Maritime &
Coastguard
Agency

Leading for Safety

Contents

Introduction

Outlining the issues around maritime safety, who this guide is for and how to use it.

Guidance to help leaders and senior officers in the maritime industry improve their leadership and people management skills, to ensure safety. It reflects current thinking on leadership in safety and the human element, focusing on the role of leaders in developing a safe culture.

In the guide, we'll explore:

- how leaders affect safety
- how human factors affect safety
- why leaders are important to maintain safety
- how leaders can use Human Element principles to create a better culture of safety on board

Maritime safety

There is no doubt that almost all maritime leaders want to do their best for safety. But sometimes life makes things difficult. Time pressures, economic constraints and everyday circumstances (including the factors covered in this document) sometimes seem to prevent good safety leadership.

This guide contains 6 sections on important areas of safety leadership.

These are:

- defining the human element
- decision making and risk management
- performance influencing factors (PIFS)
- situational awareness
- communication and teamwork
- creating a culture of safety

If you have recently done human element, leadership and management training on a course that follows the Merchant Navy Training Board syllabus, you will likely find that the content aligns with what you learnt.

The Maritime and Coastguard Agency (MCA) acknowledges the many individuals and industry bodies that supported us in the development of this guide. We heard from those representing shipowners and seafarers, as well as those with experience of training seafarers. We cannot list everyone here, but your input is appreciated and has helped to produce a really useful document for seafarers.

Who this guide is for

Those with formal management responsibilities may find the information most relevant. But safety is everyone's responsibility, and organisational culture is influenced by all, so it's important that these principles are understood more widely.

This document is intended to guide those working in roles that have an effect on the delivery and culture of shipboard operations. Take a moment now to think about how you influence these, no matter how big or small the action may seem.

In this context, anyone can have a leadership role – not just managers.

Sometimes, specific responsibilities are given to those with designated roles in ensuring the safety of those on the ship. Those with a designated safety role on board are referred to as "safety officials". This term includes safety officers, safety representatives and other members of safety committees.

However, you do not need to be a safety official or a manager to be a leader when it comes to safety. Everyone onboard, and those working ashore, contributes to the overall safety and performance of a vessel. As leaders in safety, you can use your understanding of the human element to improve safety and influence change in the maritime industry.

How to use this guide

We suggest you read through the guide and consider how each piece applies to you and your roles onboard. You could read this ahead of starting the human element, leadership and management (operational level) course as the content of this guide aligns with the course objectives.

But this guide is just words. What really counts is how leaders behave in everyday situations. Your colleagues will draw a conclusion about your safety leadership based on what they see you do and what they hear you say in your daily work.

1: Defining the human element

How human behaviour can affect safety onboard.

1.1 The human factor

In the maritime context the term human element refers to aspects that influence the interaction between a human and their physical and/or social environment.

The system refers to any interaction between the person and their environment – whether that be social, physical, or technological.

Human error refers to actions or decisions that were unintended or that have unintended consequences.

In other industries, the Human Element is usually known as human factors. In simple terms, the human element looks at how humans behave to develop the "system" to improve safety performance.

Analysis shows that incidents involving technical failures alone are very rare. Usually, there are some human factors involved. Understanding the human factors is important because it helps us understand what went wrong and how to make improvements to safety.

Human error is a technical term. It's important to remember that everyone makes errors, and it can happen to even the most experienced and competent person. It's just part of being human. So, it's unreasonable to expect every system to work perfectly all the time. When something goes wrong it's crucial to investigate that the whole system, not just the person who made a mistake. By improving the system, you can put risk-reduction measures in place that prevent incidents from happening when someone inevitably does make a mistake.

Organisations do not stand still, and safety issues emerge continuously from the interactions between the areas within the organisation. This includes its people and the context in which they operate. This guide will help you make sense of some of the more common of these factors.

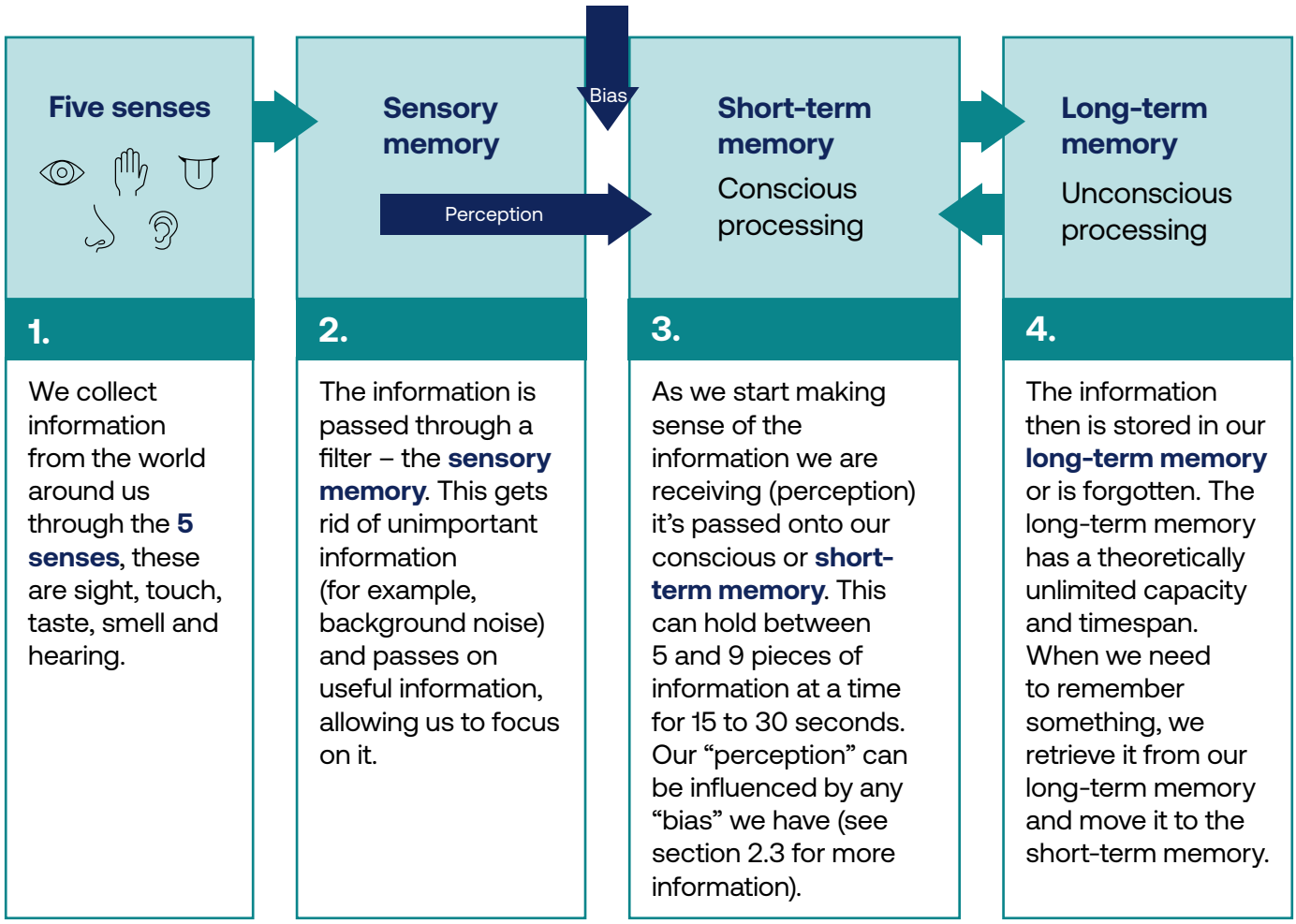
2: Decision making and risk management

Looking into what can lead to people making mistakes and how to mitigate errors.

2.1 Information processing

So, why do humans make mistakes? To answer this question, we need to understand how we process information. Figure 1 shows a simplified version of what happens when we receive information from any one of our senses.

Figure 1: how people process information they receive through their senses to their long-term memory



The process of storing information is open to errors at any point because our brains have evolved to take shortcuts to conserve energy. Factors such as time pressures can affect this process. It can also be influenced by biases we have. In section 2.2 and 2.3 we will explore some of these shortcuts and how they might negatively affect decision making.

To learn more about how we process, and store information look at **Behaving Safely: A practical guide for risky work**, Dik Gregory and Paul Shanahan

2.2 System 1 and System 2 thinking

In section 2.1 you learnt about unconscious and conscious processing. We will focus on these systems of thinking here in more detail which affects our decision making. Psychologist and economist Daniel Kahneman, who is widely considered to be an expert in decision making, proposed that the human brain operates mainly in two systems.

System 1 thinking:	System 2 thinking:
• fast, unconscious, and automatic thinking which we cannot control • allows us to assess situations quickly • makes up most of our thinking • examples: an experienced driver using the brakes in response to perceived danger; detecting emotions in someone's voice • automatically generates suggestions, feelings, and intuitions for System 2	• slow, conscious, and effortful thinking which we can control • we use this to investigate or probe for information and to make complex decisions • makes up a small percentage of our thinking • examples include learning to drive or changing the way you speak to someone

Both systems do an important function, but issues arise when we rely too heavily on System 1 instead of System 2. For example, have you ever driven somewhere and realised you have no idea how you arrived there? How can you tell for sure that you did not make any mistakes like going through a red light on the way? The same applies at work. We can complete tasks on autopilot when we should be paying attention. When we rely too much on System 1, we can fail to notice when things might be going wrong.

If you notice that System 1 has taken over it's important to slow down, go back a few steps in your task and check what you're doing thoroughly. Checklists and other aide memoires can be an effective way of keeping track of your tasks and engaging System 2 in tasks that are habitual or boring.

To learn more about System 1 and System 2 thinking, have a look at **'Thinking, Fast and Slow'** by Daniel Kahneman

2.3 Cognitive biases

Our perception and consequently the information passed on to our memory is affected by what we choose to direct our attention to. This is where cognitive bias comes in and influences System 1 thinking. Our brains have evolved to take shortcuts based on our previous experiences. This is to make decision making more efficient and to make sure we're not overloaded with information.

Cognitive bias focuses our attention very quickly on information that seems important or urgent, which can lead to errors in perception and judgement.

There are many different types of cognitive bias.

> A cognitive bias is a systematic error in thinking that occurs when we're processing information. It affects our perception and judgement of a situation. Biases are shortcuts that are made unconsciously based on our past experiences.

Confirmation bias

This is when you're only looking for or paying attention to information that supports what you already believe. Anchoring bias also describes relying too much on the first piece of information received when making decisions. An example of this would be thinking that a particular colleague is not good at their job, and then not paying attention to evidence that shows that they are.

Familiarity bias

This is the belief that some events are more frequent or likely because they are more familiar in your memory. For example, if you believe more incidents occur on aircraft than on vessels because aircraft incidents are more often in the news.

Framing effect

This is when the decision is made based on how the information is presented rather than the content of the message. So, for instance, "I'm not happy with some of your performance" sounds worse than "I'm happy with your performance most of the time".

Hindsight bias

This is the tendency to see events in the past as more predictable than when they occurred. For example, wondering how your team made a mistake because the correct path seems so obvious now.

Automation bias

This is the tendency to overly rely on technology when making decisions even when contradictory information is introduced. For example, relying on electronic chart display and information system (ECDIS) too much during navigation and ignoring other sources of information.

Risk normalisation

This is tendency to get used to risk, so believing that it's normal and does not need to be managed. For example, when a task is repeated regularly without any severe consequences, so you believe that there is no risk.

You need to be aware of cognitive biases because they can have a significant impact on your perception and judgement in any situation.

Tips for overcoming bias in decision making:

- constantly seek new pieces of information from diverse sources – be open to input from others
- seek to understand why a mistake happened instead of just blaming the person who made it
- use a systematic process in decision making (such as a checklist)
- take time to think through a decision – pressure will only make you more prone to cognitive bias

2.4 Errors, mistakes and violations

Now that you know how issues can arise while processing information, it's important to understand the different types of human failure and how they can lead to an incident.

As a leader, it's important to recognise why you and others make errors and mistakes and use this knowledge to prevent this from happening again. A leader also plays an important role in setting people up for success.

Human failure is a term used to describe ways in which humans in a system deviate from the intended course of action.

While this section will help you understand human failure, in the system's view, people are not seen as sources of error so much as the creators of safety. This view recognises that there will always be gaps in any system, because designers and rule makers cannot think of all situations and contingencies. This means that human operators must be given some degree of freedom to cope with the unexpected. In turn, this increases the need for the human operator to identify and manage the risks that arise.

Figure 2: the types of human failure

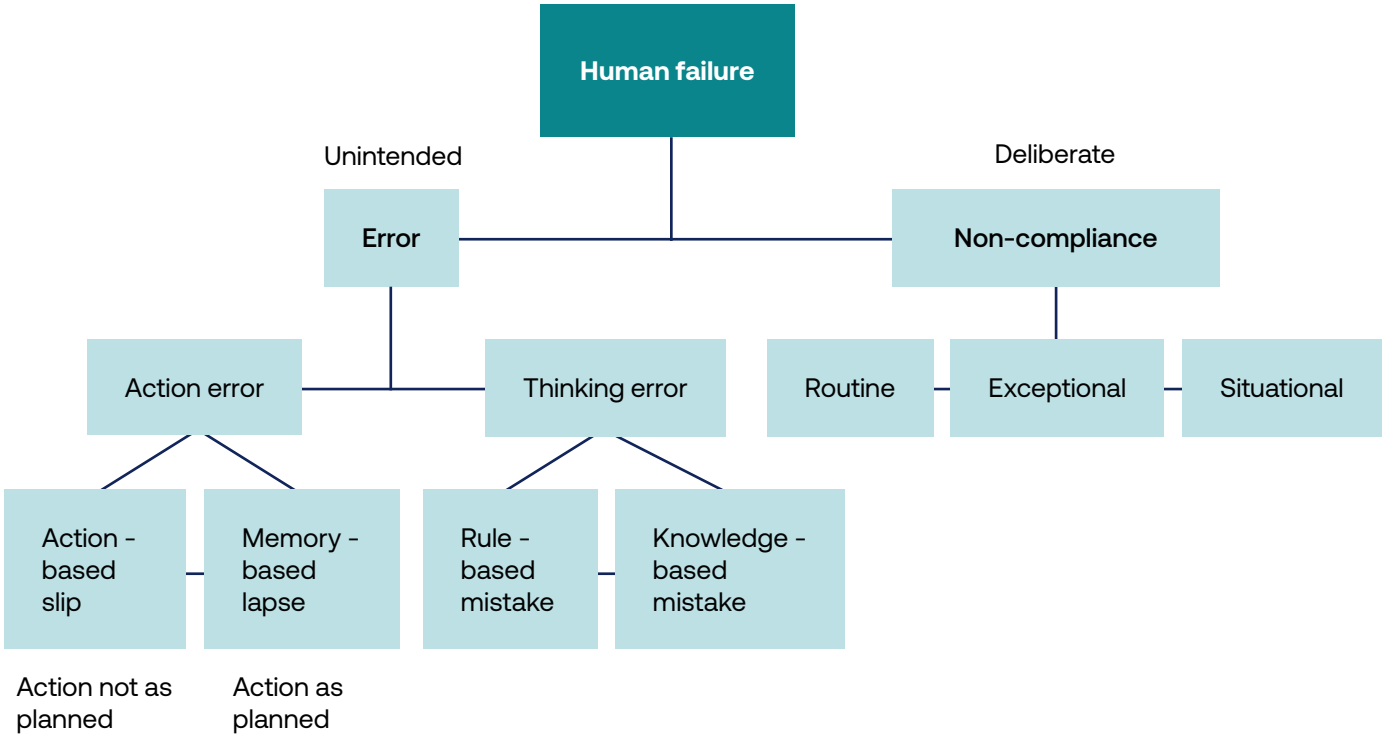


Figure 2 shows there are many types of human failure. These can be classified as either an "unintended error", which can be an error of action or thinking, and "deliberate non-compliance" where someone chooses not to comply with guidance.

Unintended errors or incorrect actions

Slips – when you intend to do the right thing but get it wrong for example, moving a switch down instead of up. Lapses – when you forget to do something or lose your place in the middle of a task for example, losing your place in a safety-critical task.

There are many causes for these errors, including:

- it being a familiar task requiring little conscious thought (System 1 thinking)
- two similar tasks being confused
- tasks being too complicated
- the main task being completed, but details are missed
- distractions

You can reduce these incidents by:

- making staff aware that slips and lapses do occur
- using checklists and flowcharts to ensure tasks have been completed
- ensuring that procedures are clear and logical
- ensuring complicated tasks have checks
- reducing distractions

Mistakes that are failures in decision making

These can be “rule-based mistakes” that occur when learnt procedures or rules are applied to a task incorrectly. For example, you may follow the procedure correctly but misjudge the speed of the vessel while berthing because you are in an unfamiliar vessel. There are also “knowledge-based mistakes”. These are mistakes made because of lack of knowledge of the task for example, relying on an out-of-date check to plan an unfamiliar route.

There are many causes for these errors, including:

- trying to accomplish too many tasks at once
- a complicated task
- time pressures and poor work environments
- social factors for example, peer pressure or staffing issues
- individual stressors for example health
- problems with equipment
- organisational factors such as a lack of training and monitoring

You can reduce these incidents by:

- increasing awareness of high-risk situations
- providing procedures for predictable non-routine, high-risk tasks
- supervising inexperienced workers
- providing aids and diagrams for procedures

A violation

This is a deliberate action or decision to deviate from the rules, regulations or procedures. These can be "routine violations" – shortcuts to rules or procedures that become a normal way of working. For example, everyone onboard routinely working without personal protective equipment (PPE) because of being under time pressure.

There can also be "situational violations" – when exceptional pressures lead to deviations from rules. An example would be having to take shortcuts or rush through tasks to do everything you need to do in the time you have been given.

"Exceptional violations" are when unusual or emergency situations lead to a deviation from the rules, usually to solve the problem. For example, the Master working during a rest period as they're needed on the bridge to avoid a collision.

Causes of violations can include:

- being under pressure, including time and manning
- peer pressure
- not understanding the reasons for the rules
- perception that the rules are too strict, or that complying with the rules is not expected
- lack of supervision or the perception that there are no repercussions for violations
- wanting to take the easy option – this may be particularly prevalent if workers are stressed
- lack of correct equipment

You can reduce these incidents by:

- setting a good example and encouraging compliance – if the procedure does not make sense, consider changing it
- involving staff in changes to rules, to increase buy-in
- explaining the reasons behind rules and procedures and why they're relevant
- ensuring the work environment is suitable to carry out procedure
- providing appropriate supervision
- ensuring you provide the necessary resources to carry out tasks
- including possibilities of violations when completing risk assessments
- creating a culture where safety is prioritised

Violations are deliberate acts that deviate from the rules or usual procedures; however, the intended outcome is often well meaning.

A violation intended to cause harm to others, or the organisation is called sabotage. However, there are many reasons why errors occur and, in most cases, they're unintended.

It's easy to blame someone when something goes wrong. But to stop the same thing happening again, it's important to look at the reasons why the mistake happened. We have to explore the weaknesses in the whole system and look at the organisational causes, not just on an individual level, of the error.

To learn more about errors, mistakes, and violations, take a look at the Health and Safety Executive's toolkit on **Managing human failure.**

2.5 Swiss cheese model

'The Swiss Cheese Model of Safety Incidents', put forward by James Reason, shows that there are many layers of defence that lie between a hazard and an incident.

In this model, the layers of cheese represent different aspects of the work environment that contain some weaknesses (holes).

For example, the layers of cheese might represent:

- organisational culture
- policies and procedures
- equipment
- the individual carrying out a task

Figure 3: successive layers of defence in the Swiss cheese model

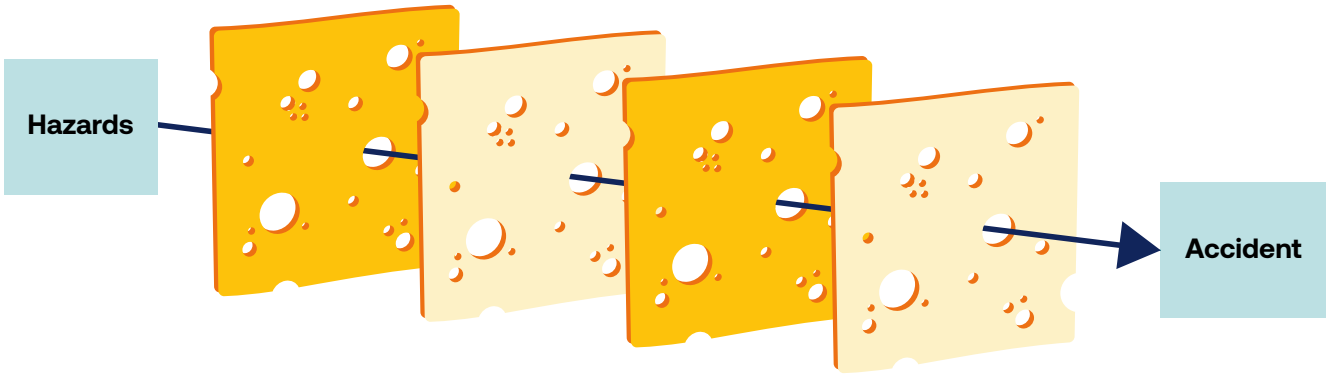


Figure 3 shows some holes are because of active failures and other holes are because of latent conditions.

Most of the time, when a hazard is present, the protection the other layers provide stops the hazard from passing through different parts of the system. For example, there may be a poor organisational culture that allows hazards to pass through, but there may be strong policies and procedures that allow individuals to be alerted to and mitigate the hazard.

Sometimes, there are too many (or even just enough) weaknesses (holes) in the system or the few weaknesses in every layer line up, letting a hazard to pass through.

So, when an incident occurs, remember to go further than just looking at the individual. Most of the time, they're just the last layer of defence in an already weak system. Think about the environment around them that could have led to, or protected from, a hazard becoming an incident.

To learn more, have a look at the **'Swiss Cheese Model of Safety Incidents'** by James Reason

2.6 Mitigating risk

You cannot fully eliminate risk. It's a consequence of the uncertainty in the situations we face and the world around us. Considering what you have learnt about risk perception so far, it's important to think about how you can mitigate these risks in the workplace. Also, think about the tools you can provide to make your colleagues more aware of risk in themselves and others.

Risk assessments are a useful way of identifying and mitigating risks in the workplace.

There are 6 steps to conducting an effective risk assessment:

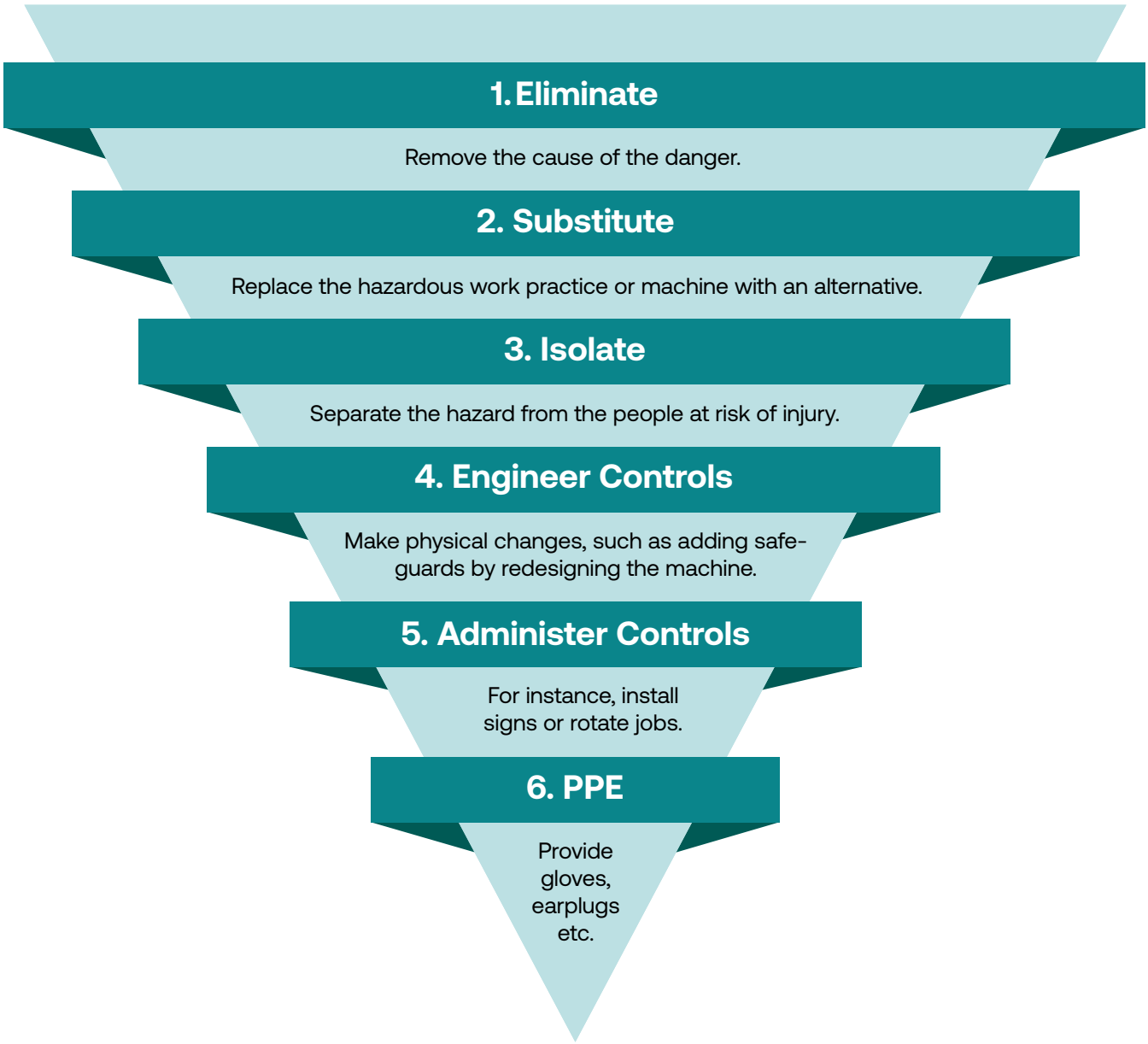
1. Identify hazards - anything that has the potential to cause harm is a hazard
2. Identify risk - a risk is the likelihood that a hazard (something that can cause a harmful effect) will occur
3. Assess the level of risk - decide who might be harmed, how serious it might be and how likely the event is to happen
4. Mitigate the risk - see if you can remove the hazard all together or put in place controls to minimise the impact or the likelihood of something going wrong
5. Record and communicate - may be necessary to record your process in a formal risk assessment, or at least to make sure others are aware
6. Review - make sure you review the risk assessment at regular periods to ensure that the assessment is still relevant

Risk assessments can be formal and informal. Formal risk assessments are documented and often completed as part of workplace procedures. Informal risk assessments are held in our daily lives as we mentally weigh up the risks of our actions. They can be affected by the individual factors. You can reduce risk normalisation by making sure the same person is not always completing the risk assessment.

Risk normalisation means becoming used to seeing high-risk situations, without realising the possible consequences of risky behaviour. One way to avoid complacency is to arrange for training in the human perception of risk for yourself and your seafarer colleagues. If you're introducing new equipment or kit, consider how it will affect awareness of risk and manage this appropriately.

The hierarchy of risk control (see Figure 4) is a framework that is used to minimise exposure to hazards. Controlling risks and reducing hazards is a safety-critical responsibility, and while this is the focus of those working in roles that affect the delivery and culture of shipboard operations, all need to implement this framework.

Figure 4: the hierarchy of risk control



2.7 Decision-making models

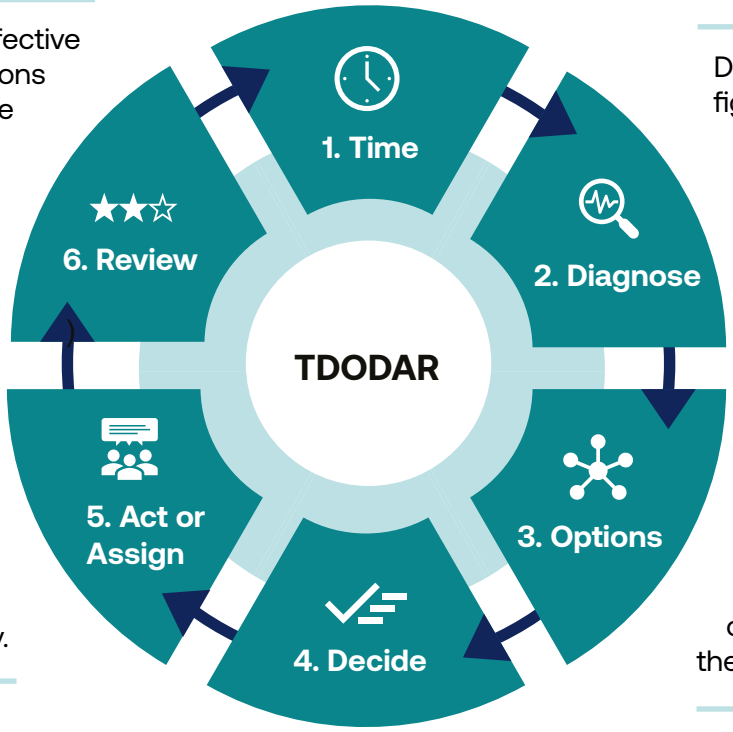
When a situation occurs you may not have the time to consider all factors that affect decision making before planning a course of action. Decision-making models such as TDODAR, which stands for "time, diagnose, options, decide, act or assign, review" (Figure 5) provide a step-by-step process that you can use to help make decisions even in high stress situations.

TDODAR is commonly used in the aviation industry, but there are many different decision-making models that serve different purposes. It's important to find one that you can remember and that works for you.

Figure 5: the TDODAR decision-making model

Work out how much time you have to make a decision and keep this in mind as you go through the next steps.

Think about how effective your actions and decisions were in solving the problem. Has the problem occurred again and if so consider whether your solution was effective



Diagnose the problem: figure out what is happening by collecting information from a range of sources including relevant experts.

Decide who should act on the decision and assign roles if necessary.

Using all the information you have collected so far, make a decision. What option would have the best outcome? Would it solve the problem?

Using all the information you have collected so far, make a decision. What option would have the best outcome? Would it solve the problem?

3: Performance influencing factors

Looking into how some factors that can influence the performance of people on board can lead to more accidents as well as how to mitigate or control these factors.

3.1 What are performance influencing factors?

Performance influencing factors (PIFs) can make human error more likely, which can lead to errors and incidents. These factors affect the way information is processed (see section 2.1 on information processing) as well as the way decisions are made. By mitigating or controlling these PIFs, you can improve performance and increase safety.

This section will explore a few common PIFs that may affect you and other seafarers. This is not an exhaustive list and there are many other factors that can influence performance.

Performance influencing factors describe any condition that influences performance. These can be individual, job or organisation related.

3.2 Fatigue

Fatigue spans the spectrum of individual, job, and organisation related factors. Fatigue refers to extreme mental and physical exhaustion. It's not the same as tiredness.

Tiredness is a temporary state that you can recover from quickly with rest. Fatigue is an overwhelming sense of tiredness that is prolonged and cannot be recovered from quickly. Many things can cause fatigue, such as a lack of quality sleep or stress.

Fatigue has several mental and physical effects, many of which can affect your ability to do a job safely.

These effects can be:

- difficulty concentrating
- difficulty making decisions
- lack of motivation
- poor memory, coordination and concentration, and slower reactions
- low mood, irritability or mood swings
- falling asleep suddenly and without meaning to
- reduced amount and quality of communication

Other physical effects that may reduce performance, as well as having long-term health effects include:

- loss of appetite
- headaches
- nausea
- shortness of breath
- muscle pain or weakness
- palpitations

Fatigue can impair performance and decision making, making incidents more likely to happen. Sleep debt can be built if you do not have enough good-quality sleep, even for a short period of time. It can lead to issues with decision making and problem solving, as well as an increase in risk-taking behaviour. Therefore, it needs to be managed and mitigated like any other risk.

Managing fatigue in the workplace

Manage fatigue onboard:

- ensure rest areas are comfortable – quiet, cool, and dark
- ensure good watch schedule planning, maintenance, and any other work. Consider when your team can have their hours of both rest and sleep
- try to prioritise rest hours, especially if there has been an emergency, problem or situation that has led to your team being fatigued
- when planning training exercises or drills, try to arrange them so there's little disruption to rest periods
- encourage your team to practise good sleep hygiene and that the causes, effects, and mitigations of fatigue is well understood
- uninterrupted rest periods are important – other staff (including shoreside staff) should facilitate this. If you notice that you or your team are fatigued, work to manage it
- make sure everyone is recording hours of work and rest accurately – working beyond these hours is a "routine violation" (see section 2.3) and cultural change may be needed to address this

You must abide by the minimum hours of work and rest as outlined in the MLC 2006, **MGN 505 (M) Amendment 1: Human element guidance - Part 1: Fatigue and fitness**

To learn more about managing fatigue onboard, read '**Wellbeing at sea: A pocket guide for seafarers**' by the MCA.

3.3 Stress and mental health

Stress is our reaction to feeling under pressure. It's usually thought of as being negative but that's not always the case. Some stress and pressure are necessary in our lives to make us feel motivated and to allow us to feel a sense of satisfaction. However, when the pressure becomes more than we can cope with we can feel overwhelmed and burnt out.

Similar to fatigue, stress has an impact on so many things that affect safety. It can affect our performance, our decision making, our interactions with others, to name a few, and can lead to major incidents if not managed properly.

Positive stress is called eustress.

Causes of eustress can include receiving a promotion, holidays and retiring. It can be noticed as someone with increased energy, focus, motivation, productivity, and a positive mood.

Negative stress is called distress.

Causes of stress can include conflict with your colleagues, excessive demands at work, job insecurity, lack of training for a task, unproductive and time-consuming meetings.

Symptoms of negative stress:

- tiredness and fatigue
- low motivation, energy and focus
- shortness of breath
- nausea
- breathlessness
- palpitations
- mood swings
- poor mental health
- lack of libido
- back pain

To learn more about managing stress onboard, read **Wellbeing at sea: A pocket guide for seafarers** by the MCA and **Health and Safety Executive's guidance and tools on stress and mental health at work.**

If stress seems to be widespread in your workplace, there could be a problem with staffing and management. Speak with your colleagues about the possible causes of fatigue. Report your findings to management.

The World Health Organization states:

> *"Mental health is a state of well-being in which an individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community."*

Some individuals may be more predisposed to certain mental health conditions, and these can be exacerbated by personal issues. It's important to assess the way their job and the organisation they are working in, impacts stress and mental health.

We all have mental health, just like we all have physical health. Just like with physical health there are times when our mental health is better or worse. Stress is one mental state that can influence our overall mental health.

To learn more about mental health onboard, read **Wellbeing at sea: A pocket guide for seafarers** by the MCA and **HSE guidance and tools on stress and mental health at work.**

Managing mental health

If you're concerned about a member of your team and want to speak to them about mental health, as a leader, you can:

- choose somewhere quiet where you will not be interrupted by other people to talk
- use open-ended questions such as: "How are you feeling?"
- let them say as much or as little as they want to
- just listen – do not try and diagnose them or guess at what you think they might be feeling
- avoid any judgement or judgemental language
- encourage them to seek help and support them through this. You can signpost them to company or external resources for mental health. You might need to do some research beforehand to know what is available
- if you're seriously concerned about a colleague's mental health, contact helplines and speak to a manager

If you feel as though your mental health is being affected, seek help. Speaking up should help you get the support you need at work.

What leaders can do:

Ensure your team understands the mental health policy and resources such as employee assistance program (EAP). Another resource is the **Wellbeing at Sea Tool**, which is a digital survey that is completed by seafarers. It provides practical advice on how to manage or improve wellbeing at sea. The anonymised data it collects is sent to managers to help them identify priority areas for improvement and highlight best practice.

- ensure staff complete relevant mental health training to eliminate misconceptions
- encourage open conversation about mental wellbeing, which is easier if your staff understand that they will not be penalised for expressing their concerns
- monitor mental wellbeing with satisfaction surveys, productivity, absenteeism etc.
- ensure workloads are reasonable and that seafarers are not over or underloaded with tasks

The 5 R's of mental health support

	What to do:	What to say:
Reflect	Start by gently mentioning any changes you've observed in their behaviour, appearance, or mood. It's important to approach this with empathy and without making assumptions.	*"I've noticed you've seemed a bit quieter lately, how have you been feeling?"* Give them space to talk and respond and avoid pushing them to share if they're not ready. This is about opening the door for discussion without pressuring them.
Reassure	Let your crewmate know that they are not alone and that it's normal to have tough moments. Reassure them that seeking support is a normal and important part of mental wellbeing.	*"It's really common for people to go through tough times, and I want you to know I'm here for you. You're not alone in this."* This step is about supporting their feelings and creating a safe space. Avoid minimising what they're feeling or trying to solve the issue immediately. Just listen and offer understanding.
Respond with care	When they open up, listen actively and with care. Show empathy by being present and paying attention to what they are saying. Avoid interrupting, giving unsolicited advice, or rushing the conversation.	*"I'm here to listen and support you however I can, no matter what you're going through. If you want to talk more I am listening."* You may also reflect back what they say, like: *"It sounds like you're feeling overwhelmed right now, thank you for sharing that with me."* Work on listening, not on solving the situation. Sometimes, people just need to feel heard and understood.
Respecting boundaries	Be aware that they may not be ready to open up fully. If they withdraw or seem hesitant, give them the time and space they need to process their emotions.	*"I understand if you don't feel ready to talk right now. Just know that I'm here whenever you want to chat, there's no rush."* Supporting their pace is crucial. If they express that they need time alone or don't want to talk further, don't push them to engage before they're comfortable.
Refer	If their situation seems to require more specialised support, recommend speaking with a professional such as a counsellor or therapist. Be prepared to provide information about available resources.	*"If you feel like you need more support, I can help you find resources like counselling services or a mental health helpline. It might be helpful to speak to someone who can provide expert advice."* It is helpful to have some resources on hand that they can access, whether they are internal (company programmes) or external (online services). Offer to assist them in making the connection if they feel unsure about reaching out.

Important notice: If you believe the situation is urgent or your crewmate is in immediate distress, don't hesitate to contact the medical officer or other appropriate emergency resources.

Creating a culture of health and safety

1. Make sure staff complete relevant health and safety training to eliminate misconceptions
2. Support open conversations about mental wellbeing. Help staff understand that they will not be penalised for raising concerns
3. Check mental wellbeing, for example, using satisfaction surveys, productivity, absenteeism
4. Make sure workloads are reasonable and that seafarers are not over or underloaded

Important notice: Make sure your team knows about the mental health policy and available resources, such as the Employee Assistance Programme (EAP). Another useful tool is the **Wellbeing at Sea Tool**, a digital survey for seafarers that gives advice on managing and improving wellbeing at sea. The anonymised data collected helps managers identify priority areas for development and highlight good practices.

3.4 High and low workload

The mental and physical resources a person has available for any task is limited and can vary between people.

When workload is too high or too low, performance can be negatively affected.

Job-related pressures that increase mental workload include:

- time pressure
- switching between tasks
- task demands
- time on task
- task complexity

Workload refers to the demands of a task.

Workload can also change over the course of a shift. Underload can be as dangerous as overload and switching between levels of workload can also cause issues.

Certain activities can add excessive pressure on the seafarers (for example, inspections). It's important to identify these times and to get extra help as necessary.

Individual and job factors such as competence and training can impact a person's ability to manage workload. So, it's important to make sure that you and your team have all the necessary training you need before undertaking any work, especially if it's new, changed in process or equipment used or is unfamiliar.

It's also important to have open communication with your team to ensure that they can speak up if they feel that they are struggling with any part of their work or feel as if they are being underloaded with tasks. Likewise, it's also necessary for you to know your team well and look out for any team members to make sure they are not being underloaded or overloaded with tasks.

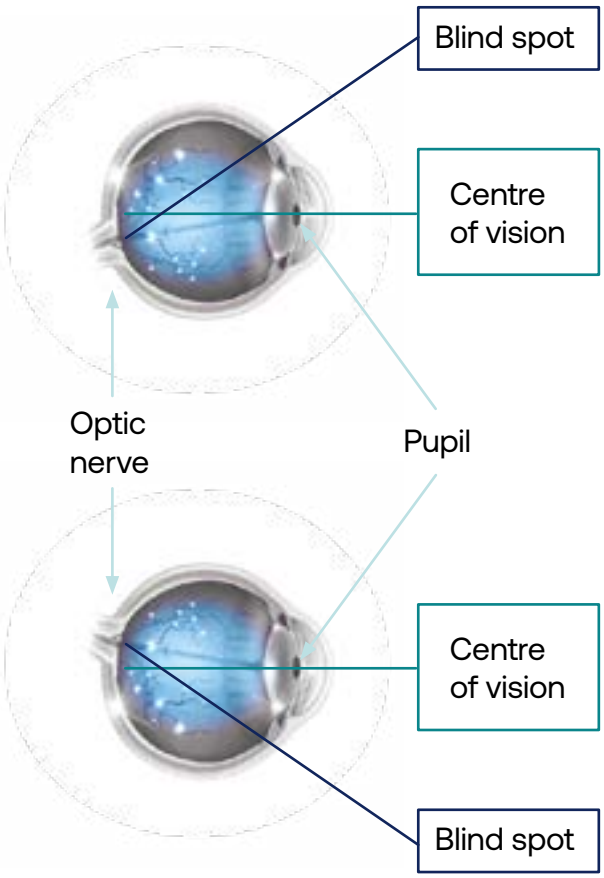
3.5 Environmental factors and physical limitations

Many environmental factors can affect performance.

For example, when the temperature in the environment is higher or lower than our core body temperature, we can gain or lose heat. This affects our performance, such as our decision making and critical thinking skills. So, it's important to assess the effects of climate and mitigate them.

The physical limitations of humans also need to be considered. The majority of sensory information the brain receives is through sight. As such, we tend to rely too much on eyesight, sometimes ignoring other cues that tell us something is wrong because we cannot "see" the danger. This can particularly be the case during duties such as watchkeeping. It's important to be aware of some of the issues that affect what we see.

Figure 6: how the eye creates the centre of vision and a blind spot



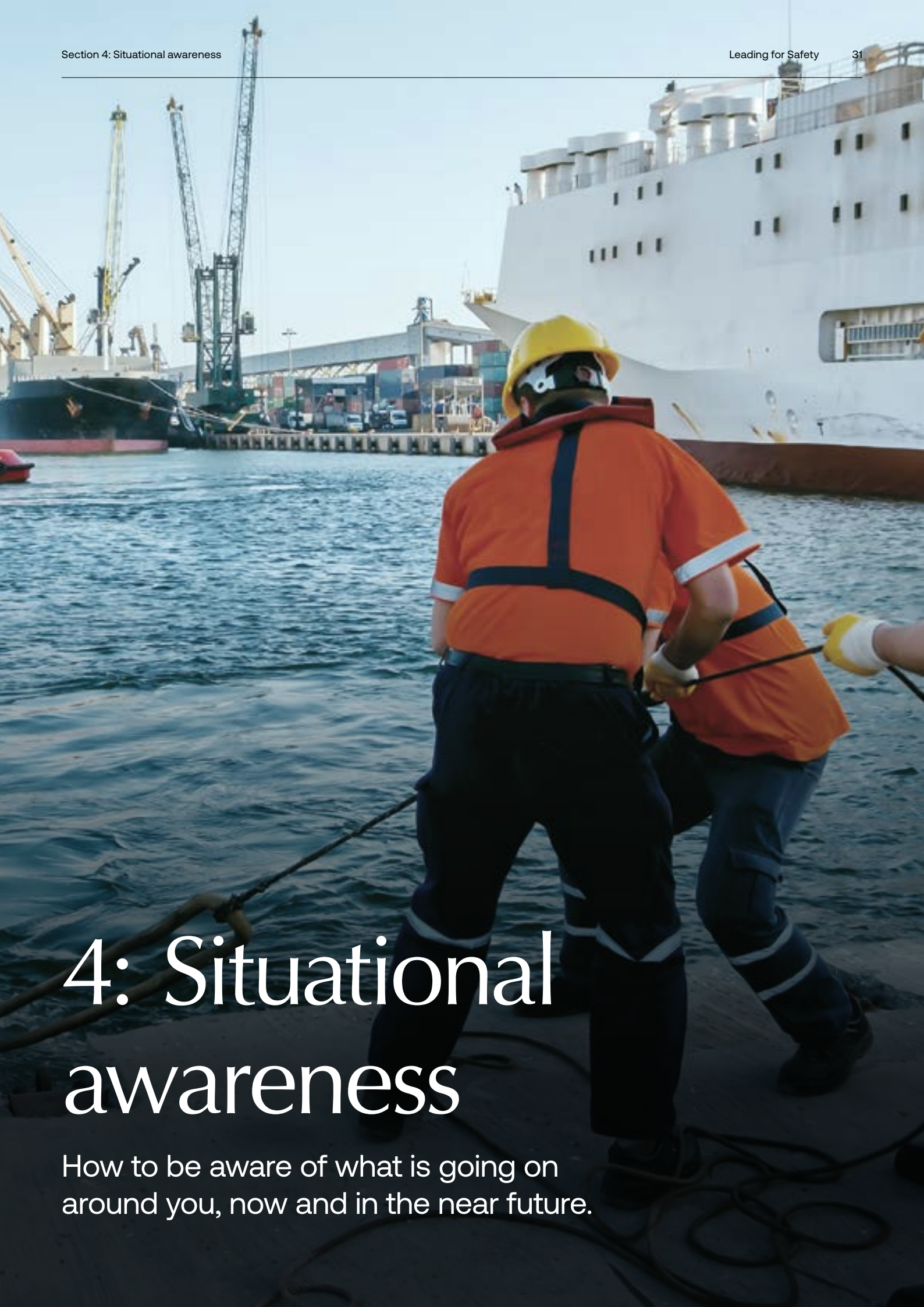
Blind spots are gaps in your visual field.

Blind spots are caused by a lack of receptors in the area where blood vessels and the optic nerve leave the eye.

Everyone has a blind spot; you do not usually notice that you have one because your brain fills in the missing information for you based on the surroundings.

When the brain fills in the missing information it makes a "guess" based on what it has seen. Therefore, you can miss something important if it's in your blind spot. It's important that you're aware of your blind spots and move your head while completing scanning tasks.

Figure 6 shows the natural blind spot of the human eye. All seafarers have this built-in gap in their vision, caused by the optic nerve's connection point. Effective lookout practice, scanning, not staring, helps ensure hazards do not fall into this unnoticed area of the visual field.



4: Situational awareness

How to be aware of what is going on around you, now and in the near future.

4.1 Situational awareness factors

Situational awareness is knowing what is going on around you in the present, as well as the potential influence of different factors in the near future.

Figure 7: Important points for situational awareness

Perception	do you recognise what is happening?
Understanding	do you understand the potential impact of what is happening?
Projection	can you figure out a solution and what might happen next?
Action	what should you do based on what is happening now?
Feedback	what happens after you act, and how does that help you decide what to do next time?

Adaped from Vicente, K. J., & Christenson, J. (2004). Situational Awareness Model found in: The dynamics of human-machine interaction: A situational awareness perspective. Journal of Cognitive Engineering and Decision Making, 8(1), 15-40.

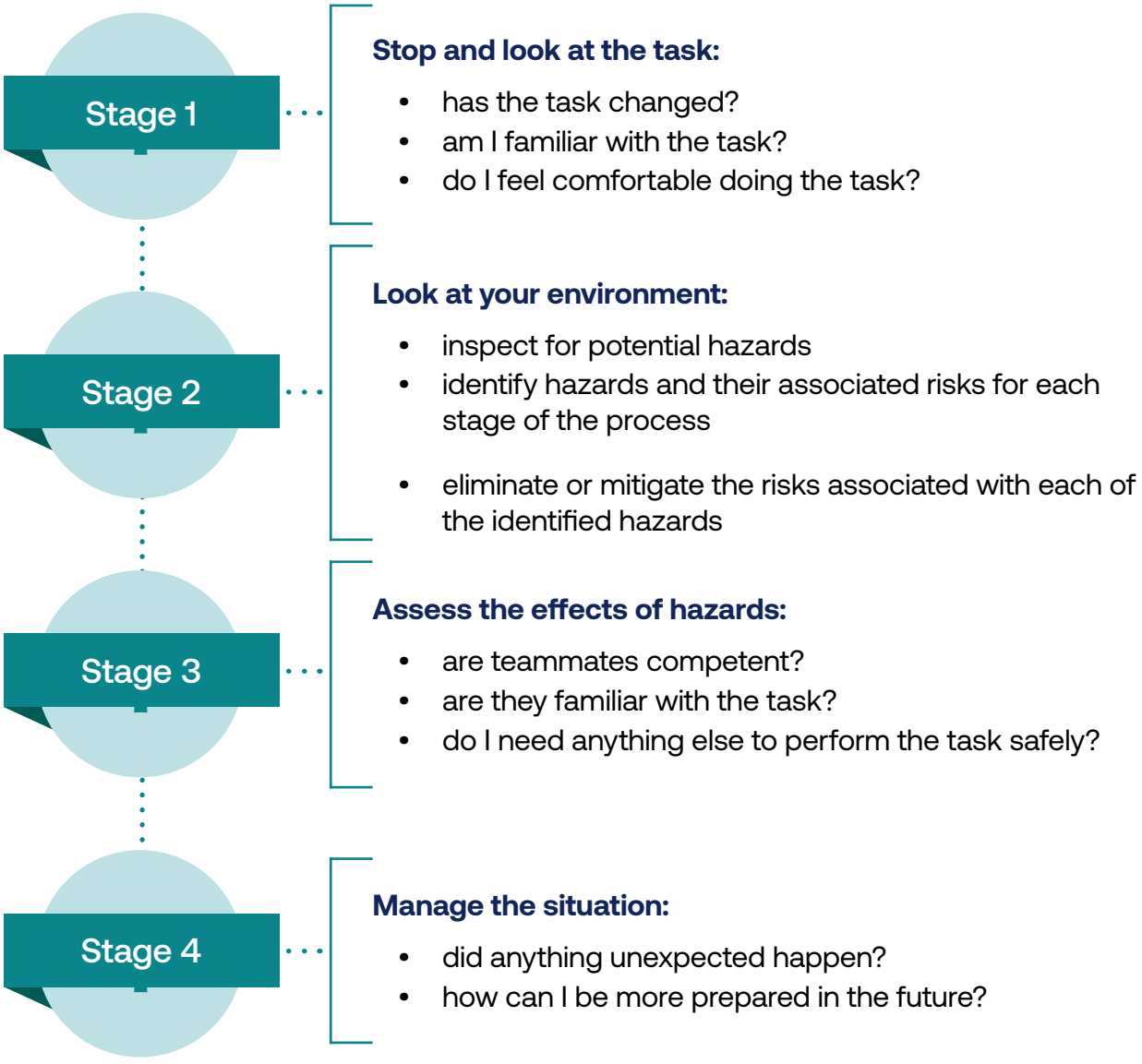
Hazards may appear at any moment, and situational awareness allows us to identify these, and to judge the level of risk involved.

Remember:
Risk = probability of impact x severity of impact

Situational awareness can vary from person to person, and of course, situation to situation. Our knowledge, experience and competence help us to understand what is happening around us, weigh up and then mitigate risks. Situational awareness will only be as accurate as our perception. So, it's important to consider the factors you learnt about in section 2. A range of factors, in particular high-pressure or stressful situations, can cause a loss of situational awareness, which, in turn, can lead to incidents.

Stop, look, assess, manage (SLAM) is a quick technique you can use when you're in a situation that requires urgent action to make sure that you maintain situational awareness. See Figure 8 to find out how to do the SLAM technique.

Figure 8: The four stages to consider in the SLAM situation management technique



5: Communication and teamwork

How good communication and building a positive team environment are crucial to creating a safe workplace.

5.1 Communication

Communication and teamwork are essential parts of any workplace. Onboard, you may not only be working with your colleagues, but living with them too. Aside from the seafarers onboard you will also work with and encounter shoreside personnel, pilots, and surveyors. It's important that your interactions go as well as possible.

Poor communication can have many negative effects including:

- creating an unpredictable work environment
- low morale
- conflict
- increased errors, leading to increased incidents

There are certain barriers to communication onboard that you might need to consider.

These include:

- different styles of communication
- hierarchical structures
- remote communication and use of technology
- diverse languages and cultures
- performance-influencing factors such as fatigue

Communication is not just about what you say but how you say it. Body language, tone, and the pace you speak at can all influence how a message is received.

To learn more about communication styles and body language, read **Wellbeing at sea: A guide for organisations** and **Wellbeing at sea: A pocket guide for seafarers** by the MCA.

Tips for good communication

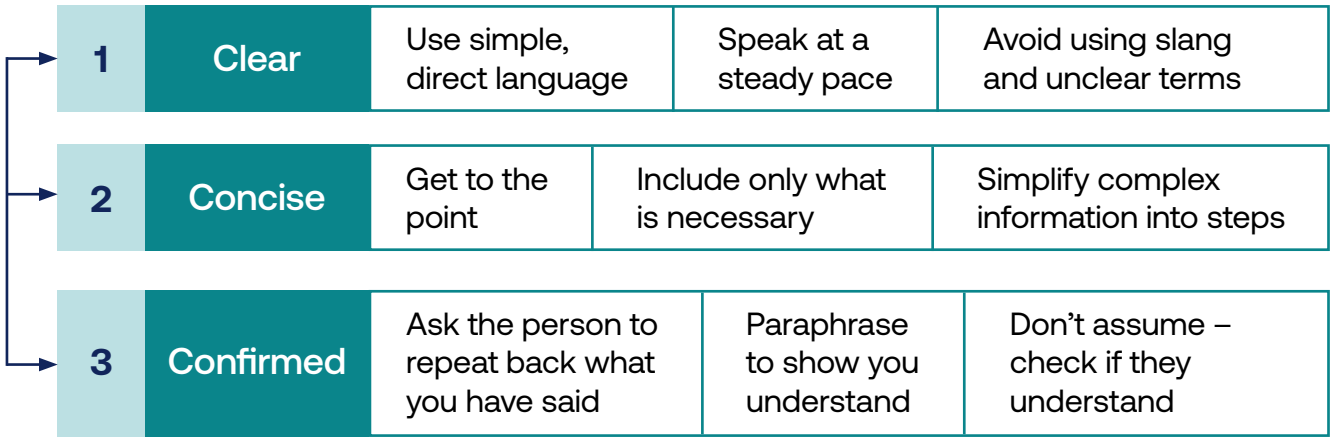
Communicator:

- keep your message concise, avoid using overly descriptive language
- make sure you convey the meaning of your message in easy-to-understand language
- keep good eye contact
- keep your body language open – avoid gesturing too much and maintain a calm demeanour

Listener:

- focus fully on the speaker – distractions can lead to you missing information, not communicating properly or misunderstanding what was said
- avoid interrupting someone while they're speaking
- paraphrase what was said and repeat it back so you can check you have understood what the other person was saying
- similarly, to the communicator, keep your body language open – keep arms uncrossed, maintain eye contact, and lean a little towards the speaker

Figure 9: The three c's of good communication



Good communication = safer operations, fewer mistakes and smoother teamwork.

5.2 Teamwork

Teamwork is an essential part of working and living onboard. Your team does not just involve the people you work with directly but can involve any number of people you have contact with. This could include, for example, pilots, port authorities, shoreside personnel, senior managers, customers and charterers.

A team describes any group of people who come together to achieve common goals.

There will be several factors that affect a seafarer's perception of the task and their ability to complete it. Think about what we have discussed in previous sections – performance-influencing factors, situational awareness and different perceptions of risk will all contribute to this.

So, at the beginning of a task it's important to check that you have a mutual understanding, sometimes called a shared mental model. To have a shared mental model among a team it's important that everyone in the team understands:

- **the task:** what you are trying to achieve
- **the team:** everyone's roles and responsibilities
- **the strategy:** how you're going to achieve the aim as a team

5.3 Briefings and debriefings

Briefings and debriefings are useful ways of communicating information on a task to a team and ensuring a shared mental mode. It's useful to have these short meetings often during a shift to reduce opportunity for focus fading.

During the brief, talk about:

- the goals and aims of the team
- the roles and responsibilities of everyone in the team – how you share the workload
- the plan for the task, including resources available and staffing issues
- what might go wrong and how can this be prevented or mitigated

Briefings are quick meetings intended to provide information clearly about a task.

Keep briefings short and to the point with no more than 7 items being discussed. This accommodates the limited size of our short-term memory (see section 2.1 on Information processing). Make sure that if you're leading a briefing that you answer any questions the team may have. Invite attendees to question the leader on any part of the briefing.

During the debrief, talk about:

- was communication between all parties clear?
- did everyone know their roles and responsibilities?
- was situational awareness maintained?
- could the workload be distributed differently?
- were errors made, why?
- what went well?
- what could be improved?

Debriefings are held after the task has occurred and are a chance to discuss what happened and identify improvements in working practices.

5.4 Team bias

There are some biases that are specific to teamworking situations that you need to be aware of.

Groupthink

When we work in groups it can be difficult to oppose opinions that are shared by some of the group. Groupthink is where the group agrees to a plan or decision regardless of whether the individuals within the group believe it to be valid. The objective becomes establishing a consensus rather than finding the best strategy or plan of action.

Ingroup or outgroup bias

At times when you work in a group you can form attachments to the members of your group. This can sometimes lead you to treating people from "your group" more positively and with more trust than people outside of the group.

Bystander effect

When we're in a group, we are less likely to step in when things are going wrong either because no one else is doing anything or because we think someone else will do something. This can be especially dangerous in high-pressure situations.

You can mitigate some of these biases by ensuring that you take personal responsibility in any situation. This might mean stepping in when you see something going wrong even when others do not and where appropriate, respectfully challenging any decisions that you think may be poor. Models such as engage, ask, state, tell (EAST) can help you get the facts you need before you challenge someone's behaviour or decision.

Engage
Make eye contact with the person, introduce yourself if necessary and make it clear that you would like to speak to them.

Ask
Ask them to explain the reasoning behind their decision.

State
Tell them that you have concerns and explain why.

Tell
If they do not take you seriously, alert someone else to the situation and your concerns.

6: Creating a culture of safety

Looking at why accidents happen, what really causes them and what we can do to create a safety culture in an organisation.

6.1 What we need to know to create a safety culture

To reduce the rate of incidents, we need a good understanding of:

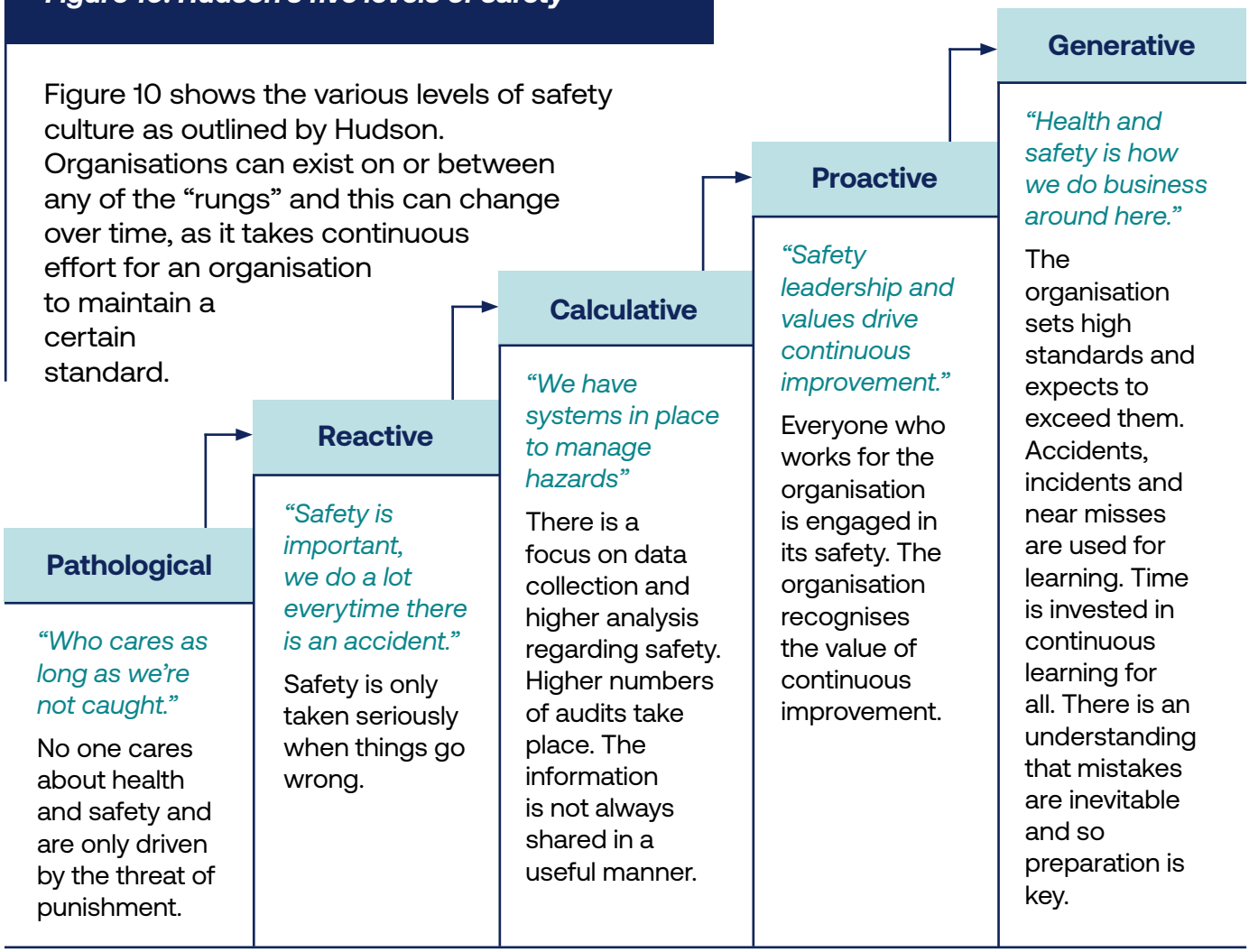
- why accidents happen
- what really causes them
- what kind of organisational culture can help to prevent them

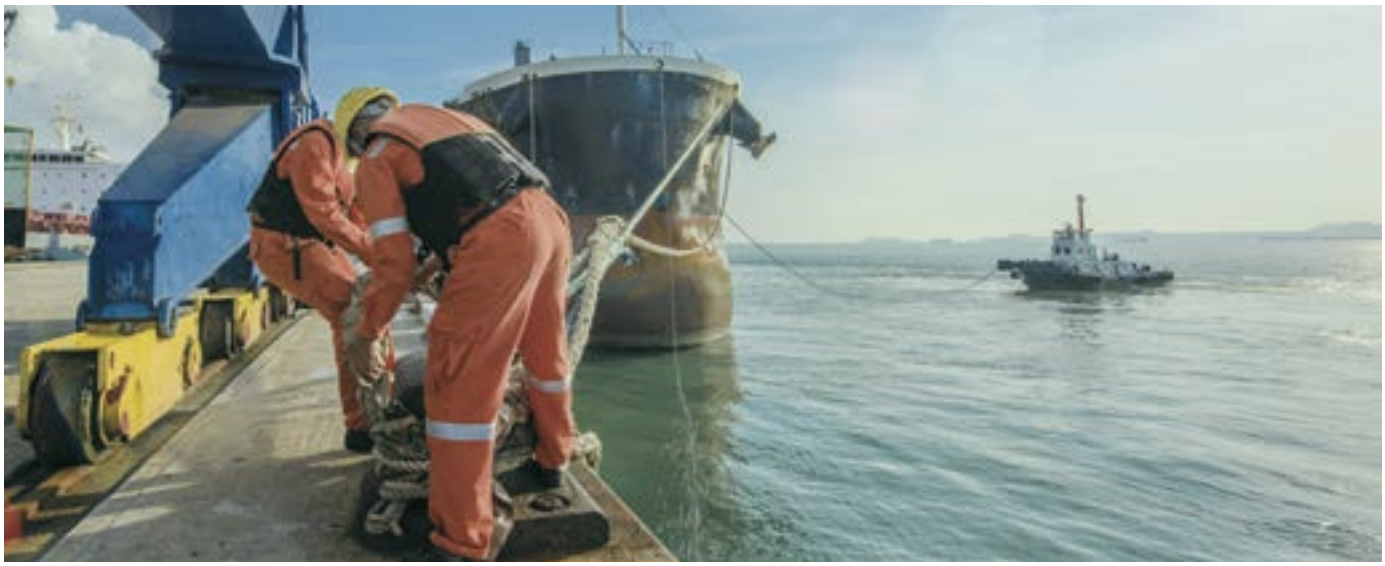
It's important to recognise that while individual behaviour is influenced by many factors, the behaviour is an emergent property of the organisation. The safety culture of an organisation has a big impact on the actions of its employees and how seriously they take safety. Poor safety culture has been linked to many incidents in the maritime industry.

Safety culture describes the way in which safety is managed within an organisation. It relates to the beliefs and attitudes, values, and perceptions that employees share regarding safety in the organisation.

Figure 10: Hudson's five levels of safety

Figure 10 shows the various levels of safety culture as outlined by Hudson. Organisations can exist on or between any of the "rungs" and this can change over time, as it takes continuous effort for an organisation to maintain a certain standard.



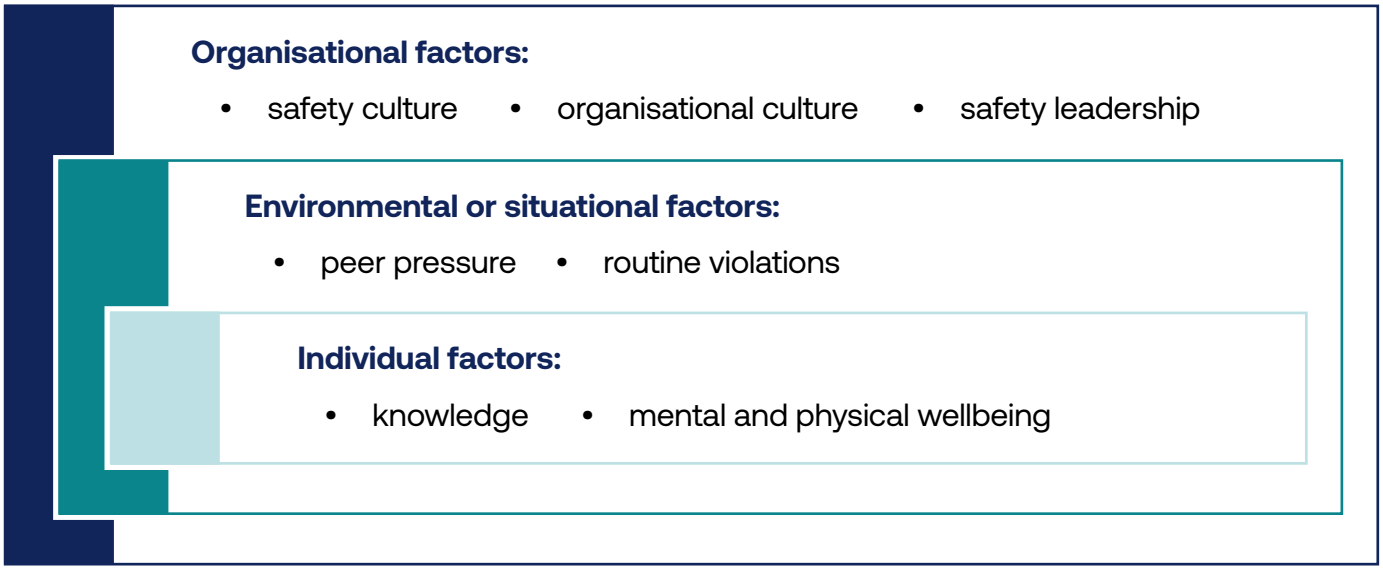


It should be noted that it's not possible to reach the top of the ladder at the generative rung, without having gone through the other levels. So, an organisation will need to be at the proactive level before being able to work towards a generative culture.

Reaching any of the higher levels on the ladder relies on commitment from managers and all seafarers.

Several individual, environmental and organisational factors can influence our perception of risk and risk-taking behaviour. Figure 11 illustrates some of these.

Figure 11: the factors that can affect our perception



Organisational, environmental and individual factors work together to affect our perception of risk and risk taking.

6.2 Culture of compliance versus culture of continual improvement

When an organisation encourages continuous improvement, it strengthens its ability to deal effectively with inevitable incidents. The International Safety Management (ISM) Code is designed to encourage continual improvement – through the company's safety management system (SMS), it encourages the self-regulation of safety. The critical link to accomplishing effective self-regulation is by setting safety goals and targets.

Culture of compliance

While a culture of compliance is certainly better than a culture of non-compliance, rules and regulations only define the minimum standards that should be met. In safety-critical organisations, new risks can arise at any moment.

Culture of continual improvement

An organisational culture that values continual improvement should constantly be seeking out information and ideas to improve safety onboard, to make risks in the working environment as low as reasonably practicable.

Continuous improvement means that:

- scenarios are anticipated and planned for in advance
- fewer emergency responses are needed as proactive management is in place
- complacency is reduced because risks are continuously monitored and new ways of dealing with things are considered

Measurement is an important step in any management process and forms the basis of continual improvement. If measurement is not carried out correctly, the effectiveness of the health and SMS is undermined and there is no reliable information on how well the health and safety risks are controlled.

Safety officials should be given relevant information such as industry guidance, as well as:

- findings of the risk assessment and measures for protection in place
- information on any other factors affecting the health and safety of those working on the ship
- statistical information that needs to be considered when conducting risk assessments

6.3 Learning culture

Learning culture arises from a culture of reporting, and focuses on how people, organisations and entire industries learn from past incidents and near misses, as well as successes, to become safer. The simple argument is that if you have just culture, you get good reporting, and if you have good reporting you can learn to be safer, which leads to a better safety culture.

You can contribute positively to your organisation's safety culture by reporting safety concerns when you have them, encouraging seafarers to act safely and speak up about any issues.

Think about section 2. We looked at how different factors, including organisational systems contribute to the behaviour of individuals, which is why having a reporting system in place can help to work towards a just culture.

As a leader you can help develop and encourage the use of a reporting system by:

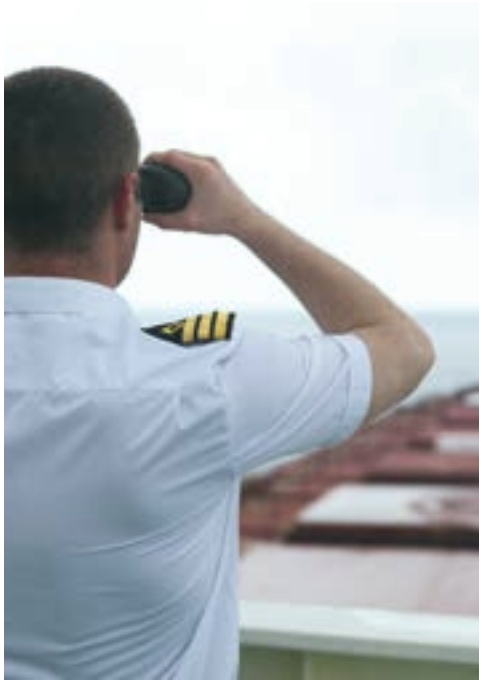
- identifying staff who can champion the reporting system
- providing relevant training on the reporting system
- being open to feedback from your team, ensuring that concerns are taken seriously, and changes are made accordingly
- taking safety committees and the role of safety officials seriously

Developing a positive safety culture and achieving high standards of safety depend on whole-hearted support of management and all seafarers. Those with specific safety responsibilities are more likely to perform well when management is clearly committed to health and safety. It's also important that procedures are in place so that all seafarers can cooperate in establishing and maintaining safe working conditions and practices.

Seafarers on board, or their elected representatives, must be allowed to make representations to the company or their employer about health and safety matters. They need to be able to do so without risk of disadvantage to themselves. Such representations should be considered, perhaps in conjunction with the safety committee, and any agreed measures to improve safety put in place as soon as possible.

Risk assessments

The safety officer should be familiar with the principles and practice of risk assessment and should be available to advise those preparing and reviewing risk assessments. Where the safety officer also has other responsibilities (for example, a chief officer) they may well conduct risk assessments themselves. However, the general principle is that the safety officer takes an independent view of safety on behalf of the company. Appointing the Master as the safety officer is not generally advised. This is because the safety officer is required, among other duties, to make representations and recommendations on health and safety to the Master.



Seafarers, and in particular leaders, should be given tools to assess current attitudes and behaviours they possess and gaps that need to be addressed.

This should aim to improve:

- operator and manager behaviour
- safe working
- supervisory behaviour
- rule-breaking
- situational awareness
- understanding and assessing personal risk
- managing change and making change last
- seeing yourself as others see you
- understanding own organisational culture

Research by Dr Little in 2004 found that there was more emphasis on technical skills, than on leadership abilities in the training provided and in promotion criteria through the ranks, all the way up to Master. Training quality was generally regarded to be low, suffering in particular from cost-reduction drives, which put pressure on training providers to reduce the scope and length of training courses.

A lack of investment in training can contribute to a poor safety culture. So, it's important for seafarers to have access to personal and external resources, as well as appropriate training to conduct their tasks safely.

6.4 Just culture

A ‘just culture’ is founded on 2 principles that apply simultaneously to everyone in the organisation:

> **1.**
> human error is inevitable, and the organisation’s policies, processes and interfaces must be continually monitored and improved to accommodate those errors

> **2.**
> individuals should be accountable for their actions if they knowingly violate safety procedures or policies

In a ‘just culture’ there is a high level of trust between workers and managers. Workers are encouraged or even rewarded for providing essential safety-related information. When incidents occur, the focus is on preventing it from occurring again. A just culture leads to a learning culture.

To note

‘Just culture’ is a term used by many, but it may not work well in your organisation, depending on a variety of factors. There are many terms that reflect differing approaches to safety culture, and this is just one. So please take what is useful from this section and do your own research to work out what kind of organisational culture would best address any problems you have within your organisation.

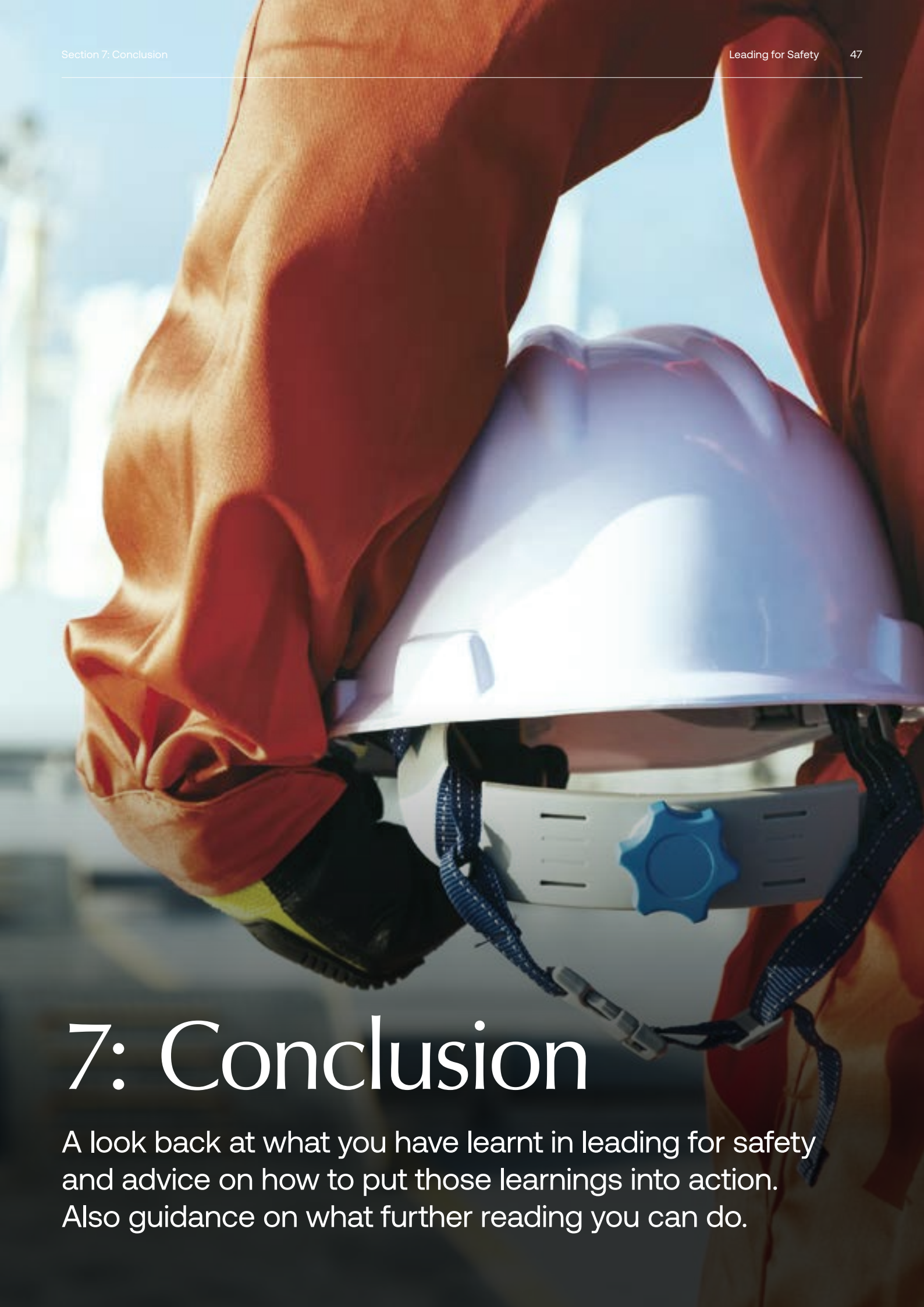
Incidents, errors and near misses are inevitable from time to time, but in a ‘just culture’ these are treated as learning opportunities and although workers are held accountable for their actions, dismissals only occur if the incident was a direct result of an action intended to cause harm. Otherwise, the factors that contributed to the problem are identified, and workers are supported in their work environments to ensure the incident does not occur again.

6.5 Changing culture

Changing organisational culture is not easy and it's not quick. But everyone's actions make a difference.

Some proactive steps that you can take:

- get to know your workplace and the habits and attitudes of those employed in it
- look and listen to what is happening and be prepared to ask questions
- take on the responsibility of a safety official, or proactively listen to and encourage those that have the role
- contribute to lesson learning by being honest about mistakes, and always try to understand others



7: Conclusion

A look back at what you have learnt in leading for safety and advice on how to put those learnings into action. Also guidance on what further reading you can do.

7.1 Consider how this guide applies to you

Now that you have got this far, we suggest you consider how each section applies to you, any leadership roles you may have, and of those around you. We hope you will continue to use this guide; however, the most important thing is putting these ideas in to practice.

To start this process, you may wish to ask the following questions of yourself and of your colleagues.

1. How could the human element be better understood by those working onboard?

What knowledge, skills and attitudes have been learnt in the human element, leadership and management (HELM) training course (and other courses) that could be expanded upon? Refer to section 1 to refresh your memory on the human element.

2. How could you use some of the information about decision making in section 2 to improve the way risks are understood and managed onboard?

Take a look at the Health and Safety Executive's toolkit on managing human failure for more information. A good place to start would be to think about common errors that happen on board and think about what cognitive biases may be at play. How could decision making onboard be improved?

3. What have you learnt about PIFs? How can you reduce their negative effects? What factors commonly affect your work?

Performance influencing factors (PIFs) describe any condition that influences performance. Section 3 gives a few common examples. PIFs can be related to the individual (physical, mental, temporary, or permanent), environmental (physical) or the organisation or job (typically social factors).

4. Thinking about situational awareness in section 4, can you identify the steps in the SLAM technique (stop, look, assess, manage)?

How could you use this technique and your understanding of situational awareness to improve safety?

5. How could you improve the way you communicate with those in your team? How could this improve safety outcomes onboard?

Section 5 provides some underlying principles.

6. How do you think "the way we do things round here" mindset affects safety onboard?

Can you identify features of different levels of Hudson's safety ladder in Section 6 within your organisation? What do you think may need to be done to improve culture in your organisation?

7.2 Further reading on leading for safety

Introduction to the human element:

- 'The Human Element: a Guide to Human Behaviour in the Shipping Industry' by Dik Gregory and Paul Shanahan

Decision making and risk management:

- 'Behaving Safely: a Practical Guide for Risky Work', Dik Gregory and Paul Shanahan
- 'Thinking Fast and Think Slow' by Daniel Kahneman
- Managing human failures' toolkit from the Health and Safety Executive (HSE)
- 'Swiss Cheese Model of Safety Incidents' by James Reason
- MGN 638 (M+F) Amendment 1: Human element guidance - part 3 distraction

Performance influencing factors (PIFs):

- Wellbeing at sea: A pocket guide for seafarers
- HSE guidance and tools on stress and mental health at work
- MGN 505 (M) Amendment 1: human element guidance - Part 1: Fatigue and fitness
- MGN 520(M): human element guidance – Part 2. The Deadly Dozen - 12 Significant people factors in Maritime Safety
- MIN 680 (M) Wellbeing at sea

Communication and teamwork:

- Wellbeing at sea: A guide for organisations
- Wellbeing at sea: A pocket guide for seafarers by the MCA

Creating a culture of safety:

- Identification of Leadership Qualities for Effective Safety Management by Dr Little, 2004
- MIN 664 (M) Amendment 3: Safety climate tool (SCT) for the maritime industry

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