SAFETY THEATER

How Success Can Mask Growing Safety Risks

By Sidney Dekker

IS IT RISKY TO BE SAFE? Research findings on individual investigations as well as datasets from the Safety Science Innovation Lab at Griffith University and other sources show that incidents can follow years of incident- and injury-free performance (Boskeljon-Horst, Sillem et al., 2023; Hopkins, 2001; Hutchinson et al., 2023; Poole & Dekker, 2024; U.S. CSB, 2016; Valluru et al., 2020). For example, studies in aviation and construction (Barnett & Wang, 2000; Saloniemi & Oksanen, 1998) show that fatalities can hide in the green: the fewer incidents or injuries, or the "greener" the audit or safety culture survey, the higher the organization's fatal incident risk.

In contrast, conventional safety approaches rely on the absence of incidents as a signal of effective safety management. Longitudinal studies with sizable datasets (e.g., Bellamy, 2015; Yorio & Moore, 2018) offer qualified support for this idea: Fatalities can be predicted by various shades (severities) of red. This seemingly confirms that an absence of incidents means that there is a low risk of incidents and fatalities (Rebbit, 2014), as once suggested by Heinrich's triangle (Heinrich et al., 1980). It compels us to once more examine the complex relationship between operational success and the potential for incidents and fatalities. This article does that by first examining the possibility that both are true (and the perennial methodological challenges in demonstrating the veracity of each). Then it analyzes the difference between a lack of incidents driven by active repression of bad news, and a "genuine" lack of incidents—but growing incident potential—produced by the very means of creating operational success. The article explores each of these and concludes by laying out what to ask, look for, and do to explore and mitigate risks hiding in the green.

KEY TAKEAWAYS

- **Organizations often equate success with safety, but the absence of incidents and injuries does not necessarily indicate a well-functioning system. Incidents (including fatal ones) can follow years of incident- and injury-free performance.**
- **Traditional safety approaches focus on preventing small failures to forestall large ones. But many risks remain hidden inside operational successes, only becoming apparent after failures occur. Systemic weaknesses can persist unnoticed inside high-performing organizations. Safety professionals must once more examine the complex relationship between operational success and the potential for incidents and fatalities.**
- **This article makes a distinction between an absence of incidents because of underreporting—driven by repression (intended or not) of bad news and the production of "safety theater"—versus a genuine lack of incidents, generated by the very means of creating operational success.**
- **The article explores each of these in turn, and concludes with practical strategies, which includes reviewing operational successes, disavowing the pretense of perfection (e.g., in zero harm) and incentives around achieving such targets, embracing integrity and honesty instead, and decluttering safety systems to separate critical risks from lower-value noise.**

Incidents Hiding in Red & Green

It is plausible that fatal incident risk can hide in both the red and green. After all, none of the studies that investigate the question can escape statistical confounds nor the definitional variances for "incident" and "severity" that come with real-world data. For instance, Marshall et al. (2018) found that Heinrich was not statistically valid for 50,000 companies over a 28-month period, but found any discrepancies to be small enough to conclude with caution that the occurrence of minor incidents may sometimes still be a useful signal. Single case studies, of course, select their evidence on the dependent variable (i.e., the outcome of either an incident or the lack thereof; cf. Sagan, 1994). This introduces selection bias and limits generalizability. There are case studies of incidents and fatalities that emanated from the "green" after long periods of apparently safe work without incident or injury. Texas City, Macondo and Longford are such examples (Hopkins, 2010; Transocean, 2011; U.S. CSB, 2007, 2016). There are also case studies of incidents that followed a slide into the red, with incidents and potential fatality events mounting in the lead-up to disaster

(Pidgeon & O'Leary, 2000; Vaughan, 2005). But establishing a (causal) connection requires counterfactuals. Only then can we determine whether the outcome had occurred without the putative predictor (whether that is the presence of incidents and injuries or their absence). Yet gold-standard evidence in the form of a randomized controlled trial is also out of the question: safety professionals cannot randomly assign people to experience incidents, ethically or practically. While rich and compelling for other reasons, individual case studies cannot adjudicate whether successful, failure-free performance contains the potential for incidents, or whether this potential hides in a persistent throb of smaller failures. Case evidence selected on the dependent variable cannot rule on the truth value of either.

How Success Can Mask Underlying Risks

Suppose it is true that incidents and fatalities hide in the green. Let's change the question: What accounts for the finding that operational success itself can be a breeding ground for incidents and fatalities? What does safety science offer to explain this? Should safety professionals (increasingly) worry about their safety performance if nothing has happened for a while? And, perhaps most importantly, what can they do about it? To answer, and to add something useful to this knowledge and professional guidance, this article assesses theoretical propositions and, where available, empirical evidence about the psychological, cultural and organizational mechanisms that might explain how a lack of incidents can portend or produce an incident. A subtle difference exists between a lack of incidents driven by active repression of bad news and a "genuine" lack of incidents with yet a growing incident potential produced by the very means of creating operational success. This article covers both. Each can promote, or not, concern about a stretch of incident-free performance. The article concludes with what to ask, look for and do if you have such concerns.

Safety Theater

"Safety theater" refers to the performance of work when subject to some form of surveillance (e.g., inspection, management visit, supervisor observation) in such a way as to demonstrate compliance. During the performance of safety theater, informal ways of working slide out of view (cf. McDonald et al., 2002). It presents an image of work as imagined only to revert to work as done when left alone to continue work (Hollnagel, 2012). Safety theater points to an inauthentic relationship between the design and execution of work, which was caricatured in Taylorism where planners and designers of work were assumed to be smart and the worker simply needed to follow orders (Taylor, 1911). Behavioral safety has often been criticized as supporting this same approach (Frederick & Lessin, 2000; Hale, 1990; Hopkins, 2006). The misreading of what produces safety (strict compliance with safety rules) is really a misapprehension of everyday work, of what it takes to get the job done amidst goal conflicts, changing circumstances and limited resources, and where using procedures does not necessarily mean following them (Carim et al., 2016; Havinga et al., 2018; Suchman, 1987).

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Zero & the Lack of Appetite for Bad News

Safety theater can occur when an organization lacks appetite for bad news. It can indicate an unwillingness to accept evidence of nonconformances or incidents, or even punish workers who deliver bad news (e.g., Goglia, 2015). Sometimes, embracing tactics such as practicing perfection, zero harm or an injury- and incident-free policy is a driver for this, as it exerts downward pressure on workers' willingness to come forward with something that might affect the score (Boskeljon-Horst, De Boer et al., 2023; Dekker & Edmondson, 2022; Edmondson, 1999; Kish-Gephart et al., 2009). It has made zero, even if a noble aspiration, a singularly bad idea for safety (Dekker, 2017; Dekker et al., 2016; Donaldson, 2013; Hopkins, 2015; Long, 2012; Sherratt, 2014; Sherratt & Dainty, 2017).

Sheratt and Dainty's (2017) study of the U.K. construction industry tracked regulatory incident data over a 4-year period, together with an analysis of major contractors' safety approaches. The study revealed that working on a project subject to a zero-harm safety policy or program is associated with a slight increase in the likelihood of a serious life-changing incident or fatality (Sherratt & Dainty). Companies with zero-harm programs often still had the most fatalities, and they also reported more serious injuries—incidents that could not be disguised through case management or shifted onto contractors to keep them out of the company's statistics. Zero-harm programs are often based on the belief that fewer reported incidents mean greater safety, but in reality, these programs were associated with poorer safety outcomes and more fatalities. The fundamental regulator paradox explains how a zero-harm program prevents an organization from seeing and managing its real safety risks (Ashby, 1956). When the data is reduced to zero, safety professionals have no reliable signals to guide system management, leaving them with no meaningful information (Lofquist, 2010).

The risks of zero reporting increase when management implements incentive systems that reward low or no incidents, or when companies must show an absence or a low

number of incidents to secure contracts or other benefits (Hollnagel, 2014; Hopkins, 2015). The link between a lack of incidents and the possibility of an incident occurring is fairly intuitive in this case: After all, a safety culture is one where employees feel they can report problems honestly, even to their boss (Dekker, 2006). At its inception, high-reliability theory emphasized the importance of learning from smaller incidents to foresee and forestall bigger ones (without explaining how small incidents might turn into big incidents; Rochlin et al., 1987). The easiest way to achieve zero is to keep quiet, hide bad news and keep playing safety theater. Fatal incident potential can then stay hidden as well, suggested by Sheratt and Dainty (2017) and shown in Saloniemi and Oksanen (1998). In other words, fatal incident potential remains hidden until it is no longer possible to do so.

A related explanation relies on distraction and decoy. In the Macondo and Texas City process safety incidents (CSB, 2007, 2016), the companies—and the industry—were preoccupied with reducing countable lost-time injuries and incidents (Leveson, 2012). Safety had devolved into a bureaucratic accountability, where the goal was to show fewer and fewer lost-time events to the board and shareholders (Graham et al., 2011). Turner (1978) described this as "decoy phenomena," which occupy managerial and board attention at the expense of engineering and process-safety issues, while falsely reassuring leaders that safety was under control (Elkind et al., 2011). The focus is often on production over all else (Barton & Sutcliffe, 2009). This can involve an unwillingness to engage with expertise—whether frontline workers or engineers or scientists in various roles (Defazio & Larsen, 2020; Dekker & Conklin, 2022; Dekker et al., 2022; Guerlain et al., 1996; Tkakic, 2019), whose contribution may be seen as inconvenient and time-consuming, but could discern the patterns, connections and complex interactions that drive incidents (Downer, 2013; Macza, 2008; Perrow, 1984). Instead, the focus is on reducing simple negative data points (incidents), which are often ignored, repressed, underreported or case-managed into statistical oblivion. The outcome is risk secrecy (Dekker & Pitzer, 2016).

Lack of Incidents & Growing Incident Potential Produced by Operational Success

Max Weber (1922) warned that systems of social organization produce and contain their own dark sides (Vaughan, 1999)—the seeds of their demise germinate and grow from within. Merton (1936) applied this to organizations and their performance, safety or survival, observing that any system of purposive social action inevitably generates secondary consequences that run counter to its objectives. Man-made disaster theory (Turner, 1978) concretized this by tracing how incidents piggyback opportunistically on systems of efficient production (Pidgeon & O'Leary, 2000). If an organization excels at producing something cheaply and efficiently, incidents often emerge through the same processes that made it successful.

This happens at any scale. For instance, the same factors that account for an abundance of fast-fashion clothing in the West—weak governance and oversight, murky supply chains, cheap labor—are the ingredients of massive incidents in that industry (e.g., Rana Plaza with worker 1,100 deaths; Blanton & Peksen, 2018; Park, 2011). In other words, success breeds failure. At a company level, Southwest Airlines continued using outdated scheduling systems that required minimal upfront investment. A winter weather event triggered disruptions that cascaded, making the system unable to keep track of crew locations. Incurring decades of technical debt had allowed for rapid expansion and cheap fares until the debt came due (Tufekci, 2022). Such examples are of course rife, from lean staffing in call centers to just-in-time manufacturing to optimized turnaround times in commercial aviation (Hartley, 2011). Reducing the scale even further to the PPE worn by workers, both anecdotal and research evidence show that the very equipment meant to keep people safe can become a source of risk and failure (e.g., Gao et al., 2021; Reason, 1997; Shibley, 2016; Wong et al., 1991).

For a business under cost and efficiency pressures in a competitive environment, success can be dangerously seductive. Visible success leads to more success, but invisible small compromises can build up, which can increase the chances of an incident. This pattern is known as the "drift into failure" (Dekker, 2011; Dekker & Pruchnicki, 2014). Organizations may gradually become unsafe as they adapt to performance pressures, efficiency demands, resource constraints and production goals, even though they seem successful in an operational and economic sense (Rasmussen, 1997). However, they may not realize how much of that success comes at the expense of safety (Amalberti, 2001, 2013). Because these fine-tunings and adaptations often appear reasonable in isolation, risks accumulate unnoticed (Rasmussen & Batstone, 1989; Starbuck & Milliken, 1988; Vaughan, 1996). Adaptations are normalized until failure becomes inevitable. The organization's growing incident potential can eventually be triggered when unexpected events or combined pressures push it beyond its ability to adapt (Mandis, 2013; Reason, 1997; Snook, 2000; Turner, 1978; Vaughan, 1999, 2005). In other words, the organization fails precisely because it was so successful.

Escaping from Risk Secrecy in Successes

How can an organization break through its risk secrecy? As detailed in this article, risk secrecy can come from the downward pressure within an organization that discourages people from being open and honest about safety. It can also result from being so successful—operationally or financially—that potential problems are overlooked, even though that success may be achieved by cutting into safety. Both dynamics can also be at play, which is why it is important to consider a wide range of options and combine approaches where possible. Research and practical experience suggest some solutions that can help.

To break through risk secrecy when an organization does not want to hear bad news, organizations can:

- Muster the leadership courage and humility to make it safe for people to talk (cf. Edmondson, 2019). Invite open discussions about risks and good catches, and be ready to help solve problems, being sure to not minimize the bad news nor sanction or ostracize the messenger (Dekker, 2017; Goglia, 2015).

•Offer or develop an independent reporting channel that can bypass organizational politics and hierarchy. In the past, this has been done successfully through confidential or third-party reporting mechanisms, which help prevent conflicts of interest and reduce the chances that supervisors or managers may block or discourage reports (Burian & Barshi, 2003; Eurocontrol, 2006; Iedema et al., 2006; Johnson, 2001; Noerbjerg, 2004; O'Leary & Chappell, 1996; Weiner et al., 2008).

Error is usually the result of deeper problems within an organization, not the root cause. Focusing only on error stops the chance to investigate underlying issues that set people up for failure, which could cause the same problems in the future.

•Develop safety metrics that reward transparency and move away from metrics based on the absence of bad news. Shifting away from lagging indicators such as injury rates has often been recommended. Instead, organizations are encouraged to use measures of their safety capacities, such as their capacity to adequately understand, learn, respond to and provide the right resources for safe operations (Dekker & Tooma, 2022; ICMM, 2012; Reiman & Pietikäinen, 2012; Versteeg et al., 2019).

•Stop blaming human error when things go wrong (Dekker, 2014b, 2023). Error is usually the result of deeper problems within an organization, not the root cause (Fitts & Jones, 1947; Reason, 1997). Focusing only on error stops the chance to investigate underlying issues that set people up for failure, which could cause the same problems in the future.

•Stop pursuing perfection or pretending that it is even achievable. While a noble and humane aspiration, the pursuit of perfection (i.e., zero harm, injury- and incident-free) often yields more safety theater. Real operations slide from view until the bad news can no longer be hidden. Trade perfection for integrity. Nobody is perfect, and no business operation is perfect. Pursue honesty and openness instead (Dekker, 2024).

To break through risk secrecy when an organization is successful, organizations can:

•Acknowledge that high performance often masks risks. Use structured post-success reviews (e.g., learning reviews, learning teams) to identify whether (or which) safety trade-offs were made to achieve operational and financial goals. Rasmussen (1997) suggests making the cost of safety visible by giving organizational decision-makers a recognizable sense of what they are trading off when pursuing greater efficiency gains. This helps uncover unknown risks before they can cause harm.

•Connect safety performance to business continuity and reputation, all the way up to the board of directors. Explore ways to demonstrate and discuss how safety sacrifices, even if unseen now, can lead to long-term operational disruptions, legal consequences and reputational damage. When safety is framed as a core element of sustainable success, it becomes harder to ignore.

•Engage those who know the organization but can see it with fresh eyes, and even switch roles with them if possible. These individuals can help spot risks that have become so routine inside the organization that they are no longer noticed. This person must both understand the nuances and messy details of the industry and operations, and not have been part of the drift, inculcation and normalization. This can be a reciprocal arrangement with partner companies or industries, provided confidentiality agreements are in place.

•Declutter safety systems (Dekker, 2020; Rae et al., 2018). Many sources point to a rich oversupply of safety policies, rules and procedures, many of which cannot even be traced back to (or blamed on) regulations in most professional fields (Bieder & Bourrier, 2013; De Wannemacker, 2020; Dekker, 2014a, 2018; Johnstone, 2017; Saines et al., 2014). The problem with safety clutter is that when everything is treated as important, critical risks can be overlooked. An organization may lose track of critical risks because it is distracted by decoy phenomena such as slips and trips that may cause concern but are far less significant in the bigger picture (Turner, 1978).

•Model leadership openness and humility. Leaders should be open about not having all the answers, even about not knowing where the organization's successes truly come from, which are rarely due to the leader alone (Dekker et al., 2022). Celebrate organizational successes but also examine these wins to potentially uncover hidden risks that could cause problems in the future.

•When their validity can be reasonably assured, use safety culture surveys, near-miss reports and informal worker feedback to identify patterns that indicate hidden safety trade-offs (Sanne, 2008). Data-driven insights may reveal problems that are not always visible through traditional performance metrics.

•Create internal challenge networks (as opposed to support networks), or cross-functional groups that include frontline workers, engineers and leadership. These networks can provide a reliable way to challenge blind spots in decision-making and ensure that safety concerns get the attention they deserve.

Conclusion

When drivers of operational success are not well understood, including the absence of safety warnings, it is also unclear what trade-offs are being made each day to sustain that success. An absence of incidents can be worth celebrating, but it should also prompt critical questions about how productivity, success and safety can coexist. A lack of reported incidents may reflect organizational pressures that discourage workers from speaking up. It may also mean that incidents and near misses are no longer recognized for their importance because they have become normalized as part of everyday operations.

Being open to bad news is, above all, a moral and empathetic choice. Truly understanding how work gets done

requires seeing things from the perspective of those doing the job, including the constant trade-offs and safety sacrifices involved (Rasmussen, 1997). Research has shown that encouraging different and dissenting views is crucial for noticing safety signals that might otherwise go unseen (Edmondson, 2019; Ge, 2020; Hirschman, 1970; Janis, 1982; Morrison & Milliken, 2003; Rebbit, 2013; Turner, 2010). This is particularly important because ongoing adjustments to operations can normalize small deviations (Starbuck & Milliken, 1988; Vaughan, 2005), increasing the risk of gradually drifting into failure if signals are not caught by someone who looks at the situation differently (Dekker, 2011; Feynman, 1988).

An incident-free record may not guarantee safety and could instead signal hidden vulnerabilities. Leaders must adopt a mindset of proactive inquiry, questioning how success is achieved and what sacrifices might have been made along the way.

During walkarounds, supervision or other engagements, questions should not judge how the work is done or even mention safety directly. Research shows that if there is genuine interest in the work, safety issues will surface on their own (Havinga et al., 2018). Example questions include:

- "I notice that . . . Help me understand why it makes (more) sense to work this way."
- "What are the obstacles we are putting in your way to getting things done?"
- "What is the stupidest thing we're asking you to comply with to work here?"

Questions such as these represent an invitation instead of an assessment or judgment, and can begin breaking through an organization's risk secrecy. While operational success is often celebrated, it must be critically examined. An incident-free record may not guarantee safety and could instead signal hidden vulnerabilities. Leaders must adopt a mindset of proactive inquiry, questioning how success is achieved and what sacrifices might have been made along the way. As Lord Salisbury cautioned, trusting in the surface-level assurances of experts—whether safety statistics or successful operational performance—can blind us to deeper risks. By remaining vigilant and open to hearing bad news, organizations can prevent incidents from lurking beneath the surface of their achievements, ensuring that success is not merely an illusion of safety. **PSJ**

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Cite this article

Dekker, S. (2025, Oct.). Safety theater: How success can mask growing safety risks. *Professional Safety, 70*(10), 28-34.