Are We Really Serious About Safety?

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Well, *are* we really serious about safety? I'm confident the vast majority of us at this conference would say yes. Why else are we here? Most of our management would no doubt say they were serious about safety as well, and probably mean it. Why then do we still see so many activities in the name of safety that are superficial, based on tradition rather than data, and handled completely differently than other important management objectives? This paper will question some of these longstanding safety practices and challenge safety professionals, as well as their management, to look at safety in a different and more serious manner.

For too long, our profession has relied on gimmicks, slogans, incentives and off-the-shelf safety "solutions" rather than established management principals and systems. We continue to treat safety as something uniquely different from other important business objectives, such as maximizing production, improving quality and reducing costs. Serious business priorities are not handed off to staff and do not depend on contests, incentives, peer pressure or "cookie cutter" fixes for success. Yet, when it comes to safety, these approaches remain disturbingly common. As a result, our safety efforts often aren't perceived as serious by management or the workforce. Worse, the separate and different treatment of safety commonly puts it in competition with other company priorities rather than integrating with them as part of the work process. How did this happen?

A Little Safety History

Unsafe Acts

The early industrial revolution was hard on workers. In 1912, some estimates showed work-related fatalities at more than 20,000, or nearly four times more than occur today. When you consider there was a much smaller work force in 1912, the accident rate is truly staggering. With the enactment of workers' compensation laws just a few years later, companies began to realize that unsafe facilities were starting to cost them serious money. The Triangle Fire in New York in 1911 was also a game changer. This now-famous fire claimed the lives of 146 employees, mostly women (and including some children), and got the public's attention regarding the need for improving safety at the nation's growing industrial facilities. Shortly afterward, the National Safety Council (NSC) and the American Society of Safety Engineers (ASSE) were formed, and some important industries, such as steel and the railroads, started taking safety more seriously. Much of this early safety emphasis dealt with correcting unsafe conditions, and the effort paid dividends. By the early 1930s, the industrial accident rate had declined sharply (more than 50%), although it remained high by today's standards. The construction of the Hoover Dam in the 1930s, for example, claimed 96 workers, and pictures of steel workers walking beams hundreds of feet in the air without a sign of fall protection during construction of the Empire State Building still commonly appear in various safety presentations.

In 1931, Heinrich first published his research claiming that up to 88% of all accidents were the result of unsafe acts, rather than unsafe conditions. The safety community has argued about the ratio of unsafe acts versus conditions in accident causation ever since. In general, however, safety professionals accepted Heinrich's now 80-year-old research. The result was a blizzard of employee motivational strategies that continue to this day. Safety contests, incentives, awareness campaigns, posters, and motivational gimmicks all became common if not prevalent, as we attempted to "sell" safety to otherwise unsafe workers. These activities became the safety tradition. Hand in hand with this focus on unsafe acts came blame the employee (i.e., bad apple) *enforcement* emphasis. Disciplinary procedures calling for mandatory counseling, time off or termination as a consequence of unsafe behavior proliferated. Heinrich had shown us, after all, that accidents were the result of employees behaving badly.

Heinrich's conclusions were, however, eventually questioned by the likes of Dan Petersen, who told us over 30 years ago, that neither conditions nor unsafe acts were the cause of most accidents. Rather, accidents stemmed from weaknesses in the management system (Petersen 18). Deming (*Out of the Crisis*) agreed and believed that most accident causes were actually beyond the control of the worker. More recently Manuele and Johnson (Johnson 62-65) cast further doubt on the validity of Heinrich's accident causation theories. Manuele went so far as to say (optimistically) that "As knowledge has evolved on how accidents occur….the emphasis is now correctly placed on improving the work system, rather than on worker behavior. Heinrich's premises are not compatible with current thinking." (Manuele 52). Heinrich's premises may not be compatible with current thinking, but my recent tour of the various safety blogs tell me his views on unsafe acts as the primary cause of accidents remain extremely resilient in the safety community.

Compliance

Almost 80 years after Heinrich targeted unsafe acts as the cause of the vast majority of accidents, OSHA was enacted (1970). Most OSHA requirements were merely downloads of existing standards (e.g., ANSI) and, as a result, dealt largely with conditions. Now everything from scaffold toeboards to the design of toilet seats was the law of the land. This ushered in an era of compliance. "Compliance became the ultimate safety goal for many organizations. New safety positions such as compliance manager, and even compliance engineer proliferated. Many safety professionals, armed with their encyclopedic knowledge of safety requirements, made enforcement of every safety nit in the Code of Federal Regulations and the company safety manual the goal, regardless of their importance to safety" (Loud). This compliance approach (though still persistent) has proved ineffective. Merely following the law is no guarantee of exceptional, or even adequate, safety results. Since federal law already mandates that employers provide a safe and healthy workplace, compliance goals are hardly a stretch. Although many safety experts now correctly view compliance as a byproduct of an effective safety system, a quick review of job ads for safety professionals will show you how fixated many companies remain on compliance.

Behavior Modification

Eventually, much of the safety profession became disillusioned with compliance and related condition-based approaches. Instead of moving on to a more serious management systems approach advocated by Deming, Petersen, and other leaders in safety, however, by the late 1980s, many safety professionals had turned back to Heinrich and his questionable data. Led by a variety of behavior-based solution vendors and psychologists, the focus on unsafe acts/behavior was back in style. This time, however, we gave it a name—behavior-based safety (BBS). While there are many different safety tactics labeled BBS, they all have a person-based focus with a goal of changing behavior from unsafe (noncompliant) to safe (compliant) via positive and negative reinforcement. Compliance remained the goal, however. It merely shifted from compliant conditions to compliant workers.

Serious safety management, however, focuses on the work, not merely the worker, and looks for ways to improve the system influencing the work *and* the worker for improvement opportunities. My basic problem with many (not necessarily all) BBS efforts is their emphasis on safety as a psychological/behavior problem, rather than a more useful and appropriate view of safety as a complex management issue. When I first took BBS training around 2000 from the largest provider of BBS schemes at that time, I was dubious. The BBS process was described as a bottom-up affair, with little or no management involvement included or desired. It was also clear that the principal goal of BBS was to change worker behavior via "interventions" by peer observers armed with checklists of "critical behaviors." The data from these observations was trended to determine how well the BBS effort was affecting behavior, but there was essentially no discussion on how the process or its data could be used to help change the system that spawned much of the behavior in the first place. It seemed to me at the time that BBS programs spent far too much of finite safety time focused on symptoms (unsafe/safe acts) rather than the root cause problems in the system more often responsible for that behavior. This fixation on behavior is yet another example of how safety is treated differently than other serious management objectives. As Thomas Smith pointed out in his excellent book, *System Accidents: Why Americans Are Injured at Work and What Can Be Done to Stop It*:

> I have yet to see or hear about management setting up a system to modify the behavior of employees as the methodology to solve a quality problem. You can't achieve better quality with slogans exhorting workers to do it right the first time or enticing them with incentives they can earn if they make parts with no defects. But these methods are routinely applied and viewed as acceptable solutions to just about any safety problem [Smith 119].

Several major BBS process providers now advertise their recognition of the importance of management participation in the process, including performance of management observations. Many of these providers also claim that they use BBS data and observations to help identify and correct safety systems deficiencies. This would certainly be an important and positive evolution of the process. Unfortunately, the bulk of the BBS effort appears to remain compliance-based and symptom-focused. Checklists of critical behaviors, observations followed by extrinsic positive (or negative) reinforcement interventions remain the core of most BBS programs.

Safety Stuff (aka Programs)

Over the years, safety programs began to develop that included things like training for employees and supervisors, written safety procedures, job safety analyses, accident investigation processes, safety inspections, safety meetings, and so on. Some of these programs were better than others, but many of them looked more like collections of "stuff" than systems where all safety activities are interdependent and act together to further safety goals and objectives. Worse, many safety programs and associated activities were conducted almost solely by the safety staff, leaving responsible management—and the workers—as uninvolved and generally uninterested bystanders.

In 1989, OSHA attempted to encourage organizations to look beyond compliance and stand-alone safety activities (stuff) and take a more serious and systematic approach to safety. The Voluntary Protection Program (VPP) was a product of this new approach. Rather than new regulations to comply with, VPP was a serious attempt to help organizations voluntarily improve their overall safety process. VPP was intended, at least in part, to counter the popular view that OSHA's only interest was compliance, rule (often nit) enforcement, and assessing fines. Many (myself included) considered VPP a serious step in the right direction—away from rote compliance toward a more proactive approach to safety. Unquestionably, VPP offered some sound guidance for improving safety.

With so many VPP positives I am somewhat uncomfortable as a program critic. In general, organizations would benefit from adoption of most VPP elements. The elements specifying goals and objectives and employee involvement are certainly critical to any functioning safety system. On the other hand, there are several VPP requirements that seem needlessly prescriptive and of dubious value. Requirements for detailed written industrial hygiene programs, written disciplinary procedures, and access to "certified" safety and health professionals are deemed critical, while any mention of risk assessment, work observation, or ongoing system assessment is either ignored or barely mentioned. Traditional, and generally low value, inspections of work *space* are, however, mandated in detail. Not only are monthly inspections of workspaces required but they must cover all areas "wall-to-wall" each quarter. More productive activities, such as observation of workers actually doing something, and the effectiveness of the system influencing what they are doing, is neither required nor addressed in VPP. VPP also prohibits supervisors from investigating their own accidents (to avoid presumed conflicts of interest). Isn't line management responsible for finding and fixing its own safety problems? Petersen, in *Safety Management: A Human Approach*, certainly thought so, "The primary accident investigation function has always been the supervisor's" (Peterson 46). Any perceived conflict of interest "problem" is easily addressed via independent participation and/or review. Making managers responsible for their own problems is not only logical, it promotes line management ownership of safety, and gives supervisors an opportunity to learn from and correct their safety shortcomings rather than excluding them from the process.

My chief concern with VPP, however, is the relative weakness of its "check" step. An effective check (frequently and more appropriately called "study") step is absolutely critical for a functioning safety system and continuous improvement. VPP requires only an annual assessment, and that effort is mostly focused on the 19 specific requirements of VPP, rather than an assessment of the system as a whole and how well the requirements interact to support safety goals and objectives. The "management review" step strongly advocated by the more state-of-the-art ANSI standard "Occupational Health and Safety Management Systems" (Z10-2005) is not addressed in VPP.

Frankly, VPP is starting to look pretty out of date. What seemed progressive in 1989 isn't necessarily the best option today. Better approaches are available that avoid some of the traditional baggage weighing down VPP. Is there a role for organizational safety certification as commonly seen for quality (ISO 9000) and environmental (ISO 14001) programs? Perhaps. Certification can, however, lead to complacency, the mortal enemy of continuous improvement. After certification – then what? I think it is telling that you quite often hear concern about the difficulty of "sustaining" VPP. Effective systems aren't sustained; they are improved— continuously.

Exhibit 1. ANSI Z10 OSH Management Cycle (*Source:* American Chemical Society)

System: "A regularly interacting or *interdependent* (the emphasis is mine) group of items forming a *unified* whole." (Webster)

Building on his success in Japan, W. Edwards Deming began promoting a systems approach to quality to American industry in the 70s and is generally known as the father of PDCA. Safety practitioners, however, were slow to pick up on Deming's philosophy until ANSI Z10 was issued in 2005. Z10 provided more up-to-date guidance and was more like a true PDCA system than VPP (See Exhibit 1 above). ANSI Z-10 was developed over several years by more than 80 participants from industry, government, labor and professional organizations, such as ASSE. It represented the first U.S. standard attempting to bring safety into a proven management system that looked like already existing successful systems that govern quality, environmental protection, financial performance and other core management objectives. Z10 was and is characterized by its emphasis on continual improvement and the elimination of root cause safety deficiencies.

Rather than the stand-alone stuff (Petersen called them safety "islands") you see so typically in many safety programs, all the elements of a true system are interdependent and work together to attain organizational goals and continually improve every aspect of the system. A systems approach seeks to get to the "whys" of accident causation and is much better suited to deal with serious organizational safety weaknesses, such as seen in the Challenger and Columbia disasters, Bhopal, Upper Big Branch, and British Petroleum's (BP) Texas City and Deepwater Horizon tragedies. Clearly, these incidents, and many other serious safety problems, were not preventable via "critical behavior" checklists or other person-centered programs aimed at individual workers. The U.S. Chemical Safety and Hazard Investigation Board's assessment of the Texas City refinery explosion that killed 15 and injured 180 found, for example, that BP's focus on behavior was a contributing cause and that emphasizing personal safety, personal safety metrics, and worker behavior did not serve as a good indicator of overall risk, and was an example of BP "oversimplifying" safety (USCSH 187). As Manuele pointed out in his 2008 book on safety management and Z10, genuine safety systems go far beyond the emphasis on behavior and the prevention of unsafe acts.

Since the majority of the causal factors for incidents that result in serious consequences are systemic, corrective efforts should emphasize improving the system….In a safety

management system that concentrates on worker behavior, management allocates resources predominantly to the worker behavior aspects of safety. Thus, inadequate attention is given to systemic causal factors deriving from design and engineering shortcomings, the hazards in operational procedures, and the system of expected behavior that has developed. [Manuele 56]

The PDCA approach to safety looked to many like a considerably more serious approach than the traditional safety efforts of the distant and recent past. Table 1 points out the difference between systems-based safety, as opposed to more traditional approaches, in how they might deal with observed safety deficiencies, in this case a worker using an extension ladder lacking non-slip "shoes."

Systems Approach	*Behavior Approach*	*Compliance Approach*
Seeks to learn by asking why	**Seeks to change individual behavior**	**Seeks to meet requirements**
How did the unsafe ladder get into the work place?	Cautions employee regarding unsafe behavior.	Inspects all ladders for defects.
Was the ladder checked before it was issued?	Retrains employees on safe ladder use.	Require more frequent ladder inspections.
Why was it tolerated by the workforce – and supervision?	Submits unsafe act to a database for trending purposes and potential future action.	Takes disciplinary action against the employee.
Is there an effective system for employees to report defective equipment? If so are employees using it? If not, why not?		
Were safe ladders readily available?		
Do employees understand basic ladder safety requirements?		
Does the organizational safety culture make it acceptable for employees to use defective equipment?		
Improvements are made to the system wherever indicated by the answers to the above questions.		

Table 1. Three different approaches to safety deficiencies.

Management Taking Safety Seriously

What would serious safety management look and sound like? To help give you an idea, here is a hypothetical speech from a hypothetical new CEO at the hypothetical company, Serious Inc. It is a serious speech about safety and one that I've not yet heard (but keep hoping to hear). Note how our new CEO takes a PDCA approach to safety, which includes goals, objectives, individual responsibilities and specific plans to reach them (Plan), specific actions for everyone in the company (Do), routine avenues for feedback and review of progress (Check/Study), and a commitment to continuous improvement based on that feedback and review (Act). As safety professionals become more knowledgeable and comfortable with safety systems, perhaps this type of message from management will become routine.

The Speech

Good afternoon! It's an honor to speak to you today for the very first time as the new director of this great company, Serious Inc. I can tell you quite frankly that I find my new role a tremendous personal challenge, and one that I take very seriously. My new responsibilities are many, and I know I cannot begin to meet them without the support of each and every one of you. But today, I wanted to use this opportunity to discuss with you one of the responsibilities I take most seriously—safety. Most certainly, I am referring to the personal safety of all of us who work here at Serious Inc. but I think safety is bigger than that and must also include a commitment to protect our environment and the community that serves as the home for our company, ourselves and our families.

It may surprise you that my first talk with you is about safety. After all, by many standards our company is already "safe." Our accident rate is below the average for our industry, and we spend significant time and resources on traditional safety efforts, such as training, inspections and safety meetings. Still, I'm not satisfied, and I don't want you to be either. We can do much better. We continue to have accidents that could and should have been avoided. We must fix that. And to make that fix, we'll need to work together to ensure we are doing the right things, not just the traditional things. I won't be satisfied until Serious Inc. not only ranks at the top of our industry but is also nationally recognized for its excellence in safety performance.

I am not, however, going to stand here and tell you that safety is first—or that it is priority one. I think those slogans are overused and rarely taken seriously. Furthermore, such comments tend to portray safety as something separate from the work. It isn't. Safety is too important, and I have too much respect for you to speak in clichés. Instead, let me say that safety must be an integral part of everything we do at Serious Inc. I am absolutely committed to the safe conduct of all our activities. This commitment includes my pledge, and I hope yours as well, to never place production pressure ahead of safety. If we can't do our work safely and without putting our environment and our community at risk, we simply won't do it.

I want to be very clear about this. Safety begins with me, and I willingly accept that responsibility. To meet my safety obligations, you can count on my personal involvement in our safety effort; not merely lip service and not merely speeches like this one. To our management team, I want to say we need to take safety more seriously. Safety cannot be an afterthought and isn't something we can abdicate to our safety staff, contractors or committees. Safety is our responsibility and we need to give it the same level of attention and effort we give to production, quality and customer service. Starting with me, I expect the entire management team to routinely observe company operations and team with their workers to find practical and effective ways to improve the safety of everything we do. I will meet routinely with my management team to discuss what they are seeing in the field and specifically, what they are doing to ensure improvement based on those observations. I also expect our managers to knowledgeably discuss with me any accidents, incidents and near misses, as well as the status of associated corrective actions. These discussions will stress concrete actions to improve our safety system rather than merely blaming our workers.

We are very fortunate to have a committed and knowledgeable safety department. I respect their wise counsel and will rely on frequent and unfiltered access to their expertise. Therefore, as of today, I have moved the safety department from Human Resources and placed them as a direct report to my office. As important as our safety professionals are to the success of our safety

effort, they do not have the lead role for safety. That responsibility clearly belongs to line management—and very much starts with me.

Our other staff organizations, such as Human Resources, Training, Engineering and Procurement, have a different but extremely important safety role. I want to see safety integrated into everything we do from hiring and training new employees and contractors to the purchase of safe and environmentally responsible equipment and materials. There is much to do in this area, and I have already set up a series of meetings with our staff managers to work on improving and innovating what we are doing to ensure safety is well considered in every aspect of our business.

Perhaps most importantly today, I want those of you who actually make and transport our products, as well as those who maintain and care for the machinery and infrastructure that make production of those products possible, to know how seriously I value your safety, and how much I want and need your active participation to help make our company more safe and productive. Quite simply, without your effort and cooperation, our company fails. No one here at Serious Inc. understands our work and the hazards of that work better than you do. Your participation in our safety efforts is, therefore, absolutely vital to our ultimate safety success. I know of no organization that has achieved a high level of safety excellence without the active involvement of the workforce in that effort. It should be no different here at Serious. I also know there is much to do to gain your trust and involvement. As it stands, very few safety corrective actions are generated by you, our workforce, and there is little worker involvement in our routine safety activities, such as procedure development, inspections and safety problem solving. We must improve in these areas until you, those closest to the work, become the eyes and ears of safety at Serious Inc. Please don't feel that I am blaming you or anyone else for our safety shortcomings. I recognize that it is management's job to find ways for us to work together on safety solutions that help us in meeting our safety objectives and that we continuously improve the safety of the work you do for us. In short, we must demonstrate and do our safety business with you–not to you.

Please understand that safe work is, and must be, a condition of employment. We can, however, do much more to make working safely the desired option for every Serious Inc. employee. In the past, we have frankly done a lousy job of gaining your trust and participation. Too many accident investigations have resulted in heaping blame on employees at the expense of getting to the real system problems that often set our employees up to fail. Work instructions are written with little or none of your involvement and, as a result, are frequently unworkable and ignore hazards known only to those of you actually performing the work. With your help, we can and will do better.

Some of you may be somewhat fearful of reporting safety hazards or making suggestions in the belief that you'll be considered a slacker or a troublemaker. I can't change those perceptions or earn your trust overnight, and I ask for your patience. We will begin immediately, however, to develop (with your help) a variety of means to encourage your input and participation in our safety journey. In the process, we hope to win your trust and achieve a shared sense of safety ownership.

Next month, I will speak with you again and will focus on the specific actions taken or in progress to develop a safety environment where your participation is valued and rewarded.

Meeting our safety commitment won't be easy. Genuinely safe operations are not achieved simply, and don't let anyone tell you safety is just common sense. It's just not that simple. There are no quick and easy fixes. Truly safe operations require the same kind of thought, planning, effort, teamwork, accountability, and dedication to continuous improvement typically given to production matters. In short, safety is serious business. But I also believe that safety is good

business. It not only guards us from needless injuries but protects our quality of life by helping our bottom line and keeping us profitable and sustainable. We're all in this together. Safety truly is everyone's responsibility.

At this point, I would genuinely appreciate an opportunity to hear your questions and comments. Over the years, I've found it much more productive to speak *with* people that to speak *at* people. So please feel free to speak up and don't hold back. Who's first?

Is this the kind of management support you are seeking? Would your CEO give such a speech? If not, you might want to ask yourself what you can do to encourage your management to make a similar and deeply serious commitment to safety.

Conclusion

Serious safety is hard work. If you or your organization believes that safety is just common sense, or can be attained merely by "fixing" the employees via incentives, motivation, and awareness campaigns, you aren't taking safety seriously enough. Our discussion today offers no simple solutions but hopefully encourages you to take a deeper look at safety and recognize it as a serious management challenge best addressed by a systems approach tailored to your organizational culture. Safety is not a compliance issue. It's not an enforcement issue. It's not an awareness issue. It's not a behavior issue. It's all of these, and more.

Safety professionals have too often been part of the problem by promoting simplistic nonserious safety solutions. We have alternately sold awareness, enforcement, compliance, behavior modification, and ourselves as *the* safety solution. There simply aren't any quick or easy fixes. Safety is much more complicated–and interesting–than we've been treating it, and it deserves a more serious approach.

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