

The Seventh Value

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Introduction

The world's safest organizations are unified in six basic beliefs about worker safety that guide even the most basic business decisions—whether directly or indirectly. These beliefs are hardwired into the organizations and are visible only by the actions of the members. These beliefs are central to the organization and are so entrenched as to define the characteristics of the organization itself. These six values are:

- All injuries are preventable
- Compliance is not enough
- Prevention is more valuable than correction
- Safety is everyone's job
- Safety is a strategic business element
- Safety is owned by Operations

Far from being mere posters on a wall, these beliefs are values in the purest sense; they are the deeply held principles that guide the organization in even the smallest endeavors. But recently, it is obvious that a seventh value has emerged: safety cannot be measured by the absence of injuries; instead it is an expression of the relative risk of injury. This subtle shift in thinking has profound implications in how the safety of the workplace is viewed. In many respects this seventh value permeates and provides a context for the other six values.

The First Value: All Injuries Are Preventable

“Forewarned is forearmed,” or so the old adage goes, but even among safety professionals there is significant resistance to the belief that every injury can be prevented. This resistance is rooted in the guilt that many feel when a worker is injured. If one truly believes that injuries could have been prevented and yet a worker was injured despite this opportunity, then one is driven to find someone culpable for the injury. Also, if one believes that all injuries are preventable but someone is injured the situation flies in the face of the contention that the organization did all it could do to prevent injuries.

Of all the values, there is perhaps more resistance to the notion that all injuries are preventable than any of the other values; particularly among safety professionals. Why is this value so controversial? Inevitably critics will argue that the laws of statistical probability prove

that somewhere somehow, someone will eventually get injured; it's a specious argument akin to the philosophical conundrum "if you had an infinite number of monkeys typing at an infinite number of typewriters eventually one of them will eventually write the collective works of William Shakespeare." Fortunately, we are not dealing with infinity; there are a finite number of workers working a finite number of hours. There are also a finite number of risk factors, and a finite number of hazards. But even if there were an infinite number of injury risk factors, statistical probabilities are just that: probabilities, not certainties. Is it probable that an organization will eventually have an injury? Perhaps, but that is a key distinction from certainty. When we give into the inevitability of injuries we absolve ourselves of the accountability for minimizing worker risk and comfort ourselves in the belief that there was more nothing we could have done.

In the world's safest companies, most people understand that injuries are no more inevitable than quality defects or downtime. These people know that injuries usually come from unexpected events and unusual circumstances. Often workers are injured when they are doing things they have done many times in the past. By identifying all the job elements that can possibly fail and implementing counter measures before they fail, injuries can be eliminated. All workers, especially leaders, must be made to understand that a key element of their jobs is to make the process safer.

So while some may argue that statistically someone will eventually get hurt, the world's safest organizations diligently work to lower the probability that a worker injury will occur by eliminating hazards that are likely to cause injuries. By reducing the physical hazards behavioral conditions¹ one reduces the probability of injuries to infinitesimally small levels. Beyond hazard detection and elimination, the world's safest companies undertake a rigorous process of Process Failure Modes Effects Analysis (PFMEA). The Failure Modes Effects Analysis (FMEA) approach has been in use for decades in engineering centric organizations like NASA and the aerospace industry. "Failure Modes" is a term applied to the aspects of an operation that could go wrong. Typically, process engineers, that is, the people tasked with designing the processes by which a good is manufactured or a service is performed will conduct a FMEA to anticipate and prevent or countermand a failure in the processes. (There is a similar process for anticipating product failures. Many of the warnings that put on products are not—as many people assume—the result of product liability lawsuits, rather they are the counter measure to a product failure that a product FMEA was used to predict.) The world's safest organizations use the FMEA discipline to identify the most likely process failures that could cause injuries and either alter the process to avoid the hazard or add some sort of safety control to reduce the likelihood of exposure to the hazard.




Cell: Quick Turn Operation: Flame Spray (Robotic)

| # | Step | Failure Mode | P | Prevention | S | Contingency |
|---|---------------------------|---|---|---|---|--|
| 1 | Load dist into containers | Inhalation of dust | H | Wear dust mask | L | Report to clinic for treatment |
| | | Dust in eyes | M | Wear safety glasses with side shields | M | Eye wash station |
| | | Dust in cartilage | L | Wear respirator | H | Report to clinic for treatment |
| | | Drop bag on foot | L | Train team member in proper lift techniques | M | Report to clinic for treatment |
| | | Back Strain | M | Train team member in proper lift techniques | L | Report to clinic for treatment |
| 2 | Place part on part holder | Cut hand on sharp edge | H | Wear gloves | M | Report to clinic for treatment |
| | | Drop part on body | M | Train team member in proper part handling techniques | M | Report to clinic for treatment |
| | | Cut arm reaching across part | M | Rearrange the work area to reduce the need to reach across part | M | Report to clinic for treatment |
| | | Trip over damage | L | Rearrange area to clear foot path | M | Place cardboard over parts and stock to reduce the chance of contact |
| | | | H | | H | |
| 3 | Operate Robot | Pinched between robot and other equipment | H | Install guards | H | Ensure guards are equipped with kill switches that disrupt power if the guard is removed |
| | | | H | | H | |
| | | | H | | H | |
| | | | H | | H | |
| | | | H | | H | |
| 4 | Examine/Clean Up part | Cut on sharp edge | H | Wear gloves | M | Report to medical for treatment |
| | | Dust in eye | M | Wear safety glasses with side shields | M | |
| | | Dust in cartilage | L | Train team member in proper lift techniques | H | Report to clinic for treatment |
| | | Use of compressed air injures hearing | M | Wear hearing protection while using compressed air | H | |

Figure 1. Sample PFMEA

A limitation of the process FMEA is the natural tendency of processes to trend toward disorder. Often, the process as eventually implemented differs dramatically from how the process was initially designed. Process steps and tasks are tweaked as the process is perfected. Also, over time, there is a natural tendency for variation to enter the process. The effects of this variation are impossible to completely and accurately predict so the world's safest organizations take further steps to ensure that the risk of worker injury is minimized. One such activity is the development of Job Safety Analyses (JSAs). A JSA is like a mini-FMEA, in that it identifies the things that could go wrong and hurt a worker. But the world's safest organizations typically have moved beyond JSAs and have completely integrated safety considerations into their Standard Work Instructions (SWIs). SWIs identify the most efficient way to perform a task.

FMEAs, JSAs, and SWIs are limited in that they can only be effectively used to address standard work, that is work that is performed routinely, while they cannot protect workers from situations and tasks that are not routine. This creates a significant challenge for the world's safest organizations because most tasks performed in organizations are labor intensive and human behavior is rife with variation; people aren't always able to replicate their actions no matter how hard they try. When variation enters into a process there is a significantly higher likelihood that something unpredictable will happen, often in the form of product defects, equipment damage, or injuries. The world's safest organizations routinely check their processes and record, contain, and correct the potential hazards.

So while many companies feel that some injuries are an inevitable cost of doing business, the world's safest companies believe they can prevent all injuries by predicting and removing the hazards that cause them. The idea that it is always possible to keep people safe is an essential, fundamental belief.

The Second Value: Compliance Is Not Enough

In general compliance comes down to rules; a successful organization must always follow the appropriate rules, regulation, and laws governing workplace safety, but following the rules alone

can never completely protect workers. To be safe, organizations must always anticipate the consequences of an action and be prepared to take steps to prevent injuries to workers. Organizations can never ignore safety violations, and workers should not be made to wait to be told the necessary safety precautions but instead should be encouraged to take an active role in compliance by asking what the safety requirements are whenever they enter a new or unfamiliar area.

Compliance is more a measure of organizational discipline than of workplace safety. Certainly there is a correlation between compliance with safety regulations and fewer workplace injuries—just as there is a correlation between an organization with a little process variation and a good safety record—but this is an imperfect correlation and certainly no cause-and-effect relationship exists.

More and more organizations are participating in OSHA’s Voluntary Protection Program (VPP.) The Department of Labor describes the VPP on its website as a program used to “promote effective worksite-based safety and health. In the VPP, management, labor, and OSHA establish cooperative relationships at workplaces that have implemented a comprehensive safety and health management system. There are three ways to participate in VPP: Site-based, mobile workforce, and corporate. Approval into VPP is OSHA’s official recognition of the outstanding efforts of employers and employees who have achieved exemplary occupational safety and health.”

VPP and similar efforts are laudable and commendable accomplishments, but the world’s safest companies recognize that compliance alone is not enough to ensure worker safety. Certainly it is important that organizations comply with all applicable laws, regulations, and other requirements but there is no cause-and-effect relationship between compliance and reduction in worker injuries. The world’s safest organizations view compliance as the starting point toward keeping people safe.

While it’s true that an organization that skirts compliance requirements is unlikely to make the effort and commitment necessary to implement and sustain a “zero tolerance” safety system, it’s also true that companies who are satisfied by being VPP certified may be lulling themselves into a false sense of security. The world’s safest companies comply with regulations because it’s the right thing to do, not because they fear fines or lawsuits, and while there’s definitely a strong correlation between companies that value compliance and those that have low incident numbers, compliance does not guarantee the safety of the workplace. Compliance is an indicator of lower risk and is therefore a valuable indicator, but realistically only the beginning.

The Third Value: Prevention is More Effective than Correction

While it’s nice to say that safety is everyone’s job, it’s often difficult to define exactly what that means. *If* an organization has job descriptions and *if* these descriptions identify safety duties they are typically poorly defined and so vague as to be useless and meaningless; it’s worth remembering that these are values that are shared *throughout* the safest companies—at all levels. The world’s safest companies help to build an understanding of specifically how safety relates to all employees’ jobs by:

- Reminding each worker that identifying hazards (things that could lead to a near miss—e.g. poor visibility in an aisle,) near misses (things that could have hurt a worker but that did not,) and incidents (things that will hurt someone should the person interact with them) is a primary job responsibility.

- Reinforcing workers that the reporting of near misses is essential to improving processes. Injuries and near misses afford us with invaluable information about our workplace and unless we know about these conditions we miss the opportunity to learn from them. As Edmond Deming said of quality, “drive fear out of the system;” make safety about data rather than about punishment.
- Expect workers to behave safely and report all hazards. An employer should be surprised if a worker states that they have not identified any hazards or improvement opportunities.

Perhaps the single most important element in both the quality revolution and lean thinking is the revelation that preventing problems is the most economical way to do business. This isn't as easy a sell as it may sound. There are many who believe that cost avoidance is unquantifiable and unreliable. To understand the value of cost avoidance one has to understand statistics and statistical analysis of data. Take for example a manufacturer with whom I worked implementing a safety management process. During the bid process the manufacturer gave my firm ten years worth of Workers' Compensation cost data. We conducted statistical analysis of the trend and found that the company was trending toward \$10 million in WC costs, but the last year they had a cost of \$6.5 million. After completing our one-year engagement, the plant had reduced its WC to \$1.75 million. I believe that we were able to save the company \$8.2 million in cost avoidance, and I have statistics to back up my assertion. But someone who is less familiar with statistics could argue that the only actual savings were closer to \$4.75 million ($\$6.5m - \$1.75m = \$4.75m$). Others still may argue that there were no savings at all because there was no absolute proof that they would have spent that money, reasoning that they might have gotten lucky. Clearly, a working knowledge of statistics and statistical analysis is important to the value of prevention relative to prevention.

The world's safest companies don't believe in luck, rather they understand that statistical analysis of their processes and the ability to predict likely process failures are far more effective in reducing worker injuries than relying on chance.

In 1998, the National Safety Council created estimates of how much an injury event was likely to cost an organization. I haven't adjusted for the rise in healthcare, wages, and cost of living, but I think we can agree that these cost estimates are on the low side, and that it's safe to assume that these costs have risen because the rise in healthcare costs since 1998 are well documented. The estimates that the National Safety Council made were that the average fatality costs a company \$910,000, the average lost workday case costs \$28,000, and the average recordable injury costs \$7,000. If one uses these multipliers one can easily see the wisdom of avoiding injuries versus waiting passively and reacting to injuries.

So how do these companies prevent injuries? They have several activities designed to identify, contain, and permanently correct the hazards that are most likely to cause injuries:

1. **Workplace Safety Walk-Through.** At least once a week supervisors formally inspect their departments and look for things that could go wrong. The supervisor varies the time of the walkthrough so that variables like time of day, work being performed, personnel, etc. can be addressed.
2. **Hazard Data Recording and Tracking.** Hazard data is collected and stored in a software application that tracks hazard type, location, containment action, responsible party, category, and a brief description of the recommended corrective action. A risk level is assigned which determines the priority with which the correction of the hazard will be implemented.

3. **Standard Work Instructions that Include Job Safety Analysis Data.** Standard Work Instructions (SWIs) are designed to identify the most efficient way to perform a task, and since injuries are inefficient and wasteful SWIs in the world's safest companies are descriptions of the safest possible way to do a job.
4. **Formal On-The-Job Training (OJT).** The world's safest companies recognize that the best way to prevent injuries related to behavior is to provide world-class, job specific training. A person who understands the safest way to complete a task and who has been taught the reasons for safety procedures and the risks associated with not following safety protocols are far more likely to avoid injuries than those people who have not been properly trained.
5. **Mistaking Proofing of Processes and Equipment.** As I have previously mentioned, people invariably make mistakes and do so because that is how the brain learns and innovates—through trial and error. The world's safest companies continually look for ways to make the process and equipment “mistake proof.” That's not to say that these companies are able to prevent people from making mistakes, rather they focus on minimizing the negative consequences of the mistakes. So for example, correcting the process so that a part cannot possibly be put in backwards does not prevent an individual from trying to force the part in backwards, rather it prevents the individual from successfully installing a part backwards and creating a quality defect or safety hazard.
6. **Safety Integration into Layered Process Audits.** Layered Process Audits are growing in popularity as organizations recognize the problems associated with treating a business element without considering its relationship with one or more other business elements. Layered Process Audits are structured method for bringing resources to bear on those processes that are most at risk of failing because of heightened variation. Layered Process Audits have three parts:
 - a. Audits of key processes. The audits of key processes tend to be focused on all elements: Safety, Quality, Delivery, Cost, and Morale. The audit consists of simple questions about each of these elements as it pertains to a specific process.
 - b. Layers of Auditors from all areas of Management who perform Audits. In traditional auditing, small teams from a particular function audit against criteria specific to their function. For example people from the corporate safety department audit for safety, a team from quality address quality issues, etc. In a Layered Process Audit the audit team is both horizontally and vertically integrated; in other words, you have a multi-disciplinary team from several levels of the organization auditing against multiple business elements.
 - c. A means for tracking accountability for correcting the areas of non-compliance.
 - d. Process Layered Audits are key for better embedding safety activities into Operations. The more safety is seen as endemic to the day-to-day routines of Operations the safer the workplace is likely to be.
7. **Safety Strategy Development and Deployment.** All the data in the world is useless without some means of turning it into useable information and subsequently turning that information into constructive action. The world's safest companies meet regularly to analyze data trends and create proactive actions to minister to those trends. These companies look for emerging trends and the associated challenges to safety. Most of the other activities described here are dependent on the quality of the safety strategy.

One saves more time, resources, and expenses when one focuses on preventing hazards rather than reacting to them once a person is injured. Safe companies believe that it's smarter in the long run to prevent accidents before people get hurt than it is to pay to treat those injuries after the fact.

The Fourth Value: Safety is Everyone's Job

This value is far and away the most espoused and most misunderstood. I have never visited a facility or presented this value and not had people claim that this value, at least, was held by their organization. Yet when I probe a little and ask to see where in a job description there are measurable, observable duties relative to safety, I have yet to see such a job description. At the world's safest companies employees at all levels understand their role in making the workplace safe.

Making it Safe Versus Keeping It Safe

Because the seventh value holds that true safety can only be achieved through zero risk, and because absolute zero risk is impossible to achieve, the world's safest companies understand that safety is the byproduct of all employees actively seeking ways to reduce the risk of injuries. As one employee at a forward thinking manufacturer put it. "We used to say what a safe place to work this is, but now we say that it's an unsafe place to work and everyone needs to be vigilant in making it safer."

Universal engagement in safety is manifested in many ways. One of the most prominent and visible ways of this organizational demonstration of universal engagement is self-policing. Self-policing is the practice of individual employees reminding other employees or visitors of the dangers and reinforcing ways to be safer while in the workplace. I once worked with a manufacturer who implemented a policy requiring safety glasses in all production areas after several decades where the policy required safety glasses only in areas where work was being performed and only by the person performing the actual work. Several months after the policy was introduced I decided to test the system. I walked into the production area without safety glasses and an hourly worker approached me and said, "I don't want you to get hurt, come on, let's get you some safety glasses." I was stunned. I had hoped that someone would challenge me, but I was shocked that I was unable to walk six feet into the work area without the first person to see me stopping me and making sure that I was protected. Beyond the quick response, I was further astonished by the concerned tone and matter-of-fact, even friendly, way in which the worker handled the situation. I tried the exercise several more times and got virtually the same response from each worker.

Merely saying that safety is everyone's job does not make it true. In fact, in most cases where I have seen signs and posters proclaiming this value there is little or no behavioral reinforcement of it. The posters almost seem hypocritical. I suppose one could argue that the posters are expressions of to what the organization aspires, and one could further argue that once the value is truly institutionalized there is little value to put up posters proclaiming it. Organizations that have truly hardwired the value that holds that safety is everyone's job seldom feel the need to post this value.

For leaders, this value manifests itself quite differently. Leaders need to expect complete participation in safety and accept nothing less than 100% commitment to safety because it is embedded into processes. When leaders demand everyone's participation in keeping the workplace safe, safety becomes the way the company does business. From the boardroom to the

janitor's closet, everyone at the world's safest companies recognizes that safety is part of every job.

But in a deeper sense, this value manifests itself as the recognition of safety as internal to processes rather than an external function that focuses on compliance with safety rules or OSHA regulations. When safety is everyone's job it becomes invisible and hardwired into how each task is performed.

The Fifth Value: Safety is a Strategic Business Element

Safety is a non-negotiable part of how the world's safest companies do business. The goal of these organizations is to produce the highest quality products and services safely and efficiently. If an organization cannot produce goods and services safely, how much confidence will its customers have in the safety of the products or services it provides? Organizations cannot be successful without an efficient and safe production system that produces goods and/or services.

Successful business leaders have well thought out and effective management strategies for all business elements and the world's safest companies recognize that safety is a key business element. A key business element is an area that—if not managed carefully and effectively—can jeopardize the continued survival and success of the company. The world's safest companies know that the true cost of safety goes far beyond the cost of treating workers and can impact a wide range of business functions. There can be direct costs: workers' compensation pay outs, medical bills, legal fees, and down time, but there are also indirect costs: public relations fall out, quality issues related to replacement workers, wages paid to first responders, loss of production, difficulty recruiting, damage to the corporate reputation or brands, and a host of other costs that, while very real, are impossible to quantify. Effective companies manage all of their key business elements—including safety—using both qualitative and quantitative data.



Figure 2. Sample Scorecard with Both Leading and Lagging Indicators

Quantitative data are typically a straight count of the number of a given indicator. For example, the number of slips, trips and falls, would be quantitative data; while rates calculated to

describe the state of safety at a location tend to be qualitative data. The world's safest companies understand the implications of quantitative and qualitative data (see Figure 2). These companies track and measure their safety efforts as closely as they do Quality, Delivery, Cost, and Customer Satisfaction, and a safety strategy must be a part of a total business strategy. Nowhere is this more evident than in the Quality Operating System (QOS) boards and scorecards. In the world's safest companies even the most cursory glance would show that safety is given parity with quality, Delivery and Cost. And because safety is a strategic element, the world's safest companies not only monitor a blend of leading and lagging indicators, but they also conduct analysis of the relationship of the two. At the world's safest companies, the term "indicators" is more than a buzzword, rather the term is used literally to denote a condition that indicates the presence or absence of some important business condition.

Monitoring Lagging Versus Leading Indicators

The debate over whether to use lagging (measurements of things that have happened) or leading (measurements of things from which one can infer a trend or pattern predictive of a future event) has raged for years in the Safety community. Proponents of leading indicators deride lagging indicators as irrelevant, because they measure things that are in the past and can be seen as more of a body count than a good predictor of future performance. But advocates of lagging indicators tend to argue that OSHA requires lagging indicators, and that leading indicators can tend to be too soft and don't provide a solid base line from which critical data can be extracted.



Figure 3. Sample Lagging Indicators

Benefits of Lagging Indicators

The first step to any organizational improvement is accurate measurements of the current state. A current state measurement is by definition a static look at the organization. Lagging indicators like Incident Rates or Lost Work Day due to Injury (LWDI) rates are useful because they are normalized, calculated data. Because these rates are normalized, they aren't impacted (negatively or positively) by the population size or production volumes. But in this form IR or LWDI don't provide much useful information, and operations personnel tend to be impatient with data for data's sake. Some organizations will compare their incident rate against the average for their

NAICS or SIC Codes. Comparing your rates against an average is more useful than considering the rates themselves because some industries are more at risk of injuries than other, less intrinsically dangerous industries. Also, it is far more useful to compare specific injury types within an industry than across industries, as the processes employed by different industries may be more prone to a given type of injury. But where the world's safest companies find the lagging indicators most useful in Is/Is Not analysis within problem-solving. In this type of problem solving the team looks at conditions that existed at the time of an issue and conditions that could have existed but did not. For example, if there was an increase in injuries correspondent to an increase in production this would provide the team diagnostic information relative to the problem—this would be especially true if this correlation existed in this case, but was not true in other similar cases. The world's safest companies see lagging indicators as important tools for identifying of process variation, or for establishing priority. For example, Figure 4 represents an organization's injuries by type for a year.

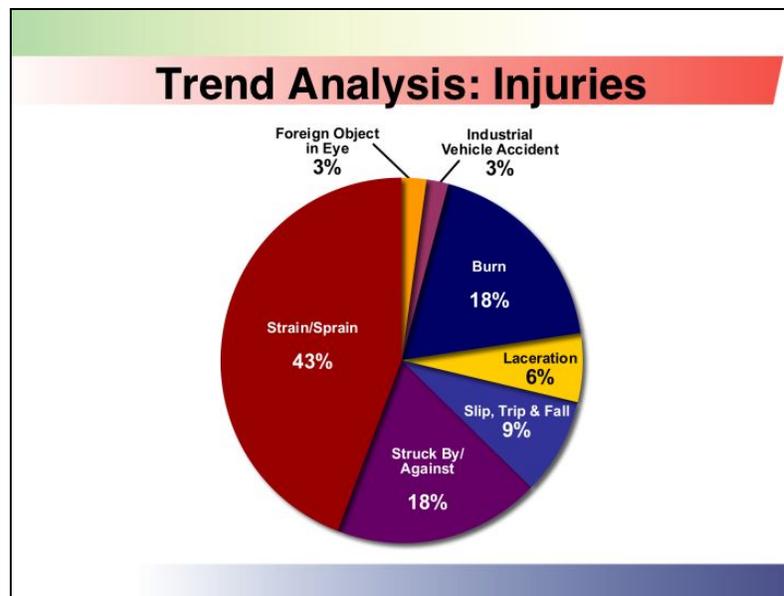


Figure 4. Sample Trend Analysis of Injuries

Since strains and sprains represent the clear majority of injury causes it would seem to make sense to create a strategy for addressing this cause. But these lagging indicators alone don't really provide a complete picture. Another lagging indicator that is useful is Figure 5 below that depicts the types of hazards found during workplace inspections or observations. But again this data really doesn't offer much insight into anything more than what was done.



Figure 5: Sample Trend Analysis of Hazard Types

One could argue that this chart would provide insight into the quality of the inspections or observations, but even this is a specious argument, because it ignores population size and variance between the inspective events. (We don't know the data population size and cannot distinguish between data collected by one person from data collected by a thousand people; that is not to say this data isn't valuable, but it does point to the need for further refinement of the data.)

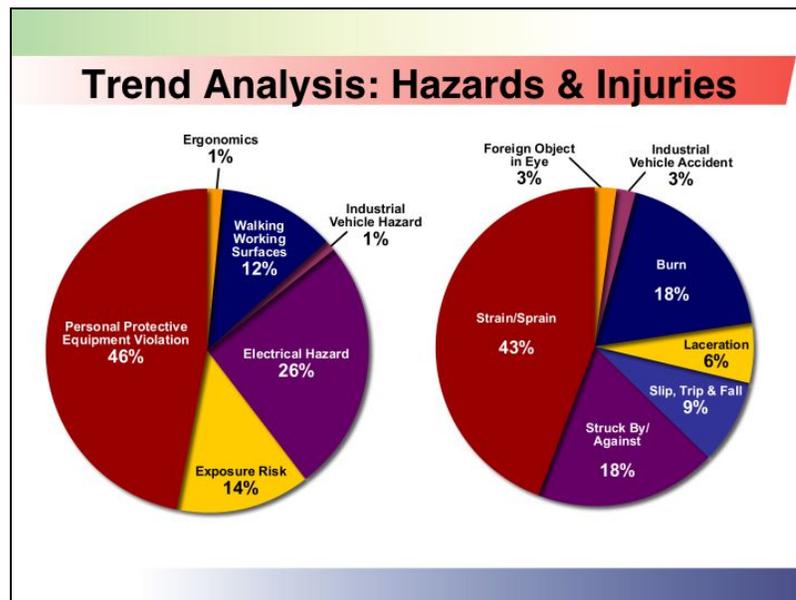


Figure 6. Sample Trend Analysis Hazard & Injuries

Assuming that the population size is sufficient to make statistically valid inferences comparing both charts side-by-side provides us with a better picture of the viability of our injury reduction process. In this case, it is obvious that there is not enough attention focused on identifying and correcting the hazard conditions that cause most of the injuries.

Leading Indicators

Leading Indicators are those measurements or data collections that provide insight into emerging trends. Leading trends are far trickier to interpret because there isn't always a cut and dry conclusion that can be made simply by reviewing the trend, and sometimes safety professionals may draw inappropriate inferences based on the indicator. One common leading indicator is participation in safety activities, whether it be completing required inspections/observations or participation in safety meetings. While ostensibly these appear to be good leading indicators, in far too many cases these indicators are poorly constructed or lack elements that are crucial to the organization's understanding of what the data is truly indicative. For example, while it is important to understand whether or not a given supervisor has completed a safety inspection over time, a better leading indicator would be paired with a qualitative measure.

| Score Card: Safety Inspection | | | | | | | |
|-------------------------------|-------------|-----------|--------|--------|--------|-------|-----------|
| Supervisor | Week Ending | | | | | | |
| | 1-Apr | 8-Apr | 15-Apr | 22-Apr | 29-Apr | 6-May | 13-May |
| Justin White | Yes | Yes | Yes | Yes | Yes | No | Scheduled |
| Joan Mauve | Yes | Scheduled | Yes | Yes | Yes | Yes | Yes |
| Allen Blue | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Kim Grey | Yes | Yes | No | Yes | Yes | Yes | Yes |
| Robin Teal | No | No | Yes | Yes | Yes | Yes | Yes |
| Chris Coral | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Jean Violet | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Lauren Redd | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Dan Tan | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Dave Yellow | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Kelly Green | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Scott Canary | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Figure 7. Sample Scorecard

Simply knowing whether or not a supervisor routinely completes a task without knowing the quality with which it was completed does adequately provide enough information for one to infer whether or not the inspections will ultimately help the organization to improve the safety of the workplace. Many organizations have greatly improved their measurement of safety indicators, but the world's safest organizations have an infrastructure for interpreting indicators and using them to predict future trends and to solve issues before they become problems. These organizations understand that collecting indicators without knowing what these metrics mean, or without the ability to translate the information to organizational action is pointless, time consuming, and inefficient. The world's safest organizations also interpret safety indicators to gauge the success of interventions they have taken to address issues. In many organizations that are collecting leading and lagging indicators without the appropriate infrastructure for

interpretation and intervention may actually do more harm than good by diluting resources, reducing crucial focus, and needlessly increasing cost and headcount. The principle difference between the world's safest companies' use of leading and lagging indicators and their use by other organizations lie in the interpretation of those indicators and the actions taken based on that interpretation.

The Sixth Value: Safety Is Owned By Operations

Operations ownership of the safety of the workplace is essential, and yet it is one of the most misunderstood of the six values. Many people believe operations cannot be truly successful until the work place is free of injuries; for this to happen safety must be hardwired into the way the company does business. Operations ownership refers to the department in which the safety *function* resides, but it is far more than that. Operations run the business and it is of paramount importance that the business be managed such that all process variation is actively sought out and eliminated wherever possible; to this end, Operations must see Safety as akin to quality, delivery or cost. Often, when I am speaking on the six values I have people describe their organization as having Operations ownership of safety, but they mean that in a reactive sense, that is, Operations polices safety. But the Operations within the world's safest companies do more than police safety, but truly internalize it. Safety has ceased to be someone's job and instead has been hardwired into everyone's job.

The safety professional is no longer responsible for keeping the work place safe, rather supervisors and team leaders are tasked with identifying and removing hazards. Teams of operations personnel replace the safety committees where supervisors and area managers present the results of their incident investigation. And Operations works relentlessly to ferret out and correct conditions that could result in worker injuries. Years ago I co-presented at the Michigan Safety Council with executives from Williams International. Williams VP of Manufacturing, Cal Schalk started his speech by saying, "If Phil would have told me a year ago that I would be addressing a room full of safety professionals I would have thought he was crazy. But over the last year I've come to realize that we are ALL safety professionals!" I was really floored, but in that moment I realized that Williams had truly internalized this value. And at the end of the speech, Williams' Safety Manager, Ron Gebhardt, addressed the crowd. Ron said, "When you achieve Operations ownership, your job doesn't go away, and in fact, it doesn't even get any easier. But what does happen is that your work gets more meaningful and more rewarding." I've implemented so many culture change interventions for so many customers that it should not surprise me, but time and again I am taken aback by how fiercely Operations will own safety, and how deeply ingrained in the way they do business it quickly becomes.

A lot of safety professionals try to instill this value by talking about safety in terms of safety being the "right thing to do". The issue with this approach is that it implies that Operations is currently not doing all that it can to protect workers. Even if that were true, no one wants to be accused of it and fewer still will respond favorably to the comment. And besides, there are many elements of business that are the "right thing to do," and while safety is always most important, it isn't always the most urgent.

But true Operations ownership also means that the safety professionals must change. The safety professional must relinquish power and control over many things that traditionally have been his or her bailiwick. Gone are the days where the safety professional is policing safety in the workplace and now the safety professional will need to be a resource, trainer, and consultant. This can be difficult for safety professionals, many of whom were attracted to the field because of

the role of protector and policeman. Still other safety professionals lack the raw talent and skills necessary to be effective in the new role.

Many people erroneously believe Operations ownership refers to the department in which the safety *function* resides, but it is far more than that. Operations run the business and it is of paramount importance that the business be managed such that all process variation is actively sought out and eliminated wherever possible, including injuries. The safety professional is no longer responsible for keeping the work place safe; rather supervisors and team leaders are tasked with identifying and removing hazards. Teams of operations personnel replace the safety committees where supervisors and area managers present the results of their incident investigation. And Operations works relentlessly to ferret out and correct conditions that could result in worker injuries.

The Seventh Value

These six values form the cornerstone of any good safety management system, but even when these values are completely and seamlessly integrated there remains a seventh value that spans these original six. The seventh value holds that safety cannot be measured by the absence of injuries; instead it is an expression of the relative risk of injury, and reshapes and refines the elements of a world-class safety culture.

Instilling the Seven Values

It can be said that one can never truly *teach* values, at least not in an organizational sense, rather one *instills* values. If one could teach values, change would come easily and cheaply. One would need only to conduct a couple of training courses and put up signs as a visual reminder of the new values. Sadly this approach is doomed to failure, at least ultimately (there are some very popular safety products that advocate this approach but their success in sustaining these changes is often limited.)

Many believe the key to a safer workplace is in reinforcing behavior, but the shortcomings of many behavior based approaches to safety—under reporting, difficulty in sustainment, and the difficulty to maintain the system in times of limited resources. If you've read enough of my work or attended any of my many speeches you know that I am convinced that nobody wants to get hurt and your processes aren't supposed to hurt them. You must fix the problems not the blame, because no amount of behavior modification will change those conditions. As Dr. Jim Leeman, a leading thinker in the ongoing safety dialogue put it: “Human behavior has way too much variation in it to be able to think you can control it. Even controlling one's own behavior at times is difficult.” Instilling values involves three basic steps: (1) selling the values, (2) modeling the behaviors, and (3) linking behaviors to consequences.

Selling the Values

As new employees are hired, it's relatively easy to instill the values because new hires are typically eager to adopt the norms and mores of their new workplace. But selling the values to existing employees is a far more difficult task. New employees will take the new norms for granted (or they will be formally or informally forced out of the workplace,) but veteran employees will not change unless they are given a compelling reason to do so that makes sense to them. Most reserve judgment and act in good faith as long as the reasons for the change (e.g., “unless we change we will go out of business”) seem reasonable and accurate.

Modeling the Behaviors

Once the values have been communicated and the change has begun, it's important that we set the appropriate tone from the moment the worker first steps on site to the second they leave the premises. Unless we walk-the-talk the organization will soon become disenchanted with the change and revert back to their old way of doing business. People want to know that the change is real before they expose themselves with the risks associated with new behavior. If leaders (both formal and informal) act in a way at odds with the values the organization will reject the changes and the values will be hung on the wall in testament of the organization's hypocrisy.

Linking the Values To Consequences

The organization needs to see the values as connected to business success, and so it is important to link the values to a consequence. Too often, people misinterpret this to mean that people should be disciplined for not espousing the values. Discipline does little to instill values; rather, it often drives behaviors underground. But the organization must see that people who practice these values are the same people who are getting raises, bonuses, and promotions. Conversely, people who clearly do not espouse these values should not be promoted and in fact should be coached and developed until they either embrace the values or leave for an organization more suitable to their belief set.

Putting the Values into Practice

Values alone will not impact to the extent necessary to improve a safety culture and ensure that workers are exposed to minimal risk of injuries. The world's safest companies are guided by the values in their approach to four basic safety practices:

Creating an infrastructure guided by these seven values is not only possible, but in fact necessary for those wishing to enhance the role and importance of worker safety within it's corporate culture. While it is true that culture change must happen if companies want to reduce worker injuries, and it is equally true that leadership commitment is essential to that change, it's dangerous for safety professionals to blame a lack of leadership for the failure of overly complex, scientifically dubious, or excessively expensive safety programs.

Values form the foundation of any world-class safety system, but they are only a foundation. The values should guide an organization's approach to the basic elements that constitute a world-class safety system:

- Safety Assessments
- Incident Prediction and Analysis
- Hazard Correction
- Safety Strategy
- Continuous Improvement Efforts Focused on Safety

Too often safety professionals mistake what they are doing for best practices, but what one should remember is that simply mimicking the practices of the world's safest organization does not make one a world-class organization. The differentiating factors between those safety activities that can be rightfully considered world-class and those that cannot is not what is done but how, by whom, with what frequency and to what end they are completed. For the world's safest companies the answers to those questions are rooted in the seven values.

Safety Assessments

A safety assessment is a brief walk through of the work area intended to identify the conditions likely to injure a worker. Most companies already conduct some safety assessment, however cursorily. In many companies these walk-throughs are done by the safety professional and are probably done once a month or even less frequently. In a world-class safety system the first line supervisor inspects his or her work area at least once a week, if not daily. Safety Assessments are a standardized way of identifying, correcting, and closing unsafe conditions and behaviors. In organizations that use a behavior-based approach to safety these assessments typically take the form of a behavioral observations conducted by supervisors. An organization that uses a more process-based approach to hazard reduction, however, tends to identify hazardous conditions, behaviors, and near misses by conducting formal examinations of work areas. The Assessments have a designated frequency (usually weekly) and duration (typically one hour) that allow inspectors to effectively monitor their assigned area.

Whatever philosophy the organization follows, in the world's safest organizations, every hazard must be contained immediately to ensure that no one is injured. The goals of Safety Assessment are to record all hazards so trends can be identified and corrected and to correct hazards immediately whenever possible. Sometimes a hazard may require additional investigation to determine its root cause, or a permanent corrective action may require the purchase of parts or personal protective equipment. In these cases, it will take longer to eliminate a hazard.

During a Safety Assessment, the supervisors walk through the area and study the interaction of the people, materials, machines, and environment and ask themselves several questions like, what could go wrong? If something does go wrong how likely is it that someone will be hurt as a result? And, if someone is hurt, how seriously are they likely to be injured? By asking these questions and carefully considering the results, the supervisors can assess the relative risk of injury to an individual and prioritize the response to the hazards they find. In addition to asking themselves questions, the supervisors ask the people who work in the area about near-misses and minor injuries they may have received. By gathering this information, the supervisors are better able to remove hazards that might otherwise go unseen—hazards related to unsafe behaviors, for example. This information is typically gathered in a way to ensure confidentiality so that an individual need not fear being punished for reporting a near miss.

Throughout the world-class assessment processes, hazards are recorded and tracked in hazard tracking database. Each hazard file contains information on the assessments, (location, date, time, etc.) hazards, priorities and corrective actions. The database also tracks the progress on the steps that have been taken to eliminate the hazards, and assigns a deadline by which a given hazard must be corrected. In more sophisticated applications, emails are sent to the persons responsible for correcting the hazards, deadlines are automatically calculated by the database and the status of a hazard is tracked. Some of the world's safest companies link their hazard tracking applications with work order management systems or engineering issue escalation systems.

Safety Assessments are not the same as audits. Where audits seek to ensure compliance with federal, state, local, or professional requirements, the purpose of safety assessments is to identify issues that may result in worker injuries.

Hazard and Incident Investigation

In world-class operations, the traditional safety committee of volunteers is replaced by an operations team that is dedicated to hazard and incident analysis and prediction/avoidance. The team is composed of 7-12 members who represent operations, safety, HR, maintenance,

Ergonomics, and any labor unions involved and its primary role is tactical. The team meets (typically weekly) and uses reports from a database to:

- Evaluate the safety indicators—a blend of both leading and trailing indicators (Incident Rate, LWDI, and whatever else the corporation has decided that each location should track.) A weekly hazard and incident investigation reviews these indicators as predictors of likely future events but the primary purpose of this investigation is to communicate safety indicators to the organization.
- Force accountability for safety onto the appropriate Operations and Maintenance personnel by ensuring that:
 - safety assessments are completed as scheduled
 - hazards are appropriately and consistently identified
 - hazards are corrected within the appropriate deadline
- Review supervisor's incident investigations reports to ensure their completeness, accuracy, and appropriate responses
- Ensure read-across so that similar hazards are corrected in other areas of the plant
- Review safety bulletins from other locations and ensure that the organization implements preventive measures
- Review best practices and safety innovations present by various departments and ensure that they are implemented where appropriate

These meetings help to make certain that all the tactical assignments required within the safety process are completed on time and correctly. The effectiveness of these meetings directly correlates to a significant reduction in risk.

Formal Hazard Correction Process

A robust formal hazard correction process that forces accountability for the containment and speedy correction of hazard conditions should characterize operations ownership. This process needs to identify, contain, and correct all hazards that might cause injuries. Hazards may be behavioral, procedural, or administrative, but irrespective of the type of hazard the process for correcting it should be owned and administered by Operations. Unless Operations drives the correction of these issues there is a high likelihood that the hazards will linger far longer than they should, significantly increasing the organization's risk of injury.

Safety Strategy

Where hazard and incident investigation are tactical, the meeting of the body responsible for developing, implementing, and managing the safety strategy is strategic, and consists of 7-12 people representing location's leadership. The Safety Strategy Team is a proactive, preventive group responsible for the "big picture" of safety at their location. The team meets (typically monthly) and uses reports and analysis to:

- Review the safety indicators—a blend of both leading and trailing indicators (Incident Rate, LWDI, and whatever else the corporation has decided that each location should track) to determine what corrective actions should be taken. While this effort seemingly duplicates the review at the weekly meeting hazard and incident meeting, the two reviews are different in scope and perspective. While the weekly hazard and incident investigation reviews the indicators as predictors of likely future events, this body examines the relationship between

leading and trailing indicators to validate the strategy or to judge the effectiveness of the strategies and tactics.

- Identify chronic, persistent, high-risk hazards. Limited resources require an organization to use a rifle-shot approach rather than a shotgun approach to resolving the most costly, most frequent, or riskiest hazard conditions.
- Analyze trends in hazards, incidents, and other relevant safety data. A data-driven safety management process is only as good as the analysis of the data. An understanding of the key trends is critical to the success of any safety strategy.
- Identify and prioritize safety initiatives. Resources are limited in the best of times, but when times are tough, resources may become so limited that only a portion of what an organization would like to do will be possible; it becomes essential to prioritize safety initiatives to ensure resources are used in the smartest possible way.
- Conduct trend analysis and root cause analysis to study the effectiveness of the corrective actions. This body directs the evolution of the safety management process as the external business climate changes and the economy ebbs and flows.
- Continually refine safety strategies, the business climate changes often and this body is tasked with anticipating these changes and making refinements to the strategy as required. This body anticipates and reacts to changes in the business environment that may impact safety.
- Review the progress of continuous improvement workshops or related to major safety initiatives
- Review plant policies, and where appropriate, make changes to them.

A good safety strategy should be simple, concise and simple to understand. Pareto charting injury types and developing a strategy to eliminate the most frequent injury types or a simple bar chart that identifies the three most costly injury types are excellent places to start when developing a safety strategy.

Continuous Improvement Efforts Focused on Safety

Sometimes the teams tasked with hazard investigation or strategy deployment will require information above and beyond that which is available through incident inspection or safety inspections. In these cases a safety workshop may be requested so that the team can get a closer look at the situation. Workshops are ad hoc teams consisting of the people who are closest to a problem. Workshops are typically requested by the team and are typically led by someone from that group. Workshops should be composed of people with knowledge of the situation and the authority to make appropriate changes. They are a standardized way to study safety issues, identify permanent solutions, investigate root causes, and promote continuous improvement. The workshops are short, goal-oriented, authoritative, and result-focused. Several different types of tools are provided to help workshops accomplish their goals. In general, workshops follow the same process and use the same tools as one would use to solve a quality concern in the organization's problem solving process.

Companies with poor quality tend to have poor safety. The process failures that hurt your workers can just as easily hurt your quality², delivery, or productivity. Any continuous improvement initiative should seek out hazards and eliminate them as sources of process waste.

Summary and Closing

Creating a world-class safety system need not be complicated or expensive—in fact, one’s goal in reducing injuries should be, at least in part, improving profitability. But any safety management process should contain the basic elements described here and each of these elements should be designed in accordance with the values of the world’s safest companies.

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