Psychology Applied

learning from normal work is a research-backed framework based on human and organisational performance, Safety II, and human factors that allows for identifying precursors of accidents before they happen

the challenge

Over time, hazardous industries have made significant strides in safety through learning from incidents. Many companies have approached near-zero accident rates in the past decade.

However, this success has created new challenges.

- As operations become safer, there are fewer incidents to learn from, reducing traditional opportunities for improvement. This creates a paradox where success limits one of our primary learning mechanisms.
- With low incident numbers, injury rates become statistically unreliable as performance indicators. Traditional safety metrics lose their effectiveness, making it harder to measure and validate safety performance improvements.
- Focusing solely on unsafe behaviours is no longer sufficient to drive further improvements. Organisations need to develop new approaches and methodologies to continue reducing risk in already-safe environments.
- Despite overall improvements, some accidents still repeat themselves. These recurring events are particularly frustrating, mirroring past incidents we should have already learned.

Only a very small percentage of all activities result in an undesired event, and the vast majority of activities are completed without a problem. As a result, it's easy to think that no additional work is needed in the shadow of success.

Does it mean all those activities that didn't result in an event went perfectly?

Rarely is attention paid to how the activities were completed, what challenges were encountered, and whether seeds of a future accident were evident.

The key question becomes: How can organisations continue to learn and improve their safety performance when there are fewer adverse events to learn from? We must find new ways to drive improvement when unintended consequences are absent.

the innovation

Learning From Normal Work – is a research-backed framework based on HoP, Safety II, and Human Factors that allows for identifying precursors of accidents before they happen.

'Normal work' is about how people adapt to changing conditions and challenges as part of their job.

Consider using a crane to lift a load. Every time an operator performs this task, the situation may differ.

They might face less time available than planned, additional people in the area, a colleague being off work, or unavailable correct tools such as lifting slings.

It's easy to see how these factors can increase risk, and yet, none of them would be classified as a hazard because none is a direct source of harm. Popular approaches to safety management focus on controlling identified hazards but miss a whole world of organisational factors.

Adapting to overcome these various challenges is part of what needs to be done. It's 'normal work'.

Learning from normal work (also known as pre-accident investigations, or learning from success) is about proactively looking into the things that make work difficult and increase the chances of human error or non-conformance.

What does this mean in practice? Simply put, the conditions that will create our next accident exist today, and we can find and address them before they lead to an accident.

how it was implemented

Implementing Learning From Normal Work (LFNW) involves a structured, three-phase approach tailored to organizational needs.

Phase 1: Foundations and Alignment

- **Internal Presentations/Webinars**: Short sessions introduce employees to LFNW, its benefits, and practical applications.
- **Leadership Workshop**: Senior leaders explore LFNW tools, developing a tailored deployment plan.

Phase 2: Site Enabler Program

- **Mindset Shifter Course**: An 8-hour session for site leaders, aligned with industry guidance (IOGP 642), transitions teams to proactive learning and risk reduction.
- **Facilitator Training**: A two-day workshop equips HSE and operations professionals with skills for learning reviews and facilitation.
- **Mastery Coaching**: Continuous support ensures facilitators improve their effectiveness in applying LFNW tools.
- **Competency Pathway**: A six-month program provides champions with expertise across 12 key areas to drive safety transformation.
- **Supervisor Training**: A one-day workshop to develop foundational LFNW skills such asking neutral questions and conducting walk through talk through.
- **Workers Training**: highly visual and engaging session aiming to help workers understand different types of error traps and differentiate from hazards.

Phase 3: Company Enabler Program

- **Integration Workshop**: Senior leaders plan how to embed LFNW into processes like risk assessment, behavioural observations and incident investigation.

- **Company-Wide Awareness**: 2h e-learning course to align employees with LFNW principles and skills.

result

Risk Reduction Without Waiting for Failures

- LFNW enables organizations to identify precursors of accidents when no incidents have occurred. By focusing on everyday work practices and adaptations, it surfaces hidden vulnerabilities before they escalate into significant issues. One company achieved 37% reduction in incidents over 18 months even though the effort was not triggered by the accidents.

Enhanced Understanding of Work Realities

- By uncovering the gap between "work as imagined" and "work as done," LFNW helps organizations understand the real challenges employees face. This understanding leads to practical improvements in procedures, tools, and systems.

Identification of Error Traps

- Error traps are conditions that increase the likelihood of error or non-compliance (see examples below).
- LFNW integrates error traps into processes like behavioural observations, leadership visits or risk assessment, helping organizations recognize and address factors that increase the likelihood of mistakes.

Improved Leadership Engagement

- Leaders gain deeper insights into operational challenges through better conversations with workers. LFNW fosters a culture where leaders ask questions like, "What makes the job difficult?" and "How can I help?" rather than focusing solely on verifying compliance.

Overcoming procedural non-compliance

- LFNW identifies procedural non-compliance that makes sense in context and addresses it by improving systems rather than punishing individuals.

Hands-on Tools and Visible Operational Improvements

- LFNW tools uncover constraints, inefficiencies, and error traps, leading to operational

improvements. For example, through walk through talk through, teams may identify and address design flaws, missing tools, or procedural conflicts before they escalate into incidents.

Examples of tools:

Discussion cards – is a tool to facilitate conversations about potential error traps in the workplace, helping teams identify and mitigate risks before they lead to incidents. Designed based on cognitive interviewing techniques the cards show 100 error traps in 12 categories.

conclusion

We offer many other tools to help companies identify precursors of incidents but do not have enough word count to describe them all. They include checklists, templates, and guides for various groups in organisations.

conclusion

ERROR TRAPS EXAMPLES AND A CASE STUDY

Error traps are any conditions that increase the likelihood of a person making a mistake.

Example: 1

Hazard is the toxin in the lubricant spray that has the potential to cause harm if ingested.

Human error (which can be unhelpfully interpreted as an unsafe act or violation if the rules say “use the correct can”) is taking the lubricant by mistake instead of taking the cooking oil spray and using it for cooking.

Error trap is visual similarity of the bottles. The colour, font type and position, logo, black line are the elements that make it look similar and therefore easy to confuse.

Example 2:

In the illustration above, the visible error traps include:

- the pipes that prevent the worker from getting closer to the panel
- the colour of the buttons – if the worker is colour blind, they will not see the difference between the buttons’ colours
- size of labels – difficult to read from a distance

But, importantly, there may be many error traps that are not visible, such as:

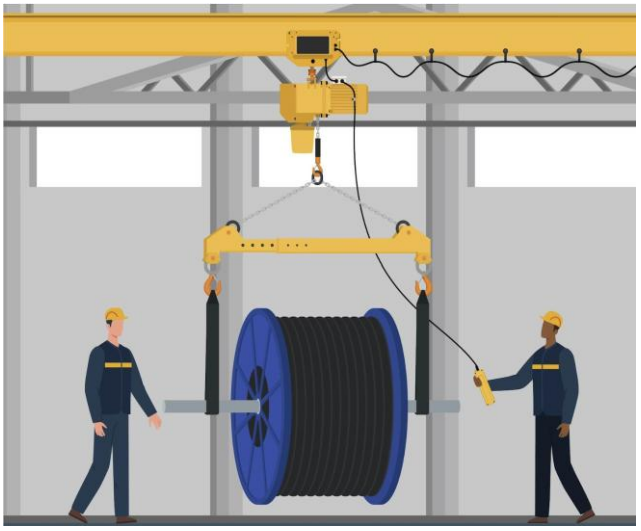
- the time is 3.30 am, and the worker is tired and sleepy
- the worker is alone
- the work instruction that was given is out of date and does not describe how the task should be actually done
- the radio allowing contact with the control room is not working

Perhaps it is easy to see that as these conditions accumulate, the likelihood of making a mistake goes up.

CASE STUDY:

We talked to a team of crane operators about “what makes their work difficult”.

The team shared challenges of lifting a 7-ton spool with a 10-ton crane. The spool needed to be lifted 6 inches (15 cm) and moved across the room—a task that seemed simple but presented issues.



The operator had to stand uncomfortably close to the spool, placing them in the line of fire. This was due to the cable-controlled crane system, which limited their position and visibility, necessitating the use of a spotter. The spotter, positioned on the other side of the spool, had difficulty seeing the operator, and they relied on verbal commands. This setup, combined with the crane's left, right, forward, and backward buttons, increased the risk of directional errors, especially given the limited visibility. When two people face each other and they point to the same direction, left for one, is right for the other.

The team recommended replacing the cable system with a remote control and introducing directional indicators like East and West. Aligning equipment with these indicators allowed the operator to move freely and always know the direction of movement.

These changes eliminated the need for the spotter and verbal communication, significantly reducing the potential for a life-changing injury if someone were struck.

Key observations:

- the same findings would have emerged after an accident.
- changing operator behaviour without altering the work setup would have limited impact.
- the improvements needed were within managerial control, not the operators'.
- the identified issues were not hazards and wouldn't appear in a traditional risk
- assessment.

LINK: https://learningfromnormalwork.com/

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