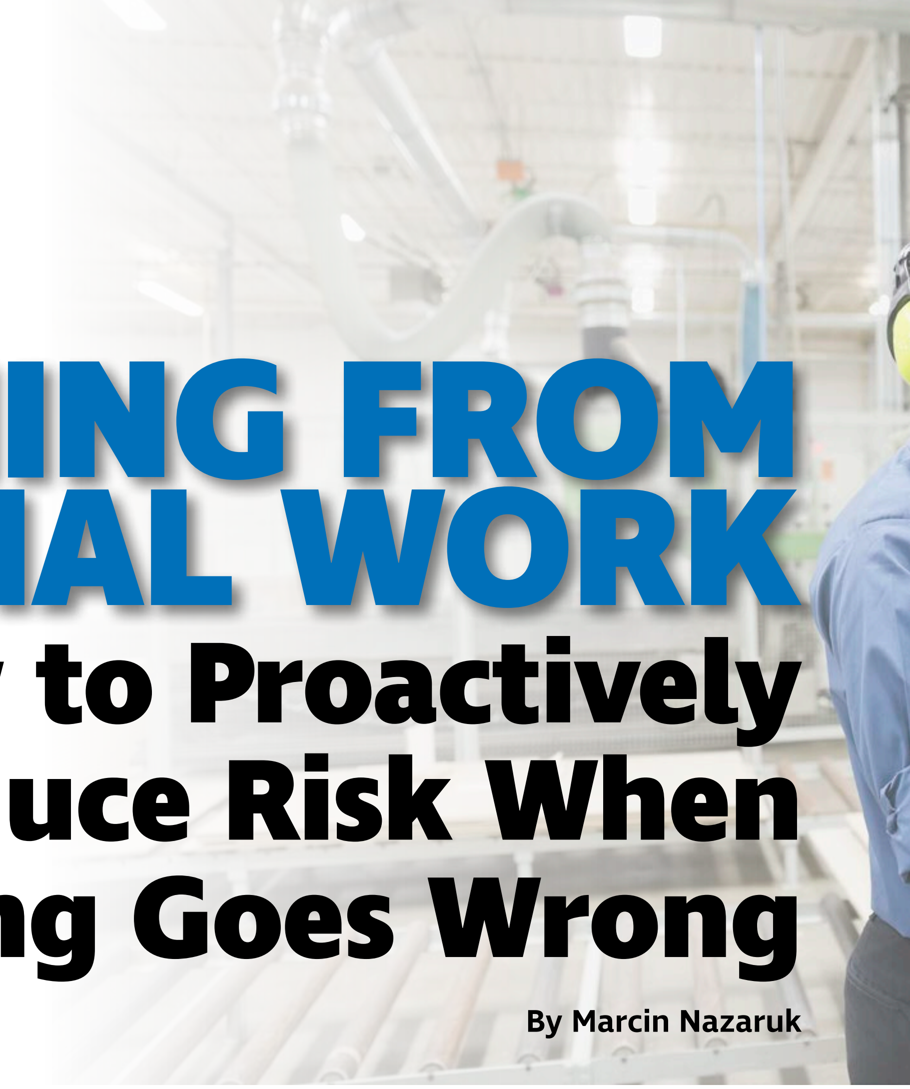

LEARNING FROM NORMAL WORK

How to Proactively Reduce Risk When Nothing Goes Wrong

By Marcin Nazaruk

AS IMPORTANT AS IT IS TO LEARN FROM FAILURE, it is too late. High-risk industries constantly strive to improve safety by learning from past incidents (Lindberg et al., 2010). However, companies that have successfully reduced incidents face a new set of challenges. The small injury rate can no longer accurately reflect safety performance (Cadieux et al., 2006), and simply focusing on behaviors and unsafe conditions is not enough to further reduce risk (Hendricks & Peres, 2021).

A fresh approach is needed to learn and improve in the absence of unintended events. The concepts presented in this article are based on safety science but are not limited to any field or school of thought. The text draws from a range of sources, including Safety-II, human and organizational performance, human performance improvement, human factors, engineering psychology, systems thinking, resilience engineering and cognitive psychology.

It is commonly assumed that completing a task without incident is a success, but this does not necessarily mean that the task was executed perfectly. The majority of activities are completed without an event, leading to the belief that no further improvement is needed (Hollnagel, 2002; Hollnagel et al., 2013). However, little attention is paid to how activities are completed and what the potential was for future incidents.

When an incident occurs, it feels natural to believe that it was a result of something going wrong, such as a failure to follow a procedure. On the other hand, when a job is completed without an incident, it is often assumed that all procedures were followed and all necessary controls were implemented (Hollnagel et al., 2013).

However, researchers who study work performed without incidents (i.e., normal work) find the same factors that are identified in incident investigation reports (Gerhart & Rynes, 2003). Steps in procedures may be skipped, there may not be enough time available or the correct tools may not be available. These challenges change over time, and they constrain the choices available at the time (Staddon, 1979), leading to people adapting and finding ways to overcome these challenges. These adaptations allow for the jobs to be completed without issues, and very rarely do they contribute to events. In other words, things go wrong for the same reason that things go right (Hollnagel, 2017).

For example, when lifting a load with a crane, operators will face various constraints that differ from one lift to another, such as:

KEY TAKEAWAYS

- **Controlling identified hazards is not enough to keep the risk as low as practically possible.**
- **Also affecting risk is another category called constraints or error traps. They are often identified in incident investigation reports but are not typically included in risk assessment. Factors such as outdated procedures, correct tools not available and two valves that look the same constrain the choices that people have, influence decisions and increase the likelihood of error.**
- **People often adapt to these constraints in a way that allows for completing the task without an incident but very rarely these adaptations contribute to an event. This is called normal work. The same adaptations are a source of both success (no incident) and failure (incident).**
- **Identifying constraints without an incident requires a different way of thinking about incident causation. A new approach is needed to understand how people adapt, what they adapt to and how it affects risk.**
- **This article introduces how to learn from normal work and outlines practical tools that can be used to proactively identify constraints.**

HERO IMAGES/ISTOCK/GETTY IMAGES PLUS

•less available time than planned—so they adapt by skipping steps
•additional people in the area—so they adapt by taking a different path
•missing lifting slings—so they adapt by using different slings from what was prescribed in the lift plan

Learning from normal work is about proactively identifying those things that make the work difficult and challenging and addressing them to reduce risk.

Hazards vs. Constraints

Hazards are typically defined as factors with the potential to cause harm (Hughes & Ferrett, 2011). Physical objects or energies such as electricity, chemicals, noise and heat are common examples. Hazards are controlled by applying the hierarchy of controls, which may include eliminating the hazard, substituting for something less dangerous or applying engineering controls such as guards. If that is not possible, then administrative, procedural and behavioral controls are applied (Barnett, 2020).

However, the level of risk in any given task is not limited to how well these physical energies are controlled. For instance, incorrect procedure, insufficient time or unfamiliar situations are not hazards, as they do not have the potential to cause harm in the same way as does touching a strong acid, but they do affect the risk level. These elements are called constraints, error traps or performance-shaping factors, and they are rarely identified and addressed as part of risk assessment (Blackman et al., 2008; Luquetti dos Santos, 2020; Pan & Wu, 2020). Table 1 provides examples of hazards compared to constraints.

Constraints must be addressed, but the hierarchy of controls successfully used to manage physical energies with the potential to cause harm (hazards) does not work very well when trying to optimize constraints. For example, if a constraint is an outdated procedure that does not match reality, then applying the hierarchy of controls to deal with that procedure is not too helpful. The procedure cannot be eliminated and substituted for one less dangerous. The incorrect procedure clearly must be addressed, but applying hazard control language and framework does not make sense when applied to constraints (Liu et al., 2021).

Unsafe Act, Adaptation or Both? Which Lens Is Most Helpful?

Dealing with constraints often requires adaptations. So, if a procedure is incorrect (an example of a constraint), then people will adapt to that situation (Bieder & Bourrier, 2013; Hale & Borys, 2012), and, for example, develop their own unique procedure. Or, if the correct tool is not suitable or not available, people may adapt and, for example, fabricate their own tools in the workshop. These adaptations are too often labeled as "unsafe acts" that must be eradicated without giving deeper thought to what prompted them in the first place (Sherratt & Ivory, 2019).

The very same behavior can be interpreted differently depending on the lens we decide to use. If leaders interpret behavior as a violation, they are more likely to apply punitive consequences but less likely to learn. However, if leaders interpret the behavior as a form of adaptation, they are more likely to show curiosity, ask questions about the context and partner up with the worker to develop solutions. Only one of these approaches will lead to systematic risk reduction.

Learning From Normal Work: An Example

During a safety visit in a maintenance workshop, an operator was spotted crouching on a large lathe machine attempting to operate control wheels while observing a large, heavy rotating valve. The machine operators held one control wheel in their right hand and another wheel in their left hand. If the worker leaned too far to the right or lost his balance, he could be hit by the rotating valve, which could possibly result in a life-changing or life-threatening event (Figure 1, p. 16). The danger is evident.

What could be done after stopping the job? Leaders could strive to have a conversation and ask questions such as "Do you know how you can get injured?" "Do you understand the hazards?" and "Do you know the rules?" but this approach will not aid in understanding what this person was adapting to. If anything, these questions are likely to put the worker on the defensive and provide compliant answers the leader wants to hear.

TABLE 1
HAZARDS VS. CONSTRAINTS

Examples of hazards	Examples of constraints
Electricity	Procedure not matching the reality
Heat	Correct tools not available
Chemicals	Confusing design
Noise	Unfamiliar situation
Pressure	Insufficient spacing

FIGURE 1

OPERATOR CROUCHING ON LARGE LATHE MACHINE

An operator crouching on a large lathe machine while operating the control wheels.

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If we changed our perspective and considered this behavior as a form of adaptation, we could ask what it is an adaptation to. The worker is dealing with several constraints, the first being the design of the equipment, which would make it difficult for the operator to reach the controls if the person stood on the floor. The second constraint is that the operator needs to observe how the blade is touching the rotating part, which requires looking into the equipment from a particular angle. If the operator held the controls while standing on the floor here, they would not see what they need to see.

From that, the question can be asked, "What do you need to see, exactly?" and "What would happen if you were not able to see that?" If what is needed to be seen cannot be viewed, the abrasion cannot be precisely controlled, which could lead to defects, damages, cost, upset management and customer dissatisfaction. The operator is adapting to the constraints to finish the job and minimize the risk of a defect. In this case, the hazards may be known, but the job cannot be done differently due to the equipment design.

Note that, while they may have their place, stopping the job or discussing safe behaviors will not solve the underlying issue unless the equipment and task design are changed (Wickens et al., 2003).

Industry Guidance

Some industries are recognizing that they cannot rely on incidents to learn how to prevent them in the future. The author had the privilege of leading the writing effort of the guides on learning from normal work published by the International Association of Oil and Gas Producers (IOGP, 2022) and the Society of Petroleum Engineers (SPE, 2020). Other industries such as maritime (Kirwan et al., 2021) and aviation (Flight Safety Foundation, 2021) have also published guidance on proactive learning, having recognized that learning from incidents is important but insufficient.

TABLE 2

SAFETY CONVERSATION

Comparison of typical questions asked during safety observations and questions aimed at learning from normal work.

Popular questions asked during safety conversation	Questions aimed at learning from normal work
Questions aimed at verifying the understanding of potential consequences: *"What's the worst thing that can happen during this job?"*	Questions aimed at listening to the needs: *"What do you need to be set up for success?"* *"What do you need to complete this work safely and efficiently?"*
Questions aimed at verifying compliance: *"Do you have your procedure/risk assessment with you?"*	Questions aimed at listening about the challenges: *"What is getting in the way of completing this task safely and efficiently?"* *"What makes this job difficult?"*
Questions aimed at verifying understanding of controls and barriers: *"What barriers do you use to control the hazards?"*	Questions aimed at understanding why at-risk behavior makes sense at the time: *"What is the advantage of doing it this way?"*
Questions aimed at verifying understanding of hazards: *"How can you get hurt on this job?"*	Questions aimed at understanding variability and adaptations: *"Tell me about situations when you need to deviate from procedures to complete the job."*

A Range of Practical Tools

There is no one way to learn from normal work, and many companies prefer to enhance their existing tools rather than create a new campaign or initiative. These tools can be placed on a spectrum from quick and easy but not providing depth of insight, to structured, multihour, multiday workshops that offer deep insight into organizational challenges.

Refreshing Safety Conversation

One tool is a conversation that focuses on listening to the challenges faced by operators and their needs, rather than emphasizing rule awareness or compliance. Such conversations can be held in 10 to 20 minutes. Table 2 compares examples of popular questions asked during typical safety observations and questions aimed at learning from normal work.

These question sets are complementary, but they do have a different focus. The questions on the left aim to check and verify various aspects such as knowledge or controls, but they would not lead the observer to achieve a better understanding of the challenges associated with the task. Conversely, the questions on the right give the observer insight about constraints and adaptations, which then creates an opportunity to partner up and resolve them together.

TABLE 3
WALK-THROUGH/TALK-THROUGH

A simple template helping to structure the walk-through/talk-through (WTTT). In this excerpt of an example WTTT conducted on maintenance of a lathe machine, Step 3 is marked as critical.

Steps	Consequences	Constraints	Improvements
1. Check the oil level	Equipment overheating	The display does not show what the correct oil level is because labels wore out	Order and install a new oil container
2. Change the air filter	Potential waste because air filter lasts 4 months and does not have to be changed every month	A mismatch between procedure and reality	Update the procedure to state "Change the filter if you find X, Y, Z characteristics"
3. Check that air pressure is 85 psi	Equipment damage	The gauge shows the pressure in mega pascals (MPa)	Correct the procedure to show pressure in MPa
4. . . .			
5. . . .			

Walk-Through/Talk-Through

Another tool that allows for more insights than a simple conversation is called a walk-through/talk-through (WTTT; Kirwan & Ainsworth, 1992), whereby the task is broken down into steps, and each step is discussed one by one to explore constraints and what makes each step difficult. Although breaking down the task into steps is also part of a typical job safety analysis (JSA), the focus of WTTT is not on identifying hazards, but rather on constraints that contribute to risk.

The WTTT template has four simple columns (Table 3). The first column outlines the steps. These may be provided by the person doing the work or copied from the procedure. The second column shows the potential consequences if the step is improperly performed. This is important because different steps may have different potential outcome severity, for example, finger pinch versus explosion. Understanding the potential consequences of improperly performing steps is an important prioritization tool because if two of 30 steps can result in an explosion, these two steps require extra attention. In the third column, we see examples of constraints and varying conditions. The rationale behind this is that different steps have different failure modes, that is, different constraints increasing the risk of failure. Finally, the fourth column prompts a discussion about the best way to address these issues.

Table 3 shows an excerpt of an example WTTT conducted on maintenance of lathe machine, and Step 3 is marked as critical. If we focus on Step 3, it notes that according to the procedure, the machine air pressure should be set to 85 psi. Talking to the operators revealed that the gauge shows the pressure in mega pascals (MPa). This means that the same pressure would be expressed through different numbers depending on the measurement unit used (psi vs. MPa). Consequently, the operator may be confused and make a mistake. Note that this constraint, which influences the likelihood of a mistake or noncompliance, is unique to this step and that gauge, while other steps have other constraints. Also, the mismatch in pressure values would not be categorized as a hazard and would likely not be identified as part of the risk assessment. The easy fix may be to update the procedure to use MPa so that full alignment exists between pressure values used in a procedure and on the equipment gauge.

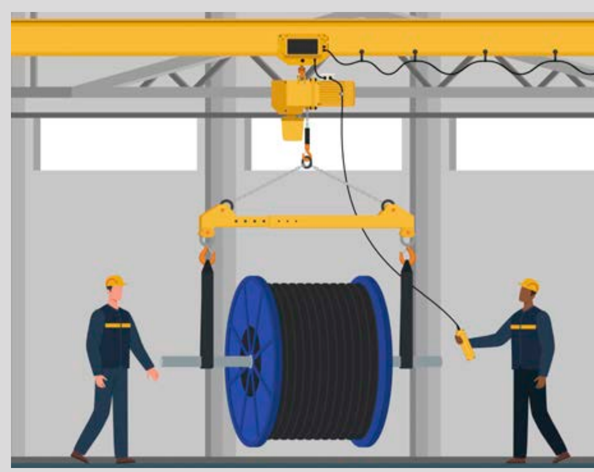
WTTT is a simple but powerful technique that can be conducted by supervisors, safety and health personnel, and leaders alike. It is also a helpful tool to aid the verification of controls.

Learning Teams

A learning team is another tool that gives even more insight than a simple conversation and a WTTT, but it takes more time and effort to set up and conduct (Conklin, 2016). A learning team is a semi-structured conversation with a small group of workers doing the job that is analyzed.

FIGURE 2
SPOOL LIFTING OPERATION

A team was moving large industrial spools in a warehouse. A standard 10-ton crane was used to lift a 7-ton spool, which the team had to lift 6 in. above the floor and move across the room.



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Example 1: A Simple Learning Team

In an example scenario, a team was moving large industrial spools in a warehouse. A standard 10-ton crane was used to lift a 7-ton spool, which the team had to lift 6 in. above the floor and move across the room. Figure 2 offers a visualization of the size of the spool and the location of the crane operator compared to the spotter.

A learning team was conducted. This was an informal chat with three crane operators on what they find challenging with the lifting task and what could be done about it. The operators said they were too close to the spool due to the crane control remote being a cable-type system. This, in turn, limited where they could stand and what they could see, requiring a spotter.

Note that the crane operators were forced by the work environment to be close to the line of fire. This behavior of being in the line of fire can be interpreted differently depending on the accepted perspective. It can be seen as unsafe behavior, or it can be considered as a form of adaptation to how the work was set up. Although both perspectives may be true simultaneously, they will lead to different responses and focus of the conversation and improvements.

The spotter was positioned on the other side of the pool, making it difficult for them to see each other, resulting in the need for verbal commands. When the crane controls were discussed, it was learned that the labels on the crane control read "left," "right," "forward" and "backward." Due to limited visibility and the orientation of the spotter in relation to the crane operator, mistakes in crane movement direction could be made easily. When facing each other, the left direction for one person is right to another.

It was decided that a remote control could be used instead. This eliminated the need for the spotter and allowed the operator to move around and see the area around the load. The remote control was changed to one with directional indicators such as east and west and a direction reference was added on the walls and the ceiling. By aligning the equipment so that it was moving in the desired direction, the crane operator always knew which direction they were going. This simple improvement eliminated the need for a spotter and verbal communication, reducing the risk of injury while moving large loads.

> The conditions that will create the next incident exist today.

This simple example offers several important lessons:

1. If an incident occurred, the investigation would likely have found the same things that were discovered during a learning team. This shows that the conditions leading to an incident do not unexpectedly materialize seconds before the event but are present most of the time; it is simply that people adapt in a way that prevents an event (Bentley et al., 2021; Homann et al., 2022). In other words, the conditions that will create the next incident exist today.

2. Any attempts to change the behavior of the operator without changing how the work was set up would have a very limited impact because their position and distance from the load was forced by how the work was set up (Boyce & Geller, 2001).

3. Improvements that eliminate the risk of an incident were in managerial control and not in the control of the operators. For example, operators would not be in a position to source and purchase a different crane control system (Boskeljon-Horst et al., 2022).

4. The majority of the items that were found and addressed could not be categorized as hazards and therefore would not show up in the risk assessment. A series of those learning teams were applied in different workshops and locations, which resulted in a reduction in the number of injuries by 37% over a period of 18 months and attracted an industry award (COS, n.d.).

The potential for reducing the number of incidents through learning from normal work exists even though it is being applied to activities that did not result in incidents.

Example 2: A Complex Learning Team

In another example scenario, the task was managing a complex lift of a large, multiton industrial turbine on a large site that has not had an incident in more than 2 years. In this case, nearly 20 people were invited to participate in the discussion, which spanned 2 days and included representatives from various teams such as workshop operators, foremen, safety operations leaders, logistics and manufacturing facilities. The discussion focused on what makes the work difficult and what the participants need from each other.

A complex learning team is a practical application of one element of systems thinking, emphasizing that in practice, people, teams, and processes are interconnected and dependent on each other. The level of alignment between these elements contributes to the risk level of the activity (Eurocontrol, 2014).

More than 30 improvement opportunities were identified. For instance, it was revealed that the information that operators need, such as the center of gravity or the type of slings, was not easily or conveniently accessible. Only a few laptops were available for use in the workshop, and walking to them took time. In addition, someone may already be using the laptops, or a person may forget their password.

Furthermore, it was found that locating the necessary information in the database was difficult, and sometimes important information was not available or was incomplete. Some operators who might be involved in those lifts did not have sufficient skills and did not have the right training. And yet, there was no incident to start with.

The identified constraints were addressed through various means, from adding tablets to improving usability of the database and enhancing training. Note that the majority of improvements would not be classified as typical hazard controls. For example, lack of information about the center of gravity would not be classified as a hazard and adding information about the center of gravity to the database used by the crane operators to help them better rig up the load would not be classified as a control, yet not having such information does affect the risk.

Walk-Through/Talk-Through & Learning Teams Combined

Finally, a combination of a procedural walk-through with cross-departmental learning teams can be used. In one refinery, the unit start-up procedure was examined step by step for 2 days, combined with people from different teams identifying problematic steps and determining how alignment between different teams can enable the effective execution of work (IOGP, 2022).

Summary of Tools

All the tools described have advantages and disadvantages. For instance, a WTTT is effective in understanding task details and failure modes for each step, but it is not helpful in uncovering systemic influences. Conversely, learning teams are useful in exposing limitations of resources or work arrangements, but they do not focus on step-related failure modes.

However, regardless of the tool used, one factor can make them an effective or a frustrating experience: the skill of asking the right questions that make people feel at ease while focusing on the challenging aspects of work.

Integrating a Learning From Normal Work Approach Into Existing Safety Processes

Many organizations do not want to introduce new tools and stand-alone initiatives, but rather prefer to enhance what they already have in place. The concepts and tools of learning from normal work can be integrated with various risk management and learning processes.

Example 1: Integration With Risk Assessment/Job Safety Analysis

Similar to the WTTT, the task-level risk assessment or JSA typically involves breaking down tasks into steps, identifying hazards for each step and identifying controls for each hazard (Albrechtsen et al., 2019; Rozenfeld, 2010). However, this

TABLE 4
EXAMPLE: JSA FOR EMPTYING CHEMICAL TANK

Excerpt from a JSA conducted on emptying a chemical tank. Step 3 involves closing valves and disconnecting a hose from the tank.

Sequence of job steps	Potential hazards	Controls	Constraints	Constraint optimizations
Step 3: Close the valves and disconnect the hose.	• chemical leak • chemical burns	• forklift training • chemical awareness training • spill response procedure	**Possible error:** • Operator disconnects the hose before closing the valves. **How error can occur:** • No visual indication of whether the valve is open or closed. The technician may have thought it was closed while it was open. • Design allows disconnecting the hose with the open valve on the tank.	• Redesign the connection to make it impossible to disconnect the hose with the valves open. • Add visual indication of whether the valve is open or closed.

approach can be further enhanced by adding a column to explore constraints and another column with actions to address constraints. This is because the line of questioning focused on "What is the hazard here?" or "What can harm you here?" would typically not reveal operational constraints.

Table 4 shows an excerpt from a JSA conducted on emptying a chemical tank. Step 3 involves closing valves and disconnecting a hose from the tank. The risk is potential for a chemical leak that may cause injury and burns. By asking the technician what the possible error is and how this error can occur, it was possible to identify issues that the previous version of the JSA (without the two columns) did not identify. In this case, the technician may disconnect the hose before closing the valves, leading to a leak. This error could occur because there was no visual indication of whether the valve is open or closed, which could lead the technician to mistakenly believe that the valve was closed when it was not. The design of the connection allows for the hose to be disconnected with the valve open on the tank, and that should also be addressed. In this case, the hose connection was replaced so that the hose could not be physically disconnected with the valve open. These insights would not be captured purely by looking into hazards and controls due to the focus on the questions typically asked.

Example 2: Integration With Behavioral Observations

Although behavioral observations come in many formats, from sophisticated functional analysis to simple peer-to-peer conversations, a common approach is to use trained observers who use a predetermined checklist to observe whether workers behave safely and follow the observations with praise or corrective feedback, based on the idea that unsafe acts cause incidents. This data is then collected and shown as a ratio of safe to unsafe behaviors. Many companies get value out of it, but many report frustration that the results they get do not justify the effort.

Learning from normal work can be used to enhance existing behavioral programs. The observers are taught how to ask questions to identify constraints leading to undesired behaviors, but also to identify adaptations not captured by the observation checklists. The questions focus on capturing the variability, and also allow capturing challenges not present at the time of the conversation or not easily visible. This approach encourages workers to open up about sensitive matters such as mistakes or noncompliance and allows access to the aspects of work that were not previously visible. The data collection forms are updated to allow the capturing of additional insights. The key performance indicators are updated to reflect the renewed focus. Unsafe behaviors may still be captured, but additional insights allow us to find and address precursors of future incidents.

Example 3: Integration With Leadership Conversations

Many organizations require company leaders to visit the workplace and engage with workers. It is common for leaders to struggle with these conversations, not knowing what to focus on. A popular approach is to focus on checking compliance, for example, by asking "Show me your risk assessment," and verifying paperwork. But this time that leaders spend in the field could be much more useful. Once leaders are shown the framework to ask learning from normal work questions, they start gaining insight about factors that were simply not available to them earlier.

Example 4: Integration With Incident Investigations

In the case of incident investigations, in addition to exploring why the incident occurred, we would look into the task itself and factors that make the task difficult even if these factors did not contribute to an incident on this occasion but could contribute to one under different circumstances. This is because of the effect called "outcome equivalence." It means that the same outcome can happen through different combinations of conditions (Grant et al., 2018).

For example, a person broke an ankle when climbing an industrial skip to throw out a garbage bag (Figure 3, p. 20). The five-why-based investigation determined that the skip access was poorly designed, and the person slipped, hence the need for a different model of skip. However, when the investigation team explored what makes garbage removal difficult—that is, what the constraints were (instead of asking why the incident happened)—the team found that the site was using 10 different skip models provided by four different suppliers, and three other skips had the same design problem. Therefore, addressing the originally identified root cause and replacing the skip on which the injury occurred would not sufficiently reduce the risk of a similar injury in the future.

Typical root-cause analysis methods advise excluding factors that did not contribute to the analyzed incident, but doing so excludes factors that could create a similar incident under different circumstances. By integrating learning from normal work concepts with the incident investigation processes, the team was able to identify additional varying conditions and eliminate the risk of not only the same incident occurring in the future, but also a similar incident that could occur through a combination of other factors not causal in that event.

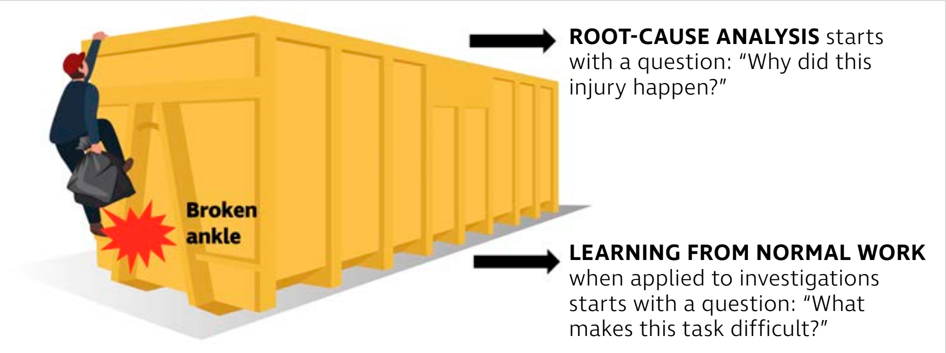
How to Prioritize Tasks for Learning Reviews

A common question asked by organizations that are just beginning to integrate learning from normal work programs is about where to start given the thousands of work tasks they perform each day. Several starting points can be considered.

If incidents occur and the existing trend is not at zero, the existing trend can be examined, such as hand injuries. Instead of focusing on the injury, the tasks that resulted in the injury can be identified. Tasks such as moving objects or assembly can result in hand injuries but in different ways and through different factors. Then, instead of focusing on why the injury occurred, focus on what makes this task difficult.

FIGURE 3
WORKER CLIMBING INDUSTRIAL SKIP

A person broke an ankle when climbing an industrial skip to throw out a garbage bag.



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As another starting point, the risk profile of the activity can be examined. The risk matrix can identify tasks with high-potential severity outcomes, such as lifting or pressure testing, which the organization can focus on.

Alternatively, talking to operators can also be a simple way to prioritize the focus. Operators can be asked questions about where the next incident may occur and what they worry about most regarding safety. Managers can also share their concerns. Typically, there is a difference between these perspectives, but both are valid because they come from a different set of experiences and perspectives.

How to Systematically Implement Learning From Normal Work

Leaders who are interested in the practical implementation of proactive learning often ask what needs to be done to make it work in an organization. Many companies around the world are implementing learning from normal work concepts, and the implementation follows a typical journey.

Step 1. Companies tend to organize short presentations or 1- to 2-hour webinars for senior leaders and key decision-makers to familiarize them with the topic, gauge their interest and obtain feedback. This tends to be supported by informal communication such as sharing additional resources, videos, examples or industry guides.

Step 2. Once the initial interest level is established, companies may choose to run a small-scale pilot to prove the value and build the business case for future change. A pilot may be conducted by organizing, for example, a learning team on one task or a leadership workshop to allow leaders to gain more in-depth insight on the topic and create space for discussion and debate. Such a workshop would typically take 1 day and focus on how incident causation is thought about, the role of behavior, the role of adaptations, the role of noncompliance in success, questions that should be asked, and what types of corrective actions are helpful, followed by a discussion focused on next steps and how the organization will support, sustain and integrate the effort.

In the author's experience, organizations that push for the application of tools without taking leaders through the mindset shift journey end up in a situation where leaders are not aligned, or leaders push back on findings that do not blame people or use unhelpful behaviors such as criticism or other penalties for admitted mistakes, which can create more damage than help. Therefore, mindset and alignment are key.

Step 3. Once leaders and stakeholders are aligned, the next step involves preparing facilitators to build their skill set of asking questions that open people up and put them at ease to reveal constraints, error or noncompliance. This skill set also includes learning how to respond when people behave differently from what is expected or how to make workers learning partners rather than subjects of an investigation or inquiry. Building such skills typically takes 2 to 3 days and includes learning how to conduct a WTTT or a learning team.

Facilitation and questioning skills truly matter because there are many different subtleties that can close people down. For example, if we were talking to a group of crane operators and one said that John typically works under the suspended load, the reaction and response to that question can either put people at ease, allowing for more learning about the constraints in a situation, or it can threaten them and make them closed off and defensive, limiting additional learning. The skills required to ask open-ended questions that encourage people to share their experiences and perspectives are essential.

Step 4. Following the initial training, the participants need to put their skills to practice and receive coaching to further refine their skill set. As they conduct WTTTs and learning teams and the value of this effort becomes clear, the organization may decide to systematically integrate learning from normal work with the existing processes and develop internal champions to provide ongoing support and coaching.

Step 5. Some companies choose to put champions through longer, more in-depth training that covers topics such as human and organizational performance and human factors, how to identify constraints, how people make decisions, how to predict error, proactive leadership, design that sets people up for failure, and modern investigation techniques. These champions become a critical part of the company's capability to integrate learning from normal work with existing processes.

Step 6. Many companies develop a multiyear strategy that combines communication efforts emphasizing the need to learn from mistakes, and implements selected processes such as risk assessment, leadership visits, behavioral safety, lean tools (e.g., Gemba walks), procedure reviews and incident investigations. The goal of these efforts is to make proactive learning part of "the way we do things around here."

Conclusion

Note several important lessons:

1. Having zero incidents does not mean the risk is sufficiently managed. In fact, the fewer incidents, the less insight managers have about what is going on (Arezes & Miguel, 2003).

2. Zero incidents does not tell leaders how well they manage risk and how things can go wrong (Dekker et al., 2016).

3. Safety is cocreated by different people in the organization, and the overall risk level depends on operators, safety, operations, manufacturing, facilities and others who contribute in various ways, from not providing information to usability of databases to determining competency matrix and required training (Cook, 1998).

A growing number of organizations benefit from the learning from normal work approach, and its value has been confirmed by advanced corporations and industry bodies alike

(Flight Safety Foundation, 2021; IOGP, 2022; SPE, 2020). Learning from normal work brings many other benefits such as increased psychological safety, culture change, stronger speak-up behaviors and better employee engagement, as well as reduction in quality defects and operational upsets. These benefits translate to reduced costs and, most importantly, help to further reduce risk and prevent harm. **PSJ**

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