Safety Culture and Leadership

Looking For A 21st Century Solution for Safety Performance: Integrating Personal and Process Safety

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Leaders who wish to create a new level of protection for their people, assets and the environment in which they work need a new approach to guide their actions—a safety roadmap for the 21st century.

The safety challenges of the 21st century require a new, integrative approach that brings fresh thinking and sound practices from across industries and among areas of safety specialization. Over the last 20 years, for example, lessons from the personal and process safety approaches have revealed the strengths and weaknesses of each, but little has been done to bring them together. This paper offers highlights of what JMJ sees as the path to a more integral (whole) solution that has formal and informal leaders applying a set of defined practices to generate a high-performing safety culture.

Looking Beyond Personal or Process Safety

In early 2010 the Deepwater Horizon drilling rig disaster in the U.S. Gulf of Mexico riveted public attention to the risks inherent in the petroleum industry. However, history has shown that such attention tends to soon fade into the background until the next catastrophic failure. This Gulf of Mexico tragedy, for example, was preceded by other noted disasters around the world, such as the 1984 Bhopal gas tragedy in India, the 1988 Piper Alpha North Sea platform explosion and collapse, the 1998 Longford Gas Plant explosion in Australia, the 2005 BP Texas City Refinery explosion, and the April 2010 Upper Big Branch mine disaster in West Virginia. These examples, mainly from the oil and gas industry, have parallels in many other industries. The accumulated effects of these failures may now have created a tipping point in the public's willingness to accept the level of risk to human life, assets and the environment that these endeavors entail. It appears unlikely that we will go back to status quo.

The public discontent is fueled by a growing recognition of the complexity of these disasters and how difficult it is to find a single cause or to hold any individual to account for the failure. For example, the Texas City event and the resulting investigatory report initiated a cross-industry focus on the systemic and cultural sources of the disaster that has far reaching implications. Company after company has since identified risks and blind spots that, if not addressed, could lead to similar disasters in their own operations. Executives from diverse industries across the globe are now wondering what else they should be doing to protect their people, assets, and the communities and environments in which they do business.

Investigations of these major failures have focused on process safety, an area of specialization that addresses safety from the perspective of the complex, systemic, and highly interconnected set of factors that govern the design and operation of facilities. Some of the most visible of these reports have suggested that perhaps an unbalanced focus on personal safety (trips, slip, and falls) led companies to ignore the systemic problems that eventually led to catastrophic failures. Although we agree with this insight, we also believe is it important not to minimize the challenges of *personal safety*.

This paper focuses on what is unique and what is common about these two important safety domains—*personal safety* and *process safety*. We assert that an integral (whole) approach to safety incorporates aspects of both, and grounds them in an unshakeable commitment to send workers home to their families every day without harm. The purpose here is to integrate practices from both domains while establishing common ground in a new model of safety culture and leadership.

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The Process Safety World

The expression *process safety* has been used widely since the Texas City disaster. It actually began being used primarily in the U.S. chemical, refining and process-intensive industries over 20 years ago. The term originally referred to an approach for preventing the unexpected release of gases and chemicals, and preventing fires and explosions.

In recent years, however, the meaning of *process safety* has expanded and often includes subjects ranging from asset integrity, technical integrity or reliability in plants, and major accidents in industries such as mining, rail, air transport or construction. What all of these terms have in common is a reference to unexpected, potentially catastrophic failures resulting in loss of life and property.[1] These so-called "Black Swans," or unpredictable events, have become more common than was suggested by statistical prediction models.[2]

While process safety was once applied mainly to industrial processing plants, a broader application reveals that system failure in a mine can lead to a collapse or explosion; in

1 It would go too far to suggest that the term process safety is used universally by all industries in the broadest meaning as we use it here. Herein we use process safety to cover a broad area of safety concern while recognizing that there is considerable divergence of language use across industries.

2 Taleb, Nassim; The Black Swan: The Impact of the Highly Improbable, Random House Publishing, 2007.

construction it could result in an explosion, structural collapse or, as seen recently in New York City, a series of crane incidents. More recently, insights from process safety have been applied to hospitals, the airline industry and nuclear energy.

One of the most common models used for illustrating the process safety perspective is the "Swiss cheese" model, a metaphor that includes several layers (or barriers) of protection that potentially prevent hazards from breaking loose (Fig. 1). Each barrier has a mix of plant, process and people components, and each has potential weaknesses, or holes in the Swiss cheese. This approach explicitly deemphasizes blame of individuals, for good reasons, while suggesting that people do have a role in the whole safety situation.[3]

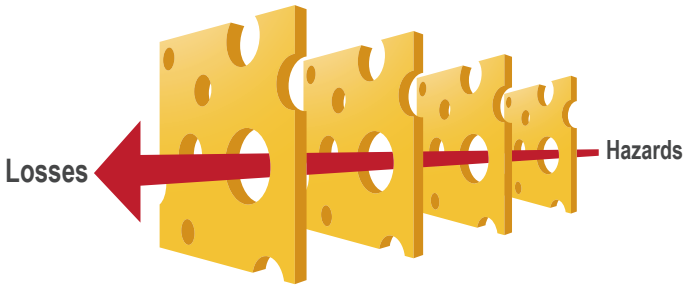

Fig. 1: James Reason's Swiss cheese model is commonly used in process safety circles to describe how layers (or barriers) of protection can potentially prevent hazards from breaking loose—until the weak spots of each layer happen to align, as illustrated.

The Personal Safety World

In spite of the recent focus on high-profile *process safety* failures, the vast majority of workplace injuries continue to result from personal safety incidents; thus, no one can afford a lapse in attention on personal safety.[4] A common definition of personal safety that has become a de facto industry standard:[5]

> Personal…safety hazards give rise to incidents—such as slips, falls and vehicle accidents—that primarily affect one individual worker for each occurrence.

Many *personal safety* approaches focus on individual behavior, with the goal of either reducing or eliminating behaviors that result in incidents or injuries. Inside the realm of personal safety both behavior-based and commitment-based approaches are recognized, and many safety programs include a mix of both. Both approaches focus on raising awareness and influencing the choices individuals make as the critical factor in eliminating worker injury.

In JMJ's long-standing approach, for example, there is an emphasis on shifting an individual's mindset from "injuries are inevitable" to "I am committed to eliminating all injuries." We have observed again and again that when people act from this commitment they produce radically improved safety performance. The assumption is that if I choose to work safely and watch out for my work mates, and you do the same, we create a partnership of safe work practice. The approach is deeply rooted in the value for human life and the practice of treating others with dignity and respect. Rather than focusing on blame or compliance, the personal safety approach is deeply rooted in values-based actions designed to eliminate worker injury.

The Best of Both Worlds

The *process safety* approach views hazards from a broad, systemic perspective, and seeks to eliminate them through analysis, process mapping and organizational learning, while deemphasizing the role of personal responsibility. On the other hand, *personal safety* approaches focus on influencing individuals' actions either through intrinsic or extrinsic factors so that people work safely and influence others to do so, as well.

From the commitment to eliminating incidents and injuries in the workplace, it seems clear that one should include both personal and process safety perspectives in a more holistic embrace. Erring too far on one side or the other is not only ineffective, but could be tragic.

To summarize, one could say that when a company overuses its "*personal safety* eyes", it is potentially blinded to process safety hazards. On the other hand, the opposite can be true. When overusing "*process safety* eyes" one can be blinded to *personal safety* concerns. In particular, an overreliance on the process safety perspective can undervalue the interior life of the worker, and those subjective states that can lead to lapses in attention, errors and violations.

For this reason, we believe that the current challenge is to create a safety approach that engages both eyes—process and personal. (The word "eyes" here refers to all types of noticing—eyes, ears, thought processes, etc.)

3 Reason, James; Managing the Risks of Organizational Accidents, Ashgate Publishing Company, 1998.

4 According to the International Labor Organization, 2.2 million people per year die of workplace related incidents and diseases, a number the organization claims may be vastly underrepresented.

5 The Report of the BP U.S. Refineries Independent Safety Review Panel (The Baker Panel), self-published, Jan. 2007.

Going one step further, perhaps it does not stretch the metaphor too far to say that a whole approach to safety would suggest (Fig. 2) one eye trained on the tiger (up close and personal) and another eye trained on the jungle (background and latent conditions that might lead to future dangers).

Fig. 2: Training ourselves to split focus—one eye attuned to the tiger (personal safety) and the other eye to the jungle (process safety)—is required to effectively implement a whole approach to safety.

Safety Culture: A Common Denominator

From the personal safety perspective, a positive safety culture is needed to sustain the personal commitments and new behaviors that correspond with working in an injury-free manner. From the process safety perspective, safety culture is seen as a primary way to reinforce competencies for uncovering and then resolving latent process hazards.

Safety culture is widely seen as an essential context for sustaining both personal and process safety interventions. Therefore, creating a positive and highly developed culture is one way to reinforce both personal and process safety perspectives. However, the meaning of safety culture is mostly taken for granted, and there is no widely shared understanding either of what it is or how it can be changed when it is necessary to do so.

Edgar Schein provides a useful summary of what various writers have meant by culture: observed behavioral regularities, group norms, espoused values, formal philosophy, rules of the game, climate, embedded skills, habits of thinking, shared meanings and root metaphors.[6] From Schein's perspective, behavioral patterns arise out of culture and are an expression of it. Adapting Schein's general definition of organizational culture, we offer the following as a starting point.

> Safety Culture: A pattern of shared basic assumptions that the group learned as it solved its (safety) problems, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those (safety) problems.

As a collective phenomenon, culture is more than the sum of its parts. Culture influences individual perspectives and actions as much or more than individual actions influence culture.

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Since culture is such a strong determinant of safety performance (including both personal and process safety), it is a focal point for safety improvement across all industries. However, sustainable culture change in a large organization can take quite a long time. What can be done in the short term, then, to create momentum for change?

To address both short-term and long-term need for change, we distinguish a high-performing safety culture, which takes time to create, from safe practices, which can be introduced relatively quickly. In the short run, and in the context of a significant cultural transformation, highly effective safety practices are implemented as a way to turn the organization toward high-performing safety. At the same time, but on a longer time horizon, we work to transform a culture (deep assumptions and values) into a highly effective one. Without this deeper, transformational work, new practices will not be sustainable.[7]

The model of safety performance we propose then is this: safety practices are an expression of culture and culture can be developed incrementally, yet quickly, by implementing advanced practices. At the same time, safety culture can be transformed over time by focusing on values, beliefs and assumptions. This allows development of safety culture to come

6 Schein, E.; Organisational Culture and Leadership, 2nd edition, Jossey-Bass, 1992, pp 8-9, 373-374.

7 Although we talk here about cultural change taking time, individual transformation is possible in an instant.

from two directions and occur in two time horizons, leading to a breakthrough in safety performance.

This new model reveals key levers for cultivating a culture supportive of both personal and process safety work—one that can be considered a high-performing safety culture. Implementing new practices creates important incremental change, while addressing deeply held values and assumptions creates transformational change (Fig. 3).

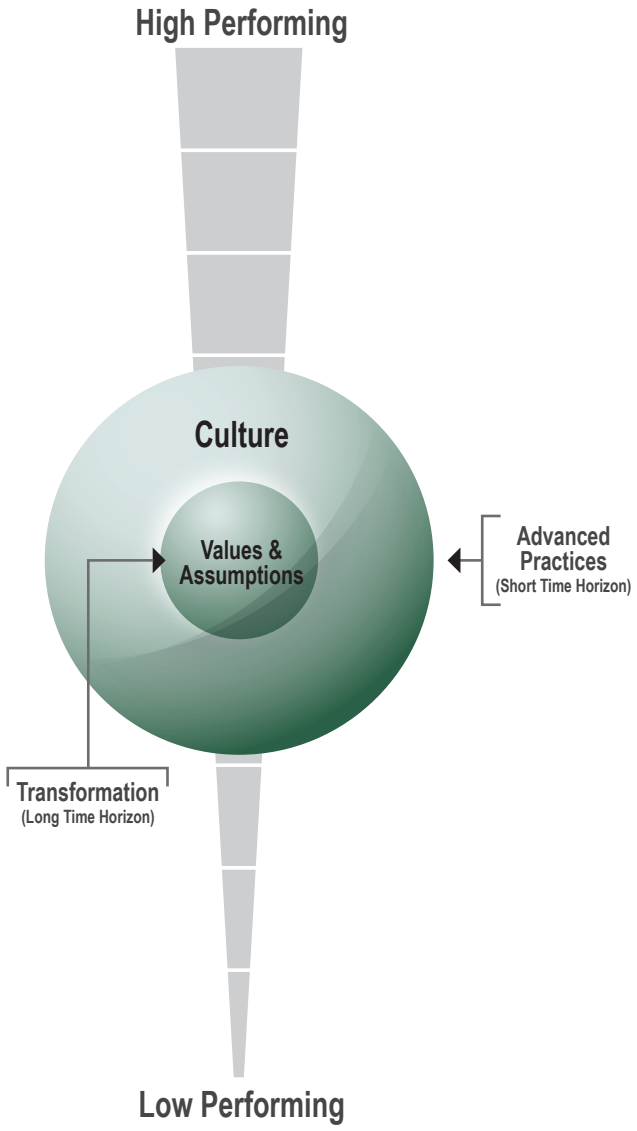

Fig. 3: Safety performance arises from two directions—implementation of Advanced Practices (visible skills or acts enforced by formal managers) and Cultural Transformation (the leadership of all employees shaping deeply held values and assumptions). Attending to both is required to maintain a High-Performing Safety Culture.

The Practices of a High-Performing Safety Culture

The deeper work of transforming hearts, minds, values and assumptions is beyond the scope of this paper. More accessible are the practices that help build the culture required to support both personal and process safety work. We offer here the Practices of a High-Performing Safety Culture. It has been our experience that companies may be strong in some, but rarely in all of these practices. Use this set to assess areas of weakness and focus on addressing them.

From JMJ's perspective, a new practice is best sustained when it is in service of some fundamental commitment, or stand. Therefore, we offer these practices in service of a **stand for the elimination of all injuries and incidents in the workplace.**

Engaging People in a Vision

Leaders create a goal worth pursuing (e.g., nobody hurt), then learn how to enroll others so the goal is spread to those who will actively support the goal, as well.

Listening to People

Formal leaders develop the practice of routinely and systematically listening to those who understand the risks—not only when crisis occurs, but also when things are going right—as the best way to manage the business. The practice of listening is the first step toward generating authentic empowerment in the workplace.

Reporting without Fear of Blame

This practice follows from the previous one: Formal leaders must practice appreciating what is going well, and correcting what is not going well, in a spirit of learning versus blaming. People will report on errors, hazards, risks and "near-misses" if they believe they will not be punished for making mistakes and/or speaking up, and if they are confident that the company will act on what they report. They not only report what is obvious, but they also can be trained to search for what is not obvious, such as latent conditions and patterns of cultural disregard for risks (seeing the visible and invisible safety influences in the workplace). This practice should be just, however, and not overlook consequences for negligent behavior. Management must create an environment in which unsafe work is stopped.

Mobilizing People

The practice of mobilizing people quickly to identify and resolve hazards includes self-organizing into ad hoc networks of those people who are best suited to understand and resolve a hazardous situation. It includes both reactive problem-solving (after a hazard is identified) and proactive problem-solving (anticipating possible hazards and removing them before they manifest). Senior and middle managers must learn to defer to others in the organization, despite their placement in the hierarchy, in order to act quickly.

Renewing Practices, Processes and Procedures

This practice links to the other practices noted here, especially to Reporting. Reporting must result in learning that is then used to update best practices and current processes/procedures. Processes must be living and useful; otherwise, people will work around them, devising their own unofficial (and therefore unknown) practices. This practice includes an awareness of a tendency for processes and procedures to drift toward expediency and practicality over time.

Building Overlapping Layers of Protection

This practice explicitly addresses weaknesses in people, processes and equipment to ensure that hazards are anticipated, seen and/or eliminated when possible. The practice acknowledges and therefore brings an acute awareness of the tendency to "normalize" unsafe practices over time. To mitigate this, formal leaders must continually generate a "preoccupation with failure," a mindset that constantly updates what is known and unknown about current risks.

Caring Actively

According to E. Scott Geller, active caring is the product of three interrelated concepts: 1) a belief that "I can do it", 2) a belief that "it will work"), and, 3) a belief that "it's worth doing".[8] The result of these three attributes is self-empowerment: "I want to make a difference." When applied to safety, the result is a work environment in which people look out for each other as a genuine expression of their regard for one other.

Together, these seven practices can contribute to the development of a culture in which people look out for one another, the business and the environment, by identifying and eliminating all types of hazards, both personal and organizational.

To summarize, we have taken the view that safety culture is a pattern of shared assumptions, values and beliefs that shape people's relationship to safety and result in better or worse safety performance. The seven practices outlined reflect those of a highly developed safety culture and can be a catalyst for moving a low-performing culture toward high-performing safety (Fig. 4).

Fig. 4: These seven practices reflect those of an advanced safety culture and, if applied, help develop a high-performing safety culture.

8 Geller, E. Scott; Working Safe: How to Help People Actively Care for Health and Safety, 2nd edition, Lewis Publishers, 2001.

Safety Leadership and Culture

As previously stated, cultural change comes from two directions—the application of advanced safety practices on the one hand and deep transformation of values and assumptions on the other. The presence of effective leadership is key to each, and the type of leadership needed shifts according to the depth of change needed.

A key distinction important to leadership is between "formal" leadership, or those with formal authority, and leadership that can come from anyone, regardless of where they sit on the organizational chart. The other key distinction is between the types of challenges leaders face, which are either "technical" or "adaptive." Technical problems have a known solution, and adaptive challenges, by definition, require transformational learning on the part of both leaders and followers in order to resolve them.

Creating a workplace free of injuries and incidents requires a mix of all four aspects of leadership. Both formal and informal leaders must take on the challenges, some of which are technical, and many that are adaptive and thus require personal and organizational transformation.

The role of formal leadership is a critical success factor. People watch managers to find out what is important, and to discover what behavior will be rewarded or discouraged. Gaps between what managers say and what they do can create dissonance for employees. For example, a manager who says that "safety is our priority" but then will not invest in the repair of faulty equipment relays an unspoken, underlying message that overpowers the explicit spoken message. This view emphasizes the role of formal leadership in generating a culture that embodies safe practices.

Leaders with formal authority have additional tools they can use because of their access to resources, knowledge and power. They can embed safe practices (the Seven Practices of a High-Performing Safety Culture previously outlined) as the primary vehicle for developing an extraordinary safety culture in the short run, while also seeking long-term and sustainable cultural transformation.

The transformational approach emphasizes the necessary changes in values, beliefs and assumptions in order to effectively commit to the elimination of all injuries and incidents. Such change requires both formal leadership, and leadership that comes from anywhere. Sustainable transformations in organizations are always adaptive challenges. They require people to let go of their preconceptions and learned behaviors in order to embrace something entirely new and unprecedented.

In most cases, the development of an advanced safety culture requires collaboration, either explicit or implicit, between formal and informal leadership. Often, informal leaders lead the critical shift in mindset that unhooks people from past beliefs and frees them to think in ways unimaginable (see inset: Leading Transformations: Lessons from History). These leaders are not invested in the status quo and have little to gain by maintaining it. Instead, they see new possibilities and inspire others to see them, too. This creates tension between a new vision of the future and the inherited habits of the past, a tension that must be dealt with by formal leadership. It is at this juncture that collaborative opportunity between informal and formal leadership emerges. (More details on transformational leadership are available in the expanded version of this paper and through conversations with your JMJ consultant.)

JMJ has found that leaders with skills in both culture development and culture transformation are needed to generate and sustain *Incident and Injury-Free*® work results. And the challenges of the 21st Century workplace require that the advanced practices from the personal safety and process safety worlds be applied.

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Leading Transformations: Lessons from History

Some of the most transformative events in history have been led by people who were not in charge. This includes figures such as Martin Luther King, Nelson Mandela, Mohandas Gandhi, Gautama Buddha, and Jesus of Nazareth, just to name a few. Often these figures created changes at significant risk to their own lives. Their leadership seems to resonate with a collective need for freedom, self-expression or basic human rights. They are able to cultivate a wellspring of collective action that rises up against prevailing structures of injustice. Usually, there is a breaking point where those with authority either accept the needed changes or work to suppress them through subjugation or violence.

The history of unionization is another case in point. Often, the reason for unionization was because of poor working conditions, little regard for the safety of workers, or unfair work practices. These complaints often reached a violent climax before managers and owners would change work practices to benefit workers. These changes in workplace practice required a combination of informal leadership (from union organizers) and formal leadership (from those with power over people and resources) before they were resolved.

In Conclusion

This paper has reviewed: personal safety, process safety, and the cultural and leadership (both formal and informal) aspects of safety.

Personal safety and process safety are distinct, yet both important to the attainment of a workplace that is free of incidents and injuries. Personal and process safety each include a unique perspective, a trained “set of eyes” to perceive the hazards associated with those domains. It will not do, therefore, to substitute one for the other, or to pay too much attention to one area over the other. The view expressed here is that **there is value in distinguishing the perspectives of both personal and process safety, and even greater value in integrating them.**

Finally, the roles of formal and informal leaders, both in creating a workplace free of incidents and injuries, and in generating a high-performing safety culture, were explored. Cultural transformation (change) requires individual mindsets, culture and practices to be willingly changed in order to create a sustainable workplace—one in which no one is hurt, and assets and the environment are protected from harm. This kind of change is neither easy nor quick to produce. However, when a group of committed people choose it, they can make significant and sustainable progress toward their goals.

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