

PREDICTING THE FUTURE

Making the Connection Between Culture & Outcomes

By Peter T. Susca

Having just returned from another fatality investigation, it is both saddening and extremely frustrating to know that the path to a fatality or serious injury is remarkably predictable.

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While these incidents are not necessarily predictable to the degree of knowing to whom and when they will occur, the road to unwanted safety and business outcomes is paved with weaknesses in the elements of the culture-to-outcomes relationship (Figure 1). Organizations that can recognize these weaknesses and see the relationship between them can predict the failure paths to risk and ultimately unwanted outcomes.

The articles from the inception of this column in January 2018 to date (see “Business Class Articles” sidebar on p. 24) have been an attempt to take the reader step-by-step from unwanted outcomes to their ultimate origin in the health of the organization. Dropping principles and perspectives along the way, it was hoped that OSH professionals would use these puzzle pieces to form an image of what the future has in store, the future of an organization and role of the OSH professional.

This article highlights how threats are formed and how they can break through defense weaknesses in the elements of the culture-to-outcomes relationship and, most importantly, how the OSH professional can use the indicators of operational health to predict risk and probable impacts to safety and the business.

The Organizational Futurist

I remember watching old western movies in which a posse always seemed to be tracking down a gang of outlaws. In many of these movies the posse's scout would jump off the horse, observe the environment and say something like, “Five men on horses, three with heavy loads moving north came through here an hour ago. One horse is lame, and they are moving slowly.” Not once did the posse leader send the scout packing and head off in another direction. The leader always seemed to value the predictive capacity of the scout, implicitly follow his advice and chase after the perpetrators at a gallop.

Unfortunately, most “OSH scouts” today are not operating in the Old West or Hollywood. Futuristic information is not easy to communicate and

sometimes not appreciated in today's business environment. The ability to extrapolate the past and present into the future is highly dependent on one's ability to clearly recognize signs, symptoms and indicators, and their relationship to the creation of future risk and outcomes. In the case of the Old West scout, the depth, orientation and quantity of the horse tracks, the weather conditions and the freshness of the road apples were among the indicators that led to the predictive conclusions offered to the posse leader. To be successful at getting leaders to value what is coming down the road, the OSH profession must facilitate the development of an organizational relationship road map and walk leaders through it in a way that illustrates both business and safety value.

Organizational Threats & Defenses

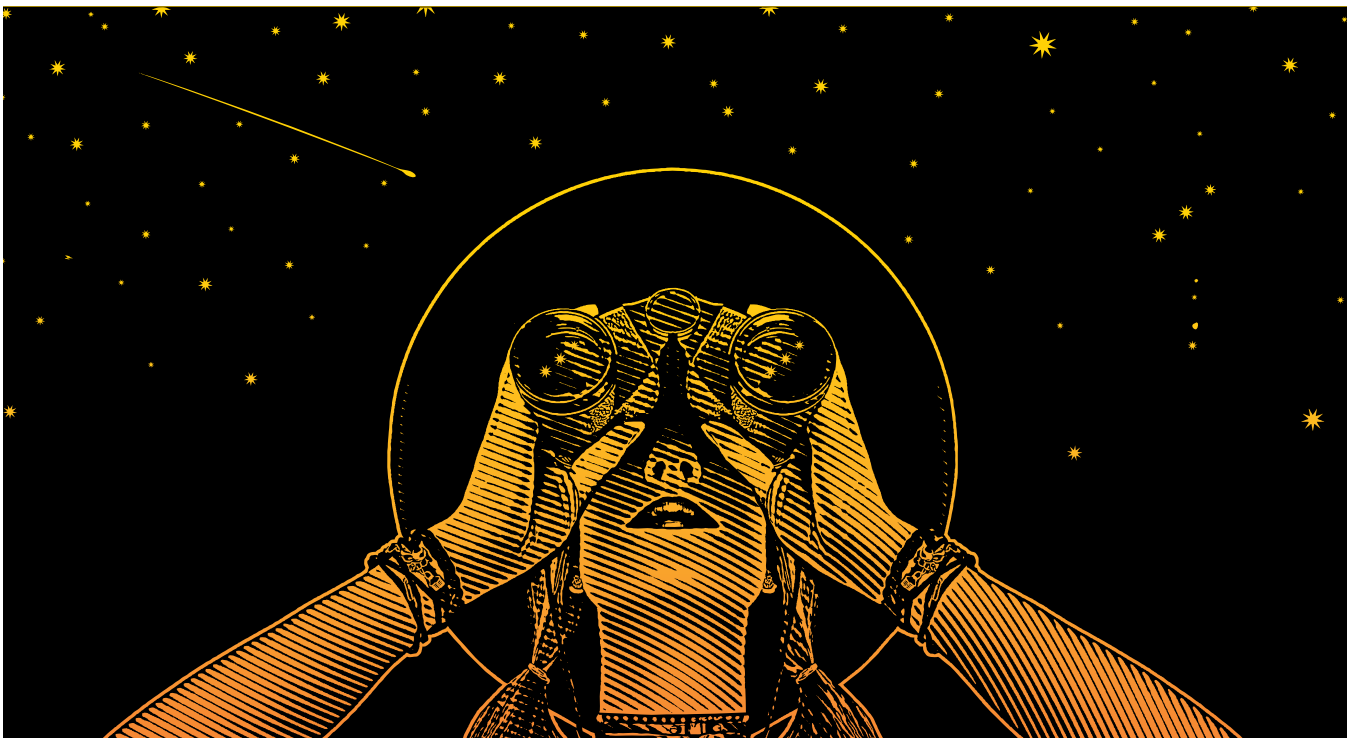
Some of the most significant threats to business health emanate from within the organization. When an organization becomes unbalanced by its values or decisions, weaknesses are created. These weaknesses create risks that often go undetected prior to a significant event. Decisions and incentives that prioritize financial or personal performance often create risk in other areas of the organization.

Organizational and operational factors have wide-ranging impacts on organizational risk. Poorly balanced decisions emanating from organizational and operational factors create threats to all areas of the business. To control these threats, organizations build defenses such as management systems, programs and risk-specific controls. When significant unbalancing factors exist in an organization's culture, their impact on business decisions can create threats so powerful that they can break through the most robust defenses. The indicators of these threats often can be seen and heard where the work of the organization is performed. These threats, although they are readily apparent, many times are not captured as risks by functional (e.g., quality, safety, financial) risk assessments. The reason is that they are often subtle.

While walking through a large truck repair facility, I noted that the operation had, in particular areas, painted the shop floor yellow. When I looked down at the bays from the mezzanine, I could not help but notice the variation in the use and condition of the yellow areas. Some of these areas were used for parts storage, some were used to define walk areas and others appeared to be a

Business Class Article Series

This article series chronicles the principles and techniques that readers can apply to transition safety and the safety profession closer to the core of what organizational leaders value. The foundational philosophy is that safety challenges stem from larger organizational issues. By understanding the core business values, OSH professionals can begin to work from the inside out to engage business leaders, rather than the typical outside-in approach to integrating safety with business. If leaders can tap into this information, they can use it to improve the organization as a whole, and move safety from a purely moral imperative to an indicator and facilitator of organizational health.



pedestrian warning indicator for truck movement. I showed a photo of this area to a group of operations leaders and asked what they saw. They talked about safety issues such as tripping and truck versus pedestrian backing hazards, which were all valid concerns. I agreed but said I saw something more systemic. I then asked them what yellow on the floor meant to them, pointing out each of the yellow areas in the photo. That is when they started to disagree with each other.

I explained that what concerned me was the variation. The same color was being thought of and used in significantly different ways, some safe and others seriously unsafe. I told them frankly, “You have taken the simplest of visual controls and made it complex. If your organization is color blind, then it’s likely the more detailed processes are in serious trouble.” That was ultimately the case. The general rule of thumb in the facility was if you have a good enough excuse (e.g., there is not enough room or support) then it is alright to bend the rules. This operational factor (threat) had degraded the organizational discipline to the point that it had the potential to create unrecognized quality, excessive rework and safety risk every day. A threat such as an organizational lack of discipline for rules and procedures is a cultural pattern that has no limits or boundaries to the risk it can create.

The Culture-to-Outcomes Relationship Map

Many factors facilitate the development and persistence of a threat to organizational health. Similarly, on the defense side of the equation, many factors also contribute to the degradation of organizational defenses. The factors that are common to all business areas tend to be those related to organizational and operational factors (e.g., culture, climate), management system and process health.

About 5 years ago, a client explained the significant organizational challenges he was experiencing at a large plant in Eastern Europe. After listening to his difficulties managing safety risk at the op-

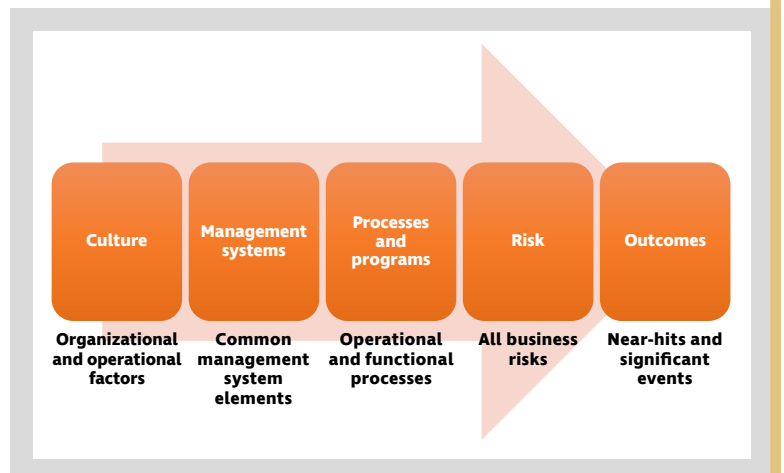
eration and hearing the litany of serious and fatal events, I asked a series of questions to understand the factors impacting the elements of the relationship. As a result of our discussion, I provided a road map showing how the culture of the organization and the weaknesses in the safety defense system would create the next fatality. Unfortunately, about 1 year after I created the map, my prognostication became reality.

Following are two examples of how, in the same company, common organizational and operational factors can facilitate unbalanced decisions (threats) and degrade defenses resulting in significantly different outcomes.

Example 1: The Safety Map

Figure 2 (p. 22) illustrates a safety-specific example of how threats can develop and punch their way through an organization’s defenses to ultimately lead to a fatal outcome.

FIGURE 1
CULTURE-TO-OUTCOMES RELATIONSHIP



Threats

The organizational and operational factors in this example represent the threat side of the map. This is where the threat evolves from the company's advertised values to its actual values. In this case, the company's actual values are so centered on creation of earnings before interest, taxes and amortization (EBITA) that they foster unbalanced decision-making that cascades down to the management of its facilities. The decision to cut costs in the facility's selling, general and administrative expenses (SG&A) is a strategy employed to reduce spending (thereby increasing EBITA). It is supported by management's short-term financial success measures and objectives. The risk associated with this decision is compounded by the siloed organizational structure, separate performance objectives, and poor recognition and communication of the collateral risk impact to the organization.

The threat grows through decisions to cut SG&A in the form of staff reductions and cuts in facility and equipment maintenance spending. To achieve a reduction in maintenance cost and downtime, facilities decide to eliminate preventive/predic-

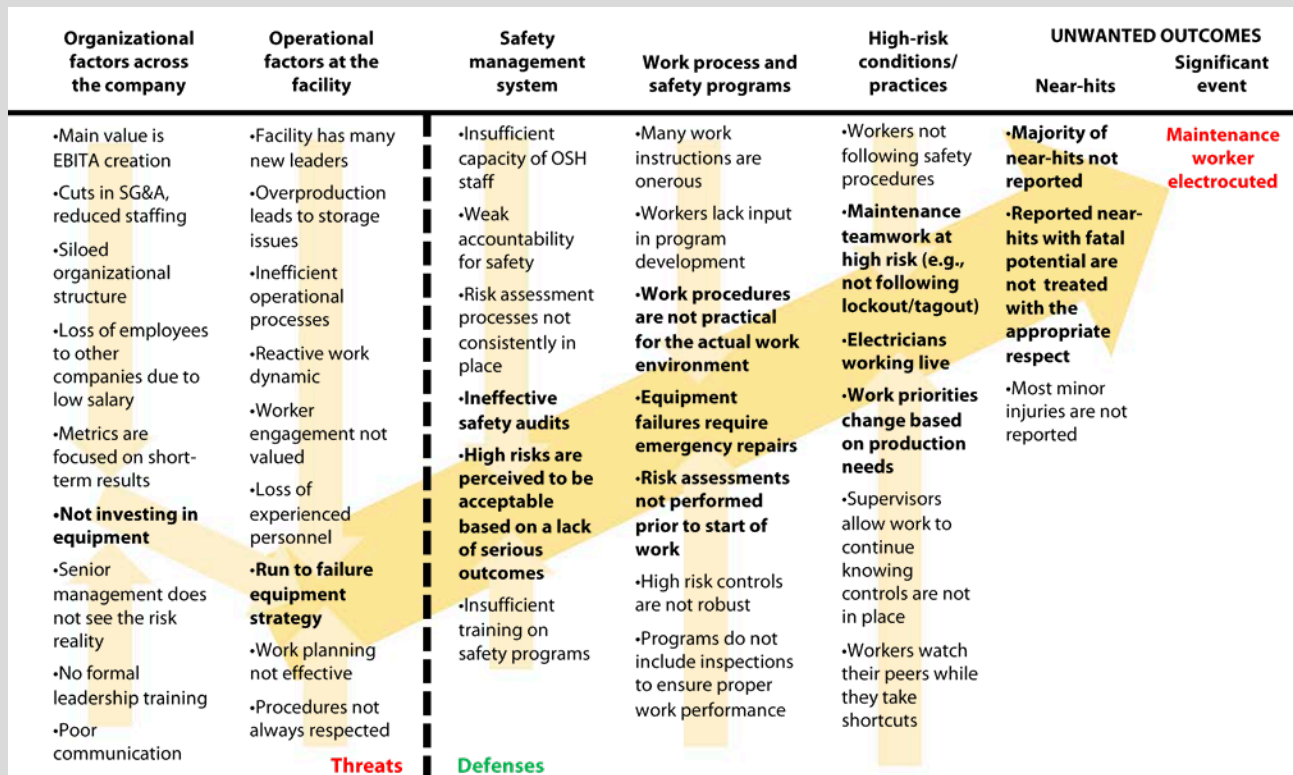
tive maintenance on most production equipment. This run-to-failure approach extracts a maximum amount of short-term productivity from the process lines. The impending failure sets up maintenance staff for crisis-mode repairs on key production equipment. In this example, the run-to-failure decision forms the core of the critical path that sets the maintenance worker up for a high-risk exposure on a particularly bad day.

Defenses

The force field that protects and preserves an organization's expectations is a combination of management systems, programs, processes and controls. In this example, the facility's safety management system has some significant shortcomings. Contributing to the system weakness is the capacity of the OSH staff and the respect and support they receive from senior management. The predictive/preventive core of the system is suffering from gaps in risk assessment, auditing, worker engagement and risk perception. Therefore, the threat makes its way through the outer defenses into the day-to-day work environment. Because the facility's work processes are unrealistic and were not developed with the involvement of workers,

FIGURE 2 CULTURE-TO-OUTCOMES RELATIONSHIP MAP: SAFETY (EXAMPLE FACTORS)

This figure illustrates an example critical path of threat development and defense weakness factors (in bold) connected by the main arrow. The vertical arrows in each column represent the support that the other contributing factors provide to enhance the threat or weaken the defense.



safety risk is not well understood and work practices are undisciplined, leading to significant operational risk. Maintenance workers are not following the prescribed safety controls and they feel comfortable with the risk. There is nothing to change their course from being productive and unsafe because accountability by their peers, supervisors and inspection/audit processes is not effective.

High Risk to Unwanted Outcome

On the last Friday of the month just prior to leaving with his family for vacation, a maintenance worker received an emergency call to get a piece of production equipment up and running. A bearing in the process burned out and caused the production line to come to a screeching halt. The facility management was counting on this week's production run to meet monthly production goals. Operations managers were happy to see the worker arrive, but they were clearly concerned about getting the process up and running. Just as he had many times before, the worker employed a partial lockout to the process line leaving the primary electrical on and shutting off and locking the section in need of repair. To gain access to the bearing

he needed to hoist a section of the process. While hoisting the section it struck an unprotected 220-V electrical connection that energized the part he was guiding. The worker never made it home to his family and the production line remained down for a full week.

Example 2: The Quality Map

Figure 3 illustrates a quality-specific example from the same company depicted in Example 1.

Threats

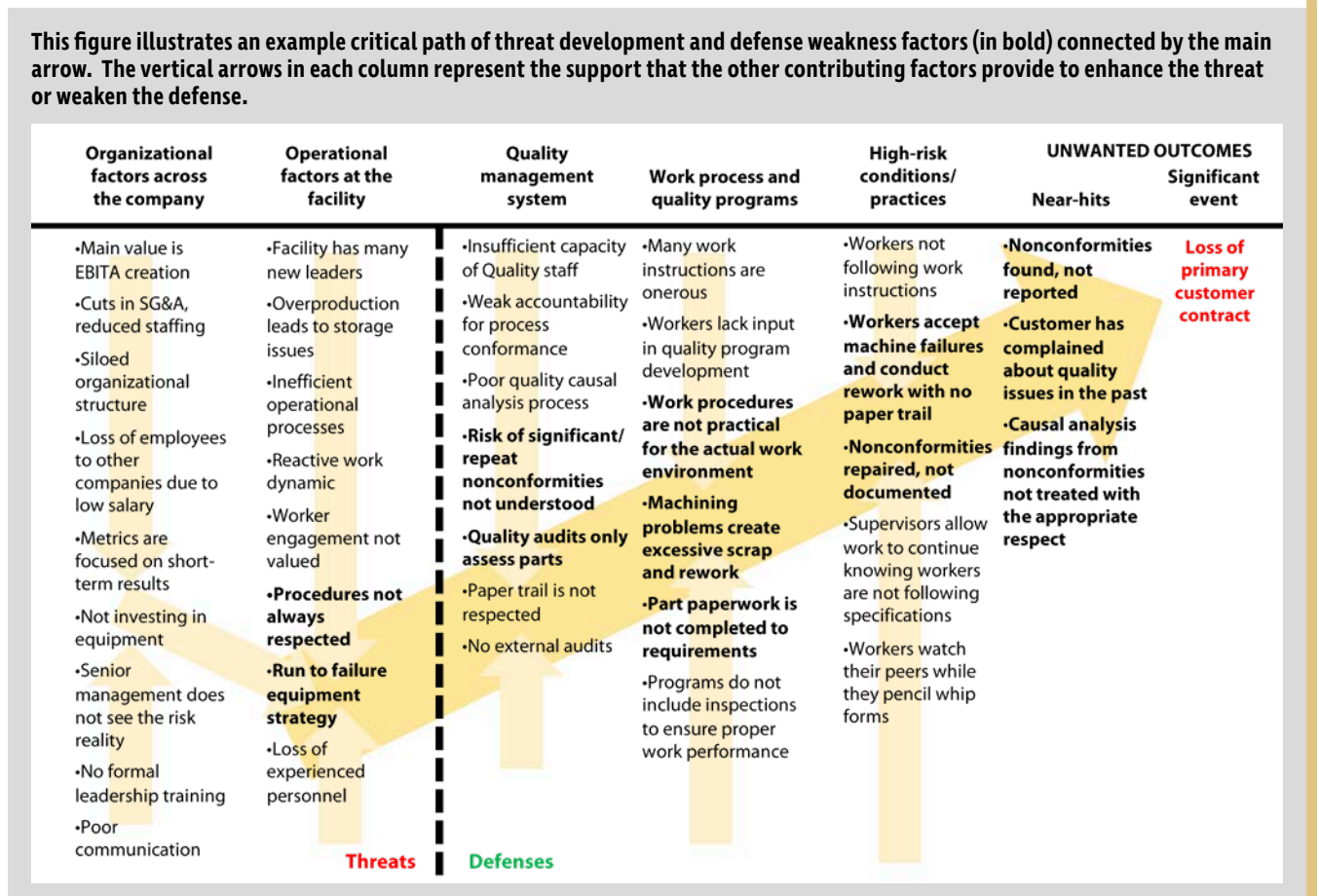
The organizational and operational factors in this example are essentially the same as in Example 1. The main difference in this example is that the decision to eliminate preventive/predictive maintenance creates a quality impact. Because the equipment is experiencing excessive wear it is frequently going out of calibration, which leads to excessive downtime, frustrated operators and bad parts.

Defenses

The quality management system also has some significant shortcomings. These shortcomings are similar to those in the safety management system. Contributing to the system weakness is the capac-

It is possible for a savvy OSH professional to have a clearer view of what is coming down the road, from a business and safety perspective.

FIGURE 3 CULTURE-TO-OUTCOMES RELATIONSHIP MAP: QUALITY (EXAMPLE FACTORS)



ity of the quality staff and the respect and support they receive from senior management. The predictive/preventive core of the system is also suffering from gaps in risk assessment, auditing, causal analysis, worker engagement and risk perception. The threat thereby makes its way through the outer defenses into the day-to-day work environment. Because of poor support from their supervisors and a general feeling that their input is not valuable, the operators become frustrated with the

scrap and rework, and take matters into their own hands to preserve the production quotas. Operators make field adjustments to processes, rework parts that are out of spec and do not leave a paper trail because that may cause them to look bad. There is nothing to change their course because accountability by their peers, supervisors and inspection/audit processes is not effective.

High Risk to Unwanted Outcome

The facility's primary customer has been complaining about out-of-spec parts for more than a year, and facility management has made commitments to improve quality performance.

An increasing number of out-of-spec parts is being identified during final inspection. Most of these were scrapped, causing the scrap rate to increase, which, in turn, caused more work to be performed during off shifts to make up for production shortfalls. During a second shift run, an order of parts was boxed without a complete inspection. These parts were shipped to the customer. The customer was so upset with the company's inability to correct the quality issues that the customer cancelled its orders and contract.

These examples represent a composite of facts gathered from the many organizations and hundreds of fatalities that I have assessed in my career. The critical path highlighted in each example is one of many possible paths created by the same set of threat and defense factors. These examples illustrate that there is never a discrete path or single factor that creates significant organizational risk. Factors throughout the organization are continuously at play building or degrading threats and defenses.

Conclusion

As a longtime advocate of management systems, I used to believe that a robust management system was all that an organization needed to predict and defend itself from threats. As I began to understand more about organizational health, I realized that unbalanced organizational decisions can create such an enormous threat that they can overwhelm even the most effective management systems. Therefore, for an organization to improve its overall health it must reduce threats and solidify its defenses.

Although these factors may not create a significant safety event for many years, they are actively creating risk and negatively impacting other areas of the business. Therefore, OSH professionals must build a business case with their functional peers to develop unified plans to disarm the threats and build robust controls prior to significant outcomes.

Using the mapping principles presented in this article and all of the puzzle pieces that are contained in articles from this column beginning in January 2018 (see "Business Class Articles" sidebar), it is possible for a savvy OSH professional to have a clearer view of what is coming down the road, from a business and safety perspective. **PSJ**

BUSINESS CLASS ARTICLES TO DATE

PSJ January 2018 (pp. 40-42)

"It's Always Bigger Than Safety: The Relationship Between Organizational Culture and Unwanted Outcomes": Provides an overview of the entire series. It creates a relationship between common organizational factors and outlines how safety can be used as a predictive indicator of decision-making health in an organization.

PSJ February 2018 (pp. 56-58)

"Increasing Your Organizational Value": To position the OSH profession to effectively apply the information in the series, this article establishes a strategy for OSH professionals to enhance their organizational capacity and influence beyond the realm of safety.

PSJ March 2018 (pp. 18-21)

"The Business Value of a Common Safety Language": Discusses the common communication challenges between the languages of safety and the business. It provides methods and techniques to evaluate and strengthen the foundation of an organization's safety conversation and decision-making capacity.

PSJ April 2018 (pp. 20-22)

"Making Safety More Efficient and Effective": Outlines symptoms of inefficient safety and some practices to make safety more efficient and business-effective.

PSJ May 2018 (pp. 38-41)

"Transitioning Organizations From Outcome Reliance": The key points in this article will help the OSH professional shift organizations from outcome thinking and decision-making to a more predictive and preventive approach.

PSJ June 2018 (pp. 34-36)

"Managing Successfully in Firefighting Mode": The key points of this article examine the characteristics of reactive environments and ways to be successful as organizational firefighters and fire preventers.

PSJ August 2018 (pp. 18-21)

"Using Processes to Prevent and Predict Risk": Provides the OSH professional

with basic techniques to use excessive OSH risk as an indicator of process health and apply the principles of healthy process design to foster a more productive business environment.

PSJ October 2018 (pp. 24-26)

"How Healthy Are Your Risk Management Programs?": Outlines principles that OSH professionals can use to evaluate the health of programs and management systems in their organization.

PSJ February 2019 (pp. 18-21)

"The Value of Effective Management Systems": Discusses the attributes of an effective management system and the predictive value of an effective system, in particular, how OSH practitioners with this knowledge can add value to OSH and the business as a whole.

PSJ April 2019 (pp. 16-19)

"Balanced Organizational Decision-Making": Offers an entry point for discussion on the impacts of decision-making and ways to improve and balance the organizational decision-making process.

PSJ June 2019 (pp. 22-24)

"Measuring Up: Evaluating Effectiveness Rather Than Results": Provides examples of weaknesses in predictive measurements and techniques to move an organization's measurement approach to a higher level.

PSJ September 2019 (pp. 24-26)

"The Influence of Organizational Culture on OSH": Reviews and discusses the impacts of organizational culture on OSH and how the OSH professional can better understand, operate within and influence organizational culture.

PSJ December 2019 (pp. 13-15)

"Eliminating the Fork in the Road: Making Safe and Productive Interdependent": The focus of this article is the fork in the road where productivity and safety diverge. It discusses how organizations should prevent and remove of the fork, rather than control risks and harm at the fork.