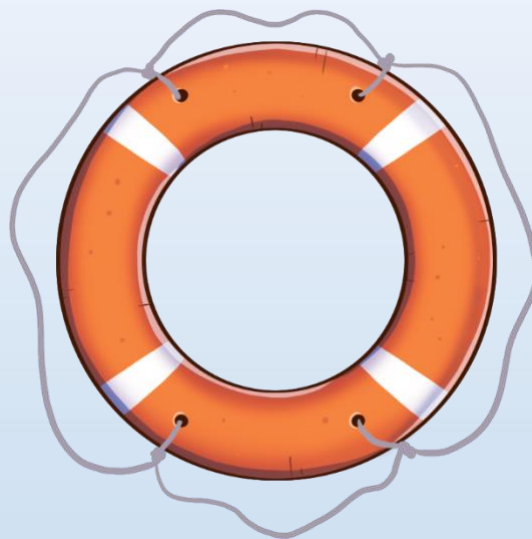




Food and Agriculture  
Organization of the  
United Nations

# Safety at Sea for Small-Scale Fishers



**Safety Risk Management**

**Training Notes**

**2022**

# Table of Contents

Additional Trainer Resources	2
Slides 2 – 6 - Introduction	3
Slides 7 – 9 –The Safety Risk Management (SRM) Process	5
Slides 10 - 26 – SAFE	6
Slides 28 – 40 – Hazard Registers	16
Slides 41 – 57 – SAFE Working Practices for Safety on Board	22
End of Session worksheet	33

# ADDITIONAL TRAINER INFORMATION

This additional information is designed to support the presenter of this course.

Additional resources are suggested throughout the document and it is recommended that the trainer utilise these materials in order to gain a sound understanding of the topic.

## **Trainer Task:**

Tasks that are required to be completed by the trainer before the course begins will be included under this title.

## **Useful resource:**

Additional information, resources, and further reading will be included throughout this booklet. It is important for the trainer to take the time to do further reading and become comfortable with the material they are teaching.

## **Attendee Task:**

Role playing, activities and other interactive tools will be suggested under this title. Encouraging open dialogue through the course is essential.

## Slides 2-6 – Introduction

Being a fisher is a tough job – there are risks in all you do, and these risks change all the time.

The Safety Risk Management Process is a system that can be used in any situation, which allows you to identify and manage hazards that have been identified for any given task.

The purpose of this training in Safety Risk Management (SRM) is to give the captain and crew a framework to be able to make good decisions about their safety.

Safety Risk Management is a way to:

- Identify Hazards
- Assess them, and
- Manage the associated risks,

Allowing you to make better decisions and improve the safety of your fishing trip.

## Terminology

It is important to have a clear understanding of the terminology used in the process to avoid confusion. The following are key terms and their meanings.

Term	Meaning
<b>Hazard</b>	Something that has the potential to cause illness, injury, death, or property damage.
<b>Risk</b>	The likelihood and potential consequence of harm from the hazard.
<b>Likelihood</b>	An assessment of the probability (chance) that an incident / accident will occur.
<b>Consequence</b>	An assessment of the potential severity that could occur as a result of a hazard / event.
<b>Risk Assessment</b>	A structured process to identify hazards and assess risk.
<b>Controls</b>	Actions / measures taken to eliminate or minimise the identified risk.
<b>Residual Risk</b>	Risk remaining after controls have been identified and put into place.

**Useful resource:** <https://www.worksafe.govt.nz/the-toolshed/definitions-and-acronyms/>

### **Trainer Task:**

Talk through the terminology and definitions to ensure the attendees have a good understanding of the various terms.

Check to ensure the class understand the differences between a hazard and a risk.

## **The Hazards of Fishing**

To protect yourself from hazards, you must first understand what the hazards are. Fishing has always been a dangerous job. Many accidents go unreported or un documented, making it challenging to identify the extent of dangers.

Most fisher fatalities are as the result of:

- An accident **to** the vessel: such as a vessel sinking. This often accounts for multiple fatalities in a single event and is estimated to account for 80% of fatalities.
- An accident **on** the vessel: an occupational safety event. Generally, these are single fatality events, such as enclosed spaces incidents, and account for 20% of fatalities.
- **Ill – health due to working at sea:** Occupational health issues. Statistics for these figures aren't available, but anecdotal evidence suggests that the long term ill health due to working at sea is responsible for even more deaths than accidents at sea.

## **Accident Types**

The most common vessel accidents that occur are:

- Vessel lost – sinking
- Vessel lost – fire

The most common accidents on vessels include:

- Fatality / serious injury – lost overboard
- Fatality / serious injury – entanglement in machinery
- Fatality / serious injury – enclosed spaces
- Fatality / serious injury – slips, trips and falls
- Fatality / serious occupational ill health.

This is a good discussion point for attendees. Whilst statistics highlight these situations, the individual area's accident rates and types will differ (sometimes significantly) based on numerous factors.

As the actual statistics for your area are not available, start the session with a discussion on this topic – see attendee task..

We know how dangerous fishing can be, but by implementing a process, such as a Risk Safety Management Process, you can help control, or manage, some of the dangers and protect your vessel and crew.

**Attendee Task:** Discuss accidents or fatalities that you are aware of that have occurred in your area. Is there a predominant theme (sinking, fire, man overboard) that highlights a particular danger? Do you have systems in place to manage these risks?

## Slides 7 - 9 – The Safety Risk Management (SRM) Process

### Managing Risks

A Safety Risk Management system is exactly what it sounds like – a system designed to manage the risk.

Safety is defined as ‘the condition of being protected from or unlikely to cause danger, risk or injury.’

In the context of safety, **risk** is defined as: The likelihood and potential consequence of harm from a hazard.

In essence, the purpose of the Safety Risk Management process is to prevent any harm occurring to the crew, the vessel, or the environment.

Due to the constantly changing environment you’ll encounter as a fisher, completing a Safety Risk Management Process is not a one - off undertaking. Variables such as seasons, weather, types of fishing, sizes of the vessel and the number of people on board all influence the potential dangers. SRM’s should be done regularly on all vessels, to ensure that all hazards have been identified, and where possible, controls have been put in place.

The SRM Process should be completed:

- If it has not been done before.
- At the beginning of the fishing season.
- When planning or making a change
- After an accident, incident or near miss.
- At regular intervals based on the risk level assessed in the workplace.
- When legislative obligations change.
- Prior to carrying out a new task / type of fishery.

## Undertaking the SRM Process

The process can be easy to understand when using the acronym **SAFE**

**S – See** the Hazard

**A – Assess** the Risk

**F - Fix** the problem

**E – Evaluate** your fix

The first step (**SEE**) is to identify existing and potential hazards – anything that could go wrong or cause damage.

Then, you need to **ASSESS** the risk – what are the consequences of that hazard, and what is the likelihood of it occurring?

Once you have established the risk the hazard poses, you can (**FIX**) put control measures in place to prevent harm from occurring, and finally;

**EVALUATE** your fix constantly to ensure the control measures you have implemented are effective and appropriate for the hazard.

### Trainer Task:

Prepare an example to demonstrate how the process works, from identifying risks, assessing them, and identifying and implementing controls. By the end of the session they should feel comfortable completing the process independently.

The slides following will take you through the process step by step.

## Slides 10 – 26 SAFE

### NOTE: Hazard and Risk

**Hazard** and **risk** are often used interchangeably but do not mean the same thing.

A **hazard** is anything that can cause harm, damage or adverse health effects

A **risk** is the likelihood, and severity of someone being injured or something damaged *due to the hazard*.

A boat out of the water may be a hazard – but as it is unlikely to cause significant harm, it is not necessary a risk to worry about.

A boat full of fishers caught out at sea with a rapidly approaching storm however, poses significant risks of damage or harm, so must be considered. There is a **clear risk** that has been identified and must now be assessed and controlled.

## Starting the SRM Process

Starting the process can seem like an overwhelming task – where do you start and what do you include?

Keep it simple – work through the various areas, tasks and roles, and identify which pose hazards (what could do wrong or could cause harm).

The first step of the Safety Risk Management Process is to do an assessment to identify the hazards. This assessment should consider:

- The types of machinery and equipment used – including the condition they are in, how they are used, the safety features of the equipment and the environment they are used in.
- Systems of work – how are tasks completed? Is that method the safest option?
- Ergonomics – Are the vessel design / layout and tasks contributing towards the risk of injury?
- Biological – hazards such as viruses, bacteria, fish, poisons etc.
- Personal protective equipment – do all crew have life jackets and sufficient gear such as gloves, covered shoes (with grip) and eye protection?
- Drowning risks – how likely is it that someone might go overboard during the task? Are they leaning over the side of the boat or entering the water at any stage? Are they wearing a lifejacket?
- Exposures to heat, cold, chemicals and diseases – these will all affect the way a person responds and behaves.
- Electrical and fire hazards – these need to be considered towards the total risk of the task.
- Psychosocial factors – including stress, bullying and workplace violence -have the potential to have a significant impact on the way crew behave, respond, or act whilst onboard so need to be accounted for in the overall risk assessment.

**Useful resource:** The following link provides information on managing workplace risks, along with a useful PDF **Identifying, assessing and managing work risks**. This provides any extra information that may be required to answer any attendee questions.

[https://www.worksafe.govt.nz/managing-health-and-safety/managing-risks/?gclid=CjwKCAjw6fCCBhBNEiwAem5SO6ZzUkdCmTfEHYEZd2QiAOBc11\\_YxqmiQDtuYnI5ZD7nMtbYvYbGcRoCnwwQAvD\\_BwE](https://www.worksafe.govt.nz/managing-health-and-safety/managing-risks/?gclid=CjwKCAjw6fCCBhBNEiwAem5SO6ZzUkdCmTfEHYEZd2QiAOBc11_YxqmiQDtuYnI5ZD7nMtbYvYbGcRoCnwwQAvD_BwE)

**Useful resource:**

[https://www.hsa.ie/eng/Your\\_Industry/Fishing/Hazards/Common\\_Hazards/](https://www.hsa.ie/eng/Your_Industry/Fishing/Hazards/Common_Hazards/)



## 1. See the Hazard

The first step – Seeing the hazard – is based on identifying the hazard. You need to be fully aware of the types of hazards, and types of accidents that can occur at sea to cover all scenarios.

To identify a hazard, consider the following:

- What could go wrong?
- Who could be harmed?
- How could harm occur?

Firstly – what could go wrong?

### What could go wrong? Hazard Types

As outlined, hazards are anything that has the potential to cause harm, damage or adverse health effects on something or someone.

**Hazardous situations:** these could include slippery or uneven walking surfaces, cramped working conditions, badly ventilated areas, poorly lit areas, and confined spaces.







**Hazardous substances:** such as corrosive or toxic chemicals, flammable or explosive materials, dangerous liquids, dangerous gasses, bacteria, viruses and poisons.

**Hazardous activities:** including dangerous tasks, unnatural movements or postures, heavy lifting, repetitive work, interpersonal conflicts, bullying, and intimidation.

**Hazardous events:** such as explosions, collisions, vibrations fires, leaks, electric shocks, falling objects, equipment malfunctions etc.

## What could go wrong? Accident types

There are many things that can go wrong at sea

<b>ACCIDENTS</b>	
 <p><b>CAPSIZING</b></p> <p>Poor stability Heavy loads on deck Water trapped on deck</p>	 <p><b>SINKING</b></p> <p>Bad construction Bad maintenance</p>
 <p><b>DRIFTING</b></p> <p>Bad engine installation Bad engine maintenance Lack of fuel Lack of troubleshooting experience</p>	 <p><b>COLLISION</b></p> <p>Lack of navigation lights Tired crew</p>
 <p><b>FIRE</b></p> <p>Bad engine installation Bad installation of cooking stove</p>	 <p><b>WORK ACCIDENTS</b></p> <p>Slippery decks Unprotected machinery Tired crew</p>

**Useful resource:** <https://www.scribd.com/document/81826232/Safety-Guide-Rep112>

## What could go wrong?

During fishing activities, do the following hazards exist?

- Collisions, sinking, grounding, etc?
- Engine breakdown?
- Slips / falls on deck?
- Falls overboard?
- Hazards from manual handling?
- Injuries from fish or fishing equipment?
- Chemicals or substances?
- Fire or explosions?

## Understand the Hazard

Once you have considered all the situations in which something could go wrong – its time to get a bit more specific about the details of the hazard.

What is the hazard?

What is the location of the hazard?

Who could be hurt by it?

How can it hurt someone or damage something?

Asking questions like this allows you to develop a clear understanding of the of the hazard, which will make things easier for the next parts of the process.

### **Trainer Task:**

Create an example scenario to use as a demonstration with each step.

Complete each step as it is discussed on a blank risk register before getting the attendees to use the same part of the process with their own examples.

**Attendee Task:** Identify 3 potentially dangerous tasks or situations (hazards) you encounter while fishing. You will use these situations as examples throughout the process.

For your 3 hazards, identify the following:

- What is the hazard? (eg. A poisonous fish.)
- The location of the hazard? (eg. In a net.)
- Who could be hurt by it? (eg. The crew member handling the net)
- How it can hurt someone? (eg. A crew members skin could be pierced by a spine, poisoning the fisher and the could get infected.)

### **Useful resource:**

<http://www.fao.org/tempref/docrep/fao/007/y4722e/y4722e00.pdf>

## Hazard and Risk registers

Once the hazards have been identified, they need to be documented.

A hazard register is the most effective way of doing this.

A hazards register is a register of all the hazards of the vessel, serving as a tool to help identify 'new' hazards, and keep records of actions taken to control existing ones.

All crew on board should be involved in the process, particularly those that have individual tasks specifically allocated to them.

**Useful resource:** <https://www.smartsheet.com/risk-register-templates>

Once a hazard has been identified, understood, and documented, you need to measure the level of harm the hazard can cause.

## 2. Assess the Risk

The **risk** a hazard poses is determined by the likelihood and potential consequences of harm occurring from that hazard. In other words, what are the chances of harm, and how bad will it be.

Safety professionals often use a Risk Matrix. A risk matrix is a tool that combines the likelihood of an accident occurring with the potential consequences, which allows for easy identification of the level of risk.

<b>Likelihood</b>	Almost Certain	Medium	Medium	High	Critical	Critical
	Likely	Low	Medium	High	Critical	Critical
	Possible	Low	Medium	Medium	High	High
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Low	Medium	Medium
		Negligible	Minor	Moderate	Major	Extreme
		<b>Consequences / Impact</b>				

### **Trainer Task:**

Be familiar with the risk matrix and how it works and be prepared to use the system in detail with the participants examples.

### **Likelihood**

Likelihood is assessed on a scale of the event being Rare (1) to Almost Certain (5) to happen in the next year.

- **Rare (1)**  
0-5% probability that the event will occur in the next 12 months
- **Unlikely (2)**  
5-25% probability that the event will occur in the next 12 months.
- **Possible (3)**  
25-50% probability that the event will occur in the next 12 months.
- **Likely (4)**  
50-80% probability that the event will occur in the next 12 months.
- **Almost Certain (5)**  
80-100% probability that the event will occur within the next month.

### **Consequences / Impact**

Consequences are measured by the effect, or impact, that the event would have if it were to occur. It is measured on a scale from Negligible (1) to Extreme(5).

- **Negligible (1)**  
No injuries, no lost time. No long term effects.
- **Minor (2)**  
First aid injury, minimal lost time. No long term effects.
- **Moderate (3)**  
Off-site medical attention required, short term lost time due to injury. Medium to long term effects.
- **Major (4)**  
Serious illness or injury resulting in hospitalisation. Long term effects.
- **Extreme (5)**  
Serious injury or illness resulting in permanent and critical loss of personnel. One or more fatalities.

The two components should be judged independently, and then multiplied.

**Risk = Likelihood of occurrence x Severity of consequences.**

When both the likelihood and consequences have been determined and placed into the risk matrix, it will indicate a level of risk, from low to critical, or 1 – 25.

When deciding which risks should be managed first, work from the highest risks first to protect yourself, your vessel and your crew.

**Attendee Task:** Using your three hazards identified in the previous task, determine (as much as possible using the information you have available) the likelihood and consequences of the event occurring. Put this into the table and determine what the RISK of the hazard is.

### 3. Fix the Problem

By this point you are half way through the SAFE process.

**S – See** the Hazard  
**A – Assess** the Risk  
**F - Fix** the problem  
**E – Evaluate** your fix

The next point is to **FIX THE PROBLEM**. In other words – you need to find a way to control the risks.

Traditionally, something called a hierarchy of controls is used to determine which **feasible** and **effective** control measures should be put in place to manage each risk.

Not all models are the same, some may have 4 or 5 levels instead of 6, but the concept is the same.

There are 6 different types of control measures that can be put in place to eliminate the risk, reduce the likelihood of the event occurring, or minimise the consequence of that event. The most effective are listed first, followed by moderately effective measures, and finally the least effective measures.

- **Eliminate**  
This is the most effective as it involves eliminating the hazard at the source by removing it completely. This can be done through adjusting work practices, so the hazard no longer exists, or simply removing the hazard completely. For example, if the crew typically use a corrosive or carcinogenic chemical for a task, but discover that water alone is suitable for that task, they can remove the chemical (the hazard) from the vessel completely.
- **Substitution**  
Substitution is effective when it is possible to replace the hazard with something that has a lower risk. There are many example of this, including replacing damaged or dangerous equipment such as an engine with a newer piece, replacing the type of chemicals or substances used onboard for something with a lower risk rating, or even changing the type of fish targeted from a poisonous/venomous species to something safer.
- **Isolation**  
Isolating the hazard involves removing or separating people from the source of the hazard. This could involve moving a machine to a room or area away from people, or operating it remotely.

- **Minimise by engineering means**

This involves changing the physical characteristics of a vessel or piece of equipment to remove or reduce the risk. For example, guards could be added to machines to protect users from being hurt or pulled into the machine.

- **Administrative measures**

Administrative measures of risk controls may involve the use of training, education, checklists, signs or procedures to control the risk.

- **Personal Protective Equipment.**

PPE is equipment or clothing that is designed to protect the wearer. The most obvious examples of this include life jackets, shoes, gloves and eye protection.

These levels are not independent of each other and can often be used simultaneously. You can have guards on a machine, but that doesn't negate the need for signage and gloves.

In many cases, the most effective levels such as elimination and substitution aren't practical for the task – which is what contributes to fishing being considered one of the most dangerous jobs in the world.. but this doesn't mean you can't do everything in your power to MINIMISE the risk.

It is likely that you will already have some controls in place to prevent the risk from being realised, known as current controls. New, or proposed measures of risk control measures will be referred to as planned or additional controls.

**Useful resource:** <https://ppl.app.uq.edu.au/content/2.30.01-occupational-health-and-safety-risk-management>

**Useful resource:** <https://www.cdc.gov/niosh/topics/hierarchy/default.html>

The risks that need attention first will be the ones which rated highest in the second 'Assess the Risk' phase.

**Attendee Task:** Now that you've identified the risk of each hazard, work through all levels of control. Which options are feasible and what can you do to lower the risk?

#### 4. Evaluate the Fix

Once the level of risk has been identified and control measures have been identified, it is time to implement them. This must be done to **prevent the highest level of harm soonest**. The hazards which scored highest in the risk matrix (high – critical or 10 – 25) need to be actioned first.

Once the control measures are in place – the hazards need to be reassessed using the risk matrix to ensure the risk has been reduced through the use of the controls. The remaining risk is known as the residual risk – the level of danger that remains even after the controls have been put in place. In an industry such as fishing, it is not unusual to have a level of residual risk due to the many uncontrollable variables of the job.

If the risk has NOT been reduced – the controls must be reviewed and further controls need to be added.

As indicated in the beginning, this process should be completed regularly to ensure hazards are not missed in a constantly changing environment, including:

- If it has not been done before.
- At the beginning of the fishing season.
- When planning or making a change
- After an accident, incident or near miss.
- At regular intervals based on the risk level assessed in the workplace.
- When legislative obligations change.
- Prior to carrying out a new task / type of fishery.

**Attendee Task:** Pick the hazard which presents the highest risk and imagine you have placed the chosen control measures in place. Evaluate your fix. Does the level of risk drop? Why/ Why not?

#### **Trainer Task:**

Slide 27: Place your completed risk register for the scenario you have been using for demonstration in this slide. **This must be relevant to the vessel size and type of fishing your attendees participate in.**



## Slides 28 – 40 – Hazard Registers

Hazard Registers are simple tables that highlight the activity or event, hazard(s) present, harm that could occur, and the controls that have been put in place. In essence, it is a simplified, or less detailed risk register.

The following slides provide **generic examples** of hazard registers that could be seen on vessels. These should all be adapted and amended to be specific for the individual vessel it is being used for.

### Trainer Task:

Using the following hazard register examples, talk through each table with the group, allowing them to complete the **Attendee Task** for each of the hazards.

**Attendee Task:** Work through each of the examples. How would the hazards, harm and controls need to be adjusted to suit your vessel. Which controls are feasible, and which aren't. Would you add anything else.

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>• Slips, trips and falls.</li> </ul>	<ul style="list-style-type: none"> <li>• Constant, unstable motion of the boat.</li> <li>• Crowded environment.</li> <li>• Wet, slippery deck surface.</li> <li>• Open holds.</li> </ul>	<ul style="list-style-type: none"> <li>• Broken bones</li> <li>• Strains / Sprains</li> <li>• Cuts / lacerations</li> <li>• Contusions</li> <li>• Dislocations</li> </ul>
Controls		
<ul style="list-style-type: none"> <li>• Non-slip surface on the deck (mix sand with paint, use non-slip enamel paints or adhesive non-slip sheeting).</li> <li>• Wash decks frequently.</li> <li>• Wear non-slip footwear.</li> <li>• Ensure hatches are shut, latched or shielded wherever possible.</li> <li>• Use proper ladders with handholds.</li> <li>• Fit handrails.</li> </ul>		

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>Physically demanding work.</li> </ul>	<ul style="list-style-type: none"> <li>Long periods of standing, stooping, bending, repetitive and forceful tasks.</li> <li>Hauling, carrying, loading, unloading or handling heavy and awkward loads.</li> <li>Pulling/lifting gear.</li> </ul>	<ul style="list-style-type: none"> <li>Musculoskeletal problems</li> </ul>
Controls		
<ul style="list-style-type: none"> <li>Stretch.</li> <li>Manual Handling</li> <li>Technique training.</li> </ul>		

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>Machinery and equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Winches, hoists</li> <li>Net Entanglement</li> <li>Fishing hooks and spines</li> <li>Falling loads</li> </ul>	<ul style="list-style-type: none"> <li>Broken bones</li> <li>Fatality</li> <li>Cuts/Lacerations</li> <li>Strains/Sprains</li> <li>Amputation</li> <li>Foreign Body</li> <li>Fracture</li> <li>Crushing</li> <li>Infection</li> </ul>
Controls		
<ul style="list-style-type: none"> <li>Use Personal Protection Equipment (PPE).</li> <li>Ensure the number of workers for the task is sufficient.</li> <li>Minimise fatigue with a crew roster.</li> </ul>		

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>Fittings projecting from decks.</li> </ul>	<ul style="list-style-type: none"> <li>Eyebolts</li> <li>Bollards</li> <li>Capstans</li> <li>Hatches</li> </ul>	<ul style="list-style-type: none"> <li>Broken bones</li> <li>Strains/sprains</li> <li>Cuts/lacerations</li> <li>Contusion</li> <li>Dislocation</li> <li>Infection</li> </ul>
Controls		
<ul style="list-style-type: none"> <li>Paint to distinguish from surroundings.</li> <li>Hatches can be identified by red and white, or yellow and black, alternate diagonal stripes.</li> <li>Latch/stow away all moveable fittings.</li> </ul>		

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>Lighting and visibility</li> </ul>	<ul style="list-style-type: none"> <li>Inadequate lighting</li> <li>Night time fishing</li> <li>Limited visibility</li> </ul>	<ul style="list-style-type: none"> <li>Any injury is possible</li> <li>Fatality</li> </ul>
Controls		
<ul style="list-style-type: none"> <li>All lighting carefully and sensibly positioned.</li> <li>The most dangerous. locations should be the most well lit.</li> <li>Use Fluorescent lighting.</li> <li>Should not interfere with external visibility.</li> </ul>		

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>• Chemical risks</li> </ul>	<ul style="list-style-type: none"> <li>• Chlorine</li> <li>• Empty chemical drums</li> <li>• Fuel and oil containers</li> </ul>	<ul style="list-style-type: none"> <li>• Eye, nose, lung and skin irritation</li> </ul>
<b>Controls</b>		
<ul style="list-style-type: none"> <li>• Wash thoroughly if skin comes into direct contact.</li> <li>• Wear Personal Protection Equipment (gloves).</li> <li>• Clean out drums thoroughly prior to voyage.</li> </ul>		

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>• Weather and forecasting</li> </ul>	<ul style="list-style-type: none"> <li>• Gales</li> <li>• Storms</li> <li>• Fog</li> <li>• Tsunami</li> </ul>	<ul style="list-style-type: none"> <li>• Sinking</li> <li>• Capsizing</li> <li>• Grounding</li> <li>• Becoming Lost</li> <li>• Collisions</li> </ul>
<b>Controls</b>		
<ul style="list-style-type: none"> <li>• Ensure boat is as stable and weight evenly distributed.</li> <li>• Carry alternate power source (oars).</li> <li>• GPS/Navigation &amp; Radar Reflector installed.</li> <li>• Ensure rescue equipment on board (Flares etc).</li> </ul>		

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>Sanitation / Hygiene</li> </ul>	Lack of: <ul style="list-style-type: none"> <li>Clean drinking water</li> <li>Toilets</li> <li>Clean clothes</li> </ul>	<ul style="list-style-type: none"> <li>Viral and bacterial borne diseases can spread easily</li> </ul>
Controls		
<ul style="list-style-type: none"> <li>Take as much clean water on board as practical.</li> <li>Use sanitizer if/where available.</li> <li>Maintain housekeeping (keep vessel clean).</li> </ul>		

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>Not using Personal Protection Equipment (PPE) and work clothing</li> </ul>	<ul style="list-style-type: none"> <li>Slippery decks</li> <li>Net work</li> <li>Winch work</li> </ul>	<ul style="list-style-type: none"> <li>Degloving</li> <li>Contusions</li> <li>Cuts/lacerations</li> <li>Infection</li> <li>Broken Bones</li> <li>Crushing</li> </ul>
Controls		
<ul style="list-style-type: none"> <li>Work clothing should be provided for net boats</li> <li>Non-slip rubber boots</li> <li>Protective gloves</li> </ul>		

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>Alcohol and drugs</li> </ul>	<ul style="list-style-type: none"> <li>Affects good decision making ability</li> <li>Co-ordination, body motor control, concentration and alertness affected</li> </ul>	<ul style="list-style-type: none"> <li>Dehydration</li> <li>Fatality</li> <li>Any injury can occur</li> </ul>
<b>Controls</b>		
<ul style="list-style-type: none"> <li>Consider banning or limiting the use of alcohol and drugs</li> </ul>		

Activity	Hazard	Harm
<ul style="list-style-type: none"> <li>Long continuous work hours / fatigue</li> </ul>	<ul style="list-style-type: none"> <li>Tiredness</li> <li>Lack of awareness</li> </ul>	<ul style="list-style-type: none"> <li>Tiredness</li> <li>Lack of awareness</li> </ul>
<b>Controls</b>		
<ul style="list-style-type: none"> <li>Ensure workers are well rested.</li> <li>7-8 hours of sleep a night</li> <li>Individuals are poor judges of their own state of alertness. Get other crew members to assess sleep patterns and decide alertness level.</li> </ul>		

## Slides 41 – 54 – SAFE Working Practices for Safety on Board

### Housekeeping on board

Housekeeping on board is the same as on land – keeping the vessel clean, tidy and safe. Good housekeeping reduces illnesses and injuries and can promote positive behaviours, habits and attitudes.

Key housekeeping points include:

- **Ensure housekeeping is maintained** – it can be easy to let standards slide when things get busy, unfortunately this is when accidents happen.
- **Be aware of trip hazards**
  - All uncoiled ropes should be coiled and put away
  - All equipment / gear left lying around should be put away.Trips, slips and falls are some of the most common causes of injury onboard fishing vessels, don't add to the risk with poor housekeeping practices
- **It is everyone's responsibility to ensure that housekeeping is maintained** – Do not leave mess or cleaning for other people. Do it at the time. You could jeopardise someone else's health and safety by leaving it.
- **Keep a bolt, wire cutter or knife on board to cut line or gear that is tangled or needs to be cut away quickly** – if lines are snagged, someone gets caught in the nets, or tangled in gear, you must be able to cut it away quickly in order to save the person, or even the vessel. Cutters should be close to where you are most likely to need them or kept (safely and securely) on the person.
- **Tie back long hair and remove jewellery that could get caught.**  
**Beware of loose-fitting clothing** – These can easily be caught in machinery and cause you to get dragged into the machine or overboard.
- **Wear lifejackets as required** – for obvious reasons.

#### Useful resource:

<https://www.osha.gov/dts/maritime/sltc/ships/housekeeping/housekeeping.pdf>

### Carrying / Handling Heavy Loads

Moving fish crates and heavy equipment on board is a common cause of injury to fishers. Many injuries fishers sustain due to manual handling – or lifting heavy objects – affect the lower back. Almost all lower back injuries can be avoided.

Crew must ensure they take reasonable steps to prevent harm to themselves – such as using correct lifting techniques, while the captain must (as much as possible) make sure the boat is safe. This could include paying attention to how the crew are working, and training them on how to work safely.

- **All crew need to know safe lifting techniques:**
  - Squat to pick up objects and lift using your legs, not your back.
  - Keep the weight close to your body.
  - Move your feet, do not twist.
  - Don't take your chances, get help if needed.

**Remember** lifting things at sea is more dangerous than lifting things on land, as the vessel moves, your muscles will have to compensate for the unstable platform and it is easier to slip and injure yourself.

- **Change your position** on board regularly during the trip. While standing move around as much as possible – this can help prevent muscle fatigue and repetitive strain injuries.
- **Take short stretch breaks** every 2-3 hours to help prevent cramping and strains.

**Useful resource:** <https://www.maritimenz.govt.nz/commercial/safety/health-and-safety/manual-handling.asp>

**Attendee Task:** How many of the attendees have experienced lower back pain associated with their jobs? What proportion of the class is this?



## Fatigue

Fatigue is known as a significant risk factor at sea. Managing fatigue is essential for the safety of everyone.

**The solutions need to fit the vessels, its operations and the crew that work on board.**

This means that there is no 'set fix' that will work for everyone. You need to consider all aspects of the duties and operations, such as the shift lengths (if there are shifts) the length of the trip, the level of exertion of the tasks, the effect of the level of exposure or weather the crew experience, as well as things like hydration, overall health and length between trips.

Some tips to managing fatigue include:

- Make sure everyone has a minimum of 6 hours continuous sleep in a 24 hour period.
- In the case of short trips – make sure the crew have had a good night sleep before sailing.
- Crews should take short naps when needed and possible.
- These naps should be before the person gets too tired.
- Rest periods are defined as periods of no work. This means repairing nets, and other 'low impact' duties are not considered rest time.
- Common symptoms of fatigue are a general feeling of weariness, slow thinking, reduced alertness and ability to perform tasks, forgetfulness, lethargy, poor decision-making time, poor communications and slowed reaction time.

### **Useful resource:**

<http://www.epaq.qc.ca/images/epaq/scfvs/meetings/2013/Fatigue.pdf>

**Attendee Task:** Discuss: Can you provide an example of something you've done, or an instance your behaviour has changed due to fatigue?

## Top 10- Symptoms – Fatigue Checklist

- More irritable than usual
- Uncommunicative
- Frustrated
- Unable to focus
- Cutting corners
- Losing the 'big picture'
- Taking unusual risks
- Responding slowly to situations
- Not noticing the warning signs.

### Useful resource:

<https://hubblecontent.osi.office.net/contentsvc/videohostpage/video?lcid=1033&syslcid=5129&uilcid=1033&app=3&ver=16&build=16.0.12827&platform=Win32&streamsso=true&appCorrelation=77894834-1264-488C-B977-FD2D47567955&url=https%3A%2F%2Fwww.youtube.com%2Fembed%2FenMzhh4Z1Rw>

**Attendee Task:** Discuss: Of the 'Top 10' behaviours, can you identify the three that resonate with you the most?

## Stress

Stress is a complex issue and due to the sheer number of contributing factors, no two individuals will be affected in the same way.

Occupational stressors include:

- Issues maintaining a work – life balance.
- Unpredictability of shifts or work
- Weather / exposure
- Financial concerns
- Danger of the job
- Physical demands
- Mental demands
- Time away from family
- Lack of support

Additionally, each person has their personal (family, or non-work related) stressors that will contribute to their overall stress load.

## Stress Symptoms

- Anxiety
- Depression / depressive states
- Poor sleep patterns
- Headaches
- **Fatigue** (one of the most common outcomes)
- Increased blood pressure
- Chronic Illness
- Digestive discomforts
- Hyperventilation
- Fatigue

**Fatigue and stress are the enemies of safety.** They both have a significant impact on behaviour, health and overall safety at work. They feed off each other and are often experienced together.

## Stress Management:

- Get as much rest as you can.
- Eat well
- Dress appropriately and stay warm and dry
- Look after your health
- Stay active / exercise

And finally – know your limits and be extra careful when you're tired or under stress.

### **Useful resource:**

<https://pdfs.semanticscholar.org/c94e/72c8a995f73463dc17be88b89eccc8b38065.pdf>

**Useful resource:** <https://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/coping-with-stress/art-20048369>

## **First Aid**

First aid is the temporary care given to sick or injured persons.

Note to the attendees that there is an emergency first aid training module to be completed during the training agenda. Included in this module will be basic first aid techniques, treatment of common illnesses and contents of first aid kits.

For SAFE working practices purposes, all crew should have knowledge of first aid procedures. This is due to the fact that fishing at sea is an inherently dangerous occupation and there will always be the risk of injury or illness occurring.

Sudden illnesses can occur at sea. All crew should recognise the signs of sudden illness, so the appropriate treatment can occur and to prevent further harm being suffered.

Training in first aid is one way to ensure crew will know how to act where an injury occurs or a crew member suddenly falls ill.

A first aid kit is an essential item and should be carried on board at all times. All crew should know where this is located.

Before each trip, check the content of the kit and restock or resupply as needed. Have a checklist of items for the kit.

Explain that knowing what to do when an injury is sustained or where someone falls ill, could save a life and reduce further harm being suffered. Acting quickly, but in the correct manner is essential.

## **Alcohol and Drug Abuse**

Even minimal levels of drug or alcohol use will impair a fisher's ability to respond to a situation – even if they do not realise they are impaired.

Drugs and alcohol affect a person's concentration, physical co-ordination, alertness and judgement – traits which are all essential to maintaining safety onboard.

Problems linked to drugs and alcohol in the workplace:

- Tardiness / sleeping on the job
- Hangover or withdrawal
- Poor decision making
- Loss of efficiency
- Theft
- Lower morale of co-workers
- Preoccupation
- Deaths and accidents
- Absenteeism
- Loss of production
- Increased risks of illnesses

**All vessels should have a drug and alcohol policy in place** clearly outlining the requirements of those working on the vessel. This should include the requirements that no drugs other than prescription medication be allowed on board the vessel.

Alcohol can be a problem even if it is not consumed onboard, long term or excessive use of alcohol (over 35 units or 14 -18 beers per week) will leave you susceptible to the following:

- Tiredness / fatigue
- Depression
- Mood swings
- Weight gain
- Memory loss
- Sleep problems
- Sexual problems

**Useful resource:**

<https://www.verywellmind.com/substance-abuse-in-the-workplace-63807>

**Useful resource:**

<https://www.thechronicleherald.ca/business/local-business/already-the-most-dangerous-profession-drug-use-an-increasing-problem-on-fishing-boats-364541/>

## **Working on Deck**

The risk of being injured on deck or falling overboard is very real due to the extensive hazards present, such as the constantly moving work platform, and amount of gear on deck.

Basic prevention methods (or controls) include:

- Ensure that all crew members wear suitable clothing and buoyancy devices with no obvious snag points.
- Remove or cover jewellery and tie up long hair.
- Keep deck areas tidy.
- Don't let lines or gear clutter the deck, or dangle over the side where they can foul the propeller.
- Remove rubbish at regular intervals to reduce the hazard.
- Don't stand in the bight of a line.
- Make sure lines are properly coiled and stowed when not in use.
- Check gear, wires, ropes and fittings regularly.

**Attendee Task:** What are things you do to reduce the hazard of being injured on deck. Are there further controls that you could put in place?

## Working with Knives

It is essential to minimise the risk of injuring yourself or someone else.

- Treat knives and other sharp implements with respect and handle with care.
- Don't leave knives laying around working areas where someone may accidentally be cut.
- Clean knives individually and store in a safe place (secure racks or sheaths) when not in use.
- The handles of knives should be securely fixed and as far as possible be kept clean and free from fish slime.
- The cutting edges should always be kept clean and sharp.
- Angle the knife away from the work (and away from the fingers).
- A falling knife should be left to fall, not grabbed.
- Don't lift baskets or bins of fish while holding a knife.
- Always use a sharp knife when chopping bait.
- Wear close – fitting gloves that allow good movement.
- Do not stab the knife into the chopping board as your hand may slip down onto the blade.
- If you do get cut – get treated.

**Useful resource:** <https://www.outdoorcanada.ca/7-crucial-safety-tips-to-remember-when-using-outdoor-knives/>

## Working with Chemicals

The type of chemicals that you use on board will depend on the size of the vessel, the type of fishing you do and the methods of operation you have. All the chemicals used will present a hazard, and you should ensure you have assessed the risks these chemicals present, and have adequate control measures in place to manage that risk.

Basic safety outlines include:

- Always read the labels, the user guide and the MSDS product safety sheet.
- Obey all relevant instructions.
- Consult the supplier if there's anything unclear.
- Check out the operational first aid requirements for the chemicals.
- The necessary first aid items must be readily available.
- Use the necessary personal protection equipment.
- If there's an accident, provide medical staff with details of the chemicals used.
- Don't mix chemicals if you're unsure of the result.
- Always maintain hygiene standards when working with chemicals.
- Wash hands after finishing or interrupting work.
- Don't eat while working with these substances.
- Ensure sufficient ventilation.
- Don't smoke when working with chemicals.
- Store correctly.
- If possible, change chemicals to a less hazardous type.

## General Condition of Vessel

A well – maintained vessel is a safe vessel.

The vessel and equipment must be maintained to a good level at all times. Regular checks are necessary. A well-maintained vessel is better able to take all that the seas and weather can throw at it.

### Useful resource:

<https://www.nap.edu/read/1622/chapter/5>



The following should be considered:

- Is the hull in good condition? Check for hull damage. General paint in good condition?
- Is there anything to suggest that the vessel is not structurally sound? Any obvious problems / damage?
- Check inside for indications of water leakage? Any rust streaks, obvious signs of water leakage? Is the bilge pump running often / continuously?
- Check that all hull & deck openings seal properly. Are all seals in good working condition?
- Can the crew safely access all areas of the vessel? What is the condition railings, seating, walkways? Excessive wear / damage seen?
- Is there adequate space on deck to work safely?
- General housekeeping standards good?

### **Personal Protective Equipment (PPE)**

Protective clothing (PPE) and equipment is an important part of the safety package. While PPE can provide a sense of security, you must remember that PPE is often the last line of defense – the control which offers the lowest level of safety protection.

While they may not be able to prevent an accident from occurring, they can reduce the severity of the impact, therefore reducing the risk.

When considering PPE and other protective gear, the following should be considered:

- Crewmembers should be properly trained in the safe fitting and use of protective gear.
- All protective clothing should be personally fitted and issued.
- All protective clothing and equipment must meet the applicable legal standards, and it must be used and maintained to the relevant standards.
- Lost or damaged PPE or equipment must be replaced immediately.
- Crewmembers should be required to clean and maintain their own protective clothing or equipment as far as practicable.
- Use of protective clothing or equipment should be part of the conditions of employment.
- PPE must be worn as required.

#### **Useful resource:**

<http://www.worksafeforlife.ca/Portals/worksafeforlife/FishSafe.pdf>

## End of Session Worksheet

Answer the following questions by circling the correct answer.

If you do not understand any of the questions, please ask your trainer for clarification.

**1. Which of the following describes 'Risk'?**

- a. Something that can cause damage, death or injury.
- b. The probability that something will occur.
- c. The likelihood and potential harm from the hazard.
- d. The actions taken to stop an identified event happening.

**2. When using a Safety Risk Management Process, what does the acronym SAFE stand for?**

- a. **S**ea going vessels, **a**ware of problems, **f**ind a solution, **e**mploy someone to do it.
- b. **S**ee the hazard, **A**ssess the risk, **F**ix the problem, **E**valuate your fix.
- c. **S**ee a problem, **A**sk the Captain to **F**ix the problem. **E**nsure it worked.
- d. **S**ee the hazard, **A**sk the Captain to **F**ind a solution. **E**xit the boat.

**3. When identifying hazards, which of the following questions should be asked? Select all that apply.**

- a. What could go wrong?
- b. What are the chances of it occurring?
- c. How could harm occur?
- d. How could it be prevented?

**4. What two factors does a Risk Matrix use to determine the risk of a hazard?**

- a. The likelihood of something occurring and the impact of the consequences.
- b. The likelihood of something occurring and the potential controls
- c. The impact and cost of the event.
- d. The amount of people affected and number of controls in place.

**5. Which is the most effective control measure you can use.**

- a. Isolation.
- b. PPE.
- c. Substitution.
- d. Elimination.

**6. Of the following, select which is NOT a symptom of fatigue.**

- a. Forgetfulness.
- b. Bad breath.
- c. Reduced reaction time.
- d. Poor decision making.

**7. What techniques are best to avoid the risk of injury when carrying a heavy load?**

**Select all that apply.**

- a. Carry the weight close to your body.
- b. Close your eyes and lift as hard as you can.
- c. Drink lots of water before lifting the object.
- d. Squat to pick up objects and lift using your legs not your back.

**8. Over a week, approximately how many standard beers would equal 35 units of alcohol?**

- a. 7-9
- b. 20-22
- c. 3-6
- d. 14-18

**9. Why should you not let lines dangle over the side of the vessel?**

- a. They could fall overboard and you could lose them.
- b. They could foul the propeller.
- c. It can scare the fish away.
- d. Its bad luck.

**10. A well maintained vessel is a \_\_\_\_\_?**

- a. Solid vessel.
- b. Beautiful vessel.
- c. Safe vessel.
- d. Important vessel.