Norsk Industri

SAFETY, LEADERSHIP AND LEARNING

– A practical guide to HOP

norskindustri.no

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Human and Organisational Performance (HOP)

HOP is an approach aimed at enhancing safety by understanding and improving the capacity of individuals and organisations to function in complex and high-risk situations. HOP emphasises the interactions between people, technology, tasks, and organisational conditions to achieve safe and efficient work.

HOP has its roots in various disciplines and industries, notably aviation and the nuclear power sector. The approach has since been adopted by businesses in fields such as the oil and gas industry, pharmaceuticals, healthcare, and the defence sector. HOP draws from multiple disciplines, including engineering, psychology, and organisational science.

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Foreword

Kings Bay, Alexander Kielland, Åsta, Helge Ingstad. Major accidents are poignant milestones in Norwegian history. Over the years, these have become rarer, largely due to lessons learned from such events. Technology has advanced, and regulations have become more stringent.

However, we must not become complacent. There are still too many workers who suffer serious injuries in our industry every year. More importantly: Safety isn't something we have; it's something we continuously create. In recent years, companies have faced challenges from pandemics, wars, rising operational costs, and unstable market conditions. What's happening at a societal level can contribute to creating vulnerabilities at the company level. An organisation's adaptability is crucial to ensure safe operations.

Serious accidents rarely have one cause. Usually, it's not individual components or employees that fail, but systems. Conditions leading to accidents have often been present for a long time before things go wrong. Companies have operated under the same routines, with the same personnel and equipment over time. Therefore, learning and improvement can't just happen after an incident has occurred – it must also occur when nothing happens. This allows us to better identify conditions that jeopardise safety.

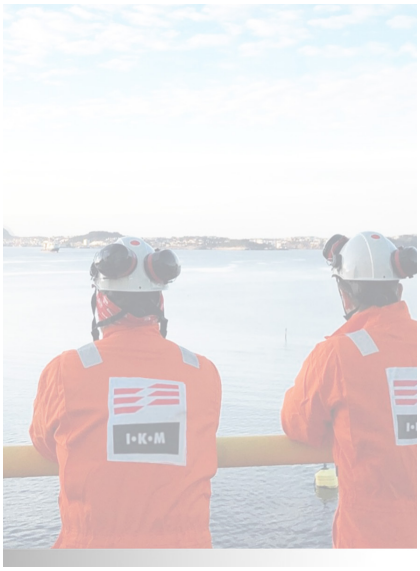
Prevention has always been paramount in Norwegian HSE-work. The premise of this guide is that HSE can be further enhanced, based on some simple, yet vital, concepts: Rules alone don't create safe workplaces. Those doing the job know best where the challenges lie. Leaders need to earn the trust of those doing the job to be informed about these issues. These concepts might appear straightforward on paper, but they're often challenging in practice.

This guide, therefore, addresses not just why we need a new approach to safety, but also how it can be implemented. It lays the foundation for improvements, irrespective of a company's size, sector, or risk profile. It mainly covers the most common HSE activities in organisations and is crafted by representatives from the Federation of Norwegian Industries HSE committee and the HSE council of the Federation of Norwegian Industries, Offshore Technology Suppliers.

The industry is continuously evolving, with new challenges demanding new solutions. This guide offers an important starting point for proactively identifying these solutions before incidents happen.

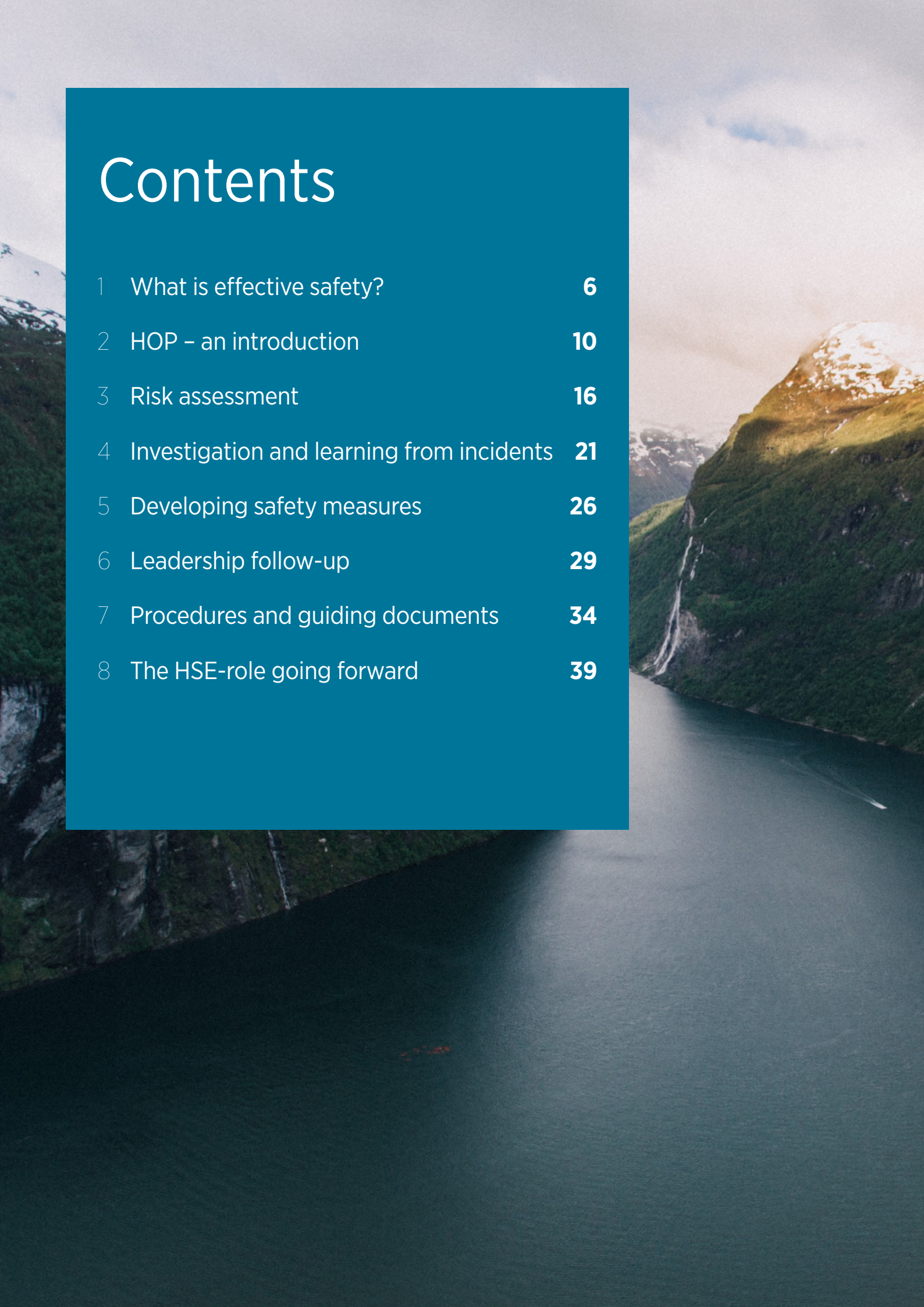
Happy reading!

Harald Solberg
Chief Executive Officer
The Federation of Norwegian Industries



As leaders, we need to be present where the work is actually carried out, and we must be curious. We need to become better at asking the right questions and listening to those doing the job. They are the experts; they understand the challenges and often know what's required to drive improvement. The HOP approach can assist us in identifying and addressing unsafe and hazardous conditions BEFORE an incident happens.

STÅLE KYLLINGSTAD, CEO OF IKM GROUP



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CHAPTER 1

What is effective safety?

Throughout the industry, people work on safety-critical tasks every single day. This work can be challenging; equipment might be inaccessible, there can be tight deadlines, there might be a lot of new staff, and contracts could be at risk. Sometimes things go wrong.

From 1996 to 2022, there has been a decrease in the number of incidents, injuries, and accidents within the industry. However, we're now seeing a trend where this improvement has flattened out. As a result, we can't assume that the same approach to safety will continue to bring improvements. We need to consider new perspectives.

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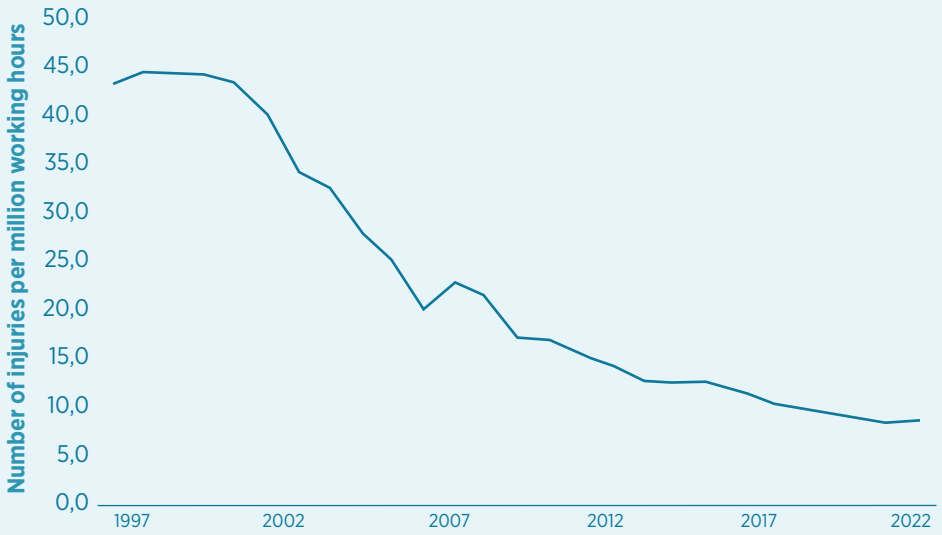
Is safety the absence of incidents, oor is it the capacity to prevent incidents from occurring?

Number of injuries with and without absence per million hours worked (H2/TRIF)



Do low numbers mean we're working safely? The number of injuries or incidents gives us an insight into what has occurred, but it doesn't reveal where we're vulnerable to future events. Mistakes will happen, and when they do, we must ensure they don't have catastrophic consequences. The issues that can be life-threatening aren't necessarily the same as those causing the minor injuries we most often see. Frequency and severity don't always correlate. Thus, it's essential to focus our attention on conditions that may lead to severe incidents.

To understand how we can better enable safety tomorrow, we need to be more proactive and learn from the work we do every day. We must pinpoint areas for improvement and issues needing attention, addressing them before an incident occurs.

When nothing happens, a lot is happening

Major accidents are fortunately rare, but the conditions leading to them are not. Often, there's a fine line between days when things go drastically wrong and days where nothing goes wrong. The tasks we carry out daily are influenced by various factors and circumstances that can make compliance with rules and regulations challenging.

In many situations, it's impossible to predict everything. What might hinder or complicate the task at hand? Factors could include:

- Less time than anticipated
- Lack of proper equipment
- Poor weather conditions
- Unclear procedures
- Worksite looks different in reality
- New team members

Variation in the way we work is natural, and most of the time, things turn out fine. Occasionally, this adaptability leads to us identifying solutions that are improvements to rules and procedures. But, there are times when significant deviations arise. As the gap between procedures and practice widens, the risk and likelihood of mistakes increase.

Such constraints also affect leadership. For instance, clients might want to cancel contracts if deliveries aren't timely, or senior leaders may solely concentrate on financial indicators, disregarding middle management's perspective on operational challenges.

Mistakes

People make mistakes. Not by intention or because we want to harm ourselves or others, but because it's normal. Our decisions and actions are influenced by the systems and conditions surrounding us.

Viewing errors as typical and often a result of complex causal relationships doesn't mean we remove accountability. We all have a responsibility for safety and to ensure our working environment remains secure. We should speak-up about concerns or challenges in our work, ensuring that

To what extent do we have systems in place to ensure our employees can fail safely?

We can assume that when performing a task, most individuals wish to comply with regulations and procedures. However, circumstances surrounding the task can make this challenging. Thus, it's crucial we understand these circumstances.

we follow up so that improvements are implemented. We must eliminate factors that hinder safe work in line with regulations and procedures, and at the same time strengthen our systems to make it easier to perform the work safely.

Learning from normal work

Learning from incidents is important. It is also important to learn from normal work before an incident happens. This is about understanding what individuals do as part of their daily tasks. After all, most of our tasks are completed successfully. There's great potential for learning here. The conditions that become evident after an incident have often existed in normal work before the event. If we excel at learning from normal work, we can tackle these conditions and help to prevent undesired events.

Success

Errors

Safety as capacity

> Compliance is important for everything we can predict. We aim for 100% compliance. But, what about all the unforeseen circumstances? Let me provide an example: Today, while driving to work, there was minimal traffic, and my journey was swift. On other days, there's traffic, cyclists, pedestrians, and children playing football. I can't predict that. Thus, I need to adjust my plan accordingly. Compliance is paramount when we can anticipate events. Capacity becomes paramount for the unforeseen.
>
> ERIK ROESEN LARSEN; SOURCE: ALWAYSSAFE.NO Q2 2022

We must have adequate capacity to perform our tasks safely. It's essential to have both the necessary expertise and sufficient resources to complete tasks efficiently and safely. If either of these elements is lacking, that's not possible.

When a mistake is made, it's crucial to have safety measures in place to manage the situation effectively. The goal is to build resilient systems that reduce the likelihood of errors, whilst also recognizing that mistakes can occur. This involves limiting the consequences of such errors.

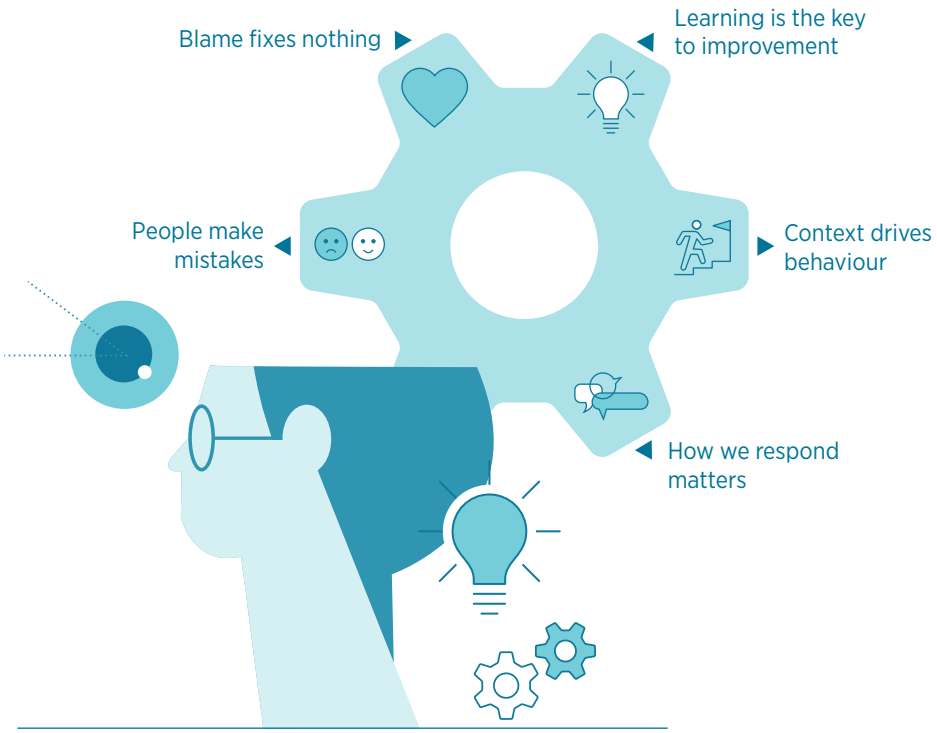
Examples of safety as capacity:

- Build systems with the assumption that errors will occur (e.g., airbags in cars)
- Make it easy to work safely (e.g., simpler procedures, instructions, and documentation)
- Those on the job know best. What do they need to work safely?
- Technology is user-friendly and designed according to end-user needs
- Design simplifies task execution and makes failing safely possible
- Maintenance tasks can be conducted without being in the line of fire
- Sufficient time and personnel to ensure quality of work

CHAPTER 2

HOP – an introduction

Human Organisational Performance (HOP) offers a lens through which we can understand our work processes, including how organisational systems influence our decisions, actions, and the likelihood of our success. The HOP approach helps us to achieve better solutions and outcomes by providing a different perspective.



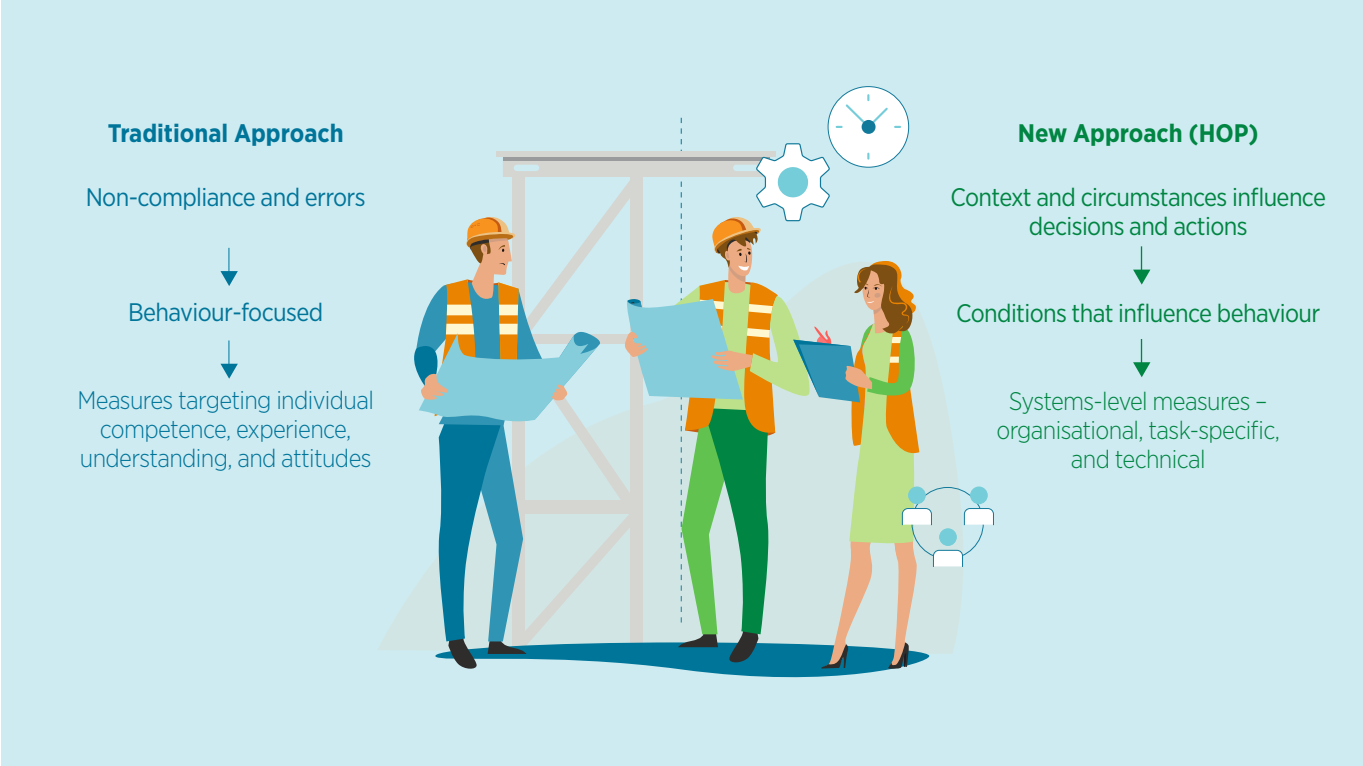
SOURCE: US Department of Energy (2009). Human performance improvement Handbook Volume 1: Concepts and Principles. Washington, D.C 20585.

Traditionally, our understanding and explanations of safety have been centred around individuals and their behaviour; errors are attributed to non-compliance or lack of quality in work. This viewpoint limits the lessons and subsequent improvements derived from these incidents. By placing the focus solely on individuals, we risk repeating the same mistakes when different people do similar tasks under comparable conditions.

For lasting change, we must work on improving safety through fixing the work, not the worker. Those who do the job are experts in their field, not the cause of problems that emerge. They are invaluable resources, helping us find solutions. HOP uses a systems-based approach to safety, looking at the factors influencing human behaviour and how we can learn and improve. In this way, we can implement measures that make safer conditions for anyone doing similar tasks in the future.

Traditional approach vs HOP

The traditional methodology focuses on the workers. HOP (the new approach) emphasises the context surrounding the task.



HOP principles

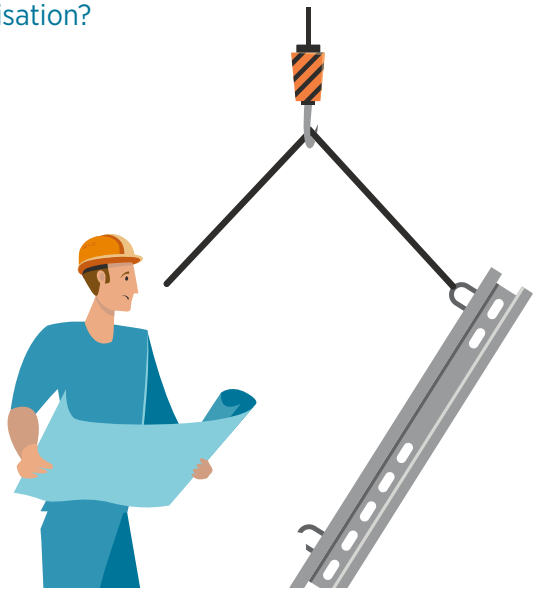
The HOP approach builds on five principles. They form the foundation of our understanding of how people execute their tasks, our perception of errors, and our thinking around learning and improvement.

1. People make mistakes
2. Blame fixes nothing
3. Learning is the key to improvement
4. Context drives behaviour
5. How we respond matters

> These principles don't prescribe how we work safely – that's what the requirements in our management systems do, but they define what we believe is best practice. What these principles offer is guidance on how we can learn to become better.
>
> KRISTIAN GOULD, EQUINOR ASA

Principle 1: People make mistakes

How do we approach human error in our organisation?



Mistakes are normal. We all make mistakes. Even the most competent leader and the most experienced employee can sometimes make poor decisions. In hindsight, these judgments may seem obviously wrong, but nobody makes mistakes intentionally. Variability, uncertainties, and unforeseen circumstances can result in decisions that seem right in the moment, but don't yield the expected outcomes. Errors and non-compliance are primarily symptoms of underlying issues, rather than the root causes of incidents.

Principle 2: Blame fixes nothing

How do we treat individuals when mistakes occur in our organisation?

Assigning blame might be essential in situations that demand legal proceedings or as a response to deliberate misconduct or gross negligence. However, it's not a productive response to human error, especially if the goal is to learn and improve. Blaming reduces trust and safety, leading individuals to avoid reporting issues for fear of repercussions. This reduces our insight into important conditions influencing our work that require improvement. After all, we can't fix what we don't know.

Blame is associated with punishment, but they're not identical. It often centres on individuals and their actions or inactions. The language we use tells a lot about where we assign blame. By using phrases like "lack of risk awareness", "inadequate leadership follow-up", or "lack of precision" after an incident, we communicate that individual failure is to blame.

Experience from the industry

One of the first things I did when I started my job was to say, "One thing you can be sure of is that if you're honest with me, you're never going to get reprimanded, no matter what. I will never reprimand. We may have to talk about different things that have happened or incidents, but you will never be reprimanded." I repeated this very often because there was a culture where nothing was reported, which in turn led to important issues not being identified. Eventually when we started changing that, that's when people started asking questions. Before, no one asked questions because the culture wasn't as open. Since implementing the change, we have noticed that tasks focusing on learning and building competence have become easier to handle. This is because people feel safe at work, and honesty, openness, and questions are welcomed.

KRISTINE PEDERSEN, TROSVIK INDUSTRY AS

Principle 3: Learning is the key to improvement

How do we focus on learning in our organisation?

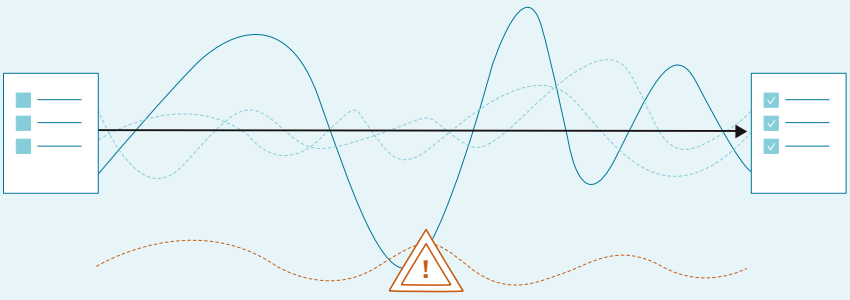
What happens when we shift the focus from 'who' to 'what'? Learning is vital for us to improve. Rather than concentrating on the individual and what went wrong, there's great potential in understanding the circumstances affecting our work and leading to variability. We must understand how requirements translate into real-world practices. What makes tasks challenging and increases the risk of mistakes? How can we best manage this? This learning shouldn't only come from incidents, but also from the work not resulting in incidents; normal work.

Principle 4: Context drives behaviour

How do we account for the circumstances people are working under when explaining how they perform their tasks?

No matter how well a job is planned and prepared, there will always be deviations, large or small, from what we envisioned. The map doesn't always align with the terrain. Conditions such as weather, ambiguous or outdated standards and procedures, challenging workspace designs and equipment, simultaneous operations, staffing, and training influence how tasks are carried out. This gives rise to variations in the work process. We make adjustments, adaptations, solve problems, fine-tune, and make assessments to complete the task in the way we think is best. Variability in how we execute the job is natural. Sometimes, it leads to positive outcomes as we execute tasks in a safer and more efficient way than dictated by standards and procedures. However, at other times, our adjustments may result in greater deviations and less safe execution. When the gap between procedures and practice becomes too large, the risk of errors or incidents increases.

The gap between procedures and practice



Conditions that make tasks difficult and increase the likelihood of errors are called "error traps". We need to understand how work actually happens, identify what error traps are present and leading to variability, and find ways to reduce the gap between procedures and practice.

SOURCE: Hollnagel, Erik (2017). Safety-II in practice: Developing the Resilience Potentials. Routledge.

If we accept a gap between procedure and practice, does it imply it's acceptable not to follow rules and procedures?

There will always be a difference between how we imagine work being done (requirements, procedures, instructions) and how it is done in practice. This doesn't mean it's okay to ignore rules, requirements, and procedures. We need to ask, "What makes the job challenging?" and determine whether it's feasible for workers to comply with the set rules, requirements and procedures. We need a shift from "Follow the rules or face punishment" to "Follow the rules, and if it's not possible, speak up."

Principle 5: How we respond matters

How do we receive and respond to bad news in our organisation?

How we respond to negative news, whether it's from leaders, peers, or others in the organisation, is crucial for trust. Trust takes time to build, but can be quickly eroded. It's about both our words and actions. When someone has made a mistake, there's a big difference between the responses "Why did you do that?!" and "How can I help?".

To gain insight into conditions needing improvement, building trust is crucial. This involves constructive responses to deviations and undesired situations, emphasising learning over blame. Responding constructively means showing care, empathy, and curiosity. Asking open-ended questions that make people comfortable sharing their honest experiences and feelings is essential. Meeting someone with care and wanting to understand the cause of an error promotes a motivation and willingness to share.

Reflections from the industry

All these 5 core principles in HOP should be second nature to you. With that mindset, I believe the questions will come to you more naturally. When a leader recognises that employees are the experts, it automatically leads to a more humble and curious approach. You don't just go out and make conclusions; you go out and ask. Demonstrating genuine curiosity in "what actually happened here?" or "what are your thoughts on this work operation?" when speaking with someone. Such conversations often don't take much time, but it is crucial that it is coming from a leader with a genuine interest in what I'm doing.

JO MINKEN, DYNEA AS

CHAPTER 3

Risk assessment

At its core, a risk assessment aims to identify if someone could be injured or fall ill due to the work being done, and to determine what actions can be taken to prevent this. It's about recognising what can go wrong, both the obvious risk factors and those that might be less apparent or that could evolve over time (Botnmark, 2022).

It can be challenging to answer the questions in a risk assessment. It's crucial to ensure that risk assessments aren't merely treated as a basic checklist exercise without adequate reflection on the task at hand and the circumstances that might influence the associated risks. Managing risk is about minimising the uncertainties related to achieving the objectives of the task, including its safe execution (Provan, 2022).

Which questions offer the best insight into factors that can make the job difficult, areas where mistakes are easily made, and situations where there is uncertainty present?

> In the industry, we're generally proficient at conducting risk assessments, but I believe we can make our workplace even safer by tailoring our evaluations more to the specific situation and the task at hand. Risk assessments can become generic, broad, and repetitive, and there's a danger in not being sufficiently specific about the particular job and the factors that could affect its execution. Moreover, we can quickly become accustomed to various operations, which heightens the risk of not robustly identifying barriers and measures.
>
> ØYVIND REIERSEN, AKER SOLUTIONS

Traditional questions in a risk assessment:

- What is the job about?
- Who is responsible?
- What risks are associated with the task?
- What measures are in place to reduce risk?
- Do the personnel have adequate training, expertise, and experience?
- Do we have the necessary tools and protective equipment?

HOP-based questions in a risk assessment:

- What can make this job difficult?
- What could go wrong?
- Where might mistakes be easily made?
- Which requirements or procedures are relevant? Is there any ambiguity?
- What conditions or factors can make compliance to procedures difficult?
- Are there any changes that need to be considered?
- What do you need to ensure this job is completed safely?

By incorporating more open-ended questions about the tasks and potential challenges in the risk assessments, we can improve safety and avoid the risk assessments becoming overly generic.

The difference between hazards and error traps

To conduct effective risk assessments, it's crucial to understand the distinction between hazards and error traps.

"Hazards are any conditions that can cause harm or illness in the short or long term. They are omnipresent in the working environment, whether it's related to falls, crush injuries, punctures, violence, burns, or exposure to chemical and biological agents" (Botnmark, 2022; p. 76).

"Error traps" are conditions that make it difficult to work safely and increase the likelihood of mistakes. By identifying and understanding error traps, we can work more safely and prevent incidents.

Categories of error traps

We can categorise error traps into four distinct categories. Three of them are at the system level. These are organisational error traps, task-related error traps, and technical error traps. The final category is individual error traps. We tend to focus on the individual level, but to enable safe job execution, we must also understand the system surrounding the individuals.

Examples of error traps

Organisational error traps

- Unclear roles and responsibilities
- Task conflicts
- Communication/ collaboration issues
- Staffing and resource management
- Work organisation (e.g., workload and planning)

Task-related error traps

- Unfamiliar tasks
- Unpredictable tasks
- Complex tasks
- Limited time
- Mundane or repetitive tasks

Technical error traps

- Equipment or technological malfunctions
- Deficiencies in documentation (e.g., incomplete, incorrect, outdated)
- Unclear instructions, labelling, or signals
- Inappropriate tools
- Poor accessibility
- Noise, lighting conditions, temperature, and/or air quality

Individual error traps

- Insufficient training/ skillset
- Lack of experience
- Lack of rest
- Health issues
- Stress

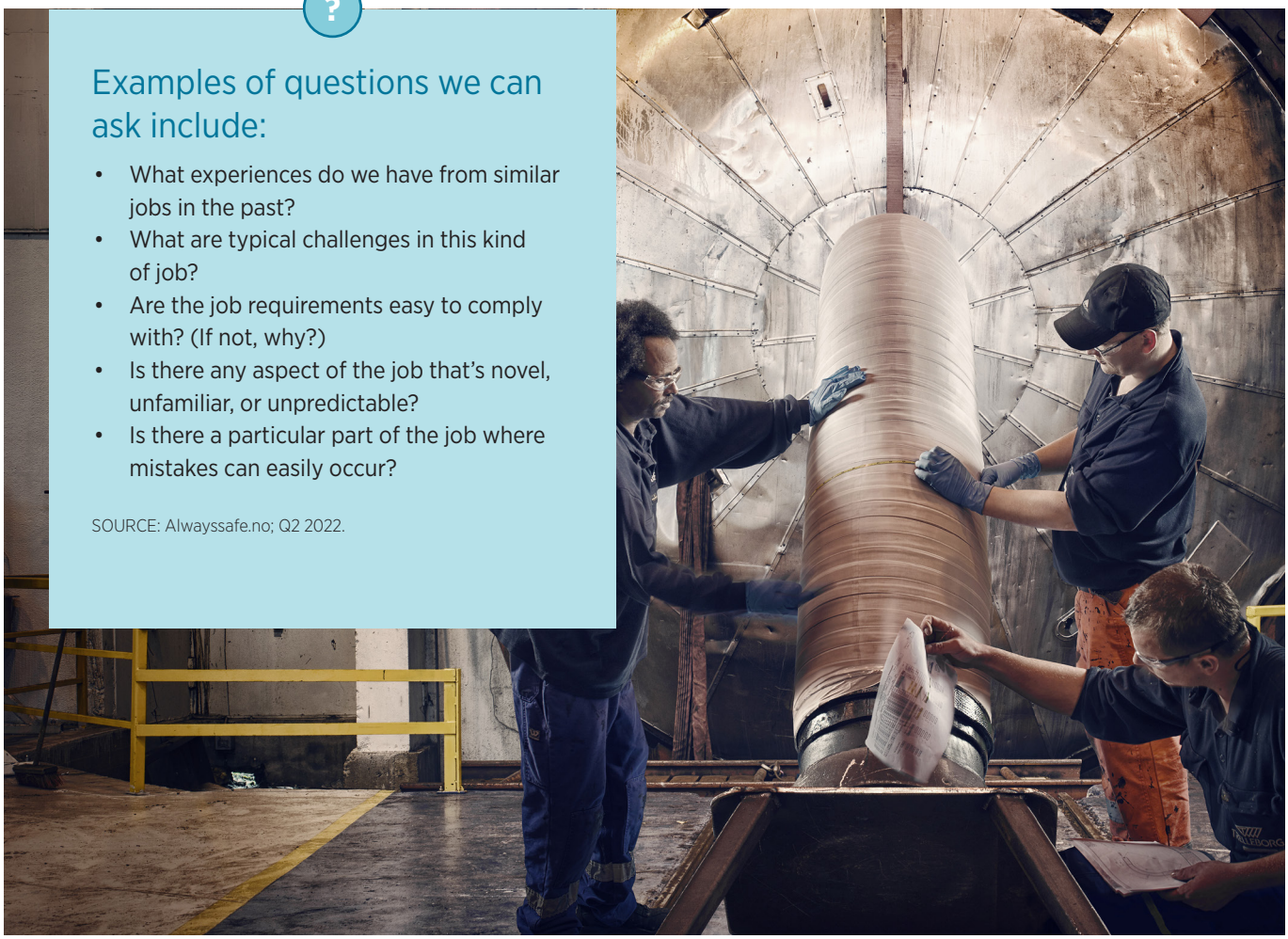
How can we identify error traps?

To understand and identify error traps, we need to discuss the task at hand, ask each other insightful questions, and observe on-the-job activities in the field.

Examples of questions we can ask include:

- What experiences do we have from similar jobs in the past?
- What are typical challenges in this kind of job?
- Are the job requirements easy to comply with? (If not, why?)
- Is there any aspect of the job that's novel, unfamiliar, or unpredictable?
- Is there a particular part of the job where mistakes can easily occur?

SOURCE: Alwayssafe.no; Q2 2022.



Situations that increase the likelihood of mistakes

Certain work-related situations can heighten the probability of errors and mistakes. Here's a list of circumstances it is good to pay particular attention to:

- Steps or tasks where mistakes can easily be made
- Steps or tasks that are impractical or time-consuming to execute
- Unusual, rare, unfamiliar, or novel situations
- Mundane, trivial, or repetitive tasks
- Systems and equipment that aren't user-friendly
- Steps or tasks where time might be insufficient
- Steps or tasks that are complex or hard to grasp
- Ambiguous signs, signals, or instructions
- Challenging work environments (noise, heat, confined spaces, lighting, ventilation, access)
- Situations prone to interruptions or distractions
- Situations requiring multitasking
- Correct tools that aren't available or utilised
- Instances requiring effective communication with colleagues, management, and/or suppliers

SOURCE: Energy Institute: Task Improvement Process.

Example of a Safe Job Analysis with Integrated error traps

Most templates for Safe Job Analysis (SJA) – or Job Safety Analysis (JSA) – typically include a description of the task, hazards and risks to be aware of, as well as measures to mitigate or eliminate these. Error traps are seldom an integrated part of SJA.

Subtasks	Potential hazards	Potential error traps	Measures

EXAMPLE HAZARDS

- Chemical exposure
- Ignition sources
- Fire/explosion
- Spills
- Pressure
- Falls
- Lifting
- Noise

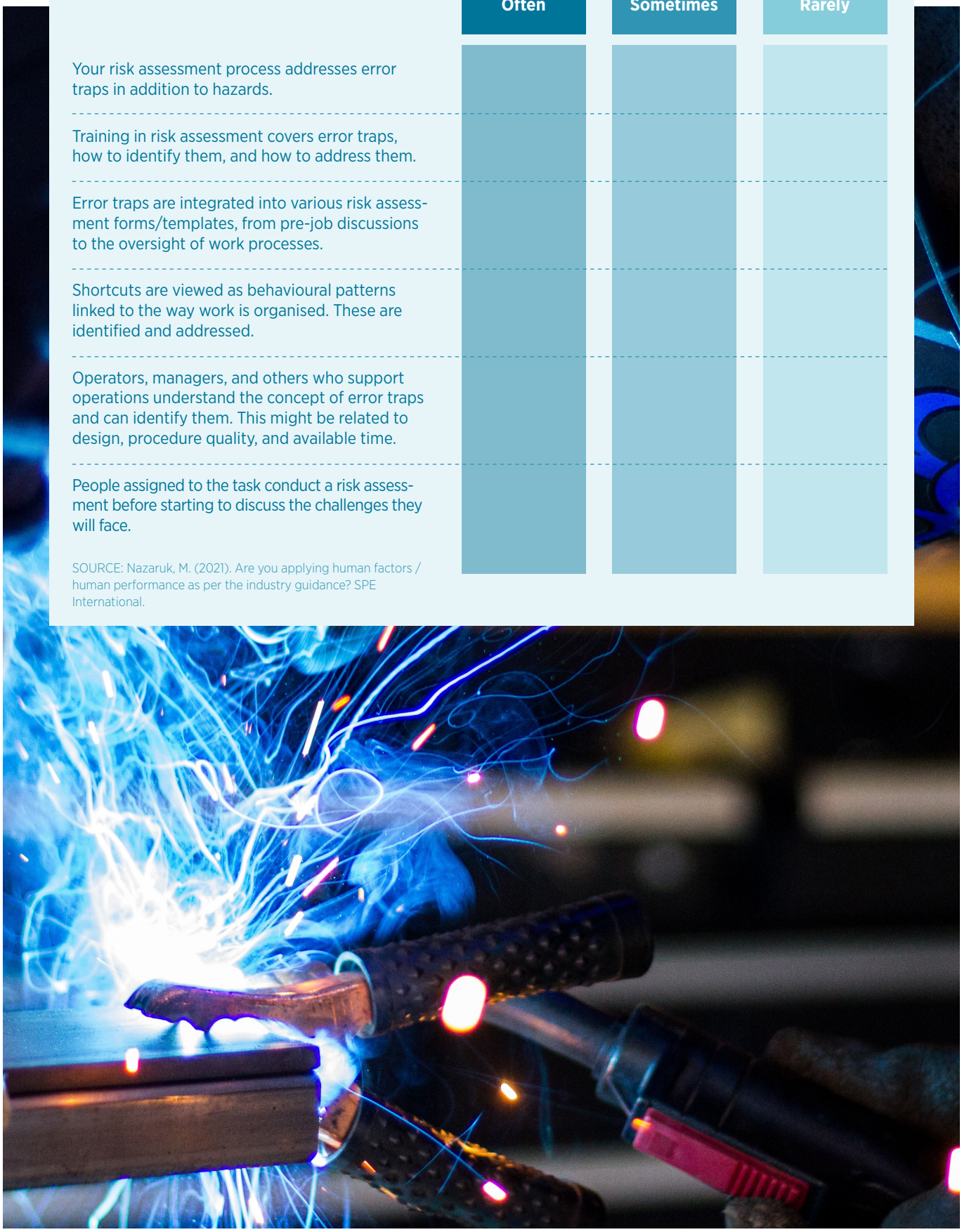
EXAMPLE ERROR TRAPS

- Time pressure
- Concurrent activities
- Staffing levels
- Access issues
- Correct tools not available
- Complex procedures

Checklist for the risk assessment process in your organisation

	Often	Sometimes	Rarely
Your risk assessment process addresses error traps in addition to hazards.			
Training in risk assessment covers error traps, how to identify them, and how to address them.			
Error traps are integrated into various risk assessment forms/templates, from pre-job discussions to the oversight of work processes.			
Shortcuts are viewed as behavioural patterns linked to the way work is organised. These are identified and addressed.			
Operators, managers, and others who support operations understand the concept of error traps and can identify them. This might be related to design, procedure quality, and available time.			
People assigned to the task conduct a risk assessment before starting to discuss the challenges they will face.			

SOURCE: Nazaruk, M. (2021). Are you applying human factors / human performance as per the industry guidance? SPE International.



CHAPTER 4

Investigation and learning from incidents

When an incident occurs, we have a responsibility to learn to prevent a reoccurrence. To what extent we succeed is determined by how we conduct the learning and investigation processes. After an incident, it's easy to place blame on the individuals involved and focus on the most immediate or apparent causes. Examples include descriptions like; "lack of compliance", "inadequate risk awareness", "recklessness", or "inattention". The challenge is that learning often stops here, and the proposed solutions are typically focused on the individual. This prevents us from learning about important underlying causes. The primary reason we tend to focus on the obvious is that we're accustomed to focusing on the individuals performing the task, rather than the surrounding circumstances that influenced the work.

People seldom harm themselves or others intentionally. Human errors or non-compliance are usually indicative of underlying issues and error traps that affect how the work is executed.

Under similar conditions, with the same experience and training, could I have made the same mistake?
(In many instances, the answer to that question is yes.)

The way we investigate an incident greatly affects the lessons we draw from it. Do we fully understand what influenced the decisions and actions that led to an incident? If we don't uncover and address these factors, we run the risk of another individual making the same mistake later on.

Approach to human error
How we view those performing the tasks largely dictates what we observe. How does your organisation perceive human error and non-compliance?

Human error and non-compliance are the causes of incidents.

Focus on individuals and their choices and actions

Human error and non-compliance are indicators of underlying issues.

Focus on what influences choices and actions

> If there's been a very serious incident, such as a breach of a life-saving rule, we've sat down with the individual(s) involved in the situation. This isn't an interrogation. We try to understand what happened and how. Could others have done the same?
>
> HARALD EIK, GLENCORE NIKKELVERK AS

To learn more from incidents, it's important to remember the following:

1. Those involved are important sources for understanding what occurred and the conditions influencing the decisions made.
2. Many jobs involve multiple people and groups at different levels, meaning incidents often have complex causes and rarely one single root cause.
3. We need to ensure that those involved sharing their experiences feel safe enough to speak openly. The focus must be on learning, not blame.

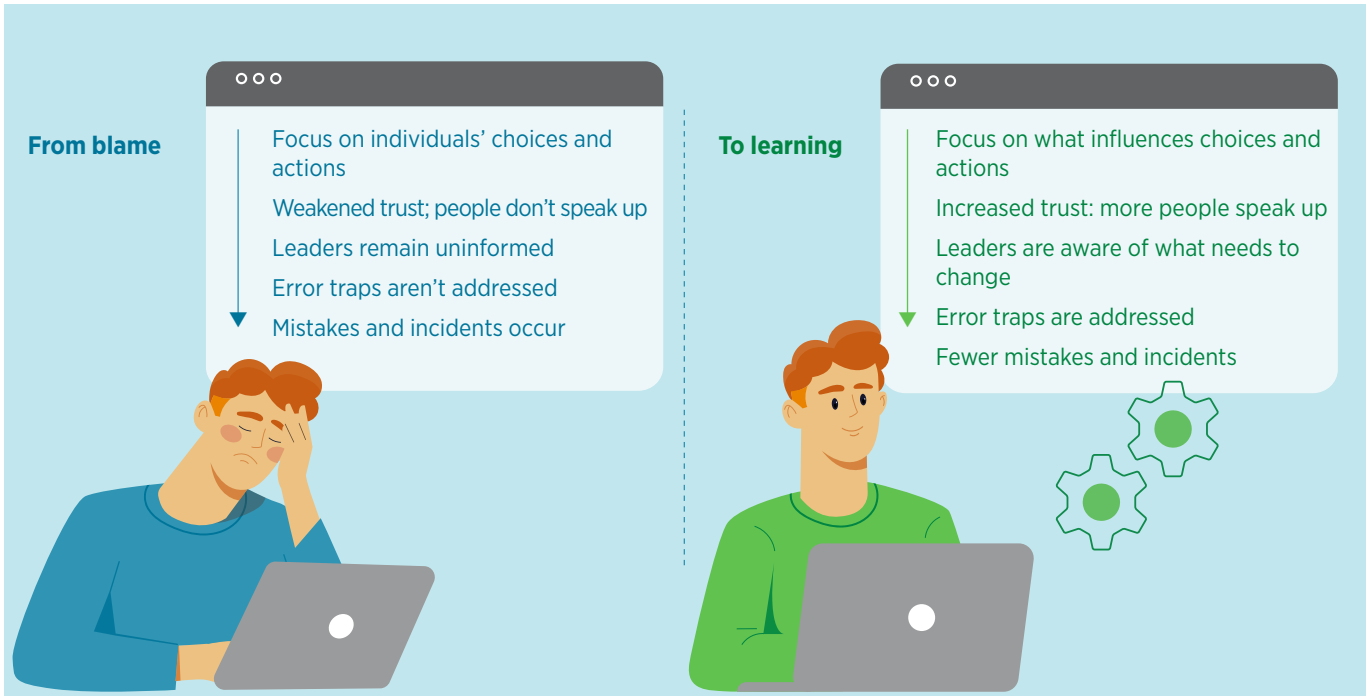
Focus on learning rather than blame

When we concentrate on individual choices and actions, and on attributing blame, we weaken trust between colleagues and leaders. This can result in people being afraid to report mistakes and shortcomings, causing us to lose valuable insight into what makes work difficult and what can increase the risk of errors and incidents.

We need to create a safe environment where those involved feel at ease sharing their thoughts and experiences. This approach enables us to obtain insights into what went wrong, how it happened, and what we can do to prevent similar situations in the future.

> "We now refer to investigations as "learning meetings". Nobody's here to point fingers; making mistakes is natural, and we're here to learn. I've witnessed many times how simply uttering these words can help someone relax. Emotions can run high. I've seen tears from adults when they realise they can let their guard down and not be afraid. Once they genuinely understand the purpose of the session, it becomes much easier to gain insights into what happened and why."
>
> TOM MICHAEL ØKSENDAL, GLENCORE NIKKELVERK AS

Does our organisation have a culture that places blame on individuals, or one that emphasises learning and improvement?



Questions that provide insight

The questions we ask influence the insights we gain. Deep understanding is essential to learn about cause-and-effect, and to prevent similar incidents in the future. Which question do you think offers better insight:

1. "Why did you do that?"
2. "Can you describe what happened?"

When we ask "Why" after an incident, it can come across as accusatory, leading people to feel they need to justify and defend themselves. This often results in answers that are less than candid; respondents might try to provide answers they believe are acceptable or that will reduce the likelihood of any potential negative consequences for themselves or those around them.

To gain a better understanding of the situation, it's essential to ask open-ended questions about the circumstances that influenced choices and actions. Encouraging honest descriptions of one's experiences in the situation creates safety and trust, which in turn leads to people sharing more information. Below is a list of questions that can be beneficial in gaining insights into both individual and systemic conditions.

How can we understand what underpins decisions and actions?

Individual factors

RATIONALITY

- What was their goal?
- What had the highest priority?
- How was the situation perceived?
- How did they believe their actions would lead to the desired outcome?

KNOWLEDGE AND ASSUMPTIONS

- What was known about the situation?
- What past experiences were there?
- What was the standard practice?

System factors

RESOURCES

- What equipment was available?
- What information was at hand?
- How much time was available?
- How much resources and expertise were accessible?

MOTIVATION

- What were the expected benefits?
- What underlying incentives were present?

STRUCTURE

- What were the relevant requirements for the task or operation?
- How well did the requirements fit the situation?
- What was the discrepancy between requirements and standard practice?

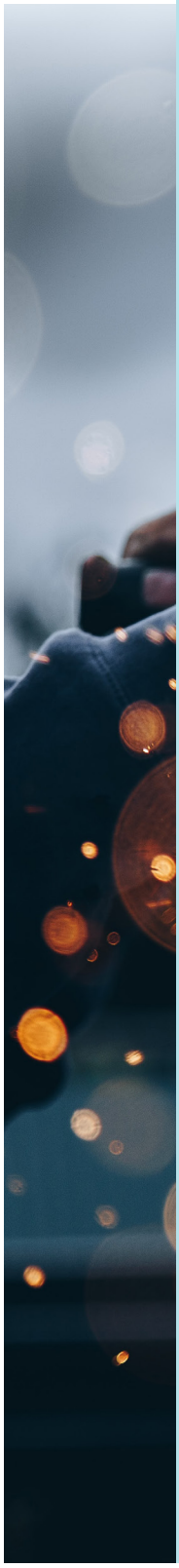
EXPECTATIONS

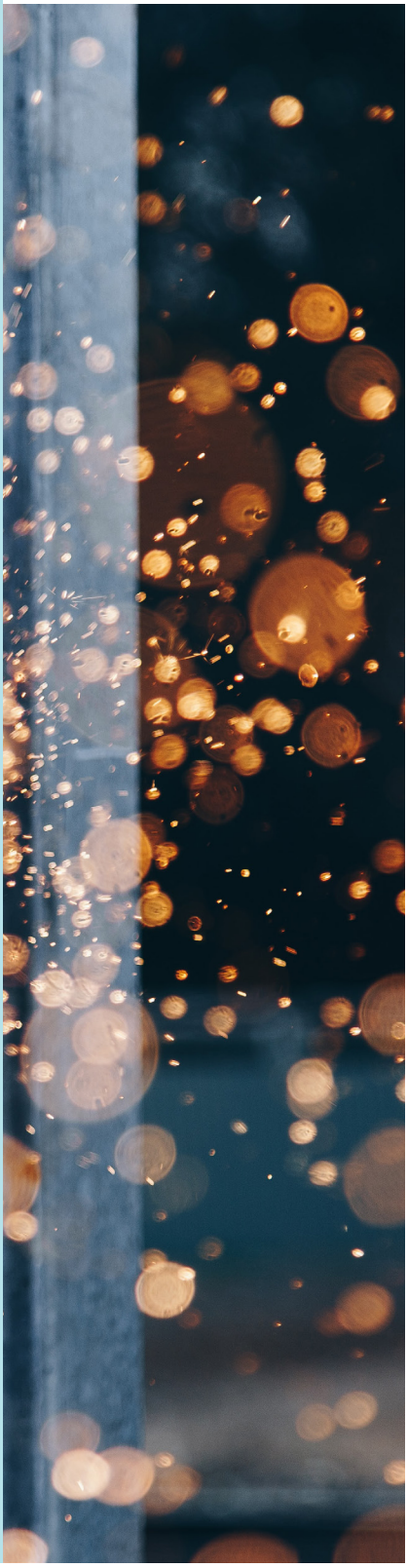
- What were the expectations of the individual/group?
- Were there any unexpected conditions that arose?

Best practices for investigations that foster learning

- **We avoid judgment.** We recognise that everyone is trying and aiming to do their best, wanting to return home safely.
- **We empathise with the situation.** Could I, or anyone else in the same situation with the same experience and training, have made the same decision?
- **We understand the 'why'.** We investigate how the incident occurred and what influenced various choices and actions.
- **We avoid hindsight bias.** With a complete picture and the final outcome (the incident), it's easy to look back and point out mistakes. Information that becomes apparent later on might not have been available at that moment.
- **We look for normalisation of behaviour.** We check if the incident has occurred before and if such behaviour has become standardised within the group or workplace.
- **We identify error traps.** We investigate and pinpoint conditions that made the task challenging, increasing the likelihood of errors.
- **We involve the injured/involved.** Instead of merely relying on statements from those involved post-incident, actively involve the injured and involved in the investigation. Ask about their thoughts during the event, the options they had, and the improvements they see.
- **We ensure system-level causes are Identified.** We actively question how the conditions related to the task contributed to the mistake being made, digging deep to uncover underlying causes. We don't conclude at responses like; "human error", "lack of compliance", or "lack of risk awareness".
- **We identify corrective measures.** We pinpoint actions at the highest possible level(s) of the hierarchy of controls and describe specific steps required to ensure proper implementation.

SOURCE: Kormaz, S. & Donnelly, J. (2018, 22.–25.04). Don't investigate – Learn. Ask How! 2018 Spring Meeting and 14th Global Congress on Prices Safety, Orlando, Florida.





How to ensure a solid foundation for learning?

A good report provides detailed descriptions of the incident, allowing others to grasp what happened and the conditions that contributed to it. These descriptions are grounded in discussions with those involved, where you try to understand the situation and the rationale for decisions made. The report may highlight several underlying causes that contributed to the event and suggest system-level improvement measures.

To produce a good report, you should:

- Focus on error traps that contributed to the incident
- Assess whether those involved could have made alternative choices and following potential outcomes
- Provide detailed descriptions to grant readers a thorough understanding of the situation and context
- Examine the dynamics between individuals and teams
- Suggest system-level measures

Try to avoid:

- Focusing on a single root cause
- Causes that are centred on human error or lack of compliance
- Using judgemental language, such as “careless”, “distracted”, “lazy”, or “lack of risk awareness”
- Emphasising what individuals didn’t do or should have done
- Proposing individual-level measures

CHAPTER 5

Action development

When we learn from normal work and incidents, we gain insights into conditions making the work difficult and increasing the risk and likelihood of errors. These conditions need to be addressed, requiring measures to achieve lasting improvement. Hence, we must implement measures that eliminate immediate and significant hazards, targeting conditions that affect our ability and opportunity to perform tasks safely. Put simply, we should develop measures that fix the work, not the worker.

Following an incident, there's a tendency to focus on the individuals involved and the most visible and direct causes of what happened. This might relate to non-compliance, lack of risk awareness, taking shortcuts, misinterpretations, and so on. By attempting to fix those doing the work, we lean towards assigning blame rather than learning. The focus shifts to fixing rather than improving. It's likely that actions primarily directed at the individual level will not prevent others from making similar errors or judgements under the same circumstances in the future. Therefore, our measures should also aim to reduce or eliminate hazards and/or error traps that hinder safe working.

> It's not enough to simply understand the error traps. We must ask: how do we move forward? How do we achieve improvement and change? We must ask questions that also focus on understanding the vulnerabilities in the solutions we choose.
>
> ANNA KRISTINE OMA, EQUINOR ASA

Begin with tasks that have the highest potential for harm or loss, or those where individual actions can lead to significant consequences. Immediately address hazards that are most probable, and which can have severe outcomes.

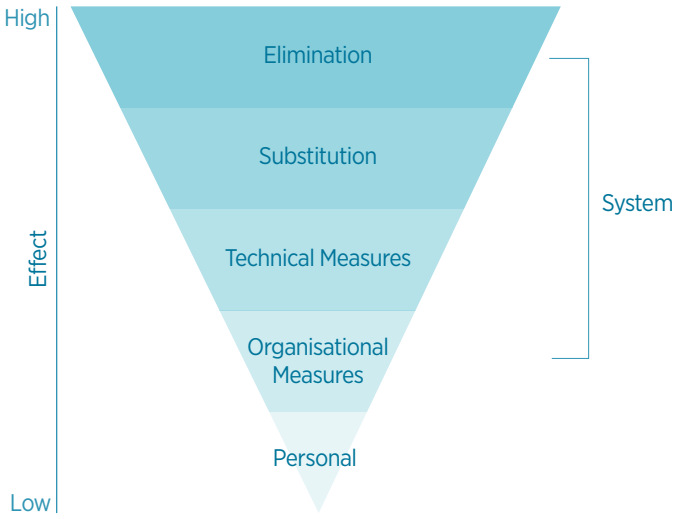
- There's no need to wait with the implementation of simple, quick, and cost-effective measures.

Ask open-ended questions about the work and systems and pinpoint conditions that create variations in how tasks are carried out and which complicate the process.

- We can't fix what we don't know.
- Those doing the job are the experts; they understand what complicates their work and what can simplify it – involve them in identifying, developing, and implementing measures.

Look at the conditions and systems that influence how work is done and identify error traps that can lead to errors.

- Incidents rarely have just one root cause. Instead, they often stem from intricate cause-and-effect relationships and various overlapping conditions. Development of effective measures acknowledges that there isn't a single root cause and aims to address all these different factors (e.g., how the job is planned and organised, the preparations we make and their methods, how procedures are designed, the equipment used, workspace design, etc.).



Effective use of the hierarchy of controls

Once we've pinpointed the conditions requiring improvement, we need to prioritise and design the right measures. By leveraging the hierarchy of controls, we can develop and implement solutions that maximise risk reduction (considering cost constraints). To eliminate the risk of errors, the most effective strategy is to make modifications and improvements at a system level. Measures targeting individuals (personal) are less effective and more susceptible to mistakes and errors.

High

Effect

Low

Elimination	With elimination, hazardous or challenging conditions are removed through changes in design, technology, equipment, and methods, so they cannot lead to injuries or serious incidents.	**Example:** Remove a hazardous chemical process by changing where and how the process takes place, ensuring employees aren't exposed.
Substitution	With substitution, we replace materials, equipment, systems, or methods that make work challenging with safer versions that reduce the likelihood of mistakes or errors and/or minimise potential consequences.	**Example:** Swap a harmful chemical with another chemical that produces a similar result, but is less harmful upon exposure; reduce the size or weight of materials or equipment being handled.
Technical measures	Technical measures involve controlling or limiting hazardous or challenging conditions so that employees cannot come into contact with the source or are protected in the event of exposure.	**Example:** Safety mechanisms on equipment and tools to prevent contact with moving parts; automatic fire suppression systems; reversing alarms, ergonomic equipment.
Organisational measures	Organisational measures involve making changes to the way we work, including competence, resources, and how work is organised, to ensure the best conditions for carrying out work safely.	**Example:** Training; procedures and requirements; job rotation; rest periods.
Personal	Personal-level measures focus on personal protective equipment to guard against or reduce exposure, strain, and injury. Measures at this level offer the least protection and are most susceptible to mistakes and errors.	**Example:** Respiratory protection, protective gloves, safety harnesses.

Example: Internal inspection of corrosion and deposits in a tank with exposure to hazardous chemicals.

High

Effect

Low

Elimination	A new tank constructed with corrosion-resistant materials and process modifications that reduce deposits.
Substitution	Inspection using drones.
Technical measures	Ventilation, lighting conditions, efficient tools to reduce exposure time, scientifically established exposure limits, on-site shower facilities.
Organisational measures	Clear requirements. Effective operational management of duration inside the tank. Fire, entry and safety guard (FES guard).
Personal	Fresh air respirator, chemical-resistant clothing, first aid equipment.

Personal Protective Equipment (PPE) as a measure:
Personal Protective Equipment (PPE) might often appear as a cost-effective and straightforward means to address hazards. However, it can also demand resources for training and maintenance. Emphasising cost, simplicity, and quick implementation may lead us to choose interventions at the least effective level in the hierarchy of controls, without fully considering better ways to protect our employees.

The protection offered by PPE can differ greatly among individuals and across different scenarios. Effective protection often hinges on the competence of the user. Consequently, incidents and injuries may still persist if interventions don't directly address hazardous and challenging conditions. Even though PPE can reduce the risks associated with certain tasks, in some cases it might also impair our ability to execute the job due to reduced vision, smell, hearing, or sensitivity. For instance, to reduce crush and cut injuries in electrical work, there's an initiative to use thicker and more durable gloves during execution of the tasks. However, electrical work demands a lot of dexterity, meaning tasks may not be performed effectively with these new gloves. As a result, many might choose to remove the gloves when working.

Responsibilities and task distribution
Developing measures require time, making priorities and making decisions. To ensure that learning is taken into account and measures are developed and implemented, it's crucial to have clear role definitions and task distribution. It's vital to elevate interventions as high as feasible in the hierarchy of controls and ensure that role and task distribution is executed. Reflect on who needs information, who needs to act, and how you can verify if a measure has been implemented and if it has achieved the desired outcome. Always assess potential risks and consequences of new interventions, both before and after implementation.

CHAPTER 6

Leadership follow-up

Leadership follow-up is about adopting a systems perspective in safety work. Instead of merely observing what people do (individual focus), we aim to understand the conditions that influence these actions (system focus). What can make work challenging to execute, and how can we identify and manage these conditions? Answering this question requires leaders to be present where the work is done, engage with those doing the job, and ask questions that can provide necessary insight and understanding. There isn't a single leadership style optimal for promoting safety. Sometimes there's a need to be explicit about expectations, at other times, being a good role model is vital, and in certain situations, there's a need to be more empathetic and show understanding.

Experience from the industry

I was tasked as the HSE resource for 14 welders. Having never welded before, I approached one of the welders and asked, "Could you show me how you do this? Can I learn from you? I feel completely out of my depth until I truly understand what you're doing." The welder began explaining and even let me have a go. What became clear to me was that when you're welding with your welding mask and ear protection, you are completely isolated from the world around you; you see only a tiny molten pool and you hear nothing. I asked the welder if he thought others around him realised this, and he doubted they did. I then asked another worker moving a large steel beam with a crane if he was aware of the people working where he was moving the massive beam. He hadn't given it much thought – he needed to use the designated path to complete his task. Instead of telling him, "You can't do that, you need to inform the welder!", I asked, "How can we make this better for you?" Today's leaders often aren't present at the work site, interacting with employees, which means they might not find the best solutions or serve as effective resources.

KRISTINE PEDERSEN, TORSVIK INDUSTRI AS

Leaders have a special responsibility to support and follow up employees, assess opportunities and measures for improvement, and ensure working conditions that allow employees to do their jobs in the best possible manner. The workers are experts in their job and have the insights needed to improve and ensure better conditions for safe job execution.

How do you learn from those doing the work?
To learn from those who do the work, one needs to be present where the work is being done. When you personally observe the job and the circumstances surrounding it, you gain a deeper understanding of how the job is done in practice and the challenges it might entail. As we engage in discussions in the field, the topics and questions that arise often differ from those discussed during planning and preparation, or in evaluations after the work has been completed.

Being present at the workplace can sometimes feel difficult for leaders on an otherwise busy day. This is partly about how leaders choose to allocate their time. But it is also about the conditions set by (senior) management to make it easier for leaders to prioritise and accomplish in practice. Context greatly shapes behaviour. Even though there may be limiting operational conditions on a day-to-day basis, the focus should be on enhancing the quality of interactions one has with those executing the tasks.

To succeed in learning from those who perform the work and to gain insight into their tasks, you must:
1. Build relationships. 2. Understand the job. 3. Respond constructively.

Building relationships with those doing the work

To achieve necessary insight into the job to improve and strengthen safety, we need candid feedback from those executing the job. This requires a sense of trust and psychological safety, cultivated by ensuring employees:

1. **Feel included, accepted, and safe being themselves.**
   - Recognise and meet each individual where they are, appreciating their contributions and the job they do.
   - Ask about the support they require in their work. Remember: Ask twice as much as you tell.

2. **Feel safe, valued, and motivated to learn.**
   - Display curiosity and a willingness to learn by asking open-ended questions about learning opportunities, embedding these into daily team practices.
   - Demonstrate that mistakes are natural by sharing your own errors and the lessons learned.

3. **Feel that it is safe to contribute and challenge the status quo by asking questions, utilising and developing their own skills, and trying and failing.**
   - Welcome new ideas, critical voices, and alternative perspectives with an open mind, curiosity, and constructiveness rather than criticism.
   - Shift from telling to asking, seeking specific contributions, feedback, and thoughts from those around you.
   - Contribute to identifying and challenging practices/processes that may be redundant, outdated, unclear, or not user-friendly.

SOURCE: Clark, T.R. (2020). The Four Stages of Psychological Safety: Behavioral Guide. LeaderFactor.

Understanding what can make it difficult to work safely

Those who do the job know it best. For a deeper understanding of the work, it's crucial that leaders acknowledge they don't have all the answers. This means asking questions you might not know the answers to and truly listening to the responses given.

The manner in which you pose questions is pivotal to the answers you receive. With trust and psychological safety as a foundation, the impact of your questions is amplified. Open-ended questions generally work better than simple yes/no ones. Some questions you might consider are:

- Can you walk me through the steps of this task?
- What makes this job difficult to do?
- What might prevent executing this job safely and efficiently?
- What do you need to complete this job successfully?
- How can I support you in making this job simpler and safer?
- Where can errors easily occur?
- Do you ever need to deviate from outlined procedures? Why is that? How do you navigate those situations?
- How do you believe we could improve this process?

After asking these questions, attentive listening is key. Failing to listen carefully might mean missing essential information. Active listening involves:

- Paraphrasing: Expressing in your own words your understanding of what's been said – "What I hear you saying is...", "Do you mean..."
- Clarifying: Seeking further details until you fully comprehend the actions or circumstances. Make use of open-ended questions.
- Providing feedback: This is when you share your perspectives or thoughts. How you respond matters. Are you focusing on learning or assigning blame?

Responding in a constructive and positive manner

People make mistakes. To drive improvements that reduce the likelihood of future errors and minimise the impact of the mistakes that do occur, we need to understand what happened so that we can implement effective and lasting measures. To succeed in this, we require leaders who respond to mistakes, errors, bad news, and unsafe behaviours in a constructive manner.

Both the situation and those involved affect what is the best and most appropriate way to respond. However, in most cases, it's important to be aware of:

1. Showing concern for those involved by asking about their well-being and if there's anything you can do to help or alleviate the situation: "How are you doing?" "How can I help you?"
2. Refrain from jumping to hasty conclusions about what happened. Multiple factors likely influenced the outcome, and we need to understand both the direct and underlying cause-and-effect mechanisms.
3. Understand why and how something occurred, rather than who did it. Focus on learning rather than attributing blame. Ask questions such as:
   a. Could you walk me through your experience of what occurred?
   b. How did you perceive the situation before it happened?
   c. What factors influenced the way it was executed?

How do you utilize "moments of high influence"?
As a leader, you'll encounter situations in your daily operations where you have considerable influence. Situations that define you as a leader. These are often referred to as "moments of high influence".

The manner in which you choose to respond in these situations will be crucial for the outcomes you achieve. A positive approach fosters trust and willingness to change amongst those you aim to reach, whereas a negative approach will diminish trust and increase resistance.

Negative approach

"I expect you to follow the rules."
"This is a straightforward task."
"You should know this."
"You ought to..."
"Why can't you just..."
"I don't have time right now..."

Positive approach

"Can you help me?"
"What do you think about this?"
"What alternatives can you see?"
"What are your thoughts on how we can solve this?"

Examples of “moments of high influence”:

- Someone’s first day at work
- A near miss or an incident where someone gets hurt
- Someone breaches a rule or procedure
- You receive a suggestion for safety improvement
- You’re managing a crisis or severe event
- You’re rolling out a new strategy or organisational change which is met with resistance

Reflect on your daily routine as a leader and think of a situation where your influence was significant. How did you choose to handle it?

Experience from the industry

If you´re not out in the field observing how work is done and receiving suggestions, it’s challenging to create procedures that are easy to follow. This is about your curiosity as a leader. Wondering why things are done in a certain way, why specific choices are made? What could we have done differently? Essentially, it’s about asking these open-ended questions and genuinely being curious about why people do what they do, without penalising them for it.

JO MINKEN, DYNEA AS

When interacting with your team members, remember that:

- People make mistakes
- The actions people take usually made sense at that moment
- Errors are often a result of underlying conditions and systems
- Understanding why mistakes occur can assist us in preventing and rectifying them
- The workspace, tools, and tasks can be designed to minimise errors and better manage risks
- Leaders can shape the conditions that influence people’s actions
- How leaders respond when things go wrong matters. Seize the opportunity to learn

SOURCE: Ministry of Defence (2020). Safety leadership guide: How listening and learning are our best defence.

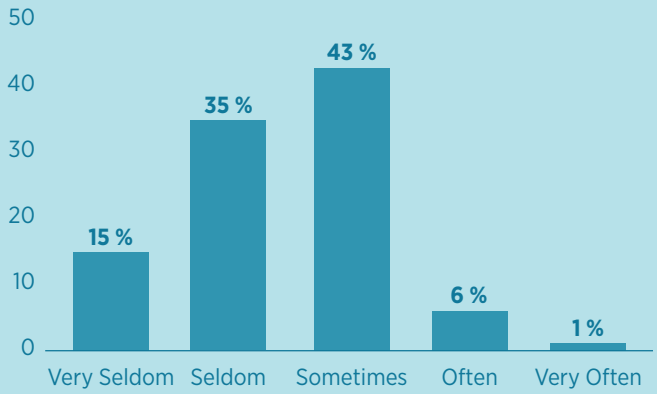
CHAPTER 7

Procedures and governing documents

When incidents or errors occur, it can be tempting to introduce new procedures, adjust existing ones, or strengthen the focus on compliance. However, organisations shouldn't merely focus on compliance but also on understanding the gap between procedures and actual practice. Where do these gaps appear? What conditions cause these gaps? And what can we do to address these conditions, thus narrowing the gaps?

50% of operational staff occasionally or frequently perceive a discrepancy between the requirements (and instructions) and how the job is actually done (source: Alwayssafe.no).

The figure displays the percentage distribution based on 1,684 responses



Examples of quotes illustrating the gap between procedures and practice:

"There isn't enough time to follow all the procedures."

"Procedures are often written by those lacking in-depth knowledge of the practical execution of the job."

"Some procedures are difficult to understand due to their wording."

"The requirements are so extensive that they are unfeasible in practice."

"Equipment described in the instructions often isn't available."

"Outdated designs don't align with current requirements."

How does your organisation view procedures and compliance?

Below is a table showing two different approaches to evaluating compliance with procedures. This perspective largely stems from comparing what's written on paper to what happens in reality when a task is being executed.

Table 3

Approach 1	Approach 2
Procedures outline the best and safest way to carry out activities.	Procedures cannot possibly specify all possible conditions and account for all contingencies.
Complying with procedures guarantees safety. For instance, a leader might think: If everyone consistently follows the procedures, we won't have any incidents. If an incident has occurred, it means at least one procedure was violated at least once by at least one individual.	Complying with procedures cannot guarantee safety. Several other factors must be present for an incident to occur.
To improve safety, people must know procedures and follow them. In case of failure, more procedures are introduced to make the activity safer.	To improve safety, various components need to be in place. Procedures are just one of the tools.
Procedures should always be followed to the letter.	Operative personnel experience several examples of goal conflicts, situations where compliance can affect the ability to meet deadlines, result in production stoppages, damage equipment, or potentially lead to catastrophic outcomes.
It's mainly the front-line operators who cause accidents through non-compliance.	Personnel at the sharp end are one of several groups that, over time, contribute to hazardous situations. Other groups include engineers, planners, managers, and more.

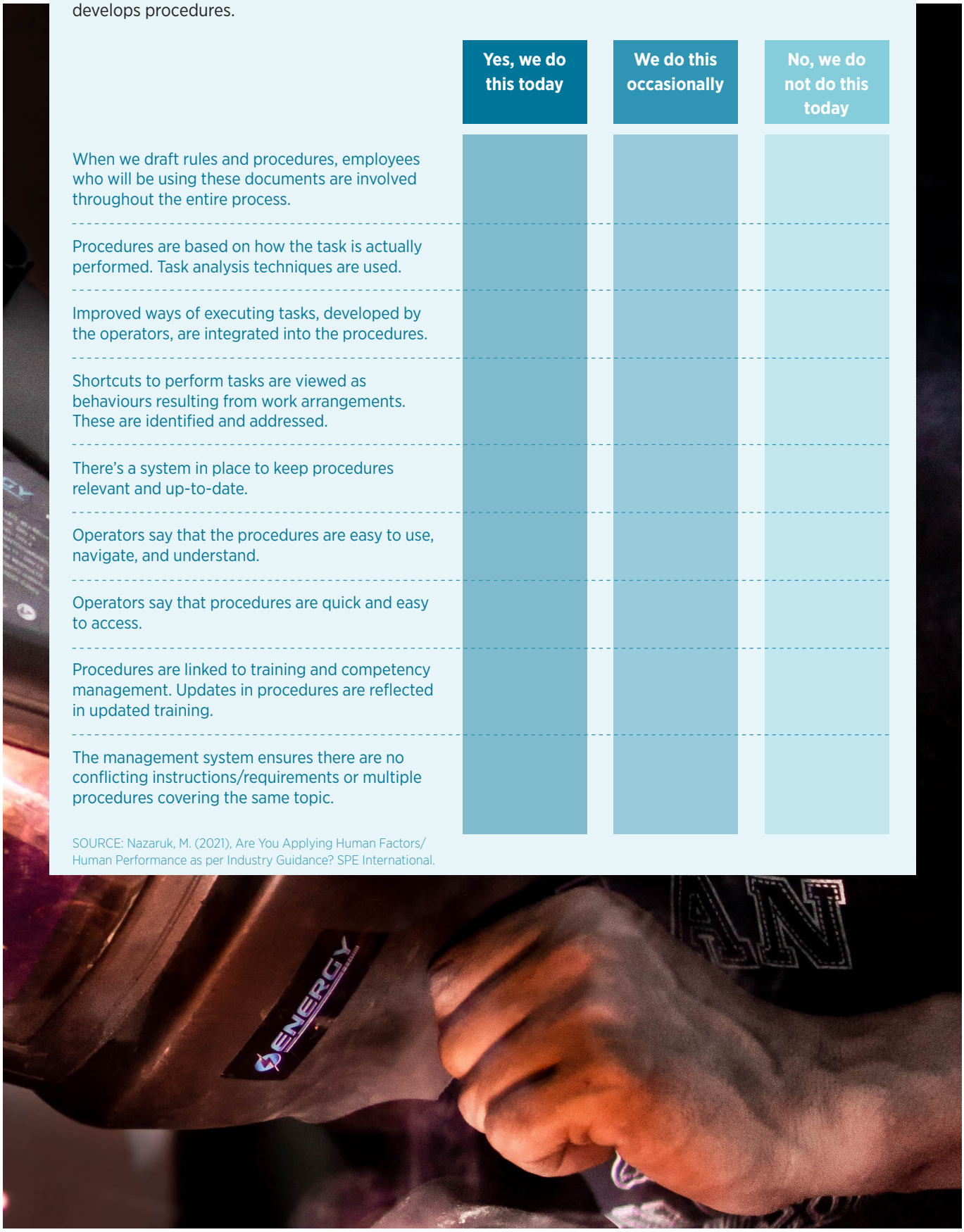
SOURCE: Mazaruk, N. (2022). Learning from normal work. IOGP.

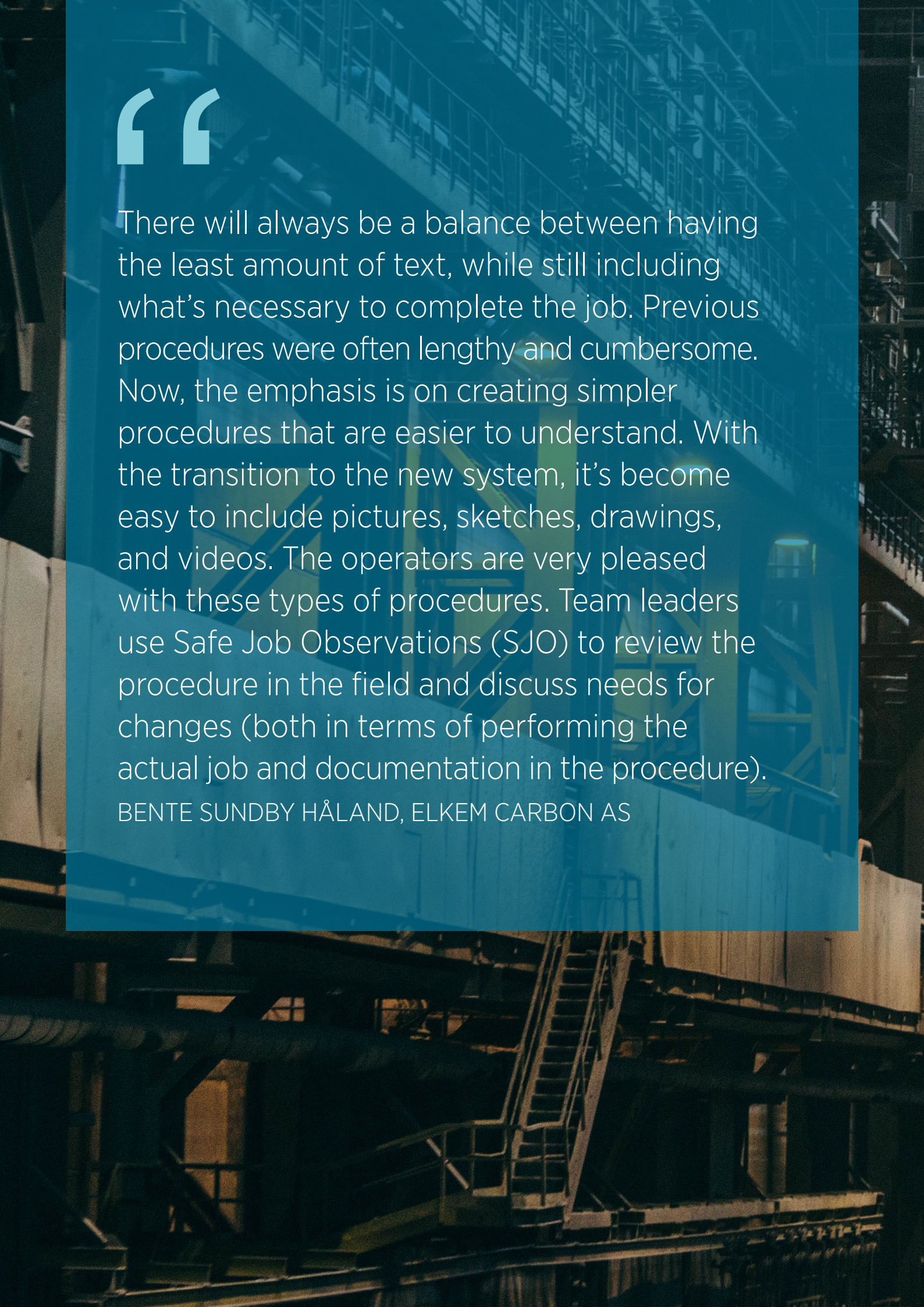
Best practices for developing procedures

Use the checklist below to assess how your organisation currently develops procedures.

	Yes, we do this today	We do this occasionally	No, we do not do this today
When we draft rules and procedures, employees who will be using these documents are involved throughout the entire process.			
Procedures are based on how the task is actually performed. Task analysis techniques are used.			
Improved ways of executing tasks, developed by the operators, are integrated into the procedures.			
Shortcuts to perform tasks are viewed as behaviours resulting from work arrangements. These are identified and addressed.			
There's a system in place to keep procedures relevant and up-to-date.			
Operators say that the procedures are easy to use, navigate, and understand.			
Operators say that procedures are quick and easy to access.			
Procedures are linked to training and competency management. Updates in procedures are reflected in updated training.			
The management system ensures there are no conflicting instructions/requirements or multiple procedures covering the same topic.			

SOURCE: Nazaruk, M. (2021), Are You Applying Human Factors/ Human Performance as per Industry Guidance? SPE International.





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There will always be a balance between having the least amount of text, while still including what’s necessary to complete the job. Previous procedures were often lengthy and cumbersome. Now, the emphasis is on creating simpler procedures that are easier to understand. With the transition to the new system, it’s become easy to include pictures, sketches, drawings, and videos. The operators are very pleased with these types of procedures. Team leaders use Safe Job Observations (SJO) to review the procedure in the field and discuss needs for changes (both in terms of performing the actual job and documentation in the procedure).

BENTE SUNDBY HÅLAND, ELKEM CARBON AS

Example of procedure simplification

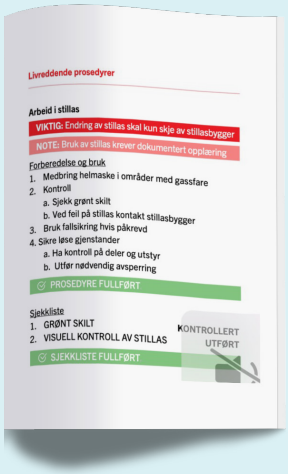
Glencore has developed a booklet where they've compiled the most critical procedures they've chosen to call 'life-saving procedures'. These are simplified and contain only the most crucial points. They've also established a dedicated training center where leaders and employees can practice the life-saving procedures in a realistic environment. This also involves people from functions that can help set important parameters for those carrying out the work, but who don't typically work operationally.

Excerpt from the booklet:

The booklet can be downloaded from the Federation of Norwegian Industries website.

Additionally, it includes a simplified description of key topics related to working at height, concerning both preparation and use, as well as a checklist:

Excerpt from the topic:



CHAPTER 8

The HSE-role going forward

The principles of HOP enable us to view our choices, actions, and the way we learn from a new perspective. We should fix the work, not those doing the work. By removing barriers and making the job easier to do, we provide those doing the job with a better foundation to accomplish their tasks safely.

Our focus must shift from "who" to "what". Rather than shining a spotlight on individuals and their actions or inactions, our attention should be directed towards the circumstances influencing the execution of the work.

What does this mean for the role of HSE going forward?
Throughout this guide, we have aimed to emphasise the importance of adopting a proactive approach to safety. Overall, this means we must focus to improve our ability to identify areas for improvement and situations that require our attention, addressing these before an incident occurs. Which tasks within our organisation carry the greatest risks to life and health, and what error traps currently make these tasks challenging?

There isn't a direct line from plans, requirements, and procedures to the actual work being done in practice. It isn't the leaders or those of us in HSE roles who know the job, but those who actually do it. Hence, it's crucial that we are present where the work is done, and that we remain curious. It is vital to observe the job firsthand and to understand the surrounding circumstances. In this way we can gain a deeper insight into how the job is actually carried out and what challenges may arise. We need to practice asking the right questions and listening to those doing the job. This enables us to identify and manage work-related challenges, focusing our safety efforts where they will have the most impact.

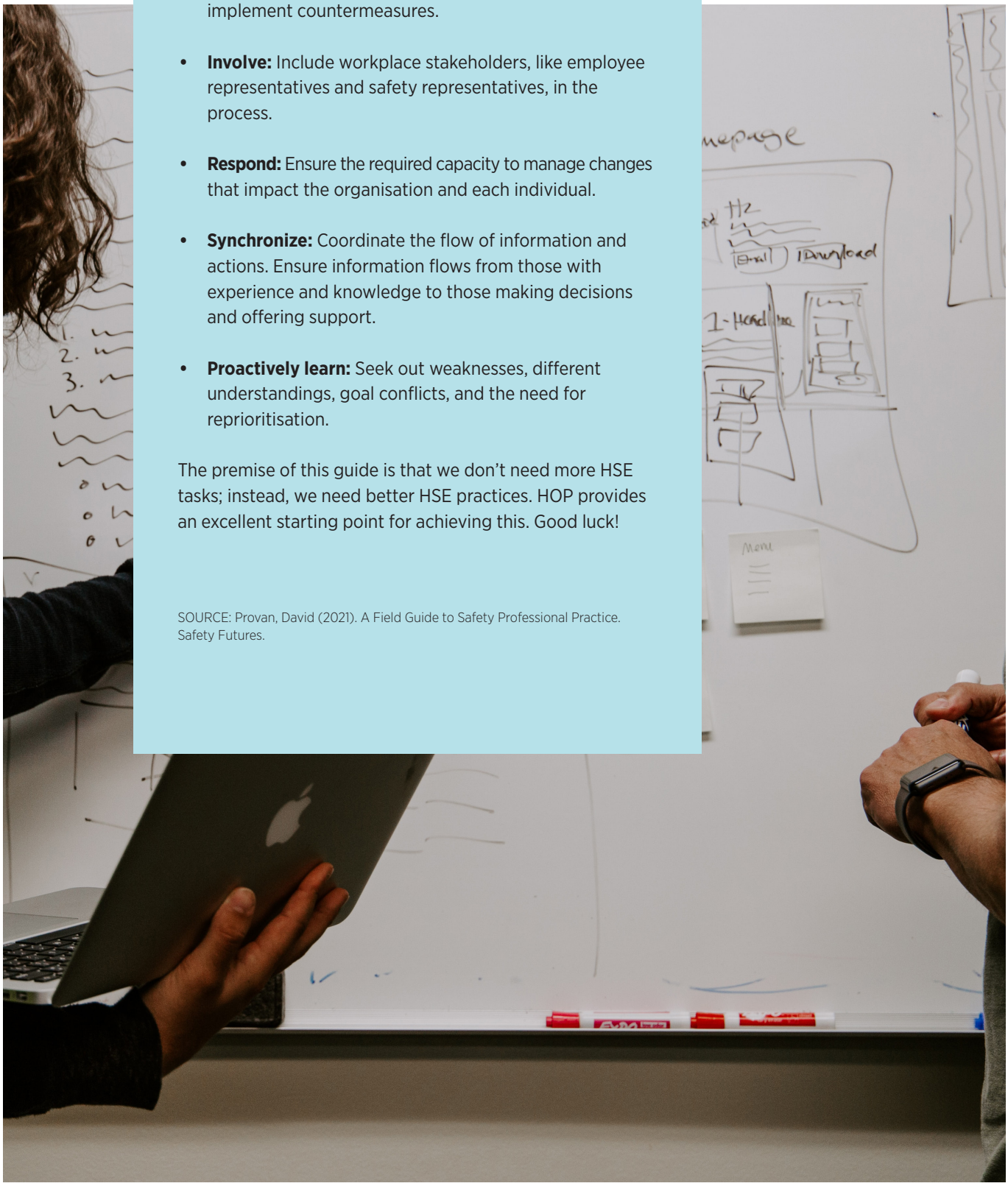
> If you want to be a proficient HSE leader, you must spend a lot of time out in the production or project environment. Sitting in an office won't suffice. That's my strong recommendation. Be out there to genuinely feel what's going on (...)
>
> STIAN KNOX, KONGSBERG GRUPPEN ASA

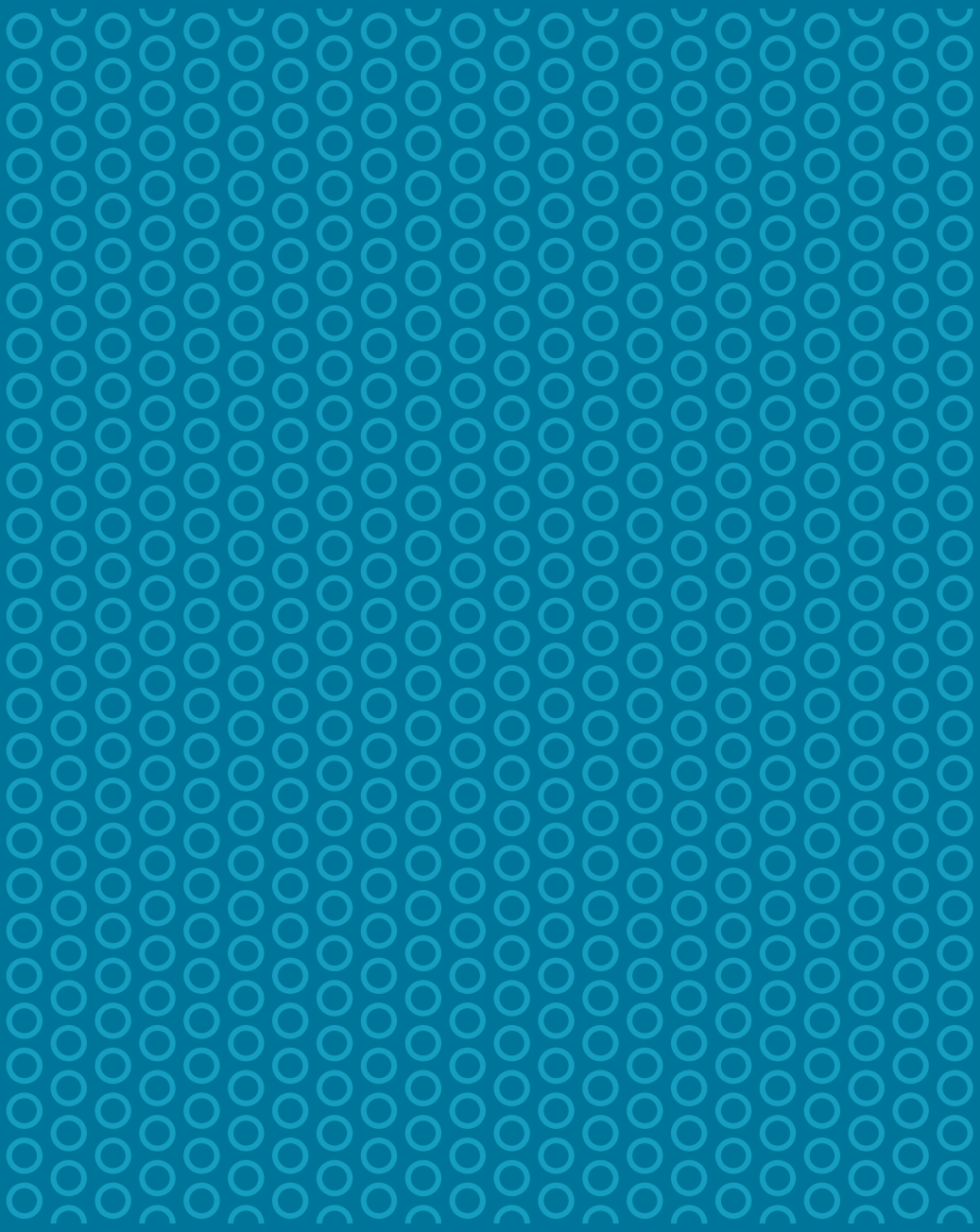
Moving forward in the HSE role, we need to build skills to:

- **Anticipate:** Gain insights into future operational conditions in the organisation, allowing us to revise risk models and implement countermeasures.
- **Involve:** Include workplace stakeholders, like employee representatives and safety representatives, in the process.
- **Respond:** Ensure the required capacity to manage changes that impact the organisation and each individual.
- **Synchronize:** Coordinate the flow of information and actions. Ensure information flows from those with experience and knowledge to those making decisions and offering support.
- **Proactively learn:** Seek out weaknesses, different understandings, goal conflicts, and the need for reprioritisation.

The premise of this guide is that we don't need more HSE tasks; instead, we need better HSE practices. HOP provides an excellent starting point for achieving this. Good luck!

SOURCE: Provan, David (2021). A Field Guide to Safety Professional Practice. Safety Futures.





norskindustri.no