

## INTRODUCTION

Welcome to Performance Safety: Lessons For Life. As the second book in the Performance Safety series, the principles, keys, and activities discussed in the first book (Performance Safety: A Practical Approach) are now illustrated in practice through informational articles, illustrations, and real-world safety training solutions.

The selected reprinted articles were chosen based on positive feedback and response from the articles after their original publish date as well as the topics of the articles focusing on performance rather than on compliance. This book gathers these articles and places them in one easy-referenced source so the information is readily available and at your fingertips.

The safety meeting articles were selected specifically for this book. Some have been successfully given in industry safety meetings; some were written just for this book, again, to provide a compilation of real-world, performance-based information that is proactive and personal while also helping to comply with regulatory issues in the workplace.

I look forward to your comments as well as your suggestions for future works. I intend to provide a sequel to this book with more information and safety topics. I hope you will actively participate. Your comments, ideas, and shared information on your successes may appear in the update, so please indicate permission to use your story(ies) as together we find ways to remain safe in our workplaces around the globe. RD

budget to improve safety. It allows a company to take working principles and make direct applications for its needs within its culture without implementing detailed mechanics and steps.

There are fundamental principles within all the methods that are necessary and that do not change, regardless of HOW the process is followed, addressing individual performance. With over five years of focusing on total performance, not strictly employee “behavior,” these principles have been proven to work with various management styles and different corporate cultures.

The purpose of this presentation is to identify those fundamental principles that help improve safety within any type culture and any production environment.

### **What is Performance Safety?**

Performance Safety can be defined as an on-going review of processes, procedures, and practices through observation, workplace examinations, and task analysis. It is a total and comprehensive review of all performance areas (machine, worker, environment) to ensure pro-active, continuous improvement in safe production at all levels.

I have always taken slight offense at suggesting to my people that the reason an injury occurred was a direct result of their “behavior.” The phrase “behavior-based safety” conjures up in my mind a fault-driven process, even though it is not intended to be so. Behavior alone cannot fully create or cause injuries. It is true that unsafe actions contribute to more than 85% of all injuries. I suggest the number is closer to 95% or higher. But the choice(s) made by a worker is not always a reflection of his behavior. It

needed, either. It created the optimal performance of the entire process, thus correcting the need for a practice in an exposed environment. Everyone understood that a change in the process created a whole set of other problems that, on the surface, could not be explained. The transfer point was too far down the process to connect what seemed to me to be an obvious problem back up-line. The old saying, “You can’t see the forest for the trees” certainly fit in this case.

Performance Safety helps keep the big picture in view while addressing specific issues. In the above example, it was not my job to tell an experienced manager how to do his job. But in the process of doing my job, we were able to identify a situation that ultimately helped the manager’s production numbers, as well.

Anyone with knowledge of conducting accident investigations knows to ask questions that help get to the “root cause” of the accident. In the same way, getting to the root cause of hazards and unsafe behaviors will allow a manager to correct the problem rather than continuing to correct a symptom that never seems to go away.

### **Why Performance Safety?**

The principles presented in this paper provide a recipe or prescription to follow to reach zero injuries and incidents. It also provides personal and team involvement and accountability to pro-actively prevent injuries and eliminate or reduce exposures to hazards.

Performance Safety encourages positive recognition and feedback at all levels within the organization to promote positive change and optimal performance.

risk of getting injured. The worker is willing to take the risk for the perceived or derived benefit, without regard to the overall consequences.

Why do workers deliberately perform actions that can, and ultimately will, cause harm to themselves, their co-workers, and to their families? Why are workers willing to “risk it all” in order to “save” time in the performance of a task or duty?

Sometimes workers feel pressured by their supervisors to push the limits. The supervisor either directly or by perception allows the worker to not follow appropriate actions or procedures for the sake of production time. For those supervisors who knowingly allow that to occur, those are supervisors waiting for the fatality; they do not realize their full legal responsibilities in such a position nor understand the personal consequences that go with it. They should not be supervisors. A company that allows such a supervisor to remain a supervisor does not fully understand the legal, corporate, and personal liabilities to which they are exposed.

More times than not, however, it is not the supervisor pushing the worker to take such shortcuts. It is the worker that chooses to make the decision to do or not do something for which the supervisor is not aware. There seems to be many “excuses” as to why a person would knowingly place his life at risk for such an inconsequential benefit. This article does not address those multitudes of excuses as to why, but to look at how costly such an action or attitude can be to that person.

It is not simply a financial cost to the company that is the issue. Obviously, such a cost exists to pay for medical expenses, lost production, employee replacement for the short term (generally with someone not as experienced to perform the task), higher

## **Personal Protective Equipment: Are we Really Protecting Ourselves?**

By Randy DeVaul

This article originally appeared in Occupational Health and Safety magazine, February, 2002 edition entitled, "Painful Lessons"

In my 20+ years of experience in safety and emergency services, I believe I have heard just about every excuse, justification, reason – whatever you want to call it – as to why people can't, won't, have no interest in, or don't know how to use or wear personal protective equipment for performing a task.

The statistical books are full of injuries and fatalities that were a result of someone making a choice, a decision – that would change or end his/her life. It's easy to read the numbers so neatly arranged in the columns and say, "Gee, that's too bad." Or, "I can't believe somebody would be that stupid" as we armchair quarterback from a safe distance after the fact. What we often forget is that for every number in the book is a face, a body part, a person who suffered the injury; a family that suffered through the healing and (hopeful) recovery of their loved one. And too many times, the injury was preventable.

I am a fanatic on performance safety. I am convinced that people have far more control over their lives and outcomes of performing their jobs at work than what most are willing to admit. I know we all have our moments when we lose our concentration and focus and we are suddenly exposed to a hazard that we should have recognized. That is why we all have to watch for and take care of each other. It's just something we need to do.

But as an employee, you are the last person to touch the equipment; the final person to choose how you will perform that task. You are the person who ultimately has

“grandfathered” but you still have an exposure. Other times a procedure at your company may be in place that requires you to perform a task for which the manufacturer did not intend by design and a guard may also be needed. Whatever the case, you are pro-actively ensuring that your quality of life will not be destroyed from an injury while helping others do the same.

Machine guarding can be done numerous ways. If you need a guard designed, be sure to get engineering and other departments involved to ensure a guard that is simple, provides protection, and won't severely restrict your ability to perform your task (that would encourage shortcuts – another no-no).

If you simply need to take responsibility for your work area, then do it! You have far greater control over your personal safety than what you give yourself credit for. Take charge of your work area and commit to at least yourself and your family that you will do all you can to maintain the quality of life you want through your pro-active performance of doing right!

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monitoring check. The oxygen level must be checked first, followed by the toxic and explosive gas checks. Multiple gas detection monitors may be able to simultaneously check all of these hazards together. Other monitors may have toggle or other types of switches that must be manually activated to check each hazard separately.

Detection monitors have safety factors built into the alarm systems and should not be changed by the person using the monitor. Any alarm created by the atmospheric readings must be addressed prior to exposure in the space, regardless of the number or detection level shown on the monitor.

Engulfment or entrapment hazards also cause the confined space to be permit required. This could be water or stored unconsolidated material that can cause asphyxiation or suffocation. It may require turning off and locking out a water source or blocking or diverting material away from the work area while in the space.

Physical hazards include excessive heat, excessive noise, narrowing of passages that can cause a person to become wedged inside, unguarded moving machinery, and others. The most dangerous spaces where employees are injured or killed most often are spaces that combine limited access and space with moving mechanical devices. These spaces require additional protection, such as using lockouts, testing equipment to ensure it is safe, or assurance that guards or barriers are present and capable of keeping body parts, clothing, and tools out of the moving equipment. High voltage is another hazard when working near cable trays and electrical energy sources.

If the space does not meet any of these criteria but contains any other hazard that can pose serious health or safety issues, it must be identified and defined as a permit required space. Hazards for spaces are dictated by the material being stored or used in

As time goes by, evaluate the action(s) taken and assess your situation. Is the spill getting bigger, is the wind now blowing the vapor cloud over others, is the spilled liquid heading for the water and sewer system? Do I need to change my action(s) to meet the challenge or is my initial action(s) taken still appropriate for the current and changing conditions? Did the right people get notified of the spill and are they present or on their way?

This process cannot work unless you have some basic knowledge. This is why the Hazard Communication Standard is important. In my view, the knowledge of materials in your work area is NEVER a compliance issue. I don't care if OSHA can write you a ticket for not complying with the standard. I do care if you are dying from a substance due to your ignorance.

You see, the HazCom Standard is a requirement of the employer. Your knowledge of the chemicals and materials you work with regularly is a requirement of your quality of life. Don't put that onus on your employer or OSHA. After all, it is YOUR life.

Take a moment to periodically review the Material Safety Data Sheets (MSDSs) on the materials in your work area. Use the right personal protective equipment when using it; know how to use, handle, transport, and store the material properly; learn what the material can do in the event of a spill or release. This information is all on an MSDS for that product.

The bottom line in addressing a hazardous material, whether spilled or simply sitting in its container, is this: you are the one with your hands and other body parts on it, in it, around it. It is called a 'hazardous' material for a reason – something in that

Examples of dBA levels in your workplace can be obtained from your safety department or supervisor. If you don't know when to protect yourself, you won't.

**Conclusion:**

Wear your hearing protection when exposed to high noise levels. Plan to enjoy life with your hearing still intact. It is your quality of life at stake. Only you can prevent your own hearing loss!

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## **PERSONAL PROTECTIVE EQUIPMENT: LAST LINE OF PROTECTION**

By Randy DeVaul, M.A., RSHEP

More than 90% of all injuries are a direct result of people making choices or taking actions that expose them to hazards. The lack of PPE (not wearing it or not wearing the correct PPE for the task) is a leading contributor to personal injuries.

Regulatory agencies always want hazards to be addressed through engineering controls first. In other words, can the hazard be eliminated entirely through a re-design or a change in tools or equipment. After this comes the administrative controls – can the task be done differently through a different procedure or tool to eliminate or reduce the exposure. Lastly is the use of PPE to protect against known hazards that cannot be eliminated from engineering or administrative controls. This means that the use of PPE is your last line of protection after all the other options have been used or determined to be inadequate.

Since PPE is the last line of protection, this is not the place to take a shortcut. If the correct PPE is not used or is not worn correctly, direct exposure to the hazard occurs. It doesn't matter whether somebody can write a ticket for the violation if the exposure results in a personal injury that alters your quality of life.

Often, people are willing to “play the odds” and take the shortcut for thinking that the comfort or convenience of not wearing or getting the PPE is a greater benefit than the cost of the risk to the exposure. This means people are willing to gamble their quality of life or life itself by directly exposing themselves to a risk that cannot be reduced or controlled any other way than through the use of PPE. We have all heard the stories about the grinding wheel that blew up in someone's face, the popped slag

## Hot, Hot, Hot

### Student Copy

- Body temperature rises when performing work
- Combined with high heat/humidity, heat stress can develop (cramps, exhaustion, stroke)
- The body can lose up to 3 gallons of water a day just through the sweating mechanism
- Prevention is the best protection
- Drink lots of water with some electrolyte-replacement fluids
- Do not take salt tablets
- Eat “light” meals
- No alcohol!
- Still no shortcuts – wear your PPE

recipe, there would be one scoop of vanilla ice cream to one railcar tanker of root beer to give one part of ice cream to one million parts of root beer.

Now, take 50 scoops of ice cream and place them in a railcar tanker of root beer. Would you notice any significant difference? Going back to the ppm level of 50 for carbon monoxide, it doesn't require too many CO molecules to become hazardous to a person's health.

Depending on the amount of time and concentration of exposure to carbon monoxide, it can produce a fatal recipe. The chart below provides an example of the human body's reaction to various levels of carbon monoxide.

PPM	Effect	Time
50	PEL	8 hours
200	Slight Headache	3 hours
600	Headache, Discomfort	1 hour
1000-2000	Confused, Nausea, Heart Palpitation	30 minutes
2000-2500	Unconsciousness	30 minutes

Keep suspect areas well ventilated and keep people rotated to reduce exposure time or concentrations. And, if you see the signs beginning to develop in an employee, get them to fresh air immediately!

Carbon monoxide is a silent killer. Whether high concentrations at short intervals or small concentrations with prolonged or repeated exposure, CO will compromise and adversely affect a person's health. Knowing the hazards can help, but only preventing the exposure will protect a person from harm.