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Safety in the Boardroom

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Editors

Elif Deniz Oguz Erkal, PhD
CSRA Associate Director of Strategy and Research

Matthew Hallowell, PhD
CSRA Executive Director

Contributors

CSRA Board of Advisors

Alicia Edsen, Clint Harris, Greg Kelly, Al Payton, Jayme Hobson, Kevin Dix, Matt Compher, Mike Quashne, Mike Court, Nick DiMartino, Paul Levin, John Gambatese, PhD, Brad MacLean

TABLE OF CONTENTS

SERIOUS INJURY AND FATALITY (SIF) FOCUS 4

SHIFT safety focus toward eliminating SIFs rather than reducing minor incidents

A call to prioritize the prevention of Serious Injury and Fatalities through targeted programs.

WHAT IS SAFETY? 6

GO BEYOND compliance and measuring failures toward a more proactive, values-driven approach

A shared definition of safety enables strategic alignment. Safety is the proactive prevention of harm and relentless readiness to respond to risk to preserve life, wellbeing, and operational integrity.

ENERGY-BASED SAFETY (EBS) 8

CONTROL hazardous energy that causes SIFs

A scientific approach to identifying, prioritizing, and controlling life threatening hazards to prevent serious injuries and fatalities.

THE TYRANNY OF TOTAL RECORDABLE INJURY RATES (TRIR) 10

MEASURE what drives meaningful change, not just what's easy to count

A case for shifting from lagging injury metrics to real-time indicators that reflect risk exposure, control effectiveness, and the presence of safety capacity.

KEY SAFETY METRICS 12

USE simple, proactive metrics that drive actionable and meaningful safety improvement

A suite of metrics offering a holistic and proactive view of safety system performance.

CULTURE 14

REMEMBER that culture underpins everything we do, and context drives behavior.

An organization-wide mindset shaped by leadership and trust.

SERIOUS INJURY AND FATALITY (SIF) FOCUS

Although the rate of recordable injuries has declined across industries, the fatality rate has remained relatively unchanged for over a decade – averaging 14 worker deaths per day. This means that current safety approaches to injury prevention are not working well for preventing the most severe incidents. Therefore, we need a more focused approach to SIF prevention.

The fatality rate has remained relatively unchanged for over a decade.

The "Safety Pyramid" ratios are a myth — one of safety's most enduring yet misleading narratives. For decades, people have claimed – without evidence – that reducing minor injuries would also reduce Serious Injuries and Fatalities (SIFs). This belief led to approaches that attempt to address all types of injuries through one overarching safety program. Research has disproven this theory, recently revealing that SIF prevention requires safety programs targeted at high-risk hazards and ensuring sufficient controls.

How many recordable injuries would we trade for a life? Although all injuries matter, preventing SIFs must be the top priority for safety programs. While this aim doesn't mean ignoring minor injuries, it promotes distributing limited resources so that SIF prevention receives the priority and focus it requires. It takes a focused, evidence-based approach to protect lives.

Recent scientific research has identified two key differentiators in SIF incidents: the absence of controls (safeguards) and the absence of a clear or followed work plan. An effective SIF prevention program must prioritize addressing these gaps through implementation of life-saving controls and clear planning.

It takes a focused, evidence-based approach to save lives.

No single company can eliminate SIFs on its own. SIFs are rare but severe, which is a paradox that makes them critical yet hard to learn from within one company alone. It will take unprecedented collaboration across industries to address the most critical risks we face. What if the key to preventing the next SIF is already known by another company, **just not by your team yet?**

A consistent SIF definition enables collaboration. SIFs are work-related injuries that are life-altering, life-threatening, or life-ending. By classifying and sharing past incidents, industry communities can learn from past failures together.

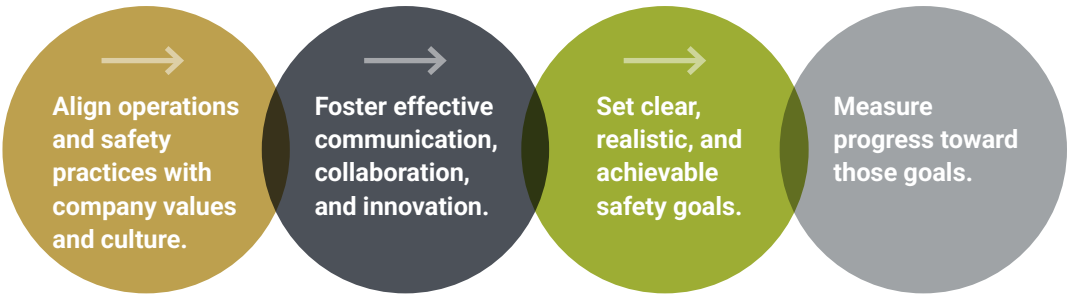
Key Questions to ASK

1. To what extent is our program focused on SIF prevention?
2. How is the SIF-prevention program resourced?
3. What operations pose the greatest SIF risk?
4. How do we specifically target SIFs?
5. How does the company collaborate with other companies to review, share, and learn from past SIFs?

WHAT IS SAFETY?

How we define safety affects how we set goals, strategies, and metrics. Although many leaders have a clear understanding of their own definition, the term is widely used inconsistently causing confusion, misalignment, and inefficiency.

Definitions are only meaningful and impactful when shared and applied consistently across the enterprise. With a clear and precise understanding of what safety means for your business, you can:



According to our research, the term “safety” is multi-faceted concept, with each view offering a distinct lens:

1. **Safety as the things we do to keep workers safe.** This definition indicates how safe work will be (future tense). Safety is represented by the quality and quantity of proactive safety activities - such as training, hazard identification, and pre-job safety briefs - all of which are fully within the company’s control.
2. **Safety as the presence of effective controls (safeguards).** This definition indicates how safe our work is in the moment (present tense). Here, the focus is on how well employees are protected from hazards as they perform their jobs. These controls can be continuously monitored to reflect both the presence of safety and vulnerability to risk at any given moment.

3. **Safety as the absence of incidents.** This definition indicates how safe the work was, based on the number of injuries that occurred (past tense). It views safety as the outcome of completing work without injury and cannot be assessed until work is complete.

These three definitions work well together. Leaders should take a holistic view of safety and consider how these three perspectives tell a unified story that enables better conversations and more strategic decision making.

Preventing serious injuries and fatalities (SIF) requires a collective effort; no organization can do it alone. It will take a *village*, and speaking the same language will help that village act with precision and purpose.

Preventing SIFs will take a village, and that village needs a common language to act with purpose.

Key Questions to ASK

1. How do we define safety, apart from absence of injuries?
2. How does this definition align with our values and priorities?
3. How well and consistently are these definitions understood and applied by our employees?
4. How do our safety performance metrics and incentives align with its definition of safety?

ENERGY-BASED SAFETY (EBS)

Energy-Based Safety (EBS) is rooted in over 50 years of scientific research and literature. It provides a simple yet effective way to identify the highest risk conditions within operations and the corresponding controls to save lives.

It revolves around three core principles:

1. All injuries result from energy transfer to the human body.

Hazards take the form of 10 different types of energy that are used to complete work such as gravity, motion, electricity, and pressure.

Example: Hot surface temperatures from an exhaust can burn the human body as thermal energy is transferred.

Practice: The energy wheel helps workers identify over 30% more hazards than instinct alone.

2. SIFs are caused by the release of uncontrolled high-energy hazards.

Energy sources with more than 1500 Joules are most likely to result in a SIF. We call these hazards “high-energy” or the “Stuff That Kills You” (STKY).

Example: Heavy mobile equipment is high energy, but trip hazards are not.

Practice: Identify and prioritize high-energy hazards in parts of the safety program — from design and planning to learning and measurement.

3. Direct Controls save lives. A Direct Control is a life-saving safeguard - not all controls qualify.

The presence of Direct Controls is the main difference between successful work and catastrophic outcomes. To be considered an adequate defense against high-energy hazards, Direct Controls must be targeted, effectively mitigate the high-energy, and work even when someone makes a mistake.

Example: A machine guard restrains energy in the event of a mechanical malfunction.

Practice: Strive for a Direct Control for all high-energy hazards. This will require innovation, collaboration, and dedication to SIF prevention.

The Reality: High-energy is required to do work (i.e., cut, move, lift). Therefore, workers face STKY hazards daily. Even among industry leading companies, approximately **40%** of these hazards do not have Direct Controls, leaving workers dependent on error-prone measures like rules, awareness, and training.

Safety efforts have long focused on addressing unsafe behaviors and human error through behavior-based safety. Today, we recognize that mistakes are inevitable and that context drives behavior. Instead of trying to fix the workforce, we can improve systems and prevent harm with Direct Controls. The EBS approach facilitates objective assessment of hazards, prioritizes SIF risks, and strengthens systems with an intentional focus on effective controls.

Key Questions to ASK

1. To what degree have we implemented EBS?
2. How do we know that our workers are seeing hazards? How are we focusing on the hazards that matter most?
3. Where is the high energy (STKY) in our operations? Where are our greatest successes and exposures?
4. What progress have we made in implementing and improving controls for STKY hazards?
5. How do we know where our SIF risk is when incidents are not happening?

THE TYRANNY OF TOTAL RECORDABLE INJURY RATES (TRIR)

For nearly 50 years, TRIR has been the primary measure of safety performance — from the worksite to the boardroom. It has been widely used because it is objective, standardized, and easy to understand.

Despite its strengths, TRIR has some serious limitations:

- **Promotes reactive behavior.** Companies tend to throttle the safety system in response to routine ups and downs in injury rates.
- **Misaligned with modern definitions of safety.** TRIR only reflects safety as the absence of injuries and, when rewarded, narrows the focus only to outputs.
- **Severely underreported.** Research shows that over 20% of recordable injuries are not reported and employees do not seek proper medical attention because they do not want to be the cause of a spike in TRIR. This is especially problematic when companies also have ZERO injury goals.
- **Increases focus on lower-severity injuries.** Since all recordable injuries are weighted equally, companies tend to focus on injuries like twisted knees and ankle sprains because they occur more frequently. This diminishes the focus on SIF.

Perhaps most importantly, TRIR is not statistically valid.

Empirical research with over

3.2 trillion

worker-hours of data yielded the following conclusions:

1. TRIR does not predict fatalities or future injury rates.
2. The timing and location of recordable injuries is about 98% random, which is like the flip of a coin.
3. Using TRIR to guide decisions is like steering with a broken compass.

Because TRIR cannot reliably be used to compare companies, business units, projects, or teams over time, it is a statistically invalid basis for business decisions. When TRIR is used to reward or penalize employees, select contractors, or evaluate leaders, the company is only rewarding random variation.

While this research focuses on TRIR, these issues apply to all injury-based metrics (i.e., DART, TRIF, SIIR). The future of safety measurement is real-time and proactive indicators that reveal what to change and by how much, enable us to observe short-term improvements, and tell us what to expect in the long term.

Key Questions to ASK

1. Which metrics do we use to measure safety performance? Do they provide meaningful insights for decision-making?
2. Do we use TRIR for direct or indirect incentives? If yes, what could we use instead?
3. What alternative metrics are we exploring and what insights do they provide?
4. How might we use multiple, complementary metrics to tell a more complete story?

KEY SAFETY METRICS

Safety is more than just the absence of incidents; it is about controlling life-threatening hazards through well-designed and functioning systems. The key question: How do we quantify safety in a way that drives targeted, proactive decision-making and learning?

Our metrics should align with how we define safety (see section *What Is Safety?*):

1. Leading Indicators: Measure safety as the things we do to keep workers safe. This usually involves assessing the quality and frequency of safety activities. Setting targets can help translate organizational safety commitments into meaningful action.

Example Leading Indicators:

- Pre-Job Briefings: How many are conducted? How well are they done?
- Leadership Engagements: How often do they occur? How impactful are they?

2. Monitoring Metrics: Measure safety as the presence of safeguards through real-time observations of ongoing activities. Setting targets can lead to underreporting, hinder learning, and ultimately compromise data quality, and trust.

Emerging Monitoring Metrics:

- High Energy Control Assessments (HECA): Tracks STKY hazards and Direct Controls over time.
- Safety Climate: Monitors workers' perceptions of the company's priorities and commitment.

3. Lagging Indicators: Measure safety as the absence of incidents through long-term injury rates and incident investigation outcomes. Setting targets can support long-term enterprise trends but are harmful when tied to employee incentives driving underreporting and case management.

Improved Lagging Indicators:

Ask your safety teams about using severity-adjusted long-term injury trends to improve analytical insights and reveal more realistic patterns in safety performance that are calibrated by severity, not just incident counts.

Together, these metrics tell a clear and compelling story — that the system is (1) effectively set up, (2) functioning as intended, and (3) driving long-term improvement, supported by a safety management system. This suite of metrics shifts the focus from outcomes alone to measuring and controlling risk.

There is no silver bullet, and each metric provides a unique perspective on safety. Empirical research shows these components are statistically connected, reinforcing the need for a balanced set of indicators.

Key Questions to ASK

1. What story do our metrics tell? Are we understanding the connection between safety in the past, present, and future?
2. How do we measure safety success today? What degree of control do we have over this measure?
3. How are we communicating and incentivizing progress toward our long-term safety goals?
4. Which investments in SIF prevention are working and how do we know?
5. How do we ensure that controlling high energy is a priority supported by a functioning safety management system?
6. How are we communicating safety performance in our external reporting like ESG?

CULTURE

Safety culture is continuously shaped within an organization and is often described as follows.

Culture is:

- **The way we do what we do; what is said, and what is left unsaid.**
- **The choice to do the right thing, even when no one is watching.**
- **The driver of performance and decision-making guided by values.**
- **The leadership's response to good and bad news.**
- **The quality of communication, sharing, and caring.**

Definitions vary, but one common thread remains; culture is about people and reflects the entire organization — from leadership to frontline workers. The key differentiator in a strong safety culture is its ability to foster learning and improvement rather than blame or "making the safety numbers work".

Employees are not the problem, they are the solution. Leaders today advocate for a shift away from outdated practices that (1) drive reporting underground, (2) fail to create a safe environment for employees to speak up (3) incentivize secrecy rather than transparency in the name of ZERO targets. Instead, they are shifting toward a culture of learning, open communication, transparency, psychological safety, and shared ownership.

Safety is built on trust, not fear. A strong safety culture prioritizes learning, accountability, and continuous improvement of safety conditions and safeguards.

Leaders recognize the importance of safety culture, yet it remains difficult to define and impossible to measure directly. However, safety climate—the workforce's perception of safety—can be measured through actionable indicators in a calibrated self-reported survey.

A meta-analysis of

107 studies

found five universal elements of safety climate that predict safety performance:

1. **Management Commitment to Safety:** How well top management demonstrates that safety is a value.
2. **Supervisor Safety Roles:** How well frontline leaders support day-to-day safety practices.
3. **Safety Rules and Procedures:** How well employees believe in and follow safety rules and procedures.
4. **Individual Health and Safety Responsibility:** How well employees manage and take responsibility for their personal safety.
5. **Safety Training:** How meaningful, engaging, and effective the safety training is for employees.

Key Questions to ASK

1. How do we create a work environment where our employees can thrive?
2. How are we building psychological safety (i.e. the freedom to speak about safety without fear of retribution)?
3. How are leaders demonstrating their commitment to safety? How do we ensure those activities and engagements are performed well?
4. What are the company trends in the five key dimensions of safety climate? How do those compare to the results of our peers?
5. What is the improvement plan, and how do we measure it?

CONSTRUCTION
SAFETY RESEARCH ALLIANCE

Construction Safety Research Alliance
UCB 428
1111 Engineering Drive
Boulder, CO 80309
www.csra.colorado.edu