International Association of Oil & Gas Producers

REPORT 810 | JANUARY 2026

Human Performance



Acknowledgements

This Report was authored by the Human Performance Subcommittee of IOGP's Safety Committee.

Front cover photography used with permission courtesy of
© Sunan Wongsa-nga/iStockphoto and © Smederevac/iStockphoto

About

This Report offers guidance to oil and gas business leaders and safety professionals on integrating Human Performance – the study of how people interact with work environments, systems, and processes. It presents key strategies to improve organizational learning, risk management, and operational efficiency, fostering resilient systems and a proactive culture across the industry.

Feedback

IOGP welcomes feedback on our reports: publications@iogp.org

Disclaimer

Whilst every effort has been made to ensure the accuracy of the information contained in this publication and any associated material, neither IOGP nor any of its Members past present or future warrants its accuracy or will, regardless of its or their negligence, assume liability for any foreseeable or unforeseeable use made thereof, which liability is hereby excluded. Consequently, such use is at the recipient's own risk on the basis that any use by the recipient constitutes agreement to the terms of this disclaimer. The recipient is obliged to inform any subsequent recipient of such terms.

Please note that this publication and any associated material is provided for informational purposes and adoption of any of its recommendations is at the discretion of the user. Except as explicitly stated otherwise, this publication must not be considered as a substitute for government policies or decisions or reference to the relevant legislation relating to information contained in it.

Where the publication contains a statement that it is to be used as an industry standard, IOGP and its Members past, present, and future expressly disclaim all liability in respect of all claims, losses or damages arising from the use or application of the information contained in this publication in any industrial application.

Any reference to third party names is for appropriate acknowledgement of their ownership and does not constitute a sponsorship or endorsement.

Copyright notice

This publication and the contents of these pages are © International Association of Oil & Gas Producers™ ("IOGP™"). Permission is given to reproduce, quote from, republish, redistribute, and recommunicate this publication in whole or in part for purposes without independent economic value [2] and provided that (i) International Association of Oil & Gas Producers is always acknowledged as the source, together with the words "© International Association of Oil & Gas Producers™ ("IOGP™"), and (ii) any acknowledgments of other sources as may appear in this publication, in respect of such material, are included unaltered. All other rights are reserved.

These Terms and Conditions shall be governed by and construed in accordance with the laws of England and Wales. Disputes arising here from shall be exclusively subject to the jurisdiction of the courts of England and Wales.

REPORT
810

JANUARY
2026

Human Performance

Revision history

VERSION	DATE	AMENDMENTS
1.0	January 2026	First release

Contents

Introduction 6

1. Fundamentals of Human Performance 7

1.1 Human Performance Principles 7
- 1.1.1 Principle 1: Error is Normal 7
- 1.1.2 Principle 2: Blame Fixes Nothing 7
- 1.1.3 Principle 3: Context Drives Behaviour 7
- 1.1.4 Principle 4: Learning is Vital 8
- 1.1.5 Principle 5: How Leaders (You) Respond Matters 8

1.2 Human Performance concepts 8
- 1.2.1 Error traps 8
- 1.2.2 Operational dilemmas 9
- 1.2.3 Work as imagined vs Work as done 9
- 1.2.4 Failing safe vs Failing lucky 9
- 1.2.5 Psychological safety 9
- 1.2.6 Forward-looking accountability 10

2. The role of leaders 11

2.1 Value and purpose 11

2.2 Aligning leadership practices with Human Performance 11
- 2.2.1 Stage 1: Initiate a shift in the leader's thinking 11
- 2.2.2 Stage 2: Assessing the baseline 12
- 2.2.3 Stage 3: Building fluency 12
- 2.2.4 Stage 4: Establishing and integrating Governance 12
- 2.2.5 Stage 5: Developing a plan for Human Performance 13
- 2.2.6 Stage 6: Start using Human Performance tools 13
- 2.2.7 Stage 7: Integrating and taking action 13

2.3 What successful implementation looks like 14
- 2.3.1 Organizational evidence 14

3. Building organizational capacity 15

3.1 Organizational structure 15

3.2 Resources 15

3.3 Building a learning organization 16

3.4 Risk management and Human Performance 16

3.5 The role of contractors 17

4. Stakeholders 18

4.1 Description 18

4.2 Stakeholders for Human Performance 18

5. Integration point: design 24

5.1 Value and purpose 24

5.2 What a successful implementation looks like 24

6. Integration point: Work execution 27

6.1 Value and purpose 27

6.2 What successful implementation looks like 27

7. Integration point: Learn and improve 30

7.1 Learning from events 30

7.1.1 Learning From normal work 30

7.2 Value and purpose 31

7.3 What successful implementation looks like 31

Glossary 34

References 37

Further Reading 38

Introduction

This Report has been developed due to a growing recognition that improving safety, reliability, and operational excellence requires a shift in how organizations understand and manage the interaction between job conditions, individual characteristics, and organizational factors that affect how people work.

Human performance should not be viewed as a programme or initiative; it represents a fundamental shift in how an organization understands and addresses the human role within its systems. It refers to the ability of individuals to carry out tasks successfully, efficiently and safely.

While human performance encompasses how people perform their work within a given context, Human Factors studies all elements that influence human behaviour and performance.

By leveraging Human Factors Engineering on the design of equipment, work environments and tasks, we can enhance safety, performance and user experience by aligning systems with human capabilities.

For this scope, this guidance leverages numerous previously published resources across various industries, as well as the real-world experience of Member Companies. It addresses a gap in practical, accessible guidance for integrating Human Performance into everyday operations.

The main aim is to provide high-level guidance to a broad section of our industry, and it is not intended to be a comprehensive guide to human performance but rather focusing on essential elements for effective integration into existing systems and structures (such as risk management and leadership). Detailed case studies or highly specialized tools are beyond the scope of this document. Additional references are provided for those seeking more in-depth material.

The content is designed to help organizations enhance risk management, organizational learning and operational efficiency with the ultimate goal to improve safety and support a stronger safety culture. Finally, the recommendations in this Report are intended to foster a mindset where error is seen as normal and manageable, blame is not used as a tool, and systems are designed to be resilient.

1. Fundamentals of Human Performance

Human Performance (HP) represents a shift in perspectives on how we view people versus systems and successes versus failures. Five key Human Performance principles outlined below were developed to aid in this shift and explain human performance in a more approachable way.

These five principles embody the essential mindset change needed to advance safety across an organization. They foster a culture where error is understood, learning is prioritized and systemic factors are addressed. By embracing these principles, organizations are encouraged to move beyond surface-level solutions, focusing instead on building resilient, error-tolerant systems and cultivating psychological safety. IOGP recommends that organizations embed these principles in their practices, decision-making, and leadership behaviours making them the foundation for how Human Performance is understood and enacted.

1.1 Human Performance Principles

1.1.1 Principle 1: Error is Normal

Human Performance is grounded in the recognition that error is an inherent aspect of human nature. Since eliminating errors entirely is often impractical, they must be planned for by implementing strategies that anticipate them and minimize their impact. Mistakes are mostly unintentional and present at all levels of an organization; they are influenced by both internal and external factors (e.g., challenging working conditions, operational dilemmas, business pressures, change, etc). By shifting focus from individual shortcomings to examining how systems influence human actions, HP fosters a culture where incident reporting is encouraged and systems are strengthened to withstand and recover from mistakes.

1.1.2 Principle 2: Blame Fixes Nothing

Human Performance stresses that blaming individuals for errors is counterproductive and stops improvement. Blame fosters a culture of fear, discouraging people from speaking up, leading to concealed mistakes and missed opportunities for learning. Instead, HP promotes investigating the circumstances and factors leading up to an event with the aim of assessing the systemic factors which may have led to errors. This gives the organization the opportunity to develop more effective preventative measures. This principle encourages accountability at all levels, improves psychological safety, and enhances trust throughout the organization.

1.1.3 Principle 3: Context Drives Behaviour

Human Performance is shaped by the organizational context: encompassing systems, processes, equipment and culture. These collectively influence the decisions individuals make, the actions they take, and – in the long term – the social norms that emerge.

Understanding the context of work enables better risk management, design and execution of tasks. It is critical to proactively understand the context where work is done and change the focus from fixing individuals to improving the conditions that influence and drive performance.

1.1.4 Principle 4: Learning is Vital

Human Performance depends on an organization's commitment to continuously and deliberately learn and improve. Rather than waiting for failures to trigger an analysis, everyday work should be proactively learned from, whether successful or not. An effective learning process should be intentional, and insights should be applied to support sustained progress and improved outcomes. Adopting a learning mindset helps organizations enhance safety and efficiency by identifying the underlying causes that lead to success and failure. It also promotes transparency across the organization, which enhances communication and allows for a better understanding of issues at the right level.

1.1.5 Principle 5: How Leaders (You) Respond Matters

How the leaders of an organization respond to both successes and failures is crucial to building a strong and effective learning culture. This principle promotes a psychologically safe environment that leads to increased trust throughout all levels of the organization and enables organizational curiosity and open communication. This principle encourages thoughtful and deliberate decision-making and is the foundation that ties all principles together: leadership's response to human performance shapes how the organization perceives error, context, blame and learning.

1.2 Human Performance concepts

In addition to the principles, there are a few fundamental concepts to help understand Human Performance. Learning these concepts should allow for a more comprehensive understanding of how to integrate the HP principles in practical ways.

1.2.1 Error traps

Error traps are conditions that increase the likelihood of people making mistakes or doing something different than expected. Various guidelines or organizations may incorporate them within the definition of Performance Influencing Factors, Performance Shaping Factors, or analogous terms. They can be physical, operational or cognitive:

- Physical traps involve poor work environments, like bad ergonomics, poor lighting or noisy surroundings.
- Operational traps occur in work processes, such as complex procedures or time pressures.
- Cognitive traps stem from human cognitive limits, worsened by fatigue or stress.

Identifying and fixing these traps is crucial for Human Performance. Once identified, organizations can redesign workspaces, simplify procedures, and offer better training.

1.2.2 Operational dilemmas

Operational dilemmas involve conflicting priorities, making it tough to make decisions as each choice has its own consequences. These issues often stem from the complexities of organizational systems and the pressure to meet targets. For instance, speeding up production may require shortcuts, increasing accident risks. Such dilemmas create a difficult environment for employees that has the potential to lead to stress, burnout, and errors. Organizations should consider the trade-offs and develop strategies to balance these priorities, such as investing in technology, providing staff support, or redefining performance metrics.

1.2.3 Work as imagined vs Work as done

These ideas illustrate the difference between the idealized vision of work and its actual execution. "Work as imagined" refers to what engineers, planners, advisers, managers, or anyone else believes how the work should be done under ideal circumstances. "Work as done" is what people actually do to get the job done, considering the realities of the situation such as equipment configuration, the procedure's ease of application and the time and resources they have. "Work as done" shows the unpredictable and evolving nature of real-world tasks under various constraints. Manuals often outline procedures based on assumptions, but front line employees adapt through informal workaround to manage workload pressures and challenges. Recognizing this gap is vital for identifying hazards, improving performance, and involving employees in designing procedures to ensure they are practical and feasible.

1.2.4 Failing safe vs Failing lucky

"Failing safe" is when a high-impact incident happens, but the worst outcome is prevented by existing controls. "Failing lucky" is when the same incident occurs, but the worst outcome is avoided by sheer luck. Failing safe is grounded in recognizing that things can and do go wrong and proactively putting measures in place to prevent harm when they do. While the goal is always to carry out tasks safely, unexpected events can still happen. Being prepared for these situations through strong safeguards and effective error-reduction strategies is essential to minimizing their impact.

1.2.5 Psychological safety

Psychological safety is the climate in which people feel comfortable expressing themselves without fear of being humiliated, ignored, or blamed. Psychological safety is crucial for building trust between leaders and workers. Acknowledging the inevitability of errors in complex work systems supports an environment that treats mistakes as opportunities for learning. When workers feel psychologically safe, they are more likely to report problems, concerns, and errors before they escalate into major incidents. This environment enhances the detection and mitigation of potential hazards, improves information sharing, and drives better performance. Responding consistently to good and bad news, listening actively, and creating learning opportunities from failures and successes are highly recommended practices.

1.2.6 Forward-looking accountability

The culture of an organization is profoundly shaped by how it responds to negative events. Prioritizing recovery, learning, and continuous improvement promotes psychological safety and open communication. In contrast, blame and punishment breed fear, secrecy, and defensiveness, ultimately hindering learning and compromising safety. Effective leadership plays a critical role in cultivating a culture of inclusive and forward-looking accountability.

Traditionally, workers are expected to deliver satisfactory results and are believed fully resourced to complete their work as imagined. If fear drives compliance and compliance always brings successful outcomes, accountability is predominantly framed as a backward-looking process where workers are held accountable and blamed when the outcome doesn't meet expectations. However, workers cannot be held accountable if the system is unsafe to begin with. Systems should be designed and resourced to tolerate imperfections, handle errors effectively, and ensure consistent and safe performance under varying conditions.

Forward-looking accountability is focused on holding workers accountable for contributing to both the discovery of learning and the development of solutions. This shift, though challenging, promotes learning from mistakes and encourages open dialogue about failures, enhancing transparency and understanding. Adopting an HP approach to inclusive and forward-looking accountability requires shifting from a hierarchical to a collaborative approach, involving team members in decision-making and problem-solving.

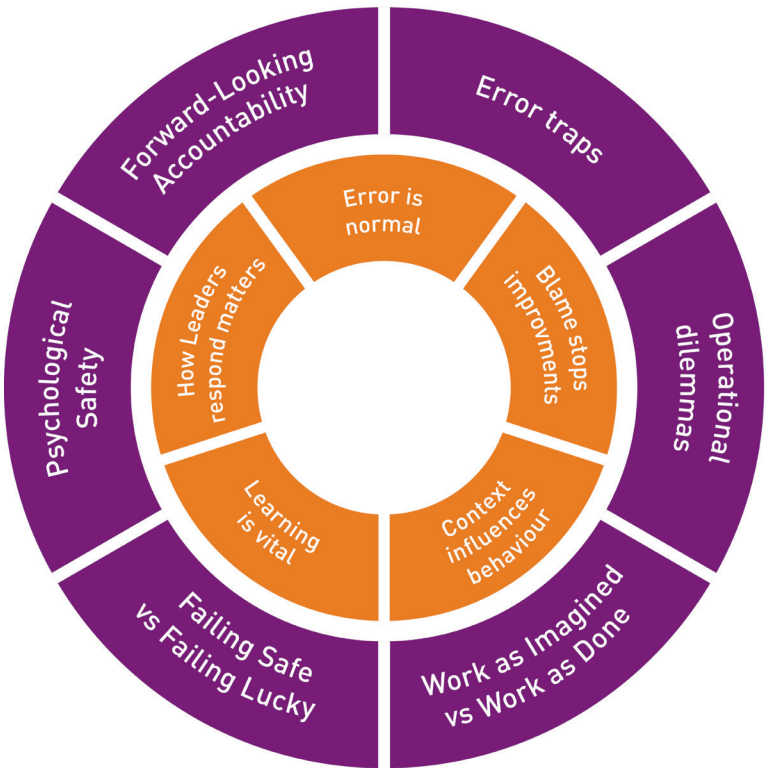


Figure 1. Human Performance Principles and fundamental concepts

2. The role of leaders

Leadership in Human Performance focuses on the mindset and actions of leaders as vital components for its integration. Having awareness of the key concepts of Human Performance described in Section 1 should shape leaders' mindset and behaviour. This affects how they communicate, how they respond to bad news, and how they make decisions.

2.1 Value and purpose

Leaders, at all levels of the organization, set the tone for the company and have significant influence on an organization's culture. It is not only what leaders say, but especially the actions they take. Leaders are ultimately in control of the processes, procedures, and resources which affect Human Performance implementation.

2.2 Aligning leadership practices with Human Performance

Leadership behaviours like empathy, support, and empowerment directly foster a psychologically safe environment. By highlighting the connections between HP and contemporary leadership visions, integrating the HP principles becomes more inclusive as various departments align strategies and implementation plans. This will enable leaders to identify synergies across programmes, broadening HP's application beyond traditional Health, Safety, and Environment (HSE) contexts, to foster "learning organizations."

Integrating the core principles of Human Performance into organizational culture supports consistent, informed leadership, and operational resilience. The following stages provide a flexible approach for embedding these principles into everyday decision-making and are adaptable to evolving business needs.

2.2.1 Stage 1: Initiate a shift in the leader's thinking

Successfully integrating Human Performance into an organization begins with leadership. Leaders must go beyond surface-level understanding of Human Performance and commit to embracing its principles. Challenging traditional views of accountability, error, and improvement requires more than knowledge; it demands a mindset shift. This shift often begins with someone who champions the HP approach. This leader can be a Subject Matter Expert (SME) or an internal advocate that starts the HP conversation, and can connect the concepts to real challenges and guide leaders toward a more supportive and learning-focused culture.

There are multiple effective ways to initiate this shift, depending on the organization's needs and context. For example:

- Reviewing incident data with human factors tools to highlight systemic failures, shifting the focus from blame to underlying causes.

- Engaging leaders in sessions about the Human Performance principles supported by research evidence.
- Enlisting an engaged senior leader as a sponsor to advocate and ensure plan execution, and catalysing change at the right organizational level.

2.2.2 Stage 2: Assessing the baseline

When planning Human Performance deployment, it's beneficial to start with a baseline assessment of the organization's maturity against the guidelines in this document and any additional regulatory requirements. A gap analysis should help identify current strengths and gaps to shape future plans and serves as a progress benchmark.

Measuring culture is also vital for establishing a baseline and tracking changes over time, usually through surveys. However, while measuring culture is crucial, organizations should focus on inputs like leadership, resources, design, policies, and processes that influence culture.

2.2.3 Stage 3: Building fluency

Leaders will feel better equipped to support Human Performance if they have a deeper understanding of the key principles and feel confident talking about and promoting them. This phase involves further education and training to ground the organization and its leadership in Human Performance principles. Often following initial leadership engagement sessions, the goal is to provide additional information to bolster their willingness to support Human Performance. A curriculum designed to further Human Performance discussion is helpful, including internal and external SME engagement sessions, reading topics, videos, and circulating podcasts, websites, or other external sources. Using existing internal communication channels and competency development systems ensures the necessary target individuals are reached.

Safety leadership programmes can be an effective component to build fluency in Human Performance. These programmes focus on educating and coaching the workforce to listen to those who do the job, cultivate trust, seek an accurate understanding of how work is truly done, respond well to negative news, reduce blame within the organization, and take action to fix system issues before incidents occur. Starting at the senior level and cascading down ensures that middle and lower levels of leadership and management are included in this cultural shift.

2.2.4 Stage 4: Establishing and integrating Governance

Establishing a Human Performance Governance or integrating it in the current existing governance is an important step to making Human Performance sustainable.

The form of governance structure may vary from organization to organization, but it should involve:

- **Executive sponsor –** A senior leader within an organization who holds significant influence and authority and can provide strategic guidance, resources, and high-level advocacy to ensure successful implementation and alignment with organizational goals.

- **Steering team –** To guide the Human Performance plans or strategy and ideally can benefit from being made up of a mixture of different roles and seniority levels.
- **Champions –** A range of roles who commit to becoming more competent in Human Performance activities, will execute the Human Performance plans, and can coach others.

2.2.5 Stage 5: Developing a plan for Human Performance

Once Human Performance concepts have been introduced, a formalized plan helps ensure recognition within the business. The plan should include key Human Performance principles, organizational capability development, focus areas, contractor inclusion, and process integration into aspects like safety, well-being, and engineering. Typically, it outlines a three to five year period using a familiar format.

2.2.6 Stage 6: Start using Human Performance tools

The introduction of some Human Performance tools marks the transition from discussion into action. Organizations often introduce these tools during incident investigations: when the investigation fails to look beyond human error, it clearly highlights the limitations of the current system and underscores the importance of adopting Human Performance to uncover and address underlying system causes rather than attributing incidents solely to individual mistakes.

Organizations do not need consensus among all senior leaders to implement this. A single willing senior leader and an enthusiastic manager can initiate the process. Successful deployment in one area can create a ripple effect, encouraging broader adoption. Sceptical leaders may accelerate their own Human Performance maturity after observing early benefits.

It is important to note that organizations may initially perceive a decline in safety metrics due to increased reporting and visibility of previously hidden conditions. Being prepared for this possibility can help mitigate early risks of derailment.

2.2.7 Stage 7: Integrating and taking action

Human Performance is a multi-year maturity journey that should be woven into the fabric of management systems and processes. This stage involves recognizing and realigning elements that do not align with Human Performance thinking by using baseline assessments to prioritize areas for advancement. Integrating these practices into existing systems ensures sustainable changes and fosters a culture that supports continuous improvement. As awareness and understanding of these areas increase, it is vital to take action to make improvements sustainable. Keeping the workforce involved in shaping these actions fosters ownership and encourages continued participation.

2.3 What successful implementation looks like

While the integration of Human Performance into leadership and culture is an ongoing journey with room for continuous improvement, organizations can demonstrate meaningful progress through clear behaviours leading to tangible outcomes.

Senior leaders should foster a supportive culture, while mid and lower-level leaders should actively resolve challenges and system issues, showing genuine interest in the problems faced by their teams and empowering workers as experts in how their work is truly performed. Workers, trusted for their expertise, constantly adapt and select effective approaches in response to ever-changing conditions and risks, always aiming to achieve the job's ultimate goal.

Leaders should consistently model and promote HP principles and leverage workers' insights to shape safety and operational improvements. In this environment, leaders should:

- Spend time with employees to understand how work is actually done, creating a psychologically safe environment for open dialogue about challenges.
- Ask open-ended questions and actively listen to the workforce, encouraging them to share concerns and difficulties in their work without fear.
- Show vulnerability by admitting ignorance and modelling this behaviour, and expressing gratitude when employees speak up about work challenges.
- Respond constructively to incidents and events to build trust, avoid blame, and encourage collaborative problem-solving.
- Ensure resources are dedicated to learning and system redesign.
- Share internal communications related to Human Performance topics and respond positively to disruptive ideas.

2.3.1 Organizational evidence

- Factors influencing system performance are clearly understood, and proactive measures addressing systemic issues on the upper part of the hierarchy of controls (elimination, substitution, and engineering), are being implemented to strengthen key system elements.
- Regular measurement of organizational culture, specifically around safety and Human Performance, with a clear company plan and accountability.
- Inclusion of Human Performance in job descriptions, meetings, and documentation within company standards and safety management systems.
- Use of Human Performance tools to predict potential errors, understand performance influencers, and take action to strengthen system elements.

3. Building organizational capacity

The following sections outline the recommended organizational structure for integrating HP effectively. While not exhaustive, this list is a good starting point for assessing organizational capacity.

Introducing a Human Performance framework will not instantly transform an organization; genuine change is achieved by nurturing a culture of ongoing learning and candid dialogue, where employees can identify and discuss performance challenges without fear of repercussions. Past investigations in the oil and gas industry have shown that resources and organizational structure significantly impact safety and performance, more so than other elements. To improve organizational performance, addressing these factors is recommended.

3.1 Organizational structure

To successfully integrate Human Performance and embed its principles within an organization, the organization's structure should cultivate an environment where learning, transparency, and system improvement are championed at every level. Effective organizational structures prioritize independence for Human Performance champions, ensuring they have direct access to executive leadership without commercial bias.

Human Performance champions are pivotal in embedding Human Performance. Their role extends from building fluency and coaching on the HP principles, to engaging senior leadership and securing their sponsorship for integration efforts. By acting as both advocates and connectors, they can help align daily operations with organizational strategy, ensuring Human Performance becomes a shared responsibility across the business.

Cross-functional teams, inclusive of Human Performance experts, operational leaders, and front line employees, should be established to collaboratively analyse work and develop solutions that eliminate or mitigate risks.

Human Performance should be valued alongside business outcomes, with a culture that encourages and safeguards the reporting of errors, system vulnerabilities, and operational pressures. Ultimately, fostering open communication, independent safety advocacy, and shared responsibility for strengthening system elements lays the foundation for both safety and operational excellence. Such an approach ensures that Human Performance is not just embedded in company standards, but actively supported and advanced throughout the organization.

3.2 Resources

Investigations show that having limited resources, such as schedules and capabilities, significantly impacts safety. Leaders often struggle to discuss these pressures openly and employees hesitate to voice concerns, fearing it might seem counterproductive to efficiency. Ignoring or discouraging such discussions can hinder crucial conversations and disconnect leaders from daily operations, affecting decision-making and performance.

Encouraging open dialogue can improve both safety and organizational performance. These talks are not about reducing efficiency but rather identifying when pressure is too high. Organizations often only realize their limitations through safety incidents. Prioritizing safety is beneficial for business; understanding capacity constraints helps leaders make informed decisions while showing genuine care.

What success looks like:

- Leaders actively discuss commercial pressures and safety trade-offs.
- Risk assessments identify and realistically mitigate commercial pressures.
- Management of change is proactively applied before and during organizational changes.
- Investigations or Learning Teams openly delve into safety/cost trade-offs.
- Employees are not marginalized for raising concerns about scheduling or other operational pressures.

3.3 Building a learning organization

Building a learning organization is an ongoing cultural transformation that integrates curiosity, psychological safety, and systemic improvement into both its structure and daily practices. Effective learning is intrinsically linked to sound risk management and extends beyond the simple dissemination of lessons; it demands a rigorous, systematic approach that drives sustainable progress. Leadership plays a pivotal role in advocating for organizational learning by fostering inquiry and maintaining a culture free from blame.

Sustaining improvement should involve cross-departmental collaboration and regular evaluation of learning initiatives. An effective learning cycle should encompass proactive risk reporting, thorough identification of lessons, and verification of their effectiveness, all of which are recommended to achieve continuous advancement within the organization.

What success looks like:

- Leaders recognize the interconnections within the organization and understand how individual actions influence the whole (system thinking).
- Individuals are encouraged to pursue ongoing learning and self-improvement (personal mastery).
- Managers challenge ingrained assumptions and foster openness to new perspectives (mental models).
- Teams are aligned around common goals to promote unity and collective accountability (shared vision).
- Spaces are created for collaborative learning, feedback, and reflection to drive innovation and resilience (team learning).

3.4 Risk management and Human Performance

Effective risk management is inseparable from Human Performance efforts. Organizations that integrate Human Performance into their risk management can gain a more accurate understanding of risk exposure and improve their ability to mitigate hazards proactively and fail safe.

At a high-level, risk management involves proactive identification, assessment, and mitigation of those risks and then managing them on an ongoing basis to a status where the risks are at an acceptable level to continue operations in a sustainable manner.

Risk identification should be undertaken by a team of cross-functional subject matter experts so that subjective bias, where an individual could concentrate on certain risks that they have expertise or subject matter knowledge in over other areas, will be negated.

In the same way, risk assessment work itself should also be undertaken by a diverse set of SMEs, with the outputs reviewed and challenged for consistency, and an actual reflection of where the risk sits in the overall risk matrix, rather than just being generally accepted.

When developing risk mitigation strategies and proposing relevant controls to lower risk, organizations should aim for continuous improvement and learn from successes sourced from within the business and the wider industry. Risk assessments should be reviewed on a pre-determined frequency so that feedback and proactive learning can be built in and, by using the hierarchy of controls, drive risks to As Low As Reasonably Practicable (ALARP). It is at this point that human decisions and actions can be recommended as necessary to prevent major incidents.

A significant number of incidents result from insufficient management of change. Changes may pertain to organizational, technical, process, or operational aspects. All changes should be proactively assessed by applying Management of Change and addressed promptly by ensuring the involvement of personnel with adequate competence and authority.

A critical component of the risk management process is the review and formal approval by senior management of both the current status and the strategic direction of business risks, whether improving or otherwise. Similarly, the way leaders respond to errors and issues, and how a risk is evaluated by leadership, can impact how the business and personnel manage the risk going forward. A constructive risk review at an agreed frequency at the leadership level is therefore recommended to drive continuous improvement in the overall management of risk in the organization.

3.5 The role of contractors

While engaging contractors in Human Performance is essential, it is recommended to ensure they have reached a sufficient level of maturity to enable a collaborative approach where they choose to embed Human Performance into their safety journey. Promoting Human Performance principles without consistently embedding them in day-to-day operations opens the possibility of reverting to traditional practices when challenges arise, undermining credibility and progress. Notably, some contractors may be further along in their HP implementation, and recognizing this can foster mutual learning, strengthen collaboration, and support a more authentic partnership.

What good looks like:

- Ensure organizational maturity before influencing contractors.
- Be open to learning from contracting companies with advanced HP journeys.
- Recognize that contract structure (schedule/budget) impacts contractor behaviour and safety outcomes.

4. Stakeholders

4.1 Description

Understanding and optimizing Human Performance involves many stakeholders, each with their own unique responsibilities and expectations depending on their role in the organization. In this section, we identify the main stakeholders who contribute to implementing Human Performance principles.

Current knowledge shows that Human Performance results from the combined efforts of various stakeholders, not just managers or HSE. These include workers in the field, supervisors and line managers, those preparing procedures, or even members of HR or procurement. Each group has a role to play in incorporating HP principles and applying human factors thinking within the scope of their role.

4.2 Stakeholders for Human Performance

To support effective Human Performance within organizations, it is recommended to consider the involvement of various stakeholder groups. These groups may include both staff and contractors, each contributing unique perspectives and expertise:

- **Executives/Senior Management**

  This group sets strategic direction, allocates resources, and defines priorities. Effective HP implementation includes:
  - championing HP as a core business principle
  - aligning incentives so that safety and performance do not compete with productivity
  - invest in "system" improvements rather than adopting a "fix the worker" focus

- **Management (Line managers/Proximity managers/Supervisors)**

  This group includes both middle managers, who translate organizational strategy into operational goals, and supervisors, who work directly with front line staff to guide daily work. Based on the structure of the organization, effective HP implementation might include some or all of these:
  - ensuring processes, tools, staffing, and workload support error prevention and recovery
  - establishing a culture of open reporting and psychological safety
  - promoting and implementing HP informed work execution tools
  - shifting the balance from learning from events to learning from normal work as much as possible

- **Front line workers**

  This group operates within the system established by the wider organization and carries out tasks under varying conditions. Effective HP implementation includes:

  - not overloading the front line with HP tools and training, and remembering that HP starts with a focus on leadership
  - ensuring the front line are supported and encouraged to provide insights and feedback
  - actively engaging with the front line as much as possible to feed into design, procedures, and other tools that are being implemented with/for this group

- **Human Resources**

  This group shapes culture through hiring, training, performance management, and policies. Effective HP implementation includes:
  - integrating HP principles and fundamentals into onboarding and leadership programmes
  - providing mechanisms for employee feedback and psychological safety
  - ensuring accountability is informed and forward looking (and not confused with blame)

- **Health, Safety, and Environment (HSE)**

  This group provides expertise, standards, and systems to manage risk. Effective HP implementation includes:
  - positioning themselves as partners with other stakeholders to enable HP to become embedded
  - supporting operational learning with a focus on system improvements rather than "fix the worker"
  - focusing on establishing trust and psychological safety rather than strict "compliance"; supporting effective HP-informed investigations

- **Engineers/designers/procedure writers**

  These groups design or develop procedures, tools, workplaces, and/or equipment. Effective HP implementation includes:
  - ensuring recommended practice considerations are factored into design or construction, and when developing procedures (e.g., includes consideration of error traps, not just ergonomic factors)
  - actively involving and soliciting feedback from those doing the work (in context) when reviewing or updating procedures, tools, and equipment

- **Support functions/others (e.g., procurement)**

  These groups may not have a direct role in implementing HP but will likely benefit from a consideration of HP to support its direction. Effective implementation includes:
  - ensuring HP is factored into contracts and procurement decisions
  - not prioritizing cost or deadlines over safety and well-being
  - ensuring HSE is brought into decisions and procurement discussions to ensure new risks are not introduced from the outset

The table below outlines each stakeholder group's specific roles and responsibilities, related to the HP principles:

Table 1 – Stakeholders and Principles

Error is normal

Position	Responsibility
Executives	• Appreciate human fallibility and highlight that errors stem from individual factors and work/system conditions. • Promote and reinforce the importance of psychological safety and integrate human performance principles to encourage a culture of improvement.
Management	• Anticipate human error. • Support front line workers in identifying active and latent errors. • Highlight that errors stem from human traits and work conditions. Support workers in identifying these errors without blame. • Promote psychological safety and integrate human performance principles to encourage a culture of improvement.
Front line	• Understanding errors involves identifying both active and latent errors, which result from the work situation and highlight the likelihood of exposure. • Recognizing these errors as consequences of the work environment is crucial.
HSE	Assist all stakeholders to integrate the idea that error is normal in all aspects of safety management.
HR	• Develop awareness that everyone is exposed to error. • Ensure HP is considered in investigations.
Support/other	Contribute to the identification of active and latent errors.

Blame fixes nothing

Position	Responsibility
Executives	Recognize the difference between blame and accountability.
Management	• Recognize the difference between blame and accountability. • Avoid blaming individuals and acknowledge errors as opportunities to learn.
Front line	• Recognize errors as opportunities to learn. • Report accurate information.
HSE	Maintain neutrality regarding people involved in an incident.
HR	• Help managers to consider blame as a contributor to organizational silence. • Support managers in sustaining a Just Culture.
Support/other	• Understand the difference between blame and accountability.

Context drives behaviours

Position	Responsibility
Executives	• Understand that the interaction of individual, job and organizational factors influence human behaviour. • Appreciate HP principles in the context of incompatible goals, e.g., balance of safety versus production.
Management	• Design safer work environments and minimize uncertainty in them. • Understand the concepts of error traps and operational dilemmas, and how contexts drive behaviour. • Create and promote an environment in which contextual factors can be openly discussed and actively managed.
Front line	Evaluate the work environment to ensure it can be managed safely.
HSE	Support teams in better understanding contextual factors (e.g., error traps and operational dilemmas); support and model proactive learning to better explore contextual factors influencing performance.
HR	Develop knowledge of error traps for all stakeholders to ensure understanding of what is driving human error, non-compliance and substandard behaviours.
Support/other	Being aware of their contribution can influence the context of work and consequently the behaviors at work.

Learning is vital

Position	Responsibility
Executives	• Normalize human fallibility as a source of safety improvement. • Monitor proactive and reactive learning. • Learn by asking open questions. • Sponsor and advocate for learning teams and other proactive learning tools. • Establish metrics that gauge progress and encourage learning.
Management	• Drive proactive and reactive learning. • Observe performance across full cycle of work (planning to demobilization) and Learning From Normal Work (LFNW) as much as possible; actively engage in deliberate learning such as Walk-Through Talk-Throughs (WTTTs), learning teams, and post-job reviews. • Invite feedback from those doing the work (informally during visits and more formally through use of WTTTs, for example). • For adverse events, ensure Human Performance principles are considered in incident investigations • Ensure systems enable insights from front line to be captured and shared within the organization.
Front line	• Actively initiate or participate in post-job briefs for both successful and unsuccessful work. • Provide feedback about tasks, tools, equipment, and procedures, for example, if Life-Saving Rules cannot be followed without taking a shortcut – this must be reported.
HSE	• Support HF lens on investigations to enable more impactful learning. • Identify organizational and human factors affecting behaviours. • Facilitate communication and learning. • Ensure learning is incorporated into future work.
HR	• Prior to incident investigations, ensure that the investigators are trained in HP and error precursors. • Embed a focus on learning within leadership development
Support/other	Participate in incident investigation.

How you respond matters

Position	Responsibility
Executives	• Respond to incidents and successes with the same curiosity. • Drive systemic responses and solutions rather than solutions that focus excessively on individual-level factors.
Management	• Respond positively whenever an error is identified. • If, after a comprehensive investigation, disciplinary actions are deemed necessary following an event, be transparent about what measures were taken and why.
Front line	Respond appropriately to errors within their teams.
HSE	Promote and encourage positive feedback regarding recommended practices and initiatives.
HR	• Assist management with appropriate response on human performance (from recognition to disciplinary actions). • Ensure investigations do not excessively rely on punishments and blame and that a just culture is applied.
Support/other	Ensure adverse events and human error are not ridiculed or hidden.

5. Integration point: design

The design of equipment and systems is a key component of overall HP implementation and success. Applying human factors to design is sometimes referred to as "human-centered design" or "user-centered design." The philosophy is to design work or tasks for people rather than trying to fit the person around the task. Human Factors Engineering (HFE) is the application of human factors knowledge to the design and construction of equipment, systems, and tasks. The objective of HFE is to provide equipment and systems that reduce the potential for human error, increase system availability, lower lifecycle costs, improve safety, health, and wellbeing, and enhance overall performance.

The design should address topics including workspaces, ergonomics, Human Machine Interface (HMI), and control rooms to ensure suitability and safety. IOGP Report 454 – *Human Factors Engineering in Projects* is a key reference and describes a practical and balanced approach to applying HFE on projects.

5.1 Value and purpose

Designing for people considers the capabilities and limitations of people. HFE is applied to the design of systems, workplaces, and equipment to:

- Reduce risk to process and personal safety, health, and the environment.
- Identify and remove error traps in design.
- Eliminate, reduce the likelihood, or mitigate the consequences of human error.
- Improve efficiency, productivity, and operational perfor¬mance.
- Enhance user acceptance of facilities and equipment.

Benefits of integration of HFE include:

- A system that is resilient to human error.
- Improvements in task efficiency, HSE performance, and risk management.
- Reduction in capital costs by facilitating more efficient design and avoiding redesign.
- Minimizing the need for re-work or change during or after construction.
- Decrease in life cycle costs of operating and maintaining facilities (OPEX).

5.2 What a successful implementation looks like

Steps to implement HFE include understanding how work is done and using that knowledge during design to ensure safe and efficient movement and decision-making. Asking relevant questions helps assess equipment or system design. Proper HFE implementation leads to improved task efficiency, risk management, and reduced costs throughout a facility's lifecycle.

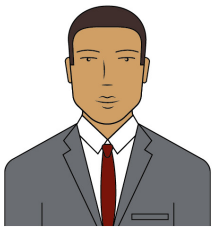
While individual processes, steps, and procedures may vary, implementing HFE into design generally follows the following sequence:

1) Developing HP knowledge into project and design teams.
2) Understanding what standards you are using for Human Factors (HF) (e.g., internal standard, Energy Institute HF in Design, IOGP Report 454, etc).
3) Making sure HP requirements are defined during procurement processes and contracts and associated deliverables.
4) Having the right capability and processes to do the HF/HP work.
5) Ensure that HF/HP associated risks are identified, managed, and incorporated into design decisions and construction plans.
6) Confirm that HFE requirements are met through usability testing, simulations, mock-up evaluations, and design reviews

Note: Further links to industry resources on the specifics of Human Factors Engineering can be found in the Resources section.

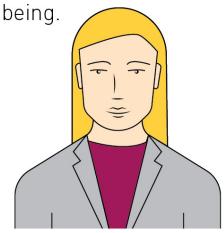
Successful implementation of Human Factors Engineering (HFE) should involve:

- Following HF design standards and principles, and ensuring any internal design and design review processes include a comprehensive consideration of HF (i.e., not just "ergonomics").
- Integrating a competent HFE person into the project to identify HFE risks and opportunities during design.
- Integrating HFE into Hazard and Operability studies (HAZOPs) and risk assessments to consider where human performance could directly cause deviations in a process, be part of the mechanisms of failure, or serve as safeguards against failure.
- Designing facilities with HF considerations from the outset to support safe operation, including effective alarm management and Human Machine Interface.



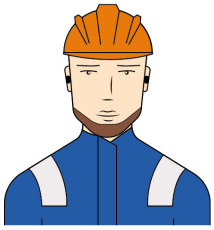
Senior leaders:

Provide and prioritize sufficient budget and resource allocation to ensure facilities, worksites, tools, and equipment "design out" human error where possible, are adequately maintained to minimize errors or workarounds over time, and support human performance and well-being.



Managers:

Ensure company standards and procedures (that include HF considerations) are followed when it comes to the design and re-design of tools and equipment; actively seek feedback from those doing the work about how design and set-up of workplaces and the provided equipment and tools impact execution of tasks; take action to improve design of facilities or tools/equipment based on this feedback (where possible), or ensure other controls are in place to minimize error traps associated with sub-optimal designs.



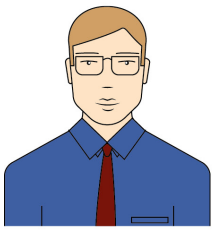
Supervisors:

Encourage teams to provide feedback and insights/suggestions related to designs that might impact safe execution of tasks; be conscious of error-traps resulting from poor design and raise these with managers.



Engineers:

Apply HF recommended practice when designing or re-designing tools and equipment. Go beyond thinking about "ergonomics" and consider error traps and other features that might increase chance of error or workarounds. Ensure those doing the work/using the tools are consulted with and or engaged in the process (e.g., user-testing in the field).



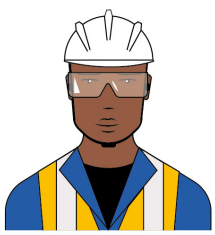
Procurement and supply chain:

Ensure that a consideration of human factors is specified and included into contracts, ensuring HF considerations are factored into procurement decisions (i.e., not prioritizing at the expense of safety or optimal human performance and well-being of employees and contractors).



HSE:

Inspect and evaluate facilities, equipment, and control rooms with a HF lens; involved in planning and projects from outset to advise on how well designs conform to HF recommended practice and minimize risk from facilities and workplaces.



Front line:

Involved in user/usability testing and relied upon to provide feedback into design aspects of their workplaces; aware that they are encouraged to report or flag error traps associated with poor or confusing designs.

Figure 2. Human Performance in Design: Stakeholders' Perspectives

6. Integration point: Work execution

While organizations design equipment, facilities, and tasks using their expertise, and aim to manage critical tasks proactively, HP risks that remain should be addressed before and during task execution. Work Execution includes all steps, such as developing procedures, conducting risk assessments, preparing teams with pre-task briefings, and carrying out the work.

Although HP principles can be applied widely, limited resources often require focusing these efforts on tasks with the highest levels of risk. Various practical tools and methods are available to help control and manage work systems, integrating key aspects of Human Performance when needed.

6.1 Value and purpose

Effective implementation, integration, and sustainability of change when introducing new work practices can greatly enhance a company's ability to execute effectively and efficiently. This includes:

- a set of usable procedures that match how the work is performed
- risk assessments that identify HP risk before the work and can build in appropriate mitigations
- a front line workforce that has a greater appreciation of HP principles
- increased company participation in HP, with front line workforce actively engaged in the conversation
- a front line workforce that has better skills to deal with unexpected situations and the dynamic nature of work

6.2 What successful implementation looks like

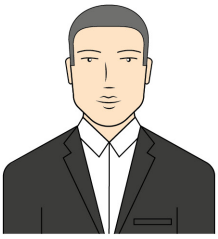
Successful implementation, embedment, and sustaining the change when introducing a new way of working significantly help companies execute and complete work. In fact, implementing effective work execution not only ensures safety but also boosts overall business performance and includes:

- critical activities have been identified (i.e., critical tasks to maximize impact whilst not using excessive resources)
- integration with other prominent industry programmes such as Life-Saving Rules and Process Safety Fundamentals which are industry tools based on past incidents to prevent fatal events and major releases.
- recommended HP practice in procedure writing and development has been integrated to procedure development[1]
- work risk assessment processes are set up to identify where mistakes can happen and what might cause them (considering error traps and operational dilemmas)

[1] Human Performance Oil and Gas, "Best Practice in Procedure Formatting." 2021.

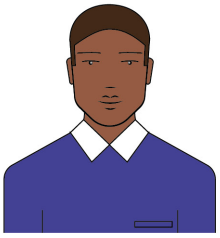
- for high-consequence tasks, consider applying an independent verification (ideally with the independent verification performed blind from original checks, and using different methods and data sources)
- high-quality pre-work conversations involving all participants where HP risks, error traps and operational dilemmas are openly discussed – these can be aided by structured conversation prompts using open-ended questions to ensure comprehensive discussions and foster a safe environment for speaking up. Tools such as these can be considered:
  - toolbox talks
  - last minute risk assessments
  - buddy/peer checks
  - pre-task briefings
  - stop work authority
  - STOP cards
  - Shell's Step 7 Work Process
- start work checks before starting work activities involving Life-Saving Rules and other fatality and life changing injury risks[2]
- stop work protocols that halt tasks when any safeguard is missing or ineffective, until restoration is verified
- tasks structured into distinct steps, with defined hold points (natural pauses/stops) that enable the team to reassess progress and conditions at critical stages
- competence building processes to educate and build non-technical skills in the front line workforce to better prepare them to manage dynamic situations (crew resource management topics such as communication, decision-making, situational awareness, teamwork, and leadership)[3]
- assessing staff working patterns for fatigue and workload to make sure people are not rushing
- a programme, support, and training are in place whereby the job can be stopped by any person
- processes to capture lessons learned

[2] IOGP Report 459-1 - *Life-Saving Rules – Start Work Checks*
[3] IOGP Report 501 - *Crew Resource Management for Well Operations teams*



Senior leaders:

Signal that safe work execution is always an expectation and priority; ensure budgets and resources to adequately manage fatigue and workload.



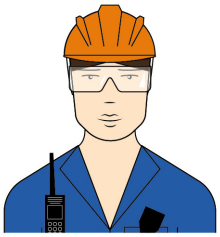
Managers:

Balance operational pressures; actively manage fatigue and workload; ensure a consideration of error traps (PIFs) when planning work; ensure company standards, procedures, and tools (that incorporate HP recommended practice) are known and implemented by teams; promote and allocate time for competency building in non-technical skills (in supervisors).



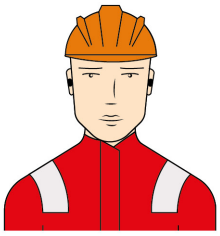
Supervisors:

Plan and deliver quality Tool Box Talks (TBTs), handovers, and post-job debriefs that build in HP considerations; ensure teams can speak up and stop work or raise issues related to safe work execution; ensure Life-Saving Rules (LSRs) and Process Safety Fundamental (PSFs) are known and recognized by teams.



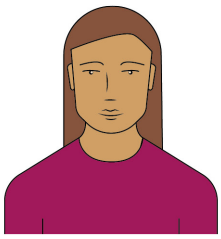
HSE:

Support managers and leaders to recognize error-likely conditions; observe work execution (including TBTs, handovers, and debriefs) to spot improvement areas; embed HP considerations into existing HSE training to build fluency in these topics.



Front line:

Actively involved in TBTs (ask questions, feel supported to not start work unless controls in place); feel supported and empowered to pause or stop tasks; apply HP techniques (e.g., standback 5*5) with peers.



HR:

Embed HP concepts into onboarding and leadership development; reinforce psychological safety with managers.

Figure 3. Human Performance Considerations in Work Execution: Stakeholders' Perspectives

7. Integration point: Learn and improve

The learn and improve approach is rooted in the understanding that HP is influenced by factors such as work system design, quality of procedures, resource availability, worker competence, and leader expectations, and can significantly enhance operational reliability and efficiency. A consistent application of learning across all organizational levels fosters a culture of learning and improvement, ultimately benefiting the organization and its stakeholders by reducing errors and enhancing performance.

7.1 Learning from events

Learning from events through a Human Performance lens helps uncover systemic factors that contribute to errors, enabling more effective and lasting solutions. In particular, the way investigation is conducted and the experience of those involved, reflects the organization's maturity in Human Performance. IOGP Report 552 – *Components of Organizational Learning from Events* highlights four key elements of organizational learning: transparent event reporting, skilled incident analysis, systematic application of lessons, and empowering individuals to seek and share knowledge. The IOGP Report 621 – *Demystifying Human Factors: Building confidence in human factors investigation*, provides further details on integrating HP in investigations.

What good looks like:

- Comprehensive event reporting and analysis and learning from normal work supports effective risk management across all units and promotes a culture of transparency and accountability.
- Incident investigation team members, including investigation leads, are trained in HP and cognitive interviewing techniques.
- HP principles are spelt out as investigation philosophy.
- Learning teams integrated into organizational learning processes and in some cases use in lieu of traditional investigations.
- Skilled HP advisors are default members of all investigation teams.
- Team members possess the communication skills and confidence to effectively present findings and insights to senior leadership.

7.1.1 Learning From normal work

Proactive learning should involve seeking and applying knowledge from normal work to enhance safety and performance. Techniques, tools and methods, such as Work-As-Imagined/Work-As-Done analysis, learning teams, human error analysis, and Walk Through-Talk Through (WTTT) help close gaps between planned and actual work, fostering continuous improvement.[4]

Operational teams should act as learning teams, reflecting on tasks through debriefs or reviews to share lessons and apply them to future work. This proactive approach to

[4] IOGP Report 642 - *Learning from normal work*

risk management identifies and controls hazards, ensuring safe and reliable operations. Proactive learning also aids in managing change by evaluating and implementing adaptations that impact safety and performance. This method links closely with risk management, helping organizations prevent errors and maintain a culture of safety and reliability.

7.2 Value and purpose

Organizations that adopt the Learn and Improve approach can experience numerous benefits, including enhanced safety, improved operational performance, and increased resilience and adaptability. By embracing this methodology, organizations demonstrate accountability and commitment to continuous improvement.

7.3 What successful implementation looks like

Successful implementation involves identifying and controlling hazards and error traps, especially for critical tasks, to ensure safe and reliable operations. It also requires ongoing monitoring and review to sustain effectiveness and foster a culture of learning and improvement.

Implementing the Learn and Improve approach should involve the support of all workers and leaders in the organization, as well as the collaboration and coordination of various functions and departments. The following subsections describe the main steps for implementing each element of Learn and Improve and provide some examples and tips for effective execution.

While the specific sequence of steps for implementing a good learning system may vary, they generally align with the recommendations below:

1) **Identify the process/weak signal you will use to learn from.**
   Action: Conduct an analysis of current processes to identify critical areas where significant learnings can be obtained. Example: Review incident reports and audit findings to identify recurring patterns and areas for improvement.

2) **Identify the tool(s) you will use to learn systemically.**
   Action: Select and train personnel in the use of specific tools such as human error analysis, learning teams, and Work-As-Imagined/Work-As-Done analysis. Example: Implement training sessions on the use of tools like causal learning and Walk Through-Talk Through (WTTT).

3) **Identify the skills needed for learning.**
   Action: Assess current staff competencies and develop training programmes to address gaps. Example: Offer workshops and courses on techniques such as cognitive interviewing and human performance analysis.

4) **Identify the authorization/governance necessary to prioritize learnings.**
   Action: Establish a governance committee to oversee and prioritize learning and improvement initiatives. Example: Create a safety and continuous improvement committee to review and approve corrective and preventive actions.

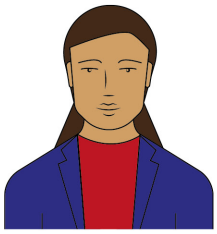
5) **Identify how to figure out if you are learning.**
   Action: Develop key performance indicators (KPIs) to measure the progress and effectiveness of learning initiatives. Example: Implement a KPI tracking system that includes metrics such as incident reduction and operational efficiency improvements.

6) **Identify if your learnings are effective at driving performance improvements.**
   Action: Conduct regular reviews of the outcomes of learning initiatives to assess their impact on performance. Example: Organize quarterly meetings to review the results of implemented actions and adjust strategies as needed.

7) **Have systemic reviews of learnings (proactive + reactive) to check how well learnings are applied.**
   Action: Establish a schedule for regular reviews to evaluate the application and effectiveness of both proactive and reactive learnings. Example: Schedule monthly reviews of incident reports and take corrective action to ensure their effectiveness.

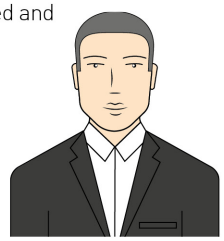
An organization that successfully implements the processes described in this document is one that fosters a culture of learning and continuous improvement, where errors and incidents are seen as opportunities to enhance safety and performance. Examples of indicators and testimonials of the successful Learn and Improve could include:

- The number and severity of errors and incidents decrease over time, as the root causes and contributing factors are identified and addressed.
- Workers and leaders are engaged and proactive in reporting, investigating, and learning from errors and incidents, and they share their insights and feedback with each other and with other stakeholders.
- The organization has a systematic and transparent process for reviewing and monitoring the effectiveness of the corrective and preventive actions, and for adjusting them as needed based on new information or changing conditions.
- The organization benchmarks its safety and performance against recommended practices and industry standards and seeks to learn from the successes and failures of others. The organization recognizes and rewards the efforts and achievements of the workers and leaders who contribute to the learning and improvement process and provides them with the necessary resources and support to carry out their roles and responsibilities.
- Major events are brought before senior leadership for review and approval of corrective action plans, with an independent perspective included to stimulate constructive dialogue about safety and organizational dynamics. An HP advisor or a senior executive with expertise in HP routinely participates in these forums. Furthermore, the outcomes of incident investigations are communicated openly to staff via safety newsletters and workshops, ensuring transparency and fostering a proactive learning culture.



Senior leaders:

Invest in "learning" and signal importance; sponsor and promote learning approaches (e.g., learning teams); push back on investigations that don't adequately learn from system failures and improve; model useful leadership visits by demonstrating curiosity and genuine interest in how work is really performed. Ensure blame and accountability are not confused and set expectations around this.



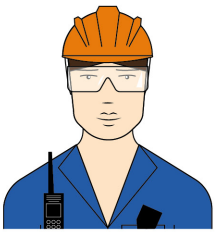
Managers:

Visit the field and regularly ask "Learning From Normal Work (LFNW)" type questions with teams (e.g., "what procedures require workarounds to get the job done"); establish psychological safety to invite and encourage feedback; respond to "bad" news appropriately with a curious and learning mindset to improve; ensure mechanisms are in place (and working) to feedback insights from the front line. Ensure that when learning from events, leadership and management practices are reviewed for improvement opportunities (i.e., don't only explore teams and supervisors' actions).



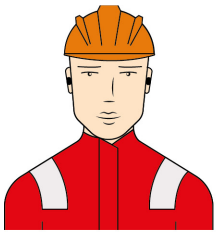
Supervisors:

Ensure opportunities for teams to provide feedback and suggestions for improvements; establish psychological safety to encourage open conversations; encourage reporting of error traps and near-misses; respond positively to open reporting and disclosure of error traps and see these as learning opportunities.



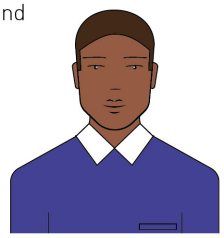
Front line:

Report near-misses and error traps where possible to learn before adverse events.



HSE:

Support good quality investigations that encompass HF best practice; be actively engaged in and model LFNW practices such as WTTTs or other proactive learning approaches; encourage and coach quality field visits for managers that seek to learn and improve (not catch people out).



HR:

Ensure learning from events does not lead to blame and punishment and that investigations apply recommended practice HF to make informed accountability decisions. Ensure leadership training emphasizes the importance of quality learning and introduces practical tools for managers to enable this.

Figure 4. Learn and Improve: Stakeholders' Perspectives

Glossary

Blame Fixes Nothing: Assigning fault to individuals after incidents prevents learning, creates fear, and discourages open reporting. Focusing on systemic factors fosters improvement and safety.

Context Drives Behavior: Human actions are shaped by organizational systems, processes, tools, and culture. Improving these conditions is more effective than targeting individuals.

Error is Normal: Mistakes are an inherent aspect of human nature and occur at all levels of an organization. They cannot be entirely eliminated but should be anticipated and managed through resilient systems.

Error Trap: Any condition that increases the likelihood of people making mistakes or doing something different from what was expected. There are multiple terms used in the industry for error traps:

- Performance Shaping Factors (PSFs)
- Performance Influencing Factors (PIFs)
- Error Producing Conditions (EPCs)

Failing Safe vs. Failing Lucky: Failing Safe: An incident occurs, but safeguards prevent severe consequences.

Failing Lucky: The same incident occurs, but harm is avoided only by chance.

Forward-Looking Accountability: An approach to accountability that emphasizes trust, transparency, and learning. Workers are involved in identifying solutions rather than being punished for errors.

How Leaders Respond Matters: Leadership behaviour in the face of success and failure strongly influences organizational culture, trust, and psychological safety.

Human Factors (HF): The study of how job, individual, and organizational factors influence behavior and performance.

Human Factors Engineering (HFE): The application of human factors knowledge to the design of equipment, environments, and tasks, aligning systems with human capabilities.

Human Performance (HP): The ability of individuals to carry out tasks successfully, efficiently, and safely, contributing to overall system performance.

Just Culture: an organizational approach that prioritizes learning and forward-looking accountability. It encourages individuals to report mistakes and near misses without fear of blame, focusing on improving systems rather than punishing individuals, and understanding context while distinguishing between human error and a reckless disregard for safety.

Learning from Events: The practice of analyzing incidents and near misses through a Human Performance lens to identify systemic factors that contributed to the outcome. Rather than focusing on individual's errors, this approach emphasizes organizational context, process weaknesses, and system design, ensuring that improvements are lasting and address root causes. (Reference: IOGP Report 621 – *Demystifying Human Factors: Building confidence in human factors investigation*).

Learning from Normal Work: A proactive approach to learning that focuses on everyday tasks and adaptations that workers make to complete them safely and successfully. Rather than waiting for incidents or near misses, organizations study routine work to identify constraints, error traps, and system vulnerabilities. Learning from normal work emphasizes operational reality ('work as done'), revealing opportunities for systemic improvement before failures occur. (Reference: IOGP Report 642 – *Learning from normal work*).

Learning is Vital: Continuous learning from both successes and failures is essential for improvement. Proactive learning, not just post-incident investigation, builds resilience and efficiency.

Learning Organization: An organization that embeds curiosity, psychological safety, and systemic improvement into daily operations. It emphasizes continuous learning, cross-functional collaboration, reflection, and the integration of insights into lasting improvements in equipment, processes, and behaviours.

Life-Saving Rules (LSRs): A set of industry-agreed rules developed by IOGP to prevent the most common causes of fatal incidents in oil and gas operations. They define clear, simple actions that individuals must follow to protect themselves and their colleagues from high-risk hazards. Within the Human Performance framework, LSRs are reinforced by understanding error traps, context, and system pressures, ensuring compliance is supported rather than enforced through blame. (Reference: IOGP Report 459 – *Life-Saving Rules*).

Operational Dilemmas: Conflicting priorities or pressures (e.g., productivity vs. safety) that force trade-offs and create stress, increasing the risk of error.

Organizational Structure: The arrangement of roles, responsibilities, and governance mechanisms that determine how Human Performance is embedded. Effective structures promote transparency, independence for Human Performance champions, direct access to leadership, and cross-functional collaboration between experts, leaders, and front line workers.

Process Safety Fundamentals (PSFs): A set of principles designed to prevent major accidents by reinforcing essential safeguards in day-to-day operations. They provide clear, practical reminders of how catastrophic events can be avoided by maintaining critical barriers, controlling risks at their source, and ensuring reliable operation of safety systems. In the Human Performance framework, PSFs complement Life-Saving Rules by focusing on the integrity of equipment and processes rather than solely individual actions. (Reference: IOGP Report 638 – *Process Safety Fundamentals*).

Psychological Safety: A team climate where people feel able to speak up, admit mistakes, and share concerns without fear of punishment or ridicule.

Resources: The capacity, schedules, staffing, and capabilities available to support safe work. Limited resources (time, equipment, skills, or personnel) can create pressures that affect Human Performance, and open discussion of these pressures is recommended for safety and organizational performance.

Risk Management: A systematic approach to identifying, assessing, and addressing risks. Within the Human Performance framework, effective risk management is inseparable from Human Performance: it emphasizes strengthening system elements, proactively addressing organizational and operational pressures, and ensuring barriers and safeguards are effective under varying conditions.

Work as Done (WAD): The reality of how work is actually performed, reflecting adaptations made by workers under real-world constraints.

Work as Imagined (WAI): The idealized version of how work is expected to be performed, often defined by procedures, planners, or managers.

Work Execution: The integration of Human Performance into planning and conducting operational tasks. It includes embedding HP concepts into Life-Saving Rules, Process Safety Fundamentals, pre-work preparation, start work checks, and pause-work authority, ensuring tasks are carried out safely and reliably in real-world conditions.

References

Conklin, T E. *The 5 Principles of Human Performance: A Contemporary Update of the Building Blocks of Human Performance for the New View of Safety.* 2019.

Dekker, S. *Just Culture: Balancing Safety and Accountability.* London: CRS Press, 2016.

Dekker, S W A and Tooma, M. "A capacity index to replace flawed incident-based metrics for worker safety." *International Labour Review.* 2021.

Dekker, S W A. "Rasmussen's legacy and the long arm of rational choice." *Applied Ergonomics.* 2016.

Edwards, B and Baker A. *Bob's Guide to Operational Learning: How to Think Like a Human and Organizational Performance (HOP) Coach.* 2020.

Energy Institute. *Guidance on human factors safety critical task analysis*. 2nd edition, 2020.

Energy Institute. *Human factors standards for facility design: Early design quick reference guide.* 1st edition, 2024.

Energy Institute. *Learning from incidents, accidents and events.* 1st edition, 2016.

Human Performance Oil and Gas, "Best Practice in Procedure Formatting." 2021.

IOGP Report 453 – *Safety Leadership in Practice: A Guide for Managers*

IOGP Report 454 – *Human Factors Engineering in Projects*

IOGP Report 459 – *Life-Saving Rules*

IOGP Report 459-1 – *Life-Saving Rules – Start Work Checks*

IOGP Report 501 – *Crew Resource Management for Well Operations teams*

IOGP Report 502 – *Guidelines for implementing Well Operations Crew Resource Management training*

IOGP Report 503 – *Guide to the use of behavioural markers of non-technical skills in oil and gas operations*

IOGP Report 509 – *The use of behavioural markers of non-technical skills in oil and gas operations: supporting material*

IOGP Report 552 – *Components of Organizational Learning from Events*

IOGP Report 621 – *Demystifying Human Factors: Building confidence in human factors investigation*

IOGP Report 626 – *Managing fatigue in the workplace*

IOGP Report 638 – *Process Safety Fundamentals*

IOGP Report 642 – *Learning from normal work*

Norsk Industri. Safety, leadership and learning – a practical guide to HOP.

Shell's Step 7 Work Process

Further Reading

Conklin, T. *Pre-Accident Investigations: An Introduction to Organizational Safety*. London: CRS Press, 2019. Shows how to uncover and fix system weaknesses before incidents happen; essential reading for proactive safety practitioners.

Dekker, S and Hollnagel, E. "The ironies of 'human factors'." Theoretical Issues in Ergonomics Science. 26:3, p. 349-359. 2025. Critique of overly narrow uses of "human factors" and call for a systems-based, resilience-oriented view.

Energy Institute, *Guidance on human and organisational factors aspects of implementing new technologies*. 2025.

Weick, K and Sutcliffe, K. *Managing the Unexpected: Resilient Performance in an Age of Uncertainty. Jossey-Bass*. 2007. A foundational Highly Reliable Organizations (HRO) text exploring how resilient organizations learn, anticipate, and respond to failure.

This page is intentionally blank

International Association of Oil & Gas Producers

This Report offers guidance to oil and gas business leaders and safety professionals on integrating Human Performance – the study of how people interact with work environments, systems, and processes. It presents key strategies to improve organizational learning, risk management, and operational efficiency, fostering resilient systems and a proactive culture across the industry.

IOGP Headquarters

3 Moorgate Place, London, EC2R 6EA, United Kingdom
T: +44 20 4570 6879
E: reception@iogp.org

IOGP Europe

T: +32 2 882 16 53
E: reception-europe@iogp.org