, noise problems, surface water pollution and soil contamination.

Contribute to a better environment when you are at work. Avoid unnecessary wastage on board and abide by the ship owner's environment policy. Naturally, pollutants (chemical substances, waste, etc.) should not be thrown overboard.



# Discrimination, aggression, violence and sexual intimidation

TOS values good social contact between employees. Everyone who is appointed to perform a job within the company is entitled to a good work place – this is a fundamental human right.

Socially unacceptable behaviour towards others, in the form of discrimination (on whatever basis), aggression and violence (mental and physical), bullying or sexual intimidation (in any form or towards any sex) is not permitted.

People who are guilty of such unacceptable behaviour or encourage others to behave in such a manner, will be held to account by the organisation.

# CHAPTER 25

## Alcohol, drugs, smoking and the use of medicines

### 25.1 Alcohol and drugs

TOS wants to ensure that health and safety risks are minimized for all our employees. The use of alcohol and drugs can directly result in an unsafe working environment for the employee, for other employees and any other persons involved. Therefore, in order for TOS and her Customers to maintain a safe and healthy work environment, a ZERO tolerance Alcohol & Drugs policy is applicable. This means that any consumption of alcohol is prohibited at all times during presence upon the work site (which includes any vessel, barge, rig or installation) and at minimum 24 hours prior to the estimated start of working activities by the employee.

In case of any incongruence between policies, the policy of the Owner/Customer shall prevail over this TOS Policy.

When on board and/or at the work site of the client, you must follow the applicable alcohol and drugs policy, which normally has a 'zero tolerance' approach. This means NO alcohol or drugs will be tolerated and that you will be immediately removed if you fail to comply. In general, TOS is entitled to take appropriate measures if you are under the influence of narcotics during or immediately prior to work hours. You can read more about this in your employment contract with TOS.

For activities abroad (for example, countries in the Middle East and/or Asia), you should be aware of the very severe penalties (prison) for transporting and/or consuming alcohol/drugs. Keep yourself well informed and always comply with regulations.

For more detailed information TOS has a separate memo on the Alcohol & Drugs Policy.



## **25.2 Smoking**

Smoking policy dictates that smoking is prohibited in the offices of TOS. When at the work site, you must adhere to regulations that apply at that particular location.

## **25.3 Use of medicines**

The use of some medicines can also have an impact on working capacity and can result in an inability to work. Every time medicines are used, employees must check whether they could influence their work suitability and, if necessary, consult their doctor or company doctor about whether work can be carried out and, if possible, what kind of work.

In addition, ensure that your employer is aware of your blood type and the medicines that are critical to you, or whether you are allergic to, for example, medicines and/or particular foods.

## **25.4 Other health risks**

Unlike a few years ago, the health risks for sea crew are not only restricted to on-board accidents and tropical diseases, but also include illnesses caused by high blood pressure, excess weight and diabetes. These health problems are determined by genetics and lifestyle and can partly be influenced and avoided. We urge all our crew to eat healthy and perform exercise at regular intervals. That way you will not only be able to stay healthy during work; you will then also be more likely to enjoy your well-deserved pension afterwards!

# Tropical diseases

Travelling to the tropics comes with the risk of being infected by tropical diseases. Good hygiene and a cautious approach are advised, e.g. avoiding uncooked vegetables, washing lettuce with tap water, contaminated or undercooked chicken, shrimps and meat, as well as ice cubes.

Vaccination is possible against a variety of diseases. TOS will ensure that everyone working for TOS in tropical regions is aware of preventive measures that must be taken.

TOS always follow the recommended program of the Travel Clinic. For more detailed information on several tropical diseases TOS has separate memos available, such as: Ebola (Sierra Leone, Liberia, Guinee), Ebola (Nigeria), Zika (several countries in Latin America).



Malaria is a serious disease that is contracted via mosquito bites. To prevent Malaria infection, it is recommended that you visit a GGD, Travel Clinic, Tropical disease centre, polyclinic for infectious diseases or a specialised GP prior to departing for a Malaria region.

We will advise you about which Malaria tablets you should take. It is advised to closely adhere to instructions concerning the duration and frequency of medicine consumption: insurance companies will not pay out if it transpires that you have not taken tablets, or have not taken enough of them. In this case, TOS may recuperate any incurred costs from you.

## What you need to know about Malaria:

- Only Malarone and Lariam are still effective in most Malaria regions. There must be Malarone on board, not only for prevention but also for treatment!
- Fever – headache – muscle pain (flu symptoms) in Malaria regions mean Malaria until the contrary has been proven
- Malaria Tropica can kill within 3 days
- Any form of prevention is always better than no prevention at all
- Preventive measures against Malaria include a mosquito net, the use of anti-mosquito products like Deet and pesticides
- In the evening, cover arms and legs with clothes in order to prevent mosquito bites
- A single mosquito bite is enough to contract Malaria
- Malaria mosquitoes are active up to 3km off the coastline Always ensure that you have a small supply of tablets with you; these pills may save your life in case of a sudden attack of Malaria

In case of long-term deployment in a malaria region and/or regular return to a malaria region, it would be sensible to consult your GP about the use of malaria medication. Medicines can have side-effects if used for long periods.



Always be respectful to the client; avoid conflicts and never discuss with the client of your own accord. Problems such as damage, risks and accidents will be handled by the executive manager and the consultant. Never allow yourself to be forced into actions you deem irresponsible. Behave correctly and always remain calm. In case of doubt, always contact the TOS consultant. Remember 1 thing:

**BE SMART**

**BE SAFE**

Make sure you are well informed and be alert. Your safety (and that of others) is determined by you!

# Used abbreviations and sources

## Used abbreviations

V&G	Health & Safety
PPE	Personal Protection Equipment
EHBO	First Aid in Accidents
BHV	Company first-aid
PM0	Preventive Medical Examination
OHC	Occupational Health Consultation
SWL	Safe Working Load
WLL	Work Load Limit

## Sources

ARBO chapters of the Health and Safety Index for the shipping industry from the KVNR – Royal Association of Netherlands Shipowners



# Pictograms



Wear protection clothing



Wear hearing protection



Wear eye protection



Wear gloves



Wear head protection



Wear face protection



Wear safety footwear



Wear dust mask



Class	Description	Example
1	Explosives	Fireworks, Ammunition, Gelignite
2.1	Flammable Gases	Acetylene, Hydrogen LPG
2.2	Non-flammable, Non toxic gases	Nitrogen, Carbon dioxide, refrigerant gases
2.3	Toxic Gases	Chlorine (gas), Ammonia
3	Flammable Liquids	Ethanol, Methanol, Hexane
4.1	Flammable Solids	Sulphur
4.2	Spontaneously Combustible	White phosphorous, Activated carbon
4.3	Dangerous when wet	Sodium metal, Calcium carbide
5.1	Oxidizing Substances	Sodium peroxide, Calcium hypochlorite (pool chlorine)
5.2	Organise Peroxides	Methyl Ethyl Ketone peroxide
6.1	Toxic substances	Sodium cyanide
6.2	Infectious Substances	Clinical or medical waste
7	Radioactive substances	Tritium
8	Corrosives	Hydrochloric Acid, Sodium Hydroxide
9	Miscellaneous dangerous goods	Asbestos, dry ice





# Sixty Safety Seconds

## Take your Sixty Safety Seconds

If you ask any person about safety on the job, he will perfectly well be able to tell you what are the risks for him when performing his tasks. And he will also know how to control those risks. However, when walking in on that same person while actually performing his tasks, chances are quite high that you will find him working his pants off, without taking into consideration any of those things that he just told you about...



In daily practice we all get careless at times. Don't! Save yourself, take your sixty safety seconds. Every day again.

-  **1. Stop before you start your task**
-  **2. Think carefully about the task and the risks**
-  **3. Look around, are there any hazards?**
-  **4. Assess the risks**
-  **5. Take precautions**
-  **6. Safely start your task!**

# 10 safety tips

- 1** Safety is not achieved automatically.
- 2** Always lead by good example.
- 3** Safety is your responsibility.
- 4** Follow the rules.
- 5** Immediately report unsafe situations.
- 6** Keep your work place tidy.
- 7** Use personal protection equipment.
- 8** Be familiar with emergency procedures.
- 9** Quality increases safety.
- 10** People create safe situations, as well as unsafe ones.



From our head office in Rotterdam and our **worldwide network** of branch offices, joint ventures and partnerships, we provide **personnel solutions** to the energy and maritime sector.

**Head office**  
Waalhaven O.Z. 77  
3087 BM Rotterdam  
P.O. Box 55064  
3008 EB Rotterdam  
The Netherlands  
Phone +31 10 436 62 93  
info@tos.nl • www.tos.nl

