Safety for the Leader/Manager

from Compliance to Excellence

How enlightened leadership, good people and a proven process can stop accidents, cut costs and strengthen the workplace culture

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Safety for the Leader/Manager…*From Compliance to Excellence*

This publication is a compilation of the author's 35-plus years of experience in the occupational safety field together with the writings and teachings of others involved in occupational safety and of OSHA standards and advisory documents. While the information contained herein is believed to correctly reflect government and industry best safety practices at the time of writing, no warrantee is expressed or implied.

It is the intent of the author that readers will be inspired to examine their current safety management beliefs and processes and, working with their employees, implement those concepts and approaches found to be beneficial in their organization. The Author has no control over implementation and assumes no responsibility for injuries of any kind in the workplace nor a lack of safety success as a result of the use of this book.

Since OSHA regulations, national consensus standards and industry best practices can change at any time; readers are advised to consult the applicable regulations and/or standards before taking action. Further, neither the author nor the publisher is engaged in rendering legal advice. If legal advice or other expert assistance is required, the service of a competent professional should be sought.

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Introduction

In This Chapter:

Why this book
Some misdirected efforts
What you'll find
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Another book on safety and OSHA? How can something so simple— keeping people from being injured—be so complicated and frustrating for so many managers and company owners? Safety isn't all that complicated. Honest!

Safety is good management and focused leadership. For thirty-five years, I've watched good people struggle with compliance and do some of the dumbest things trying to stop injuries in their workplace. They waste money and time turning a fundamental process into a thousand-piece jigsaw puzzle.

My objective here is to help you be a better manager…and to help you develop a cadre of people who behave safely all the time while they reform the operation into a model of effectiveness. No magic pill. No secret solution. We're just going back to the basics of how good people do work and then apply the framework of an appropriate safety process as an overlay.

Look at some of the comments I've heard repeatedly from managers and the people they've hired to help them be safe. Sound familiar?

I don't care what you do, just make sure we're OSHA-proofed!

Normally, this comment is directed at the safety director or manager or coordinator and offers two impossible challenges. First, you do care what he or she does. You don't want them to get in the way of operations. You want them to work quietly and effectively to make sure every regulation is met so nothing will be wrong if the compliance officer walks through the door.

Second, you want to be "OSHA-proofed" but you already know that nothing is certain in business. Why would you expect safety to vary from the norm?

Congratulations, we've decided to make you responsible for safety! For your first task, make sure OSHA stays off my back.

Any mixed messages here? Congratulations!? Is there the slightest possibility that the person being addressed, or anyone else, will really consider this a positive move? I doubt it.

The most likely implication is that the current effort is not going well, it needs to be dumped somewhere, and that anyone can do it without any particular talent or skill. After all, it's just a staff job for anyone who can read technical standards. Where is the owner/manager in all this? As far away from the action as possible. This effort will fail.

This OSHA stuff is driving me nuts! No matter what we do, people keep getting hurt.

It sounds like what's being done is ineffective or downright detrimental.

Help Wanted. Small company looking for highly qualified individual to manage safety function. Must be expert in OSHA and able to ensure compliance with all safety and health laws and regulations.

Good luck! This ad has just moved the company up the cost ladder several rungs and is still targeting the operation for failure. Here's why:

You're looking for someone who doesn't exist.

Plenty of people can do parts of the job you want done, but they already work for your company. They're called managers. Together, you and they set the tone for safety today. Maybe you don't realize it, but the people in your organization work the way they think you want them to work and do the things they think are important to you. If safety isn't high on their list, maybe that's what they think is acceptable to you.

The majority of managers and business owners rank safety high, but their people don't see it that way. There's a big disconnect in business and industry between what managers believe and what their people perceive. Only a small percentage of companies get it right.

Back to the ad. "Expert in OSHA!" I've never found such a person. Thousands of people make it their business to know what the agency requires. Many of them now have advanced degrees in safety and health. There are certified safety professionals (CSP), certified industrial hygienists (CIH), certified professional ergonomists (CPE), and a host of other certifications. Most are really good at what they do, but few would claim to have all the answers. Even fewer would want the job outlined in the ad.

Somebody said that if you took all the standards, rules, and regulations issued by OSHA, or incorporated by reference, and put them in a stack, you'd have a pile of paper over five feet high. You need someone who can figure out what applies to your business and how you make it work in your company culture.

That brings me to my last point about the ad.

Compliance is only the starting point on the road to safety and health excellence. When people and organizations "comply," they do the minimum necessary. That's human nature. Why do more when compliance is all that's required?

To illustrate my point, perhaps your state has a mandatory annual inspection of automobiles. A mechanic looks at those things on the checklist, fixes or replaces what doesn't meet specifications, and returns the vehicle to you. Does that keep you safe on the highway? No! It might help, but something not on the checklist could fail. More importantly, the mandatory inspection did nothing to address your behavior and the behavior of all the other drivers. It's only the safe behavior of everyone on the highway that reduces your risk of an accident.

For the most part, OSHA only addresses physical safety in the standards. Training requirements and performance-based standards occasionally move the agency into the behavioral side of the safety equation, but not very far. Establish compliance as your baseline and press steadily toward excellence. The pay-off, as you'll see in Chapter 2, is big!

I just suggested "excellence" as a goal. I believe excellence is 1) having a safe workplace—*compliance*— plus, 2) having no accidents, and 3) having 100% safe behaviors on the part of all your people. It requires hard work and a new cultural mindset across the organization. Is it worth it? Absolutely!

How is this book going to help you comply and move you and your organization toward safety and health excellence?

First, I will help you determine what OSHA expects of employers. I can't give you the benefit of all of that five foot stack of requirements, but I will tell you about those requirements which are generally applicable across the board in business and industry and show you how to easily get what you need.

States Covered by Federal OSHA

Alabama
Arkansas
Colorado
Connecticut
Delaware
District of Columbia
Florida
Georgia
Idaho
Illinois
Kansas
Louisiana
Maine
Massachusetts
Mississippi
Missouri
Montana
Nebraska
New Hampshire
New Jersey
New York
North Dakota
Ohio
Oklahoma
Pennsylvania
Rhode Island
South Dakota
Texas
West Virginia
Wisconsin

Table 1.1

Federal OSHA jurisdiction only applies in twenty-nine states and the District of Columbia (Table 1.1). In twenty-one states and two territories (Table 1.2), there are state safety plans that, under the Act, must be "at least as effective" as the federal OSHA standards and regulations. See the boxes at the right and next page. In practice, most of the state plans are very close to the federal standards (and frequently identical). Some states require safety committees or mandate comprehensive safety plans. I'll cover these topics but will not go into specific state plans.

Also included here is an easy-to-follow discussion of the OSHA Safety and Health Program Management Guidelines. The voluntary guidelines are considered by many to be an excellent compilation of the essential components of a well-managed safety and health process. Chances are, you've already got many pieces of the guidelines in place. I'll show you how to assess where you stand and use your assessment to develop your strategic safety and health improvement plan.

The guidelines form the basis of the proposed mandatory safety and health program regulation OSHA will soon adopt. If you start putting any missing components in place now, you'll be ready when the regulation is enacted.

State Plan Programs Covering Both Private and Public Sector

Alaska
Arizona
California
Hawaii
Indiana
Iowa
Kentucky
Maryland
Michigan
Minnesota
Nevada
New Mexico
North Carolina
Oregon
Puerto Rico
South Carolina
Tennessee
Utah
Vermont
Virgin Islands
Virginia
Washington
Wyoming

State Plan Programs Covering Public Sector only

Connecticut
New Jersey
New York

Table 1.2

I strongly believe that the workplace culture plays a pivotal role in the success of safety in any company. Throughout the book you'll read tips and ideas about how to modify or adjust your culture in order to enhance safety. There is no single best way to do safety and there is no prescribed or correct safety culture. Both the OSHA guidelines and the safety cultural components discussed in this book allow flexibility to do what fits your organization. I'll cover culture and cultural values in Chapter 3.

Myths abound in the safety business. Thousands of organizations have tried "common sense" approaches on faith. No science behind them. No concrete data. No remarkable results either. Debunking myths (one of my favorite topics): Chapter 4.

Most of the rest of the book is devoted to tools and techniques which do work and which have the support of science and data behind them. You'll find them combined with the appropriate component of the OSHA Guidelines which will give you the "what to do" and "how to do it" in the same location. Chapters 6 through 14 cover this material.

Chapter 15 covers the Act and the agency and all those bits and pieces of information needed for compliance.

Primarily, this book is focused on general industry—business, manufacturing, services, and other companies which make up the over seven million places of employment in the United States (Table 1.3). Because it is not dealing with specific standards, if you are in construction, shipyards, marine terminals, longshoring, and mining, these pages will also help you bring excellence to your safety process.

Chapter 16 lists a wealth of resources and support for help to stay current on safety once you're up to speed.

Since the majority of accidents occur in the smaller workplaces, I've tried to focus on the needs of owners and managers in facilities of all kinds with employment in the 10 to 500 range.

General Industry Includes
Agriculture, forestry, and fishing
Manufacturing
Transportation and public utilities
Wholesale and retail trade
Finance, insurance, and real estate

Table 1.3

If yours is a really small operation, you're probably already doing the important pieces of the safety process informally. That's the way it is if you're all within easy talking distance every day. You'll still benefit from much of the discussion; but you're simply not going to need to do some of the things covered.

Managers in larger companies where departments or divisions are reasonably autonomous may have corporate safety staffs that have already provided guidelines similar to what are covered here. This book will help you put your own stamp on the safety culture of your unit.

Finally, I know from experience how hard it is to find good teaching texts to use for both prospective managers and safety specialists. I hope my effort here makes the search a little easier.

I'm writing this text in first person, conversational style. As a manager and a teacher and a safety practitioner, I've had to learn to listen and present ideas and concepts clearly. I want this book to be practical and down-to-earth, easy to read, neither technical nor academic.

I want to demystify safety and health. I hope to make it clear that the tools, techniques and approaches, which can be most effective, vary with the organizational culture. I'll try to write with a cookbook in mind. I'll admit right now that I'm much better at safety management than I am at cooking. But I still like the concept.

What you do depends on taste and culture. Both require quality ingredients but only a few need be used at any given time. Both are really simple to do if you have good guidelines. They improve with practice, are essential to a healthy life, and have a multitude of pleasant side benefits.

Let's get to work on your safety culture.

2

Safety and Health Is Good Business

In This Chapter:

Accident costs
Safety costs
Calculating your total costs
Cost/benefit
Other safety benefits
Safety pays!

If you are skeptical, do the math. Start with a really simple formula: S+A=C. **Safety** plus **Accidents** equals total **Cost**.

Managers often look at the safety component only when they are figuring cost .Yes, there's a cost to safety, especially if you're not in compliance with the law. But the big bucks are in the accident part of the equation!

Accidents (Table 2.1 defines "accident" and other terms you should know) set in motion a chain reaction of events. First, work in the area stops. The bigger the problem, the more people drop what they're doing. Add time for helping out, cleaning up, and rubber necking. Throw in materials and labor for equipment repair or replacement. Add a factor for product and property damage or loss. Insurance claims and cause investigation add more labor cost. There may even be business interruption costs. The accident account has already tallied a fair number of dollars.

Terms you should know

Accident—An unintended event that results in some type of loss, damage, or injury to the organization or individual(s) involved.

Damage—loss or breakage to product, equipment, facilities, materials occurring as a result of an accident.

Illness—Harm to the human body by other than trauma, usually cumulative or occurring over time.

Injury—Trauma to the human body, usually sudden, which leaves some form of damage or adverse impact.

Occupational—When used with terms such as accident, injury, illness, or damage, means an incident occurring during, or arising out of, employment.

Table 2.1

Assume that the accident resulted in a minor injury and add costs for first aid or medical treatment. Add the time it takes to get cleaned up and settle the nerves. Throw in some time for supervisory attention and sympathy from coworkers. Chances are pretty good that the bump or bruise or cut or shaken confidence will make working a bit more difficult and drop productivity for a while. Deposit a few more dollars into the accident account.

Oops! The injury just went to lost time. Add more medical treatment, worker's compensation, and more reports and paperwork. Now factor in make-up pay to supplement worker's compensation, overtime for the replacement worker, maybe the cost to hire and train a replacement. Productivity drops for a while with a replacement and drops again when the injured worker returns. Few people who lose time with an occupational injury or illness return to 100% productivity the first day back. Now the figure in that accident account is starting to look like serious money.

Maybe the injury was bad enough that you had to report it to OSHA—or someone else did it for you. Now there is additional investigative time and a potential fine. Add some legal costs unless you want to go it alone with OSHA (which you certainly can do—see Chapter 15).

Speaking of legal costs, it's not unthinkable that you will also be party to a lawsuit. Workers' compensation is no-fault and employees generally can't sue employers for their injury. But they may decide to go after the manufacturer of the equipment or tool they were using at the time of injury. That company wants to share the costs. In you come as the third party with all the associated insurance, legal, and judgment costs in tow. No, it doesn't happen frequently; but it is a potential when listing your accident costs.

How much do workplace accidents cost your company? Here are some estimates.

The National Safety Council (NSC) publishes an annual edition of **Injury Facts** that, for 2004, put the total cost of work injuries at $156.2 billion.[1] That includes all the factors listed above except for property damage and legal costs. That figure breaks down in some interesting and more helpful ways.

The cost of an occupational death is $1,110,000. (Understand, of course, that the death figure is the total estimated cost to the employer and has nothing to do with the value or worth of the individual.)

The average cost of a disabling injury is $38,000.

A leading pharmaceutical company has calculated the average cost of a disabling injury at $39,000.

Or multiply $1,500 per lost day. That figure has been in use for some time.

A 1992 study done by the Upjohn Institute and the Michigan Department of Labor looked at over 20,000 Michigan employers and found that, on average, total disability costs for workplace injuries and illnesses exceeded 8% of payroll!

Another study done several years ago by the National Council on Compensation Insurance (NCCI) found that the average compensation case *without* lost time amounted to $7,000.

The most recent estimate from the National Safety Council puts off-job employer costs at $740 per employee.

Now consider property damage cases alone. No injury costs.

In research he did in 1960, Frank Bird put the cost of property damage at $650 per employee per year. Bird and George Germain co-authored **Damage Control** and based the damage cost on their research at Lukins Steel. Imagine where that figure must be today with inflation.

Bird continues to work in the safety field, and recently recalculated that property damage cost exceeds injury cost by ten times in the automotive industry, by sixteen times in oil, and by a huge ninety nine times in mining!

A BASF Wyandotte study found that catastrophic events (major fire, natural disaster, explosion) resulted in failure of the company in 43% of the cases. Over the five years following the event, the study found, 71% will fail![2] Even with insurance, when a business is down for several weeks or months to rebuild after a major loss, what happens to customers, suppliers, employees? Chances are they follow the money to some other company.

Catastrophic losses are bigger and much more dramatic but they start from the same root causes as any other workplace loss: physical conditions combined with human error allowed by the workplace culture. The fork truck driver, inadequately trained on a worn-out truck loses control. He can bend the corner of a storage rack, strike a fellow worker, or spear a drum of highly flammable liquid that ignites and destroys the building. Same causes, very different results.

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[1] *Injury Facts™,* 2004 ed, National Safety Council, Itasca, IL

[2] Bean, N., Business interruption can be fatal, *Disaster Recovery Journal,* Oct-Dec 1994

For the average manufacturing company with the average number of injuries with no deaths and 100 employees using the estimated costs above, annual occupational injury costs would be $135,000.

Find your company OSHA 300A summary for last year and multiply the figure on line G by $1,110,000. Add the amounts on lines H and I and multiply by $38,000. Finally, multiple the number on line J by $7,000. Add all three dollar amounts for the grand total.

This is the estimated cost of injuries to your company last year. Property damage will be more—much more!

Use the figure you just calculated for the total annual cost of injuries in your operation and divide it by your profit margin. For example, assume $175,000 is the total cost. Your profit margin was 3%. Divide $175,000 by .03 = $5,833,333.

Since accident costs go straight to the bottom line, that $5,833,333 is the amount of product or services needed to cover your company's accidents!

See the chart (Figure 2.1) for further single loss time costs. These, of course, are averages and estimates. Your company may be different but if your profit margin is slim, this should provide immediate incentive to renew your safety efforts.

Now that I have your attention: what next?

Balance the equation.

By *increasing* the safety part of the equation by a reasonable amount, the accident component will *decrease* by a *greater* amount. Therefore, the total cost of safety and accidents will go down!

If the current safety effort is fairly basic, and accidents are high, modest expenditures on training and resources for safety will result in impressive improvement.

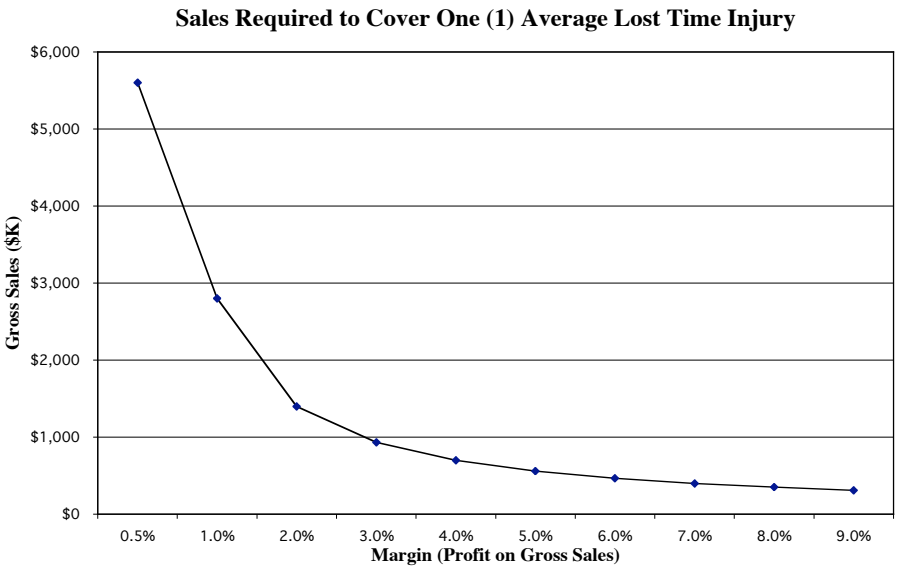

Figure 2.1

On the other hand, if a company is running a model safety effort and accidents are rare, additional safety expenditures will likely be fairly large to get just a small reduction in accident cost.

The objective with this simple SAC equation is to find the optimum balance point where money spent for safety drives an equal or greater reduction in accident costs. The tricky part is spending the safety money on the right things. A summary of "right things" is in the OSHA Safety and Health Program Management Guidelines in Chapter 5.

Any safety strategy is acceptable as long as it is legal, effective, sustainable, and supported by employees. There are over seven million places of employment in the United States. Each has a unique culture and way of doing business. Many of them have found their way to safety excellence.

Safety dollars are best spent on 1) getting in compliance with the law, 2) deciding on a strategic process, 3) getting employees involved and providing the knowledge, skills, resources, and motivation to do their jobs

safely, and 4) using leadership to keep the improvement process on track. Compliance may cost some capital and maintenance dollars, but the rest involves only labor cost.

An estimate of the real costs (meetings, training sessions, improvement tasks and implementation) is likely to run anywhere from $10,000 per 100 employees to as much as $30,000 or $40,000 per 100 per year. That figure will generally drop in subsequent years as the culture changes and safety activities become more self-sustaining

Find the *Safety and Health Program Management Cost/Benefit Calculation Worksheet* at the end of the chapter (Form 2.1). With it, you can figure your average estimated cost of injuries easily and quickly. Or, if you prefer, use it to help you figure actual costs—which will take a lot more work and may not be any more helpful in providing reasonable cost data.

Whatever method you choose, I believe that you'll find the cost of accidents versus the reasonable costs of safety to be an eye opener.

To illustrate use of the form, look at the completed sample of the *Safety and Health Program Management Cost/Benefit Calculation Worksheet* (Figure 2.2) at the end of the chapter and follow along.

XYZ Company has 83 employees and they make metal barrels, drums, and pails (information arrived at from their North American Industrial Classification System (NAICS) code of 33243). The Bureau of Labor Statistics (BLS) in the U. S. Department of Labor assigns a code to every class and type of employer. You'll need to know your code if you're going to compare injury rates—or any other business statistics BLS publishes—with your competitors.

XYZ Company had ten lost workday injuries last year and eight others that needed to be reported on the OSHA Log (OSHA Form 300). They ran the calculations in Section II for total cost. They skipped Section III on calculating their own costs because they determined that the estimates were close enough for their purposes.

Next, they used Section IV to reduce their annual cost of injuries by 50%, an estimate based on excellent research conducted by Dan Petersen. Peterson is a leader in this field and has conducted hundreds of studies over the years. He has found that a "significant" intervention designed to improve workplace safety will yield, on average, a 50% improvement within the following year.

What is a significant intervention? If your people say something like *they (the company) must really be serious about safety* that's an indicator of a significant intervention. Keep in mind that your opinion about the significance of whatever you do for safety is immaterial. Your people have to see it as an effort of value to them. Perception is reality.

Traveler's Insurance has studies to support Petersen's figures based on results of their focused loss prevention process. So does the Missouri Division of Workers Compensation. In an unpublished report, that agency found that companies which implemented the voluntary state safety program guidelines cut injuries and illnesses by an average of 50%.[3]

As you can see from the example, XYZ Company figured they could achieve the average improvement with their efforts and took credit for an anticipated $218,000 cost reduction.

The other side of the form (Figure 2.3), Section VI, addresses implementation costs. Take some information on faith until you are able to read through all of the elements of the *OSHA Safety and Health Program Management* approach. For now, you can run some rough figures of your own if you want to get an approximation.

XYZ Company managers sat down with their human resources manager and the safety committee chair and came up with the costs shown on the sample. Most of the cost is labor. They took average labor rates for line employees and for supervisors and managers and then figured out how much time it would take a team,

[3] Smitha, M. W., Bottomline improvement for business: Enhanced safety for employees, *Professional Safety,* Nov 1998

committee or individual to do the necessary work. Notice also that they had several tasks in place or completed, so no additional costs were entered.

The $19,936 they figured it would cost for full implementation looked like a lot of money initially. The next step told them otherwise.

As per Section V, they entered the anticipated savings of $218,000 and the estimated cost of implementation of $19,936 and came up with an estimated first-year return ratio of 10.9 to 1! They realized that if they overestimated the savings by double and underestimated the costs by half, they'd still be looking at a return of nearly three dollars for every dollar spent.

I've found that the return on safety investment in terms of lower injury rates and costs is anywhere from three to ten times the initial investment.

OSHA recently reported that a major study done in Oregon found employers got between four and six dollars back for every dollar spent on safety.[4] Safety and health programs are mandatory in Oregon.

It took ten years but Mobil Chemical (12,000 employees) brought the direct (read "insurable") cost of accidents from $18 million to $2 million and qualified for the prestigious OSHA Voluntary Protection Program (VPP)—a rough safety equivalent to the Baldrige Award for quality.[5] Mobil continues to set the example for VPP.

A small specialty plastics molding company in upstate New York was faced with closing in 1988. Its worker's compensation premium for 110 employees was $400,000 and they were close to being tossed out of the risk pool. The threat was enough to force management to consider radical changes in how they did business. They reexamined some faulty thinking, trusted their employees to help, and found a process that helped them change the culture completely. By 1994, compensation costs were a rock bottom $80,000 and business was booming.

An Ohio salt mine combined total quality management approaches with accountability for safety and cut worker's compensation payments from $500,000 to $150,000 per year.[6]

A cable manufacturer earned a $212,000 rebate on insurance premiums by changing the status of safety within the plant culture.[7]

Don't let all this discussion of money and savings cause you to lose sight of doing the right thing. Plenty of managers and their companies do everything they possibly can to ensure the safety of their people because that's the environment they want. They care about folks and can't imagine being responsible for harming them. But business is driven by money especially in the competitive global marketplace. "Safety pays" is more than a slogan. It goes right to the bottom line.

Companies that have taken a comprehensive safety approach have found benefits far beyond cutting costs, however. When safety is used as the instrument to change and improve a company, other indicators of organizational health improve. Quality goes up. So does morale—and productivity. Absenteeism goes down. Customers express greater satisfaction with the company's product or services. There's also sound evidence pointing to safety as a key leading indicator of future organizational health.

Studies support this, but more importantly, managers have seen it happen. They tell me that as they lead their people through a series of safety improvements, they've found other things going on that they didn't expect.

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[4] Dear, J. A., then Assistant Secretary of Labor for OSHA, Remarks to the International Conference on Occupational Disorders of Upper Extremities, Oct 24, 1996.

[5] LaBar, G., Making safety pay, *Occupational Hazards,* Penton Media, Inc., Jun 1994

[6] ibid

[7] Hansen, L., Rate your B.O.S.S.: Benchmarking organizational safety strategy, *Professional Safety,* Jun 1994

One told me he had decided to delay a push for higher quality until after he finished the safety improvement. But the process of improving safety—getting people involved, lots of discussions and problem solving, improved training and better resources to do the job—empowered people to work on quality problems. Without being told, they'd stop a process to tweak a piece of equipment or hold quick shop floor meetings to analyze and fix something that wasn't working.

The CEO of Georgia-Pacific—a strong supporter of the OSHA Voluntary Protection Program—says that one of his facilities had an embarrassingly poor incident rate one year. He went to the plant and told the staff to forget profit, forget productivity, focus only on safety. "Run the plant and make it safe."

That's what they did, but by having this exclusive focus on safety, they also improved productivity, cost, and the entire operation. He's found this is true throughout his operation. "A clean, safe plant is a productive plant," he says.[8]

One fairly large chemical company credits their safety improvement process with helping them win the Baldrige Award for quality.[9]

I'm not sure why these good things happen and I haven't run across an explanation in literature. I think it may be because safety has a strong egocentric component. Productivity improvements, quality enhancements, or customer satisfaction are all viewed as "something for the company." But safety? That's for me.

Something else happens. As you set a clear vision and ask people to help reach those goals, you set a process in motion that requires working together on real issues. As you work together, you start to trust one another. Maybe it's the strong trust that develops with a great safety effort that floats the whole boat.

It is clear that in any company, safety and other indicators of company health go hand in hand; net income, quality, high customer satisfaction, increased productivity, high morale, low employee turnover. Any one improved because of safety is nice. But to get all these indicators improved is great! Safety and health is good business!

[8] Correll, P., President and CEO, Georgia-Pacific, addressing the opening session of the Voluntary Protection Program Participants Association Annual National Congress, Washington, DC, Sep 14, 1999. Notes downloaded from the Internet via SAFETY@LIST.UVM.EDU

[9] LaBar, G., Making safety pay, *Occupational Hazards,* Penton Media, Inc., Jun 1994

Safety and Health Program Management
Cost/Benefit Calculation Worksheet

This worksheet is designed to allow rough determination of the cost of loss incidents at the facility and the cost of implementation of a comprehensive safety and health program. When complete, the worksheet will provide a ratio of cost to benefit for consideration by facility management.

I. Facility Information

Facility _____

Address _____

Contact _____ Full-time equivalent employees _____

SIC Code _____ Date of Calculation _____ Calculation by _____

II. Annual Work Accident Costs (using National Safety Council average costs for 2004)

Annual number of occupational deaths _____..... x $1.110,000 = $_____

Annual number of lost workday cases _____..... x $38,000 = $_____

Annual number of reportable cases without lost work days _____ ..... x $7,000 = $_____

Total estimated annual cost of occupational death, injuries and illnesses..... **= $_____**

III. Annual Work Accident Costs (using actual costs determined by the facility)

Worker's compensation payments....$_____	Wages & make-up pay over Worker's Comp...$_____
In-house medical costs.....$_____	Time lost by others .....$_____
Outside medical costs.....$_____	Insurance overhead .....$_____
Damage to property.....$_____	Wages & overtime for replacements.....$_____
Repair costs .....$_____	Reduced output following return to work.....$_____
Product damage or loss .....$_____	Replacement training costs .....$_____
Production loss .....$_____	Investigative and clerical costs.....$_____
	Total annual work accident costs.....$_____

IV. Annual Savings if Costs Reduced by 50%

Costs determined in Sections II or III = $_____ x 50% .....= $_____

V. Cost/Benefit Ratio of Implementing Safety and Health Programs

Cost of program implementation from reverse (Section VI).....= $_____

Annual savings from above (Section IV).....= $_____

Savings $_____ ÷ Cost $_____ = Ratio .....= $_____

The higher the number over 1.0, the greater the anticipated return

Form 2.1 (front)

VI. Safety and Health Program Implementation Cost

These costs are those determined by knowledgeable personnel at the facility. They should be **incremental** costs **only** and not include current expenditures. The costs are keyed to those elements of the OSHA Safety and Health Program Management Guidelines that might, in fact, have incremental costs associated with them. Where other elements of cost become apparent during discussion or analysis of needs, they should be listed in the spaces provided below.

1. Management Leadership and Employee Participation

Creation and communication of a clear policy ..... $_____

Safety and health goals set and communicated..... $_____

Employees involved in safety and health program..... $_____

Accountability process established and operated effectively..... $_____

Annual review of safety and health program..... $_____

2. Workplace Analysis

Baseline survey of workplace hazards conducted and updated..... $_____

Planned and new facilities, processes, materials and equipment analyzed..... $_____

Regular safety and health inspections conducted ..... $_____

Incident analysis system in place and operational ..... $_____

3. Hazard Prevention and Control

Hazard controls in place..... $_____

Equipment maintenance program in place ..... $_____

Emergency plan prepared and communicated ..... $_____

Emergency drills held ..... $_____

Medical program in place and effective..... $_____

4. Safety and Health Training

Employee training designed and delivered ..... $_____

Supervisory training designed and delivered..... $_____

Managers trained in safety and health program elements and responsibilities..... $_____

5. Other Incremental Costs

_____ $_____

_____ $_____

_____ $_____

_____ $_____

Total annual program implementation costs ..... $_____

Form 2.1 (back)

Safety and Health Program Management
Cost/Benefit Calculation Worksheet

This worksheet is designed to allow rough determination of the cost of loss incidents at the facility and the cost of implementation of a comprehensive safety and health program. When complete, the worksheet will provide a ratio of cost to benefit for consideration by facility management.

I. Facility Information

Facility XYZ Company

Address _____

Contact _____ Full-time equivalent employees 83

SIC Code 33243 Date of Calculation _____ Calculation by _____

II. Annual Work Accident Costs (using National Safety Council average costs for 2004)

Annual number of occupational deaths 0 ..... x $1,110,000 = $ 0

Annual number of lost workday cases 10 ..... x $38,000 = $ 380.000

Annual number of reportable cases without lost work days 8 .....x $7,000 = $ 56.000

Total estimated annual cost of occupational death, injuries and illnesses ..... = $ 436.000

III. Annual Work Accident Costs (using actual costs determined by the facility)

Worker's compensation payments	$_____	Wages & make-up pay over Worker's Comp	$_____
In-house medical costs	$_____	Time lost by others	$_____
Outside medical costs	$_____	Insurance overhead	$_____
Damage to property	$_____	Wages & overtime for replacements	$_____
Repair costs	$_____	Reduced output following return to work	$_____
Product damage or loss	$_____	Replacement training costs	$_____
Production loss	$_____	Investigative and clerical costs	$_____
		Total annual work accident costs	$_____

IV. Annual Savings if Costs Reduced by 50%

Costs determined in Sections II or III = $ 436.000 x 50% .....= $ 218.000

V. Cost/Benefit Ratio of Implementing Safety and Health Programs

Cost of program implementation from reverse (Section VI).....= $ 19.936

Annual savings from above (Section IV).....= $ 218.000

Savings $ 218.000 ÷ Cost $ 19.936 = Ratio .....= $ 10.9 to 1

The higher the number over 1.0, the greater the anticipated return

Figure 2.2

VI. Safety and Health Program Implementation Cost

These costs are those determined by knowledgeable personnel at the facility. They should be **incremental** costs **only** and not include current expenditures. The costs are keyed to those elements of the OSHA Safety and Health Program Management Guidelines that might, in fact, have incremental costs associated with them. Where other elements of cost become apparent during discussion or analysis of needs, they should be listed in the spaces provided below.

1. Management Leadership and Employee Participation

Creation and communication of a clear policy	$ Done
Safety and health goals set and communicated	$ Done
Employees involved in safety and health program	$ 2,000
Accountability process established and operated effectively	$ 600
Annual review of safety and health program	$ 1,500

2. Workplace Analysis

Baseline survey of workplace hazards conducted and updated	$ 1,440
Planned and new facilities, processes, materials and equipment analyzed	$ 0
Regular safety and health inspections conducted	$ In Place
Incident analysis system in place and operational	$ In Place

3. Hazard Prevention and Control

Hazard controls in place	$ 2,000
Equipment maintenance program in place	$ 4,000
Emergency plan prepared and communicated	$ 500
Emergency drills held	$ 1,992
Medical program in place and effective	$ In Place

4. Safety and Health Training

Employee training designed and delivered	$ 3,264
Supervisory training designed and delivered	$ 2,640
Managers trained in safety and health program elements and responsibilities	$ Done

5. Other Incremental Costs

_____	$ _____
_____	$ _____
_____	$ _____
_____	$ _____

Total annual program implementation costs $ 19,936

Figure 2.3

3

Safety and Health as a Core Cultural Value

In This Chapter:

Values
Culture
NIOSH Study

Let's talk about culture - not art, music, dance and theater, but the other kind of culture that determines how people act, the value system that guides them and the shared beliefs that add or detract from what is an acceptable quality of life.

Obviously, this book is not meant to be a treatise on sociology but I've already referred to "company culture" and will use that expression many more times before I'm through. "Company culture," in fact, is in danger of falling into the buzzword trap of the late 1990s, one of those expressions that brings a groan and rolling eyes to business managers everywhere.

Each of us is a part of many, overlapping cultures. We are part of national and ethnic cultures. Our family forms a culture. There is a culture in the school we or our children attend and a sub-culture in the classroom. Separate cultures exist in social or civic clubs and obviously, at work.

A culture, then, is the mass of beliefs, customs, knowledge and practices that define acceptable behavior within a particular group of people. These are passed on through verbal or written teaching and history, through example both overt and implied, and reinforced through systems of reward and punishment that may be external but are most successful when they are internalized, in other words, when we are self-motivated to conform or obey.

You may have been told, "this is the way we do things around here." Whether it related to a family, neighborhood or your job, you were just shown the inside of that specific culture. The culture always defines what's important and what isn't.

I was talking with the production manager of a high-tech electronics company about his view of safety, and he said, "oh, we're about average."

About average? I struggled to stay detached and objective, and suppressed an urge to laugh. I thought as he talked," Half your competitors are better than you. Does your chest swell with pride when you tell your customers you're *about average?* Are they comfortable with an *average* unit they spend lots of money to buy, hoping that it will give *average* service an *average* amount of the time?"

Average just doesn't do in today's global marketplace. I knew he wanted his product to be viewed as an industry leader, but he *really was* running an average business.

His injury and illness rate was average!

He had average clutter in his shop and his people had average problems.

When he told me that *there are no safety issues here…no problems…no targets for improvement,* he was simply saying what *average* managers say. His head was focused on production and on the customers who were touring

his crowded workplace that day. His annoyance at being bothered by me, the consultant his boss had hired to help "fix" safety, was barely concealed. He had ***I'm Average*** stamped on his forehead and safety was a bore!

Sadly, his people were clones. They didn't realize it, but they didn't care about safety either. When questioned, they were generally embarrassed and fumbled for the right words to make it seem like the topic was of some value. These were good people. He was probably a good guy too.

Safety was simply not part of their culture!

As implied by the definition, a safety culture is not determined by merely writing up a list of rules. As an exercise, make a list of all the places where people are expected to follow the rules. Be sure to list speed limits. Put down rules for kids about being home on time and picking up their room. Don't forget "no smoking" and "stop for pedestrians".

Analyze the list. In those cases where you think people follow the rules most of the time, what is their motivation? Usually, those situations will be where people *believe* in the value of the rule…where they want to do it…where it feels good. We follow rules because it's part of our culture and we are supported or punished by other members of that culture.

What about enforcement? Look back at your list. Do most of us follow speed limits because it feels good? I think not! Most people speed because everyone else is speeding…it's part of the culture. We slow down when we see a police car…or when the radar detector buzzes…but as soon as the enforcement threat passes, we're back up to speed with everyone else.

Enforcement only works when people think they will get caught every time.

Consider laws that require drivers to stop for pedestrians. Most states have them, but you'd never know it. An exception is the State of Maine.

I was walking along the main street in Camden one day and *thought* about crossing to the other side. I absolutely believe that the drivers read my mind and hit the brakes en mass even before my foot hit the pavement. No police. No enforcement to speak of. Just a commonly held (and quickly learned) belief that, in the safety culture of the State of Maine, cars **must** stop for the pedestrian.

Back to our *average* production manager. While he may have helped define the culture in his plant at one point, he's now clearly a product of it. He certainly will answer direct questions when asked by visiting consultants and no doubt has something written about safety because the law requires it. But safety's not important there and everyone knows it.

Ask yourself "what **does** work?"

We talked about enforcement. Do you get the behavior you want every time with enforcement?

How about safety by memo or poster? Run a quick study to see who remembers the memo you issued yesterday or the poster that went up last week. Better not ask if their behavior changed as a result.

How about pleading? I don't know a single manager who was successful pleading for his people to work safely even though it is a strategy that some try.

I do know a lot of managers who assume that the dictator role will make a difference…and it will. It will cause people to do *just enough* to get by without feeling the wrath of the dictator. This is hardly the path to excellence!

No matter how I look at safety and health, it comes back to people truly believing that safety is so important to their work life that they don't even have to ask *should I do this safely?*

They know that people must not be injured and product and property must not be damaged. They realize that production and quality are essential to success and they just find ways to do what needs to be done safely.

They do the right things without being told.

That's *culture*.

Nothing else works!

OSHA requires many traditional safety techniques such as inspections and investigating accidents. I'm not saying these are unimportant or unnecessary. They simply don't have the power to drive safety excellence.

In the mid to late 1970's, the National Institute for Occupational Safety and Health (NIOSH) asked a team of researchers from the University of Wisconsin and NIOSH to examine the distinctive features of successful safety program practices in industry.[10]

The first phase of the study sent questionnaires to forty-two matched pairs of plants representing six industries in the state of Wisconsin. The pairs were matched by standard industrial classification (SIC) code, size of workforce, and plant setting (rural or urban). The pairs differed, however, in that one of the pair had an injury incidence rate at least double the other plant. Questionnaire response showed certain clear characteristics for the low accident companies.

The next phase sent investigators into a sub-set of the matched pairs in the first phase. Interviews and plant inspections revealed additional characteristics that separated the pairs.

During phase three, the NIOSH team looked at five companies that were National Safety Council award winners with the hope of finding what set them apart from all the others.

During the site visits in phases two and three, the researchers rated a large number of program areas or components on a one (1) to seven (7) scale. For example, a score of "1" indicated that the effectiveness of the rated area was "very poor", a "4" was "moderate" and a "7" was "excellent." Huge amounts of data were collected during the entire study, but the findings can be summarized fairly well by the two graphs shown here. These charts combine areas or components into logical groupings for clarity.

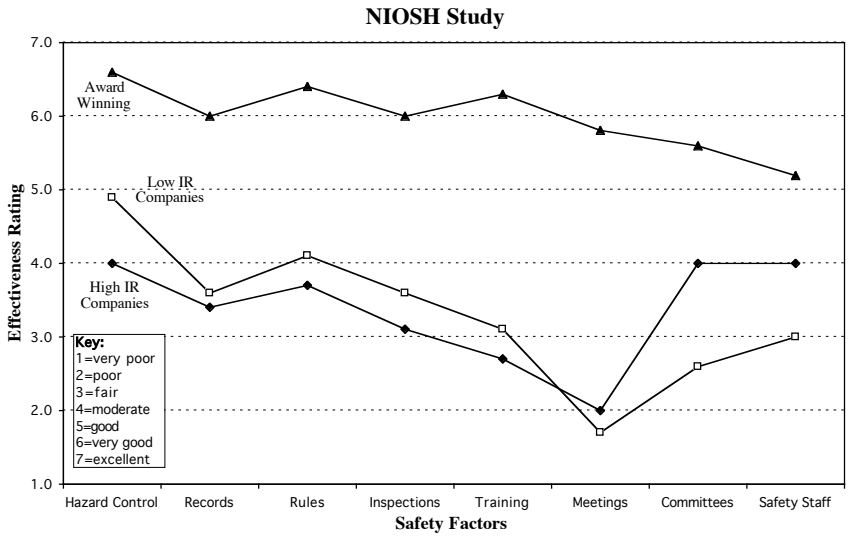

Figure 3.1

The first graph (Figure 3.1) shows total average scores in major areas for each of the three study groups: award winning companies, low accident companies, and high accident companies. What the study found was that traditional safety efforts such as safety staff, committees, training, inspections, rules and records, while necessary and often mandated by OSHA or the states, were not the differentiating factors.

Look at the graph. The lines

[10] Smith, M. J., et al. Safety Program Practices in Record-Holding Plants, NIOSH, Morgantown, WV, 1979

for the poor and good companies are nearly parallel, very close together, and even cross over on the last three elements. Imagine! Poor safety record companies are better at using safety meetings, safety committees, and safety staff than are the good companies. In basic terms, traditional safety efforts need to be undertaken, but working harder at them once their adequacy has been established does not make safety get better!

All these years of inspecting and inspecting and inspecting again had no hope of improving safety.

I see plenty of companies that have worked very hard at the traditional safety elements but have barely budged their injury rates year after year.

What *did* set these companies apart was the management and company culture factors (Figure 3.2). The quality of jobs, management and employee relationships and attitudes, and involvement by everyone in the safety effort were what made the difference. The spread—the differentiation—between excellent, good, and poor companies is clear in the cultural areas. The lines on the graph don't cross and have good space between them. There is "statistical significance."

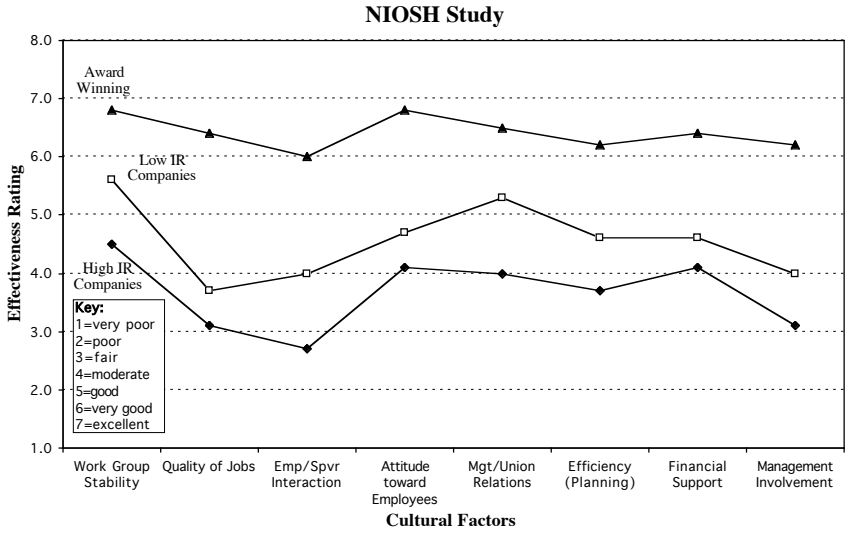

Figure 3.2

Culture provides the power for safety!

In terms of how the culture impacts the workforce, the study found that people work more safely when:

- They are involved in the decision-making process (with open communications channels and positive feedback).
- They have specific and reasonable responsibilities, authority, and goals (so they know clearly what's expected and how they will be measured).
- They have immediate feedback on their work (which also makes them more highly motivated).
- They feel important, needed, wanted, secure that the organization cares about them as individuals.

The survey concludes that there are several broad characteristics associated with superior safety performance. They are:

- Strong management commitment to safety through policy, financial support, active involvement in program implementation, and demonstrated concern for worker well-being.
- Hazard identification, engineering controls, job safety training designed to anticipate and manage hazards (not just to count and investigate).
- Communications and feedback that motivate management and employees to deal with one another in positive ways.

- Safety efforts which are integrated into the larger management system and which deal with safety as an intrinsic part of plant operations.

I've shown the results of this study to hundreds of managers and supervisors in workshops and training sessions. Many of them have completed a short questionnaire (Form 3.1)—which you'll find at the end of the chapter)—asking if the factors on the two graphs are present and positive in their companies. They are also asked to rate their company on its safety record and their opinion of how the company is doing, overall, on safety. Their response is graphed as a percentage of positive respondents as shown below.

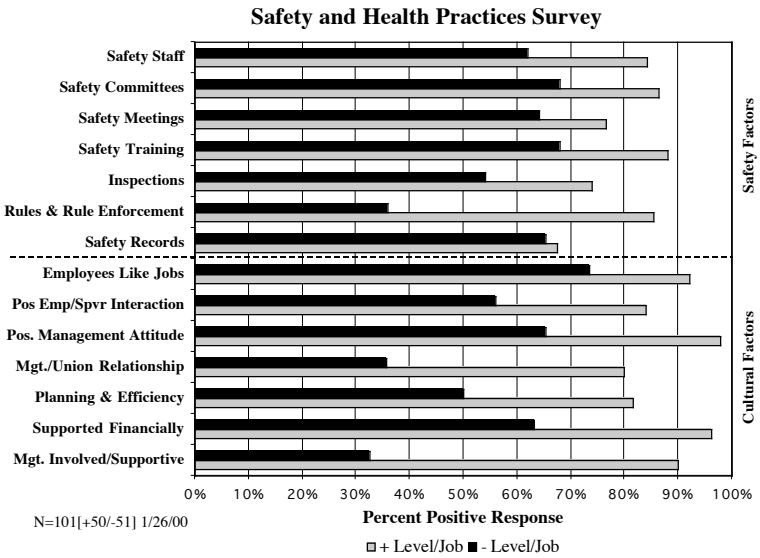

Figure 3.3

The results tend to confirm what we see in the NIOSH study. Those who have positive attitudes about their company's safety efforts and results are more likely to report that both traditional and cultural factors are present and positive in their organization. However, the spread between the lines for them and those who indicate the factors are not present is much greater for the cultural factors than for the traditional ones.

I would not presume to report this very simple survey as a valid study of any significance. However, when I do see high cultural scores within a specific company, I also tend to find the other indicators of a healthy safety culture are present. Assessment scores, incidents rates, behavioral samples, and anecdotal observations are all confirming.

Between the science and the experience, my belief that the culture of the organization determines the level of safety you have is rock solid!

Safety is much more about good management than safety tools and technique.

Safety and Health Practices Survey

In my organization, the following statements are generally:	True	False
1. A safety staff is assigned and reasonably helpful	☐	☐
2. Safety committees are formed and meeting	☐	☐
3. Safety meetings are held regularly to address issues	☐	☐
4. Safety training takes place when necessary or required	☐	☐
5. Workplace inspections are conducted regularly	☐	☐
6. Safety and health rules are established, communicated, and enforced	☐	☐
7. Safety records are maintained and regularly analyzed	☐	☐
8. People generally like their jobs and find them challenging	☐	☐
9. Employees and supervisors have frequent positive interaction	☐	☐
10. Management has a positive attitude toward employees	☐	☐
11. The relationship between management and the union(s) (where applicable) is positive and productive	☐	☐
12. Operations are well planned and efficient	☐	☐
13. Safety and health and other important issues are supported financially	☐	☐
14. Management is clearly involved and supportive on safety and health	☐	☐

I consider our accident level to be:

- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

Overall, I believe we are better at safety than most others in our industry or type of work:

- ☐ Agree
- ☐ Disagree

My job is primarily:

- ☐ Operations or line
- ☐ Staff
- ☐ Management

Form 3.1

4

Debunking the Myths

In This Chapter:

Safety as #1
Accidents happen
Stay out of off-job accidents
Safety is a staff function
Individual actions cause injuries
OSHA compliance means safety
Make incremental improvements
No injuries means we're good
Stronger discipline makes us safer
Let's train away injuries

Don't eat before swimming.

Suntans are healthy.

Complete bed rest cures a bad back.

Getting cold will give you a cold.

These and statements like them all seemed like common sense rules to live by at one time or another. Then scientific evidence proved them to be ineffective or downright harmful. They were myths.

In the workplace, extravagant sums of time and money are squandered replicating safety activities or approaches that seem to be the right thing.

Fads, hunches and "programs of the month" abound. Companies everywhere experiment with approaches to promote safety that they wouldn't dream of implementing to encourage productivity or quality. The drive for safety seems to cause many of us to completely abandon science and sound business practices and follow the slogan and sound bite school of operations.

Here are some of myths and the reasons they should trigger skepticism.

Safety is our number one priority! What happens to priorities? I've asked this of hundreds of participants in classes and workshops and the universal answer? Priorities change. They change all the time for all kinds of reasons and people know that they change.

I've visited companies with safety listed as number one goal in manuals, policy statements, and banners across the entrance and asked line employees to rank the priorities of management. Production is usually at the top of the list. Quality or customer service follows. Employees are smart enough to see through company sloganeering.

If you want people to believe that safety is important, drop the word "priority" from safety vocabulary and substitute "value." Values are those components of any workplace culture that provide constant guidance even when priorities conflict.

Values are not situational. They cannot be turned on and off at will.

Let's say you find a lost wallet on the street. It has cash and credit cards and other important papers. What do you do? *Contact the owner and return everything*. Why? Because honesty is one of your values. Suppose you're out of cash that day. Times are tough. Now what do you do? *Return it anyway!* You still do what you believe in, even though your priority for the day is to get some cash. Values always modify priorities.

Now the goal is clear: to establish a value system that includes safety. It encompasses quality, customer service, and concern for each other. At its heart, everyone does the right thing even if no one else is watching.

This is hard work. Statements will not magically change behavior. Modeling those values will. You've got to provide consistent and constant leadership.

Accidents happen! No, they don't just happen. Accidents are caused and we know what causes them. It's not a matter of luck or inherent danger. Accidents are not accidental. They are the result of decisions, business pressures, conflicting priorities, lack of knowledge or skill, inadequate resources, and unsafe conditions.

I remember the first machine shop I visited as a young safety engineer. One machinist after another raised a hand to display a missing digit or two—or more. There was a hint of pride as they explained, one way or another, that you weren't a real machinist until you were missing a body part. Accidents happen.

Not only are accidents not accidental, they don't have to happen. Risks may be ever present and taking risks sometimes grows businesses, and creates stars and heroes. However, the best risk takers know the risks and go to great lengths to control them. Watch a movie stunt team. They make engineering calculations, control every possible variable, make test runs, check and recheck equipment. Failure happens sometimes but tens of thousands of these stunts are successes.

In the business world, there are exemplary companies that do not tolerate accidents. A culture has been created where everyone believes that accidents are wrong and everyone knows how to keep them from occurring. These companies are also thriving and productive.

Some manufacturing leaders have lost time injury incidence rates of .02 or .03. Consider a rate of .02 as one injury in 5,000 employees. The average manufacturing company in the United States has one lost time injury for every 21 employees. For the best companies, being 240 times better than average is still not being injury free; but I won't argue if they tell me accidents don't happen!

Accidents off the job are none of our business! You think? If you do, you've got lots of company. What our people do on their own time is their business. We've got enough problems trying to keep them safe at work, how could we do it away from here? Remember our cost discussion in Chapter 2? If one of your people gets hurt at home or on the highway, nearly all those costs kick in. You probably pay them. There are medical insurance expenses, overtime and replacements to get the work out. There can be training costs and reduce output on return and administrative costs.

Because their exposure to injury is greater away from work, chances are good that non-work injuries occur far more frequently than do work injuries. These injuries may be more severe. Consider automobile accidents. Severe trauma on the road far exceeds severe trauma at work.

Even if it's a family member who is hurt, some of the costs will impact you. Your employee may lose some time dealing with the injury. Medical insurance costs will still build. Even if at work, the employee may be distracted by the events at home.

Obviously, in today's environment, no one expects you to establish rules for conduct outside the job. However, you certainly can make sure the safety values you instill at work are taken home. Cover safety off the job in safety meetings and at tailgate discussions. Have an annual home safety exhibit on a weekend. Invite local community safety organizations to participate.

Regularly provide non-work safety information the employee can use at home. The National Safety Council has booklets and brochures with home and highway safety tips, including **Family Safety** magazine. Many providers of safety films, videos, and booklets have material on home safety that cost as little as a few cents per employee. Local law enforcement and fire departments often have materials you can distribute to your people.

Make it easy for people to take safety-related items home for home projects. Hearing protection and safety glasses are cheap compared to injury costs. Consider a loan program for specialized tools that will make the home project easier and safer. Or consider letting your electricians do personal power tool inspections one day a month to be sure employee tools are in good shape.

Do get your company attorney's advice. In my experience, making good faith efforts to reduce the exposure of your employees and their families to accidents away from work lowers your overall costs and liability. Positively, the more you show you care about your people and the welfare of their family, the stronger your safety culture will be and the better they will feel about the company.

Safety and health is a staff function. Even the most qualified safety manager can't do what you can do. Safety touches every element of the management process. If you tell an employee to reinstall the guard on the table saw, you are affecting production. If you reduce the pressure on an air gun, you are affecting production. If you compel a mechanic to lock out a machine for maintenance, you are affecting production.

Do you really want a staff person making production decisions all day every day? That's what you do. It's what your supervisors do. When people have concerns or questions, you want them coming to you. Basically, you've got two choices. You can manage safety and health…or you can make the safety person a senior line manager.

In practice, making everyone on the management team a safety manager makes more sense, is more effective, and causes fewer problems. It doesn't take more time. Safety is just part of the normal every-day process of managing, you just incorporate your knowledge of safety and the safety process into all your thinking.

There remain an abundance of tasks for safety that can best be done by someone in a staff position. Staying current on safety laws and regulations, researching and advising on technical safety issues, drafting company procedures, keeping records, dealing with the regulators and safety consultants, coordinating training, and keeping all of you in management informed are just some of the tasks the staff person can do. They're important—and they need good skills—but they're not you.

Most accidents are the fault of individuals. This is a diehard myth. Even the people who get injured tend to believe this one and on the surface, it seems true.

But remember, the workplace culture tends to drive everything we do. The injured individual fails to wear the required gloves because he gets a better feel for the quality of the product with bare hands. A desire for quality drove this injury. The fork truck driver picks up speed just a bit because she's running behind on an important shipment and dumps the pallet of product all over the dock. Production is behind this one. The operator reaches into the machine to grab the misaligned part and loses a finger. A desire for production drove the action and a management failure to guard a pinch point allowed the injury to occur.

A friend of mine says we should begin all our safety inspections in the management offices since that's where injuries originate.

If we comply with OSHA, we'll be safe! Sorry but OSHA doesn't cover all the elements of safety in the workplace. There are some big gaps. Motor vehicle operation is not regulated, nor is ergonomics. Ergonomics

was covered for just two months in early 2001 until Congress sent OSHA back to the drawing board. There are a host of other jobs and operations that are covered only partially.

And obviously, no regulation can cover all the variabilities of human behavior. Several of OSHA's newer standards are performance-based. In other words, they provide objectives. The means to accomplish those objectives are left to you, but the bulk of the standards are specifications. Do this! Don't do that! There is no consideration in the thousands of pages of standards for all the individual and corporate variables that must be balanced to get work done safely.

Safety is planning and sharing and working together. It's understanding how others are going to react. It's following the intent of the standards and industry best practices, rather than trying to arbitrarily meet the letter of the law.

It's developing trust and the ability to analyze and reason through the risks and probabilities. It's all those things intelligent and thoughtful people do once they understand the basic rules of workplace safety.

Complying with OSHA is the very beginning of the safety process, not the end.

Small improvements in safety will get us better over time. This is a good one. By now, nearly every employer in the country uses the teachings and tools of quality management. One of those teachings is the continuous improvement cycle. As I interpret what Dr. W. Edwards Deming was telling us about the Shewhart Cycle, the objective is to constantly improve the system of production and service.

How does this continuous improvement cycle actually get applied to safety?

In this scenario, goals are revised annually to reduce injury rate by ten or fifteen percent. The goal gets set in apparent isolation from any other process. I see this repeatedly in companies I visit and usually everyone spends the year trying to figure out how to actually meet the numbers.

Dr. Deming would have us focus on the process—the system—and improve that. But that's not what happens in the minds of many well-intended managers. They try to improve the bottom-line measure and completely overlook the need to tweak and adjust the process that will make any improvement possible.

Obviously, for this to work, both a process and a strategy are necessary. Tweaking or continuously improving a hit or miss approach to safety is useless. If you don't have a proven process already working, radical redirection is needed, not mid-course corrections.

Managers, safety directors, safety committees and company newsletter writers—when the improvement goal is actually met—thump their chests and exclaim with pride how much better safety is this year vs. last. Better! Really!? The company put ten percent of its people out of work two years ago with an injury and last year they only disabled nine percent! In the minds of most people, disabling nine (or fifteen or three) percent of your people is bad. Disabling any is bad. Yet by a strange twist of logic, disabling ten percent fewer allows managers to say the company did a good job.

A good friend of mine, a safety director on the west coast, sent me an e-mail a while back and ended it with this comment. I'm working on the safety plan. The bean counters want me to tell them how many people we plan to hurt and how long they will be out of work. That's how staff and line employees interpret the message about the small improvement in the bottom line.

Some managers do understand the lunacy of setting injury targets. There's a story I've heard often. It may be many stories with the same theme. A senior executive, when presented with the committee recommendation for a percentage improvement in injuries, slammed his fist on the table and said *Great! That means we only need to hurt fifteen people next year. Do we have any volunteers?*

Yes, have a process for safety improvement and continuously improve it. But when it comes to injury targets, set those at the only acceptable point there is—**zero!** That goal may not be met, but it sure beats implying to your people that hurting them is acceptable and maybe even good business thinking.

We didn't have any injuries last year, we must be good! Now this makes sense. Nobody got hurt; we're in fine shape. Ah, but there's a rub. Injuries and their degree of seriousness can be chance events. If no one got hurt, luck was with you.

Before you throw your arms up in disgust and say *it's hopeless,* consider this. The causes of injuries are known. Behind those injuries are behaviors and conditions. Those are the factors you can see and work on that will significantly reduce the probability of the injury event occurring.

When I walk through a company on an assistance visit, I take a quick mental snapshot as I look at each person I come across. If that snapshot sees at-risk behavior—in the line of fire, poor body positioning, missing personal protective equipment, and so on—I check the "unsafe" column on my note pad. If the person is behaving safely, the "safe" column is checked.

I also look at physical safety—guarding, housekeeping, etc. With those two basic components identified—behaviors and conditions—I've got a pretty good idea about whether the known causes of injury are in control. If they are not in control, any claim of having an injury-free year tells me is that luck was smiling.

Here's an example of the relationship between cause and luck. Imagine a facility that has not been well maintained. The roof leaks, the supporting concrete is spalling, the suspended ceiling is overloaded with equipment, and maintenance personnel are too busy to know that the ceiling in your office is near the end of its useful life.

You are oblivious to the growing hazard above your head and the assorted behaviors that have allowed it. You decide to get a cup of coffee. As you walk out into the hall, the ceiling falls in behind you. Wow! Were you lucky!

Rewind the tape. As you are about to leave to get coffee, the phone rings. You pick it up just as ceiling, equipment, and concrete chips fall around you. You pull yourself out of the debris, bruised, cut, dazed. What bad luck!

Same scenario. Same causes. Same everything except for the ringing of the phone—an event you do not and could not control. If you managed to avoid injury, it was luck. Nothing more.

I often use this story to illustrate the relationship between cause and luck. It's an example I dreamed up but in telling it, I've had at least a dozen people tell me about the ceiling falling in their workplace from the same causes and their luck at avoiding injury.

If we disciplined more people for safety violations, we'd be safer. For a safety solution that seems so popular, it's surprising more managers don't actually do this. On surveys I conduct with training participants, it's one of the most often suggested solutions but among the least used traditional safety tools. I consider that a blessing.

Discipline drives minimum compliance behavior. People tend to do just enough to avoid the discipline. It never motivates anyone to work harder, better or safer. There are no studies I've seen which support the notion that you can win the hearts and minds of people by beating them with a stick—or progressive discipline paperwork. People do good work and good things because there's something in it for them—something good—not to avoid something bad.

Discipline, making examples of people, enforcement, does not make a better world or a better workplace. Arguably, it is necessary when other things don't work. But other things do work and nearly always work more effectively.

We're having too many injuries, let's do more safety training. Training is critical. It's the first thing we do when someone comes into the workplace. Employees must have the knowledge and skills to do the work and do it safely. No argument here.

Training, of course, needs to be effective. Pay attention to the message and the quality of delivery. Evaluate the success of the training and make sure that people are able to apply it properly.

Once training is completed, however, look to other causes for injuries. Does the individual have the resources to do the job safely? Does she have the methods, materials and equipment, time and help essential to the safety process. How about motivation? In today's workplace, everyone is busy. We all pick and choose what we think is necessary to get the product out the door or to perform the needed service. Is there any positive consequence for working safely? Why should we take the safety route when a short cut lets us get more done?

Reducing injuries and increasing safe behaviors takes effort. Analyze what's going on and intervene in ways that have the best hope of success and that are consistent with your safety process and culture. Retraining again and again is a cop-out. It's impossible to bore an employee into compliance. Take the time to figure out what's really going on and apply an effective and individual solution.

That's it for the myths and "common sense" solutions to accidents in this chapter. There are others, and you'll find some of them scattered throughout the rest of the book.

In the meantime, if someone comes to you with a wonderful idea for safety, embrace it warmly! You need all the creative ideas you can get. Don't discourage that. But consider how it will fit with your company culture and management style. Ask about the science behind it. Make sure it meshes with the tools and techniques you now use to manage the business successfully. Look at the big picture. If you do this, what are the positive and negative consequences on safety and the rest of the operation? Will your people support it?

Poke at the idea from all sides and if it stands up against your tests, go for it.

5

The OSHA Safety and Health Program Management Guidelines

In This Chapter:

Safety process
OSHA Guidelines
Attributes of excellence

Let's talk about the safety process, the system implemented in order to establish safety as a core value, stop accidents, ensure safe behaviors, and enjoy the auxiliary benefits.

We all use processes. Some are well designed, premeditated, and others just fall into place through trial and error, in other words, evolve.

Manufacturing processes allow for a consistently reliable product to be created and marketed. As an example, a standardized process that includes the use of homogeneous ingredients, strictly regulated cooking and serving methods, all contained within an atmosphere that is closely mandated by corporate architectural and design teams, allows consumers to go into a chain fast food outlet anywhere in the world and know exactly what food served there will look and taste like. There will be absolutely no surprises whether the burger is purchased in the shop around the corner from your office or on a street in Tokyo.

If you get a cold, hard burger, you—the consumer— can't be sure whether it was the process that failed, or whether the failure came from the application of the process. People can mess up excellent processes, but even the best people can't turn disaster into excellence without a good process.

When I visit companies troubled by accidents, injuries and workplace hazards, I look at the safety process. What I often find are system disconnects: elements and components which need to be linked but aren't, actions but no follow-through, black holes into which reasonable effort disappears never to be seen again.

The process is the foundation for other efforts. If it's flawed, what gets built will likely be unstable. A benchmark is necessary against which current efforts—processes—can be measured. OSHA has one of the best benchmarks available.

Known as the **OSHA Safety and Health Program Management Guidelines**,[11] the process outlined has four major elements (Table 5.1) and 25 components or "indicators" within the elements. Details of the elements and indicators, along with tips and tools for implementation and evaluation, are in Chapters 6 through 14.

OSHA Safety and Health Program Management Guidelines	
I.	Management leadership and employee involvement
II.	Worksite analysis
III.	Hazard prevention and control
IV.	Safety and health training

Table 5.1

[11] Safety and Health Program Management Guidelines; Issuance of Voluntary Guidelines, OSHA Notice, Federal Register #59:3904-3916, January 26, 1989

Notice in the title that OSHA uses the word "program"? Think "process" or "system" instead! Program reminds too many employees and managers of the hated "program-of-the-month." Dozens of improvements have come and gone with no positive impact and far too much loss of faith or trust under these banners.

OSHA also has several standards that require written programs—lockout/tagout, confined space, bloodborne pathogens, hazard communication, etc. It's easy for people inside and outside the organization to assume that each of these standard-specific written program requirements constitute the necessary safety and health program. They do not!

The first element is **management leadership and employee involvement.** Here is the organizational framework necessary for a comprehensive process. Policy, goals, and objectives are suggested. Roles and responsibilities for everyone in the organization are established and authority and accountability are clarified. This element was originally titled "management *commitment* and employee involvement" but was subsequently broadened to *leadership* by OSHA.[12]

Next is **worksite analysis.** This element offers the key to understand existing hazards and their impact on the workplace system and culture.

Hazard prevention and control implements the tools and techniques essential within the facility which allow you to reduce or eliminate the risks and hazards identified by the components of worksite analysis.

Safety and health training is the final element of the guidelines. Do not infer anything from it's positioning. Developing knowledge and skills must be one of the first things done in any improvement effort.

OSHA—the Act—was a congressional mandate of 1970. It sprang from a basic concept that rules and enforcement will stop bad things and make good things occur. OSHA—the Administration—has been enforcing the provisions of the Act for nearly 30 years. As with any enforcement agency, OSHA has developed a sizable list of detractors.

OSHA staff, however, has gained a wealth of experience about what does and does not work to enhance safety in the American workplace. As stated in the background information to the guidelines, "OSHA representatives have noted a strong correlation between the application of sound management practices in the operation of safety and health programs and a low incidence of occupational injuries and illnesses. Where effective safety and health management is practiced, injury and illness rates are significantly less than rates at comparable worksites where safety and health management is weak or nonexistent."

Based on this experience, the agency began emphasizing management practices in several programs during the 1980's.

The chemical hazard communication standard had a management component. A standard requiring safety and health management programs in construction was enacted and revised during the same period. Voluntary safety and health management was encouraged in agency booklets and pamphlets and by the state-operated OSHA consultation services around the country.

OSHA people paid attention to how businesses were accomplishing safety. A substantial number of companies were so expertly operated that in 1982, OSHA developed the Voluntary Protection Program (VPP) to recognize worksites with exemplary safety and health management programs.

At the VPP sites, OSHA carefully evaluated and monitored safety and health practices, procedures, and recordkeeping. Because OSHA found that VPP worksites generally had lost-workday case rates of one third to one fifth those of average companies in their industry group, the processes used at these companies to get low

[12] Managing Worker Safety and Health, draft document, OSHA, October 1992

rates was of particular interest. By the way, most of the participating sites reported improved employee morale and productivity, and significantly lower workers' compensation costs as a by-product of their safety efforts.

Based on its findings at VPP sites and at other companies where safety and health was working well, OSHA drafted a set of guidelines that pulled together all the pieces they had discovered into a cohesive and logical process. In July of 1988, the agency published the guidelines for information and comment and then held a public information meeting in September.

Comments came from individuals, labor, trade associations, professional safety and health associations and societies, safety and health consultants, and federal and state agencies. Surprisingly, given the contentious nature of many OSHA proposals in recent years, nearly "…all the commenters endorsed the concept that effective safety and health management is the decisive factor in ensuring worker safety and health."

In addition, most respondents indicated that the guidelines were generally applicable regardless of industry type, size, or nature of activity.

OSHA had done its homework! Public comment, VPP and other employer observation, input from compliance officers and consultants, review of the literature, and substantial opinion from experts and practitioners all supported the premises that "effective management addresses all work-related hazards, including those potential hazards which could result from a change in worksite conditions or practices. It addresses hazards whether or not they are regulated by government standards."

On January 26, 1989, OSHA issued the guidelines as a rule in the Federal Register - non-mandatory but supported by scientific and experiential evidence. The guidelines are instead a framework, a strategy, and a process to guide and shape the safety culture in the American workplace.

OSHA did indicate that the guidelines were applicable to all places of employment covered by the OSHA standards in 29 CFR Parts 1910 (General Industry), 1915 (Shipyards), 1917 (Marine Terminals), and 1918 (Longshoring). Not covered, because a mandatory safety and health program regulation was already in place, was Part 1926 (Construction).

The Agency also made it clear that "although compliance with the law, including specific OSHA standards, is an important objective, an effective program looks beyond specific requirements of the law to address all hazards. It will seek to prevent injuries and illnesses, whether or not compliance is at issue." Sound advice.

Since then, OSHA has been working on changing its own culture with its primary objective shifting to selling the guidelines to a sometimes reluctant customer—you and your fellow owners and managers— and away from strict enforcement of a limited package of rules and regulations. If you think changing your workplace culture is difficult, try changing a federal bureaucracy.

OSHA consultants are now expected to advise company owners or managers on how to put safety and health process in place in addition to the more traditional help with hazard fixing. New regulations contain safety and health program elements. Even compliance officers have a process to help them raise the guidelines as a comprehensive solution to the issues they find on an inspection.

In fact, the experience with the voluntary guidelines has been so universally positive that work is underway to turn them into a regulation. However, even if that happens, experience so far says that ultimate control of the content and nature of the process will remain within the individual facility.

The guidelines clearly cover the elements to be considered and the broad objectives to be met; but they do not proscribe how to do each component. They allow for wide flexibility to fit cultural differences and management styles. Unlike safety standards which detail the steps of implementation, the guidelines focus on the destination and leave the details of the journey to you—as long as you follow some basic rules of the road.

The true test of implementation—voluntary or required—is success at eliminating incidents by creating a culture that ensures physical safety and safe behavior on the part of everyone. You—and OSHA—realize that such a culture does not come from an enforcement threat. It comes because people really want it.

The OSHA guidelines do not introduce alien processes. When followed, sound existing practices are aligned and a few missing components are added which strengthen overall safety efforts. If you who have already embraced the quality management process— a great model for your safety efforts— you have probably seen this alignment in graphic form.

Look at the top box at the right (Figure 5.1). Effort is all over the place, pulling the force off track or in the opposite direction. A valid process—safety or quality—simply aligns those forces applied to the problem, maximizing the impact (Figure 5.2).

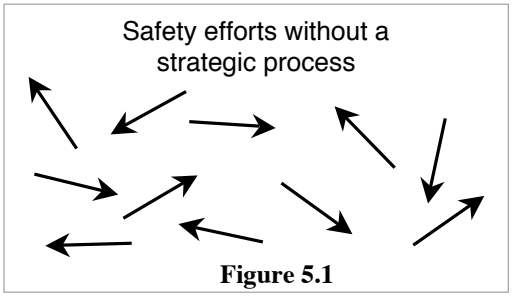

Figure 5.1

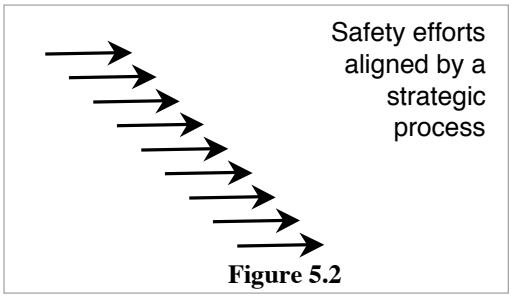

Figure 5.2

Some existing comprehensive approaches similar to the guidelines are already in use. The American Chemistry Council (ACC) has a process called Responsible Care™ designed to deal with all manner of safety, health, and environmental issues within member companies. One part of this process covers safety and health and has components very similar to the OSHA guidelines.

A new American National Standard (ANSI Z10), *Occupational Health and Safety Systems,* was issued in late 2005. It, too, has many similarities to the OSHA Guidelines.

During the past ten years, many states have published material on the safety and health management process. Some are spun off from the federal guidelines. An internal state process created others, but all cover most of the same elements.

Check with your state labor department or safety and health agency to see what's required. Ask about support materials and training sessions they sponsor to help with process implementation.

Commercial safety and health plans are also available. They are usually unnecessarily complex but at the core are pieces echoed in the guidelines.

Eliminating workplace injuries and illnesses have been goals of safety professionals and scientists all around the country. The search ends up with a few core elements and a process holding them together. All reach nearly the same conclusions. Combine management leadership with employee involvement, some tools to identify and control workplace hazards, and the knowledge and skills to make it possible and work gets safer!

All those people marching to the same music can't be heading in the wrong direction.

Each of the 25 indicators within the guidelines has a description or statement of intent. These statements are actually the core of the guidelines. The description will normally start with an action expected such as "Provide for an encourage employee involvement…" followed by the words "so that…." After "so that" will be the outcome expected for that indicator, such as "they will commit their insight…."

As I go through the guidelines in the next few chapters, I'll give the statement of intent from the guidelines so you'll know what objective or final performance is expected. Then I'll suggest a variety of ideas, tips, and tools to help reach the objective.

However—and this is an important point—if you have a better way to meet the objective and stay true to the intent of the indicator, go for it! This is the heart of the performance-based aspect of these guidelines. Do what fits your style and your culture and your people as long as it helps you—and them—get to where you all need to be.

Also included in each section is a list of steps—a checklist— helpful to determine if all the desired components are present. These lists are called the *Attributes of Excellence*.[13] They were developed for federal OSHA by the team from the University of Alabama that developed and delivered training on the guidelines and the safety management process for all of the OSHA consultants around the country. View them as training tools rather than official agency policy.

The attributes came about because many clients of OSHA Consultation—owners and managers—wanted more guidance and help ensuring they were taking the necessary steps to improve their safety process. They are the essential elements of an excellent effort and are listed as discrete single components, generally in hierarchical order from basic to advanced. Use them to determine how far along you are with each indicator and how far you've got to go to have an excellent process in place.

Don't worry if you've only made it up the excellence ladder a few steps. Each step suggests progress and each step should enhance your safety process and the underlying culture.

A final comment, if you picked up on "combine management leadership with employee involvement" above—good! You're already sensitive to the overriding theme of the OSHA guidelines and one of the key concepts of this book. No matter where you look or who you ask, highly successful efforts at safety and health (and quality and customer service and…) simply do not happen without management and the workforce in the effort all the way.

If you count management as one unit of force and the workers as another, they cancel each other out. But if both are pulling together, you don't get two units, you get three or four or seven or 50! There is no practical limit to the synergy that comes from everyone engaged in a common effort by a process that keeps them focused!

Really! I've seen it. It's remarkable. Try it. Tell your people you need their help and then listen to what they say. When your experience makes you a believer, send me a note and I'll work your story into the next edition

[13] Attributes of Excellence, D. Daniels, L. Dawson, W. Gibbons, MBA, L. Nolen, MSW, O. Smitherman, PhD., W. Weems, PhD, University of Alabama, College of Continuing Studies, 1996

6

Management Leadership

In This Chapter:

Management 101
Setting clear policy
Goals and objectives
Management leading, participating, setting examples
Responsibility and expectations
Authority and resources
Accountability

Management 101

I taught one summer at a major midwestern engineering school. At the time, I was also working on my masters' degree and doing independent study on safety.

I spent a lot of time at the university library. The volumes on safety filled about three feet of space on one shelf. The management books took a little more room.

Today, books on safety and management that I own fill one wall of my home office.

Technical books on safety are widely available within the profession, and some are even on the bookshelves of popular chain bookstores. They are right along side the hundreds of other management books.

So, go to the bookstore. Get some coffee. Sit in a comfortable chair. Skim through a book stack. Buy one or two volumes for detailed study and later reference. Go back every few weeks to see what's new.

I still do that even though I've worked as a manager for nearly 35 years. However, I believe my experience in the field is unique. That's why I'm writing this book, to share some basic ideas that impact directly on safety.

What do managers do exactly?

Quoting from most management books, managers plan, organize, direct, control, communicate, coordinate, and develop processes.

Sound a little overwhelming? I see managers struggling to do all these things, and they are frustrated, unfocused, buried from the effort - and all too often, ineffective.

Here are management inputs.[14] They are the necessary steps managers must take to ensure that the outcomes—or products—of their system are effective and appropriate. These inputs help remove all the clutter and confusion and get everyone focused on objectives.

[14] Safety and Health Program Consulting Training Program Phase I, University of Alabama, College of Continuing Studies, Tuscaloosa, 1994, 3-15.

Knowledge and Skills—providing people with the things they need to know to do the job (safely in our case) and the skills to perform it properly.

Resources— the machines, materials, methods, time and staffing which allow the knowledge and skills to be correctly applied.

Motivation—encouraging people, through some appropriate human process, to do those things that are needed for the good of the organization and their own safety.

These are the three components management provides to achieve an effective system. They are simple and direct. Focus on these and everything will come together.

However, they must be provided in the order shown.

Knowledge and skills *always* comes first. No one can be motivated to do something they have neither the knowledge nor skill to perform. It is absolutely critical that each new employee go through a comprehensive training and orientation process. Make sure that they have the knowledge and skill to do everything you expect them to do.

If given the choice between providing employee training or buying a machine, provide the training. A machine is worthless without people who have the knowledge and ability to run it.

Second in priority are resources. Resources are the things that allow the person to do the work, and must come before motivation. Here is an illustration of what I'm talking about.

I visited a plant that was having trouble getting people to wear the prescribed personal protective equipment. An excellent PPE training program had been given to everyone. The right PPE was in the stock room. Supervisors were doing their best to motivate people to wear it, but noncompliance was high.

People knew what to wear and why to wear it. But supervisors in this plant were always in meetings. The PPE had to be drawn daily from the stock room. It took a supervisor's signature to draw it. Employees didn't control the resource and they didn't want to break into meetings.

All the motivation in the world couldn't make it easier to get the necessary PPE.

Motivation may be listed last of the priorities but it is equally important.

People make choices every day. They are often forced to prioritize between safety, production, quality and costs. Assuming they have the knowledge, the skill, and the resources, they must be motivated to perform the job safely.

If there are accidents, workplace hazards, or at-risk behavior, ask these questions first: was necessary training in knowledge and skills provided for this job? How about the resources? Are employees appropriately motivated to perform tasks safely?

If the answer is "no" to one of these questions, you have uncovered a root cause.

Studies show that 87 percent of all feedback (in the workplace) is negative![15] That's right. Eighty-seven percent! With all the information available about positive reinforcement and the value of a "happy" workplace, the people who provide most of the workplace feedback—the supervisors—are negative 87% of the time. No wonder morale surveys look so bleak.

Merely to remain in business requires that employees do things right at least 50% of the time. Probably, you're all doing the right things 90 or 95 or 98 percent of the time. If not, how do you find the energy to keep at it?

[15] Hansen, L., Rate your B.O.S.S.: Benchmarking organizational safety strategy, Professional Safety, ASSE, Jun 1994.

Does this give you an idea? If your organization is doing things right most of the time, maybe the feedback—the motivation—ought to be positive and supportive most of the time?

Try it. Come up with an estimate of the percentage of time your collective actions are right. Mandate that positive feedback—good words, a pat on the back, a note of appreciation, a pizza celebration lunch—match the percentage. Your workplace culture will change.

Quality management is a valuable health and safety concept. This is not a short course on TQM and I don't intend on spending time on the theory here. There are good books easily available on the subject for any further investigation.

In the early 1990's, the Michigan Department of Labor and the Upjohn Institute conducted a series of studies of Michigan industry. The Michigan Disability Prevention Study looked at the best safety practices in the study companies and their impact on reducing disability. Within companies having the greatest success at preventing and managing disability, there was a general shift toward TQM.

In visit after visit, I find the same thing. Quality management gives companies and their people a structure. It teaches them how to ask the right questions and how to work together.

TQM seems to require lots of training and endless meetings. I suspect this is partly so because, for the first time, people are really talking through and resolving issues.

I mentioned TQM in a meeting with a small company CEO. He let me know in strong terms that they had "tried it—it didn't work—the term is banned in business discussions." I closed the meeting seconds later but I've watched company progress in the papers since. Financial difficulty along with injuries and citations confirm my expectations. Even the best processes can't fix the flaws in some organizations.

I've found that there are three elements to the safety and health improvement process. All three must be in place to maximize effort. Here they are:

1. *Quality Management*—the overall system that establishes focus, process, and relationships

2. *The OSHA Safety and Health Program Management Guidelines*—provides structure and focus to allow integration of safety into the overall operations plan

3. *Performance Management*—ensures that the human component of the operation will be positive and rewarding.

Before leaving this Management 101 course, review the Analytical System flow chart (Figure 6.1) on the next page. It takes the cyclical, continuous improvement process from quality management—assess, plan, do, verify—and combines it with many of the tools available for safety and the three management inputs. Performance management is listed along with several of the elements of the guidelines.

Use the chart to help guide your improvement process. Find the appropriate intervention to a deficiency in the management inputs. If you use different tools or other terminology, rewrite it to fit them. I've rewritten this chart several times to reflect new approaches or changed thinking. Make it work for your organization.

Now it's time to look at the details of the safety and health process. Because there is so much useful material included in them, I'll go step by step through the OSHA guidelines.

Study the tips and skills covered here and be diligent about their application. The rest will come easier and cleaner than you think.

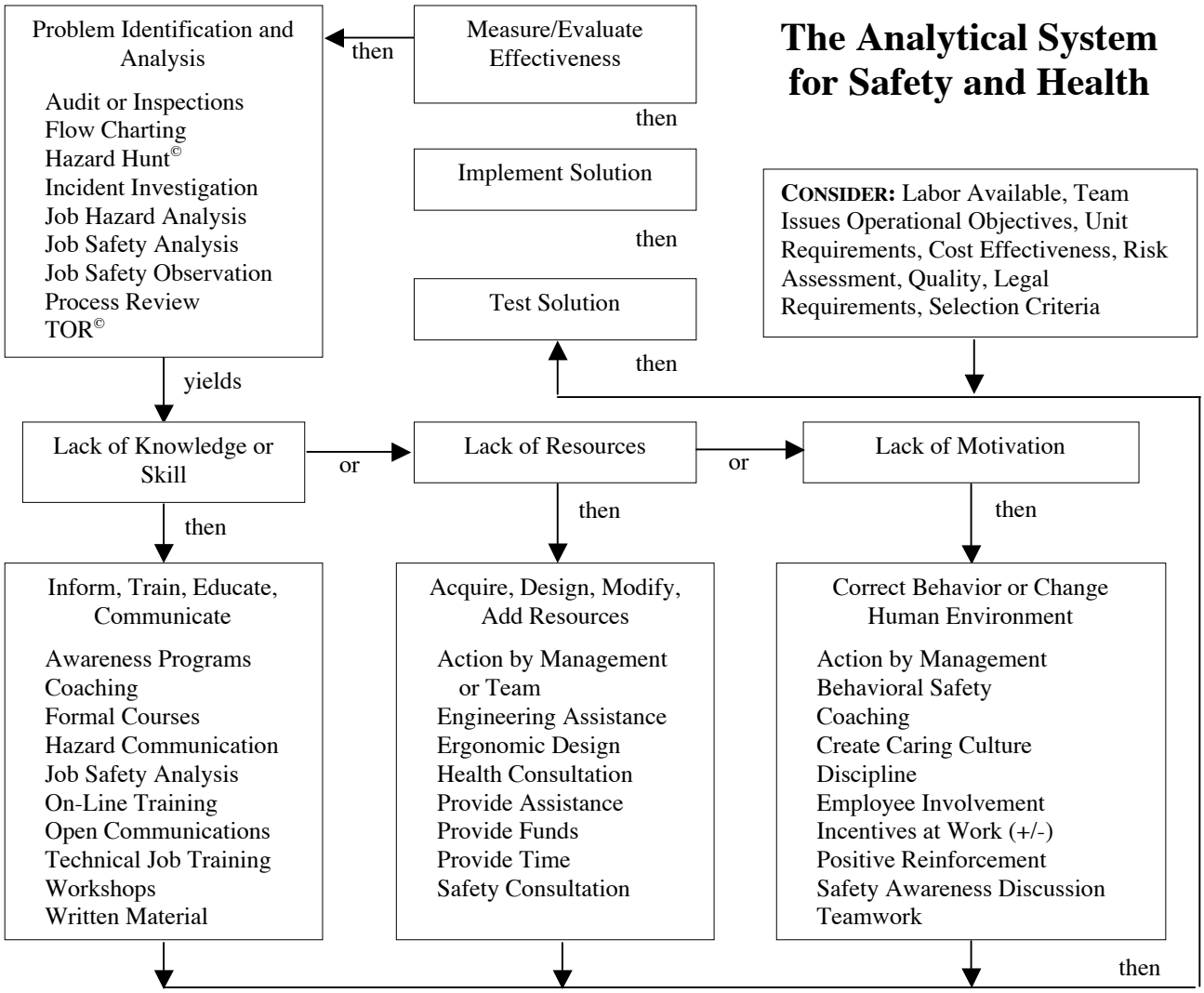

Figure 6.1

Indicator 1—Clear Worksite Safety and Health Policy

Indicator Description—State clearly a worksite policy on safe and healthful work and working conditions, so that all personnel with responsibility at the site and personnel at other locations with responsibility for the site understand the priority of safety and health protection in relation to other organizational values.

Attributes of Excellence

A. There is a policy that promotes safety and health.

B. The policy is available in writing.

C. The policy is straightforward and absolutely clear.

D. The policy is supported by senior management.

E. The policy can be easily explained or paraphrased by others within the workforce.

F. The safety and health policy is expressed in the context of other organizational values.

G. The policy statement goes beyond compliance to address the safety behavior of all members of the organization.

H. The safety and health policy guides all employees in making a decision in favor of safety and health when apparent conflicts arise with other values and priorities.

To clarify, this does not refer to *policy* at all. Yes, p*olicy* is repeated nine times in the statement of intent and the attributes, but look at the context. Instead, think *vision*.

Remember the last time you tried to get someone at another organization to do something that seemed so clear to you—receive a return item, give a refund, make a document copy? Was the response *no can do?* Did you answer with that wonderfully simple word which allows you to probe deeper and deeper into any situation—*why?* And was the response to that *it's our policy?*

Policy translates "no!" Policies are barriers, blocks, lids on possibilities and option.

Policies do not drive excellence. They barely allow any positive efforts.

Take a look at your company policies. See if they inspire action, pump people up, get them excited.

Vision! Now there's a word! How far can you see? What does the future look like? What are the possibilities out there?

Take another look at the attributes of excellence. They don't suggest a 50-page manual on "no." They suggest looking at values, understanding how to make good decisions, and setting positive behavioral expectations.

Rules are necessary and they come from the OSHA standards, your company guidelines, and training required to help employees understand specific injury-avoidance techniques. But you can still express your values and aspirations and overriding behaviors for safety.

For example, our nation's Constitution is the document that guides the conduct of government and its citizens. Laws are based on it; courts test decisions against it, and people consider its concepts as they wrestle with life choices. It's success at guiding the course of the country for over 200 years makes it a model for other nations.

A safety and health policy should be the same. It is a brief statement of what the organization and all its members believe and value. It guides work rules, helps sort through conflicts with other business imperatives, and provides the broad behavioral expectations members will strive to meet.

It is the benchmark from which performance is measured. It is the starting block for the race to an accident-free workplace. It is what the organization can become.

The safety vision is the picture of the perfect future. It energizes and inspires. It is intuitive and creative and provides the magnetic forces that align the members of the organization for common purpose. It gives or enhances meaning and is always positive, proactive, and alive.

Vision is the power that drives the organization.

Napoleon Bonaparte said that "The only way to lead people is show them a future: A leader is a dealer in hope." That's vision!

Do's and don'ts come a lot easier to the mind and the paper than do the words which give wing to great ideas and creative processes. But try. Create your own "safety constitution."

These ideas may help you get started.

Again, this is the document that powers the ever-improving organization and gives life to shared values of human dignity and concern for the individual.

Ideally, all members of the organization should have an opportunity to offer their feelings and beliefs to the vision statement. Get as much input as possible.

Hold a contest. Tell people the characteristics of a good vision statement and ask them to write one. Since you'll probably take words from several submissions, give an award to everyone who's words you used.

While you're at it, give a token of appreciation to anyone who participated. Invite them to a pizza lunch or coffee and cake session where you announce the new safety vision. Put all their names on a poster with the vision.

But remember, ultimately this is a statement that describes your commitment as the manager of the organization. It needs to be in your words. The vision statement should be attainable, brief, emotional, inspiring, involving, and memorable. It's that simple.

Since the vision statement is specific and personal to the leader(s), there is no "ideal" statement I can include here. However, here's one that illustrates how one manager saw the vision.

Company X holds a vision of a workplace where losses through accident, fire, theft, environmental incident, and similar problems do not occur. Loss incidents are avoided because we believe that we can avoid the human errors that lead to them. We believe that all of us share the responsibility for loss control and that, by working together, we can help each other reach the vision. Our relationships are open, positive, and supportive. We are safe and secure.

Notice that this example introduces the idea of loss control. It's a simple concept. Don't limit your efforts to accident reduction. Go for all those things that cause organizational loss. This will help you meet the intent of the attribute that says, "the safety and health policy is expressed in the context of other organizational values."

Vision statements are often reduced to slogans. Slogans lose meaning if there's nothing behind them. The vision needs to start the whole improvement process. If all you get is fizz with no flavor, the slogan becomes a joke.

A recent Internet posting from the Editor-In-Chief of Safety Smart! Magazine listed several slogans submitted by readers.[16] The readers are line employees, presumably. Slogans like "always alert, nobody hurt," "avoid the worst, think safety first," and" safety is a word to live by" may well serve some useful purpose. I'm skeptical.

But the next words were chilling. "I just completed a feature story on a coal mine disaster. Safety was non-existent in this mine causing the death of 26 men, yet at the bottom of every memo from (the) head office there was a little line that read '*Safety and Productivity Go Hand in Hand."*

I met a fellow traveler a few years ago who was wearing a tee shirt with large stenciling on the back. It read "XXX Tool and Die, Ormond Beach, FL" followed by "safety protects people, quality protects jobs."

I asked if his company had a program to back the words.

"I guess so, we've got lots of rules."

Then I asked if his company management really set a positive tone. He said, "you'd have to ask them, we've got our own ideas."

[16] Need a safety motto?, observations by Kate Heaven, Editor-in-Chief, Safety Smart! Magazine, www.safetysmart.com on SAFETY@LIST.UVM.EDU, 2/5/99

Words can be short like a slogan but carry the message of a top-rate vision. One of the most succinct: *Safe, legal, and efficient*…in that order! (This also from Florida, contributed by a safety consultant formerly employed at a nuclear power plant.)

What's really sad is the number of policy statements (no vision to be found, unfortunately) that provide no guidance, let alone inspiration. Here are a couple of examples. Real statements. Now in use.

"Company A agrees to provide a safe and healthy work environment in so far as practicable. Proper safety devices and clothing shall be provided for all employees engaged in work where such devices are necessary and, where provided, must be used. If an employee claims that an assigned job or equipment is unsafe or might unduly endanger his/her health and, for that reason refuses to do that job or use the equipment, the employee shall immediately give the reasons to his supervisor in writing and shall request an immediate determination by a representative of the appropriate governmental agency as to the safety of the job in question."

No kidding! You got a problem? Call OSHA!

Here's another.

"Our goal at Company C is to obtain maximum safety in all operations. Safety is a fundamental obligation of each and every employee. No operation is successful unless it is also safe. The company insists that every employee does his/her part to contribute to the overall effectiveness of the program. The supervisor has the authority to enforce the company safety policy, safety rules, and departmental rules and will be held accountable for accidents that could have been prevented. Disregard of safety rules by employees will be considered a violation of company policy."

So what's wrong with this? We want safety and it's your (the employee's) responsibility. Screw up and you face discipline. How moving. How inspiring. I'm weak in the knees.

I doubt that the manager/owner had anything to do with writing these policy statements. In both cases, I found signatures on the bottom, but I'll bet the signer never read them. I often find policy statements for Company C with Company D's name still embedded within the document. Not only do they not apply to Company C, but they can't even make the "search and replace" function on the computer work.

Vision is what you want things to look like in five or ten years.

Don't worry about the words. Write what you believe in, not what sounds good.

This isn't some final exam, it's a few words to guide and perhaps inspire your organization to excellence.

It doesn't stand alone. It will work when your people see your actions matching the words on the paper.

Look again at the attributes. Notice, people need to be able to paraphrase vision. It needs to guide them, help them make decisions. This is going to take more than a framed plaque on the wall.

Larry Hansen, a top consultant in safety management and organizational development, writes that "vision isn't forecasting the future, it's creating the future by taking action in the present."[17]

Larry knows a CEO at a supermarket chain in Ohio who wrote a safety vision for his operation and then held early morning meetings at every one of his twelve stores so he could talk about the vision.

That CEO gave life to his words. He explained. He got excited. He showed commitment. He improved the level of trust his people had and helped them believe that the future was possible. Actions always speak louder than words.

17 Hansen, L., Rate your B.O.S.S.: Benchmarking organizational safety strategy, *Professional Safety,* ASSE, Jun 1994.

Indicator 2–Clear Goals and Objectives Set and Communicated

Indicator Description—Establish and communicate a clear goal for the safety and health program and objectives for meeting that goal, so that all members of the organization understand the results desired and the measures planned for achieving them.

Attributes of Excellence

A. A safety and health goal exists in writing.

B. The goal relates directly to the safety and health policy or vision.

C. The goal incorporates the essence of "a positive and supportive safety system integrated into the workplace culture" into its language.

D. The goal is supported by senior management and can be easily explained or paraphrased by others within the workplace.

E. Objectives which are designed to achieve the goal exist.

F. The objectives relate to deficiencies identified on the (OSHA) Form 33 or on a comparable assessment tool.

G. The objectives are clearly assigned to responsible individual(s).

H. A measurement system exists which reliably indicates progress on objectives toward the goal.

I. The measurement system is consistently used to manage work on objectives.

J. The objectives can be easily explained by others within the workplace.

K. Measures used to track objective progress are known to the workforce.

L. Members of the workforce are active participants in the objectives process.

The vision statement is done. All your people understand where you intend to take them and they know what the future will look like. Three cheers!

Now, what's the game plan?

To get that alignment of forces covered in Chapter 5, goals and objectives must be paired with the vision. No random efforts and "no making it up as we go along."

Zero accidents may be a fine component of the vision but not in this indicator. Remember that the goal of zero injuries can be reached by simply hiding them. The goals and objectives need to take you and your people down the proper path.

Current management theory challenges us to do more to ensure that goals and objectives really drive the safe behavior we want. It suggests we look at quality concepts—and offers some cautions.

Dan Petersen references Deming when he suggests that we "concentrate on the long-range goal of developing a world-class system (not *program*), not on short-term accident goals." [18] Notice the distinction between system and program again. Our objective is to install a sustainable safety system rather than a one-shot program.

E. Scott Geller suggests we focus on the *process*, not outcomes. Concentrating on outcomes, he says, "is like trying to play golf by watching the scorecard. If you get the processes right, the desired results will follow." [19]

18 Petersen, D., Integrating safety into total quality management, *Professional Safety,* ASSE, Jun 1994.

Tom Peters says that "goals are (mostly) stupid; seize the day." [20]

Addressing the overall business process, not just safety, Peters invites some thoughtful reflection. His point is that having a vision (no accidents) is a pretty good idea, but in the turbulence and cacophony of daily life, close adherence to a specific goal and objectives may blind you to great opportunity to achieve the vision faster, better, or more completely. If a better way pops up, take it!

Petersen, Geller, and Peters are all correct. The quality management model requires a system or a process. It also calls for continuous improvement. In the safety context, that requires us to evaluate our progress and adjust our thrust to maximize the effort. If something better comes along and it works well, go there.

I notice often that people in business find all the terminology around goals and objectives to be confusing. Don't worry. Keep it basic. Make sure you and your people know what the terms mean to you. That's all you need.

I like this model shown graphically here (Figure 6.2). The foundation is our company value system or guiding principles. Use whatever seems to fit your culture. The mission builds on the values. We haven't talked about mission before, but it's important. Make sure your people understand why you exist— that's your mission.

Figure 6.2

The strategic plan takes you to the vision. It's how you improve the company culture. Goals implement the strategic plan and objectives are signposts on the road to goal achievement. You'll find some definitions of all these terms in Table 6.1 on the next page.

Normally, visions are singular and so are strategic plans, but you can have several goals and then a series of objectives to help you meet each goal.

Again, don't get hung up on terms. Stay true to your values and focus on the vision. Make sure that the things you and your team do to get where you want to go are linked and supportive as you build in more detail.

Assuming that your vision is in place and you've worked through the strategic plan, go for the goal first.

The goal gets us to the vision. It relates to management motive. In other words, why do you want to do this? There are a whole bunch of motives which can drive management—concern for people, fear, liability, negative publicity, profit and productivity, the union, pride of ownership, avoiding hassles, compliance, or simply good management or doing the right thing. Be sure you know what's driving you.

The goal should be a single statement, broad and ideal in language, and long-range. Make sure it is measurable. Otherwise, how will you know when it's been met? Have supporting objectives been achieved? Can you tell from opinion surveys, assessment of the workplace, or samples of some kind?

Be sure all employees are involved. They will assure success if they have bought into the process at the beginning.

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19 Geller, E. S., Ten principles for achieving a total safety culture, *Professional Safety,* ASSE, September 1994.
20 Peters, T., *The Pursuit of WOW,* Vintage Books, NY, 1994.

Here are some examples of a safety and health goal. Remember, you can have two or three. It's best not to have many more than that. Do not dilute the effort by having too much competition for resources and time. Also, write your own—even if you like these.

A safe and healthful workplace free of hazards

Everyone behaves safely all the time.

A positive and supportive safety system integrated into the workplace culture is in place and functioning effectively.

Now for the objectives.

They ensure you can achieve the goal. They are multiple statements, written in positive language and tend to be more specific than the goal. From reading through them, there is no confusion as to what needs to be done. Nothing fuzzy. No escape clauses. Just clear statements.

They have a due date. The result is well within the time allowed to achieve the goal they support. The shorter, the better. If it's important to the overall process, it needs to be done quickly. Think days or weeks, not months or years.

Management Process Definitions

Action Steps—Specific measurable actions that need to be taken, usually in sequence, to reach the objective.

Goal—A broad area of performance that gives the vital signs of the business and the health of the organization. A goal is a sub-set of vision, providing specific direction and focus. It takes us from present performance to the future by addressing results desired in terms that can be specifically measured. A goal tells us when we've arrived at where we want to be in our strategic plan and vision. There can be several goals.

Mission—The purpose or reason for the organization's existence. It is who and what you are, what you will do, and whom you serve. Mission can answer the question of "what value do we add to our world?"

Objective—A step along the way to the goal. These are mileposts or specific activities necessary to achieve the goal (and ultimately the plan). There are usually several objectives within a single goal.

Policy—A guideline or expectation of behavior on the part of members of the organization. Policies tell us "what" we can and cannot do and are typically the rules of conduct at the present. Unlike vision, they are rarely inspiring and compelling, and more often restrain us rather than empowering us to improve. For this reason, while organizations are typically asked to express a "safety and health policy", a "safety and health vision statement" tends to be a much better starting point for improvement.

Principles—See "values."

Strategic Plan—The way we translate vision into reality. This is the tool that guides the effort.

Values—The base, or underpinnings, of the organization. The foundation of our beliefs. The "rules of the game" or the "moral compass." Values shape the vision and everything else that follows. Sometimes referred to as "core values" or "guiding principles", the tell us "why."

Vision—The picture of the perfect future. It energizes and inspires. It is intuitive and creative and provides the magnetic forces that align the members of the organization for common purpose. It gives or enhances meaning and is always positive, proactive, and alive. Vision has been described as the power that drives the organization.

Table 6.1

These objectives must be measurable simply by determining if all the supporting actions have been accomplished. It is sometimes possible to verify completion by observation or doing program assessments. Review records, check documentation, conduct interviews, or take opinion samples—whatever method gives you and your people confidence that the objective has been met. At the end, there must be a quantifiable figure that means something. *86% of the sample said…. 100% of the inspections were completed with corrective action taken by….*

SMART is a model that may help you be sure that your objectives meet the basic criteria for success. SMART stands for Specific, Measurable, Attainable, Results-oriented, and Time-limited.[21] Failure to address these five components is probably a prescription for failure.

After specific, measurable, and time-limited, look at attainable.

Is it doable? Does the person or group assigned actually have the authority and resources to make it happen? If you say, "all members of management will attend two days of safety management training" and make the safety coordinator responsible for the objective, it will be a lost cause. He/she rarely has the authority to make senior managers do anything. However, if you assume responsibility for that objective, it's attainable!

Finally, a thought about "results-oriented." You want concrete results. It may not be 100%, but you need to announce to everyone when the objective has been accomplished. At what point do you declare success if it isn't 100%?

Here are some examples of objectives that could meet the SMART test:

All personnel are held accountable for performance of assigned safety and health responsibilities within the time frame assigned.

Site safety and health inspections are performed monthly with corrective action taken prior to the next inspection.

Sixty percent of all line personnel will have completed 20 hours of behavioral safety training by the end of the calendar year.

Feasible engineering controls are in place on all new equipment prior to start-up.

All that's left is the action plan.

Each objective will have an action plan. The action plan will tell everyone how you will meet the objectives, who will be involved, and the order in which things will be accomplished. The action plan will list the steps, start dates, responsibilities, estimated completion dates, and any checkpoints along the way.

That's it. Know where you want to go, set a process in place to help you get there, and spell out the details so work is coordinated and tracked.

Don't bite off too much work. Accomplishing all of a reasonable amount is much better than doing very little of a grand, exhaustive plan. Use the OSHA guidelines as your strategic framework and celebrate your progress.

Indicator 3–Management Leadership

Indicator Description—Provide visible top management involvement in implementing the program, so that all will understand that management's commitment is serious.

Attributes of Excellence

A. The positive influence of management is evident in all elements of the safety and health program.

B. Members of the workforce perceive management to be exercising positive leadership.

C. Members of the workforce can give examples of management's positive leadership.

"Get a commitment from management? Ha! Everybody knows that safety is not high on that priority list!"

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21 Safety and Health Program Consulting Training Program Phase I, University of Alabama, College of Continuing Studies, Tuscaloosa, 1994-95, 6-15.

This is repeated by safety directors, human resources managers, safety committee members and safety representatives. The same words are repeated in meetings and on the telephone. They are used as explanations for why things aren't better and are an automatic component of any discussion of safety.

But are they true? Managers certainly disagree. Generally, they feel as though they illustrate their commitment to safety all the time—especially with large sums of money.

So why is there such a disparity between two groups of people on such a critically important issue?

A big part of the answer is perception. People see actions. They can't see beliefs, attitudes and intent. If safety exists only in your head and on paper and in your office, your people can't see it and the commitment—the leadership—does not exist.

Management and leadership both need to be exercised for true organizational success.

Talk the Talk, Walk the Walk.

Actions speak louder than words.

MBWA—Management By Wandering Around

Corporate values are established by executive action—and safety is a corporate value according to Sonoco Products.[22]

Catch phrases, acronyms, sound bites—leadership gets a lot of attention! It should. Leadership determines what an organization will look like in the future.

Still, some managers *just don't get it!* That's why hundreds of books and articles now address leadership from all angles and perspectives.

The 1979 NIOSH study (see Chapter 3) concluded that management commitment to safety is the major controlling influence in obtaining success, and overall, maximally effective safety programs in industry will depend on those practices that can successfully deal with people variables.

My friend Larry Hansen differentiates the passive management role from leadership when he says safety leadership [is] where executives exhibit 'profound knowledge'—an understanding of what's right—and proactive involvement—a willingness to act on what's wrong.[23]

Leadership means making organizational safety expectations clear. It means supporting safety financially, and being present at meetings when key safety issues are decided. It absolutely requires being positive about and supportive of others' safety efforts, and creating and insisting on a caring company culture.

It is, in fact, the single *overwhelming* factor in achieving an effective safety and health program.

Leadership has almost nothing to do with sitting in a corner office signing policies and making decisions. It has everything to do with having your fingerprints on everything associated with safety and health. It requires leaving your footprints in

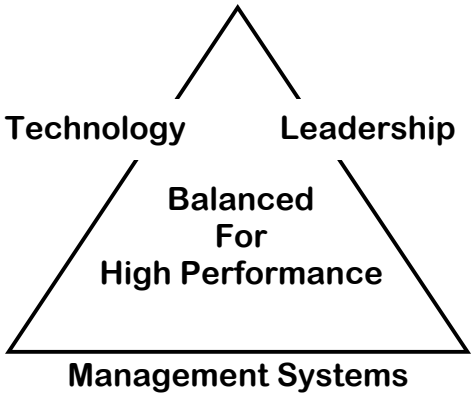

Figure 6.3

[22] Hansen, L., Rate your B.O.S.S.: Benchmarking organizational safety strategy, *Professional Safety,* ASSE, Jun 1994.

[23] Minter, S. G., What's missing from this picture? *Occupational Hazards,* Penton Media Inc., Nov 1993

every work area and your ideas and vision in everyone's mind!

It demands hard work and commitment to get a top score on this very important indicator. Leaders are out in front pulling; not in the back pushing.

Clemmer and McNeil offer an expanded view of the management–leadership picture in their 1988 book *The VIP Strategy: Leadership Skills for Exceptional Performance*. In it, they suggest that high performance comes from a triangle—balanced—of management systems, leadership, and technology (Figure 6.3).

Leadership cannot stand alone. In safety and in other business imperatives, leadership lights the fire, but technology and management systems make it work and give it direction.

Table 6.2 shows the components of the performance triangle. All necessary to high performance in the organization.

Performance Triangle	Technology	Management	Leadership
Focus	Equipment, expertise, products	Administrative systems	People
Predictability	High (based on science)	Medium (based on probabilities)	Low (an art form)
Control Mechanisms	Physical laws	Legal and accounting principles	Emotional commitments
Tracking Results	High (measurable output)	Medium (measurable process)	Low (perceptions and attitudes)
Financial Thrust	Scientific breakthroughs	Cost containment	Revenue enhancement (value added)
Key Elements	Manufacturing, delivery, services	Budgets, rules, plans, and controls	Vision, values, environment, and behavior
Key Words	Research, facts, precision	Efficiency, objectives, structure	Feelings, motivation, pride

Table 6.2

How does safety fit the model?

The standards, regulations, and science of safety form the technology leg. The OSHA Safety and Health Program Management Guidelines provide the framework for safety management. Finally, leadership— the piece you provide—completes the model.

Sometimes, this leadership style gets linked with a "soft" manager.

Is that true? So what? I've worked for some great leaders and I didn't consider any one of them to be soft. I knew exactly where I stood and what was expected of me…and they expected a lot!

The employee-centered environment is anything but soft, say Clemmer and McNeil. In the technomanaged organization, employees are more likely to "get away with murder." They can hide behind the rules and policies, names and titles, and do good "technical" work while snubbing fellow workers and providing mediocre customer service. It's in the balanced organization with clear values, an overall vision, and great people skills that there is nowhere to hide.

The balanced environment has "hard humanism", according to Perry Pascarella, an environment in which everyone expects the maximum from everyone else and where compromises simply will not be accepted.[24]

The most effective role model for values is contained in only six words: "Do anything you see me doing."

24 Clemmer, J. and McNeil, A., The VIP Strategy: Leadership Skills for Exceptional Performance, Key Porter Books, Toronto, 1988 (out of print)

In basic terms, make sure that everyone in the organization knows that safety is one of your hot buttons. Pay attention to the strategic plan. Know the goals and objectives for the year and your role in meeting them. Use safety vision and values to guide your decisions. Most importantly, be visible.

Above all else, leadership is a constant demonstration by the key managers that safety and health is a critical element of daily operations. Here are the kinds of things managers do to show leadership:

- Chair the plant safety committee
- Hold subordinates responsible for the costs associated with accidents.
- Have the safety function, where assigned, report to you.
- Have a Board of Director's Safety and Health committee.
- Hold a monthly plant-wide safety meeting where you take questions and addresses safety issues.
- Have any loss incidents reported directly to you at the time of occurrence.
- Make sure that organizational safety expectations are absolutely clear by asking every member of the organization about them.
- Be present, and supportive, whenever key safety issues are decided—show they are as important as key product and quality decisions.
- Spend daily time on the plant floor asking people about safety and observing and commenting on issues.
- Start every meeting with a discussion of safety.
- Require a formal safety and health plan from every manager and hold him or her accountable for results.
- Deliver the safety vision in person to every work team (rather than sending it out in a memo).
- Let people see you picking up dropped items, moving obstructions, helping out for safety every day.
- Make it clear that any accident is unacceptable and ask hard questions about every one so people know you are really serious about having no accidents.
- Act every day in a way that makes it clear you know that everyone is watching to see if safety is really a key value.
- Empower every employee to do what's right for safety—and support and encourage them when they make a mistake.
- Try progressive approaches that fit into the company business strategy and workplace culture.
- Attend all the safety training delivered at the site—and deliver some of it personally.
- Know the facility safety rules—never violate any one for any reason—and challenge any one who does.

These examples come from site visits, benchmarking, and trade media reports. They all work somewhere, but few will work everywhere. Success depends on the manager, the company culture, and the nature of the organization. Pick those that will fit your style.

To assess your leadership skills, use the informal quiz the *Safety and Health Leadership Quiz* (Form 6.1) at the end of the chapter. Since I developed it, OSHA has chosen to feature it as one of the tools available on the

agency web site. It's not validated. But it will ask some questions that you should be thinking about. From my experience, the more you agree with the questions, the better your leadership skills. Take the quiz and see if it points to some changes.

Indicator 4–Management Example

Indicator Description—Provide visible top management involvement in implementing the program, so that all will understand that management's commitment is serious. [Same as 3]

Attributes of Excellence

A. All managers know and understand the safety and health rules of the organization and the safe behaviors they expect from others.

B. Managers throughout the organization consistently follow the rules and behavioral expectations set for others in the workforce as a matter of personal practice.

C. Members of the workforce perceive management to be consistently setting positive examples and can illustrate why they hold these positive perceptions.

D. Members of management at all levels consistently address the safety behavior of others by coaching and correcting poor behavior and positively reinforcing good behavior.

E. Members of the workforce credit management with establishing and maintaining positive safety values in the organization through their personal example and attention to the behavior of others.

Management's role in safety and health is so critical that OSHA devoted two indicators to the subject—leadership and example. Related, yet different.

Let's look more closely at the example piece of management.

What management does is so loud that I cannot hear what management is saying!

Employees tell us that what management actually does has far greater impact on employees than any words management speaks. If safe behaviors are to have any chance of taking hold, the organization's leaders must demonstrate, every time, that they believe enough to follow their own rules.

This is what makes safety a shared value throughout the organization. Managers in safety glasses, not smoking in restricted areas, walking in the aisles, cleaning up a spill, lending a hand…every time…these are the ones who set positive safety values in the workplace culture.

It's not enough to follow the rules like everyone else. Managers have to reinforce safe behaviors and coach and correct unsafe behaviors they see in others.

Failure to address both safe and inappropriate or at-risk behavior tells those who violate the rules that it's okay…it's their option. It also tells people who follow the rules that management doesn't notice…and therefore doesn't care. Only management can make everyone believe in safety. Only management has the capacity to make perceptions match reality.

So there you have it. Two parts to management example. Part one is doing what you expect others to do—follow the rules. It's a small part; but an important foundation.

Part two is the *huge* piece! Address the behavior of others both positively and negatively—if necessary. Do this or you send mixed messages and get limited success.

Do you know all the safety rules your people are expected to follow? When I was developing my management skills, I was frequently told that I didn't need to know how the work was done; I just needed to know management.

Wow! Was that advice wrong!

How do you win respect? Develop trust? You've got to understand how work is done and what's right and wrong about the behaviors you see on the floor. Otherwise, you will soon be taken for a fool instead of a leader.

I ask line employees all the time about safety and what they see on the job. The response I hear most often? *Safety is for us, not the boss*.

Let me make one thing clear right now. A management title is not effective personal protective equipment. If you go into the hazard zone, you'd better be wearing all the protective equipment you require of your people.

If you're looking over someone's shoulder at a job with eye hazards, the flying object can strike you as easily as the operator.

If you lift a box of product, you risk injury from poor lifting technique as much as the next person. Maybe more. You might not be in the same physical shape as the person doing the lifting daily.

Walking through a noise zone? Even if it's brief exposure, wear appropriate hearing protection. You and I know that OSHA would let you be exposed to noise up to 115 dBA for up to 15 minutes, but your people won't look at it that way. If they have to wear hearing protection, so should you! Always set the example!

Know the rules! Follow the rules! Simple.

Now, assume you've just gotten a call from shipping of a crisis with an outgoing order. Safety glasses on. Hearing protection in place. Safety shoes—polished—on your feet propelling you toward shipping. The crisis fills you head. No room left for other issues.

To your right is John, safety glasses on top of his head. To the left—farther up the aisle—is Sue bent over, struggling to get a loaded tote tray on her bench. Just outside shipping is Bill, the fork truck driver, blowing through a blind intersection with seat belt flapping in the breeze. Just another normal day at work.

You've been providing leadership. You've been following the rules.

You've also just told John and Sue and Bill that their approach to work and safety is just fine. It is the "Unless I tell you, assume you're doing a good job" philosophy of management.

They were working unsafely. Breaking the rules. Such action calls for corrective action— discipline. Instead, you reinforced them. Your mind was somewhere else and you reinforced them. Negative reinforcement—but reinforcement never the less.

Properly addressing the performance of others can be challenging for some of us—especially when that performance is inappropriate or unsafe. Sometimes we use techniques that were used on us.

"This is the last straw. Let's make an example of him!" Another wonderful management approach. The "last straw" is probably not the worst straw. It may be only a tiny infraction but it was just enough to light the boss' fuse.

Be critical all the time? Wrong again.

Ranting, raving, ignoring, glad-handing and being everyone's good buddy or bull-of-the-woods may make the boss feel better—sometimes—but they don't provide the incentive for the worker to do more better faster safer.

Science has taught us about performance management and its spin-off, behavioral safety. This approach is known to work—and work well. More on this later.

Indicator 6–Assigned Safety and Health Responsibilities

Indicator Description—Assign and communicate responsibility for all aspects of the program so that managers, supervisors, and employees in all parts of the organization know what performance is expected of them.

Attributes of Excellence

A. All elements of the company's safety and health program are specifically assigned to a job or position for coordination.

B. Assignments are in writing.

C. Each assignment covers broad performance expectations.

D. All personnel with program assignments are familiar with their responsibilities.

In *The American Commonwealth,* James Bryce wrote, "…responsibility…is the first step to reform." So it is that we see that increasing safe behavior and eliminating accidents starts with a strong sense of responsibility.[25]

Clear statements of responsibility for operating a business safely are critical to meeting the safety and health policy and to reach for the vision of the organization. Without responsibility, members point to one another and say "I thought you did it"…if anyone even recognizes that safety "needs doing."

"Everyone is responsible for safety" is ineffective. When everybody is responsible, nobody takes responsibility.

Every task should have a name or function by it to be sure it gets done. Others can help, but someone must call cadence.

Responsibilities must be complementary rather than overlapping or conflicting. They must be appropriately distributed throughout the organization. Ultimately, the boss is responsible for everything that happens but practically, you're human in a human environment.

The sign on Harry Truman's presidential desk said "the buck stops here." But Harry Truman didn't run the nation by himself. Neither can senior management or the safety director "do safety."

Management is responsible for safety to the extent that it creates and maintains an effective system. If everything gets passed to management, we wouldn't need anybody else.

The safety director can't be solely responsible for safety because he/she doesn't have the authority. He/she is really a management consultant with responsibility to understand the safety process and the technology and to advise, bug, poke, prod, cajole, counsel….

Safety committees are widely used and some states even require them. Usually they function like the poor safety manager. The whole load gets dumped on them, they have little or no authority to decide and act and almost no time to do the job. Safety ends up disappearing into a black hole.

The answer to "who's responsible?" is to have all that needs doing to ensure that accidents *do not occur* clearly assigned in ways that fit the organization's culture.

It also means that *everyone* has a meaningful role to play, knows that role, and how it fits into the total organization. Knowing their role helps everyone know the specific performance expected of them.

[25] Bartlett, J., *Familiar Quotations,* Little Brown and Company, 1968.

This truly does make sense. Stick to the basics…and use the power of your organization.

First, understand what makes your organization work. What responsibilities and relationships are already in place to produce a product or perform a service?

Since we already know that safety is an integral element of line operations, manage safety as you manage everything else. Keep the "doing" of safety in the line. Place the "advising" for safety with the staff and the committees.

Next, sketch out all the elements of your safety program. Remember, "program" really means "process."

Consider the OSHA guidelines and make sure you have made primary assignments for those elements that are already in place. Then, look at your strategic plan for improvement and the goals and objectives it includes and make assignments for each element.

Finally, consider the on-going, daily tasks necessary to keep safety visible such as observing and correcting behavior, training and coaching, revising procedures, dealing with questions and concerns.

For shorter-term or specific tasks, the work is often assigned to a specifically named individual. At other times, the responsibilities can properly be assigned to positions.

For example, most of the daily tasks are really part of the line supervisor's job. You wouldn't want a staff person or line worker making decisions that will also impact productivity or quality unless you've also created a supportive culture.

Many organizations are using empowerment successfully. Line operators are being trained to fill dual roles as mechanics. Skill-based pay systems compensate individuals who have developed advanced knowledge and skills that allow them to function at a higher level. Job enrichment allows qualified people to move horizontally into related tasks and functions.

Flatter organizational structures make approaches like these necessary and safety is often a beneficiary.

You might consider conducting an inventory of skills within your workforce. If you've provided the training and skill development, you probably have a good idea about the talent residing in the facility.

But with today's more mobile workforce, you may have new employees that have training and experience outside the job you've hired them to do. This prior or parallel experience can be enormously valuable to you.

For example, volunteer firefighters and emergency medical technicians bring skills and qualifications to your emergency management and response effort you couldn't afford if you had to start from zero. Others may come to you with safety committee experience or records of training provided by OSHA or other recognized safety training operations. Former military personnel may have served in any number of skilled safety and health positions that have application to your work.

If you do plan to use this bank of talent, be sure that all your new people get a strong orientation to safety, the safety culture, and safety values. It's not fair to them, or to the organization, to drop expectations and responsibilities on them without adequate preparation. Remember the management inputs.

Attribute C says, "each assignment covers broad performance expectations." Assume that you've done a good job up to here and everyone understands your vision. They hold safety as a value, the strategic plan to reach the vision is clear, and you've made sure they have a good foundation (see Chapter 14 on training) to meet their responsibilities.

Don't micro-manage them! Tell them what you want them to accomplish and let them do it. Trust them. Trust your preparation of them. Coach them, if necessary, but don't drive them nuts.

Indicator 7–Authority and Resources for Safety and Health

Indicator Description—Provide adequate authority and resources to responsible parties, so that assigned responsibilities can be met.

Attributes of Excellence–Authority

A. Authority to meet assigned responsibilities exists for all personnel.

B. Authority is granted in writing.

C. Authority is exclusively within the control of the individual holding the responsibility.

D. Personnel believe they actually have the authority granted to them.

E. Personnel understand how to exercise the authority granted to them.

F. Personnel have the will to exercise the authority granted to them.

G. Responsibilities are being met appropriately and on time.

Attributes of Excellence–Resources

A. Adequate resources (personnel, methods, equipment, funds) to meet responsibilities are available to all personnel.

B. Necessary resources are exclusively within the control of the individual holding the responsibility.

C. Resources are being effectively applied by all personnel in order to meet responsibilities.

Indicator 6—assigning safety and health responsibilities—was the easy part. Now the rubber meets the road. You have to grant authority to someone else to run some aspect of your business. And you have to give him or her the tools to do the job.

In other words, you have to give up power and spend money to do it.

The return on investment will far exceed the cost and the effective granting of authority will make you look like a management wizard.

With all the new approaches to business and management, one fundamental rule has not changed. *Responsibility* and *authority* go together. *Accountability* forms the third leg of the stool.

The typical safety manager or coordinator is told, via a lengthy job description, to make the facility a "safe place." But who actually has the authority to make it happen? Usually, it's the line manager. Without authority, the safety person is frustrated and ineffective.

There are, of course, two solutions:

1. Add authority to match the responsibilities (an unlikely and probably undesirable option), or

2. Change the job description to assign responsibilities for which he/she has (or should have) the authority—a more likely prospect.

Occupational safety gets into every single aspect of operations. If you tell someone to keep the blade guard in place while using a table saw, you are impacting how the job is done. If you write a job safety analysis, you are specifying the steps of the job and how it will be performed. If you adopt a safety suggestion, you are validating a new tool, technique, or process.

Managing safety is a line function.

A manager may be perfectly happy giving line authority to the staff and various teams and committees. It takes a strong and confident leader to give up control. When confidently executed, an empowered workplace is a wonder.

But don't opt for solution #1 until you've developed a great deal of trust throughout the organization, conducted a lot of training, and made sure that everyone is comfortable taking direction from a variety of other people.

Let's look more closely at the attributes of excellence for authority. Notice first that you must spell out the necessary authority for each person with responsibilities and do it in writing. I'm not suggesting that you have to create an organizational book. But working relationships and acceptable practices do change over time. As people gain experience and trust increases, responsibility and authority may increase.

The changes may be unnoticeable. It's a little like a parent and a child. The kid is all grown up through a long series of thousands of subtle changes in the relationship. You don't notice individual ones, but you sure can see the change when you look back.

As a parent, you may periodically stop and assess the relationship with your child. You may sit at the dinner table one evening and talk about being left alone without a sitter for the first time or taking on more household chores or driving the family car. You may even make some notes so you're sure all of you understand some new rules.

Try something similar at work. Periodically assess the changes in the working relationships. Agree on what individuals can and cannot do at this point. What you have created is a very simple, informal working contract.

We know that verbal understandings are often interpreted differently. Make some simple notes. Have them typed up if you like. Use it as a working document, but do have some reference point you—and the individual—can go back to.

Now look at the attribute that says, "Authority is exclusively within the control of the individual holding the responsibility." You've given someone responsibility, so of course they control the authority. But that's not always true.

I often ask managers and supervisors in my training classes to fill out Figure 6.4 at the end of the chapter indicating their safety responsibilities in their workplaces. I ask them to put a check mark in any box which applies, moving from left to right on the form. It's an informal survey, but it gives me an indication of how they see their responsibilities and the other elements that go with them.

In the samples I've taken so far (Figure 6.5), about three quarters of the supervisors agree that the items listed are their responsibilities. But only 24% agree that they have complete authority to meet their responsibilities!

Let's say the survey fails the tests of scientific inquiry—which is probably true—and there's a large margin of error. Maybe 50% have complete

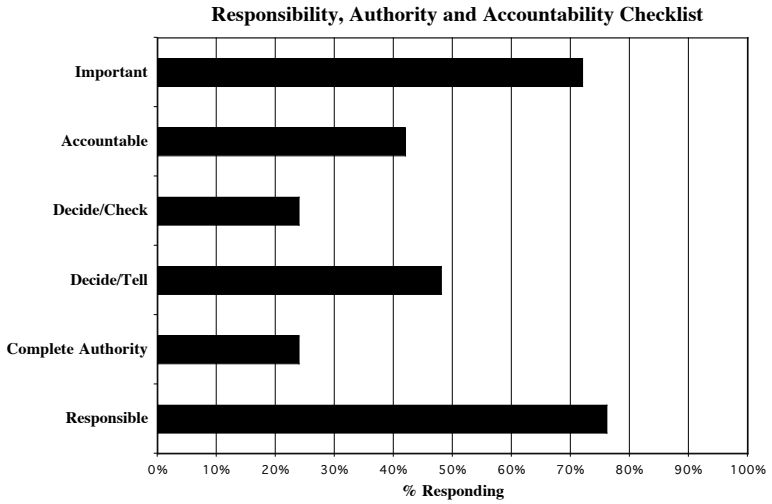

Figure 6.5

authority. To do well on this attribute, the figure should be 100%! Nothing less!

48% said they have the authority to decide, but they must tell their boss about what they decided. In effect, they are bumping the decision up the line.

24% can decided, but have to check first! Check first?! Who do you think is making the decision? Imagine paying salaries to managers to serve as message passers.

The next attribute says, "Personnel believe they actually have the authority granted them." (Again, actions speak louder than words. The words may say that the authority exists, but if the first time the safety manager acts under his or her own authority and is challenged by you or someone else, the limits are clear.)

Keep in mind that this authority may be in the hands of your line people. Here's an example.

The safety manual says every employee has the authority to stop a job for a safety hazard or imminent danger. This is fairly common. Safety problem? Hit the emergency stop button.

So Jane sees Billy trip and fall toward the line. She pulls the emergency stop cord and stops the whole operation. Billy recovers. No injury. Now the whole crew has to sort out some bad product, reset the equipment, and take a few minutes for debug after restart.

The crew gives Jane grief over what they think was an over response. The supervisor chews her out for putting a tight production schedule even further behind.

Do you think next time she will "believe" she has the authority?

I've been in companies where the authority to stop jobs for safety was absolute. Stopping work could cost thousands of dollars in lost product. But when it was necessary, the work was stopped.

People had learned that their safety actions were expected and supported. No negative consequences. They believed they had the authority!

Training and coaching are the keys to understand how to exercise authority (Attribute E), training in both work practices and in human relationships. Otherwise, we get back to" seat of the pants," trial and error approaches which do cause problems and which make you, as the owner/manager, less willing to grant authority in the future.

Attribute F, the will to exercise authority, goes back to Jane's experience. It also includes motivation.

If using authority is difficult or personally painful, few people will choose to exercise it ever. There must be a strong positive consequence. You and your supervisors have to create that environment of positive consequences. Thanks for preventing an injury! Thanks for taking the time to correct the new employee on the safety process.

Tied closely to authority are resources. A carpenter can't cut wood without a saw. A coach can't win a ball game without a team. A supervisor can't teach people about hazard communication without a program.

If responsibilities are assigned, authority must be granted, and adequate resources must be easily available. Without all three, failure is certain.

A supervisor in a paper mill needed a pulp pump. The old one was on its last legs, it was the weekend, production could not be stopped, and all the senior management team was at a retreat. He went to the stock room to draw a replacement pump. It was in stock.

Keep in mind he was responsible for the entire plant that weekend.

He slid the pump requisition to the stock clerk who looked it over and said, “I can’t give you the pump, it’s over your approval limit of $1,000.”

The supervisor had the responsibility but inadequate authority to keep things operating. Now what?

He grabbed a pad of requisitions and wrote out three that covered all the components of a pump. No single requisition was over his approval limit. The clerk gave him the parts. They were assembled and the pump was installed. Production didn’t falter.

Turns out he had all the resources he needed. They were between his ears.

I know you don’t have an unlimited supply of resources. People are resources. No company today has extra people for long. But if you don’t have enough people so that someone is around to help with a heavy lift or to work as a safety observer for a hot work project or a tank cleaning, you’ve not provided the resources the responsible person needs.

Time is a resource. I get calls daily from people who want to do something about safety but who don’t have the time to get it done. Training—the first input—often gets shoved off for months or years because there it not time.

The phone rang a while back and a very nice human resources director asked it I could coordinate the delivery of all the OSHA required training for the people at her facility. It had been neglected for several years.

I knew their operation, and figured in my head that the training might take a week to accomplish. I asked her the amount of time they had budgeted for the project. Her reply: *I think an hour would be reasonable, but my boss would be happier if we could do it in 45 minutes!*

I didn’t do the training. Ethics suggested it was inappropriate. But it certainly made me aware, again, of time as a resource.

Indicator 8–Accountability

Indicator Description—Hold managers, supervisors, and employees accountable for meeting their responsibilities, so that essential tasks will be performed.

Attributes of Excellence

A. All personnel are held accountable for meeting their safety and health responsibilities.

B. Methods exist for monitoring performance of responsibilities.

C. Failure to meet assigned responsibilities are addressed and result in appropriate coaching and/or negative consequences.

D. Personnel meeting or exceeding responsibilities are appropriately reinforced for their behavior with positive consequences.

E. Data related to key elements of safety and health performance are accumulated and displayed within the workplace to inform all personnel of progress being made.

F. Accountability data is used by individuals and teams to revise goals and objectives so as to facilitate continuous improvement in safety and health.

What gets measured gets done. This is at the heart of accountability.

Accountability is the checklist, the progress chart, the expression of interest in the tasks and responsibilities an organization has asked its people to meet. Throughout life, parents, friends, “bosses” and other authority figures

told us what they wanted us to do. What we actually did depended on our interpretation of the consequences of taking or not taking the desired action.

Sometimes, we did what we were asked and no one noticed. Maybe we did it again and no one noticed. Before long, we decided to do things that people noticed…and especially those things for which we got a positive reward.

In safety and health, we are often competing with a multitude of other company interests for the hearts and minds of managers and the workforce. Assigning responsibility and granting authority is actually the easy part of the job. We can put ideas on paper and say "these are very important" and people can nod their heads and say "sure." But they decide what's *really* important by waiting to see if they get asked for the product of their efforts.

Remember to ask!

Insist on a process for keeping track of what we asked people to do. Look regularly at some bottom-line measures of success. Tell people we appreciate results. That's accountability and that's what says safety is *really* important!

Lack of accountability in any system says no one cares. If you don't ask, it is assumed that you don't care.

On the survey of responsibility, accountability and accountability, the supervisors in my sample indicated that they were held accountable for meeting safety and health responsibilities a mere 42% of the time. People tell me this is too high, that more commonly few are asked if they did what was expected of them for safety.

To keep track in your own organization is easy if you've adopted quality management approaches. Simply do what you do for quality accountability. In fact, apply whatever system you have for general business accountability to safety.

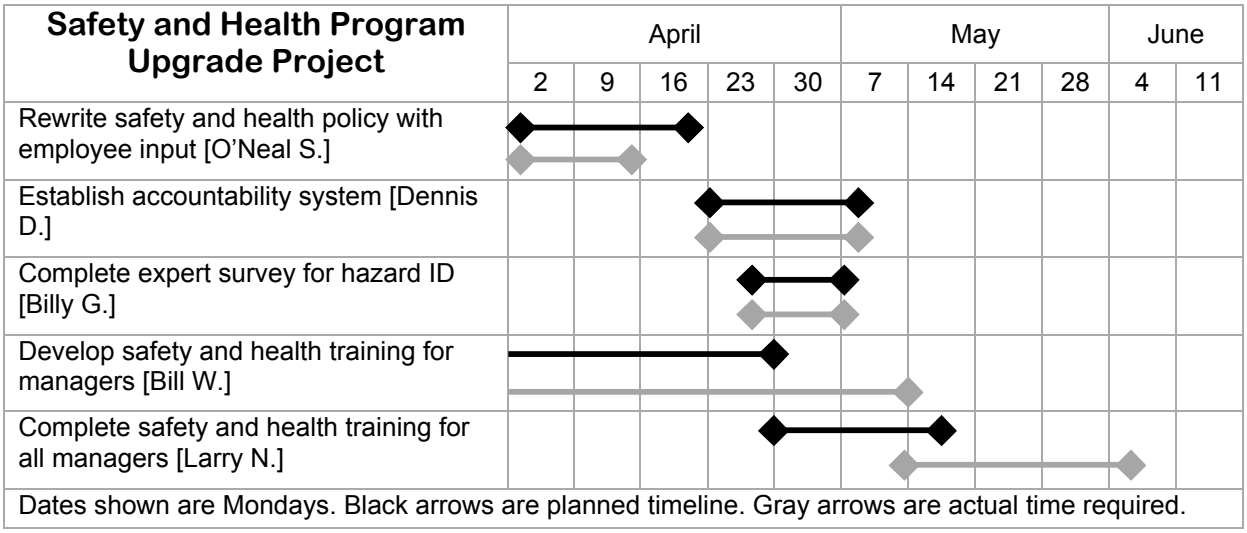

Figure 6.6

If goals and objectives are set using the SMART approach, then you know what's expected, you know it is measurable, and you have an end date when the work is due.

Chart it. Use a computer program to track projects or write the information on a large flip chart. Decide who's going to do what parts of the improvement process and create a time line that will show the schedule, the components of the effort, and the target and actual completion dates. See Figure 6.6. This is the single sheet

management needs to be sure that the schedule is being met. As things get done, it can trigger reinforcement and celebrations and communications to the entire workforce.

Put it out in the workplace on a safety board. Let the entire facility know that you care about safety enough to make assignments for improvement and that you are actually expecting completion of the projects or assignments. Make sure the chart is kept current. A yellowed chart with months-old data gives a strong message that you don't care.

By the way, performance appraisals and evaluations may fill some need in your operation, but they're a lousy way to hold people accountable. Safety responsibilities are assigned to people to do every day. Supervisors coach, train, inspect and investigate. Safety coordinators prepare reports and training materials and advise on conditions and recommended actions. If you wait for an annual appraisal to reward work done well or otherwise, you've lost hundreds—thousands—of opportunities to bring out excellence in all your people.

Instead, set expectations, observe daily, and react appropriately. Say thanks, give a pat on the back, send a note, correct or express disappointment. Say or do it now—when you observe the behavior or its outcome.

Drop by where your people work. Ask them what they're doing for safety. Be specific. If you don't remember what responsibility has been assigned to the specific individual, ask them and then ask how they're meeting it. If other people depend on them, ask the other people how the responsibilities have been met.

Asking questions is a powerful message that you care.

There are some sophisticated systems to track safety and health accountability. They look impressive with easy to chart figures and scores. If you'd like to know more about them, contact me. However, you honestly don't need them.

Why use a process that only infers scientific accuracy and requires administrative time to create, score and explain to people?

A simple process of assigning work and asking if it's done will work just as well.

The Safety and Health Leadership Quiz

Leadership is personal and specific to the individual and culture in which the individual operates. However, when it comes to safety and health in the workplace, there tend to be some common characteristics of an effective leader. The following twenty-five items will help open a window into your safety and health leadership approach. When you finish the quiz, we'll suggest some actions you might take. Just check the box that most closely aligns with your feelings about the statement.	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
1. I like it when my people find safety problems and correct them on their own	☐	☐	☐	☐
2. I have a clear vision of an accident-free workplace	☐	☐	☐	☐
3. When an accident occurs, I try to understand how my actions might have contributed to it	☐	☐	☐	☐
4. I make it a point to be on the floor with my people observing safety every day	☐	☐	☐	☐
5. I know and follow all the safety rules I expect my people to follow	☐	☐	☐	☐
6. When I really need to understand a safety issue, I talk with some of my line people about it	☐	☐	☐	☐
7. I know good safety practice when I see it and I always let the person involved know I like what I see	☐	☐	☐	☐
8. My people have full and open access to all the tools and equipment they need to do their job safely	☐	☐	☐	☐
9. I've learned that the person who knows the job best is nearly always the person doing it	☐	☐	☐	☐
10. I always know the status of safety and safety projects in my organization and those involved know how I feel about that status	☐	☐	☐	☐
11. We consistently get a positive return on our investment in safety	☐	☐	☐	☐
12. I enjoy attending safety meetings and feel good about the results	☐	☐	☐	☐
13. I know whenever an accident occurs and consider it my role to get involved in addressing the issues it raises	☐	☐	☐	☐
14. I know enough about the safety process to be able to speak about it to employee groups and training sessions	☐	☐	☐	☐
15. I'm always looking for the good things people do so I can recognize them for their efforts	☐	☐	☐	☐
16. I know everyone makes mistakes and I see this as an opportunity to learn and grow	☐	☐	☐	☐
17. Some of my greatest satisfaction comes from walking the floor and learning from my people	☐	☐	☐	☐
18. I worry more about having the right safety values than about having safety rules	☐	☐	☐	☐
19. I see teamwork everywhere I look in my organization	☐	☐	☐	☐
20. If my people know what to do for safety, I reinforce them; if they don't know, I train them	☐	☐	☐	☐
21. I am blessed with really good people in my organization	☐	☐	☐	☐

22. My people helped form my vision of safety, which they now share and support.	☐	☐	☐	☐
23. I know that my actions say more than my words about safety, so I always act out my belief that safety is a key organizational value	☐	☐	☐	☐
24. Before I send my people to training, I go to the program so that I can reinforce and support their post-training efforts	☐	☐	☐	☐
25. I know that my people hold safety as a key company value, so they know they don't need my permission to take safety action	☐	☐	☐	☐
Now that you have completed the quiz, count the number of check marks in each column and write the total in the appropriate box to the right				
Multiply the number in each column by the number shown	x4	x3	x2	x1
Write the result in the appropriate box to the right				
Add the total of the four boxes and put the result in the box to the right. This is your total score				

As a general rule, the closer your score comes to 100, the stronger your safety and health leadership skills.

If your score is less than 51, you are fairly traditional in your approach to management and probably tend to hold a fairly tight rein on your control of operations. *To improve your score, consider reading one or two of the recent crop of books on leadership. Ask a friend at a progressive company or someone at your local Chamber of Commerce or employer's association to recommend one. Spend some time in the plant asking people how they feel about you and the culture of the organization. Be patient, listen without being defensive, select two or three approaches suggested by the quiz and try them for a while. If you see results, select some more and try them also. This will be hard work; but the more time you spend with your people during this process, the more they will reinforce and encourage you.*

If you score between 51 and 74, you're in the transition zone to a new style of management. *To improve, spend some more time learning leadership skills. Look at the quiz and select several areas where you answered, "Strongly disagree". Try to understand why you act or feel that way and work on changing your approach. As you make some progress, find other areas where you disagreed or strongly disagreed and work on those. Be patient and be sure to get feedback from your people on how you are doing.*

If you score 75 or higher, you are probably operating in a fairly positive, empowered environment and are viewed as a leader by your people. *To improve, look at areas where you scored less than strongly agree and understand why. Get your people involved in helping you improve. They are probably already interested and supportive and will welcome the opportunity to enhance your effectiveness and that of the organization.*

Form 6.1

Supervisory Responsibility, Authority and Accountability Checklist

For each of the typical supervisory responsibilities, check one (1) box between each series of dotted lines. If you have no *responsibility* for one particular function, skip the *authority* and *accountability* questions and check one of the final two boxes regarding *importance*.

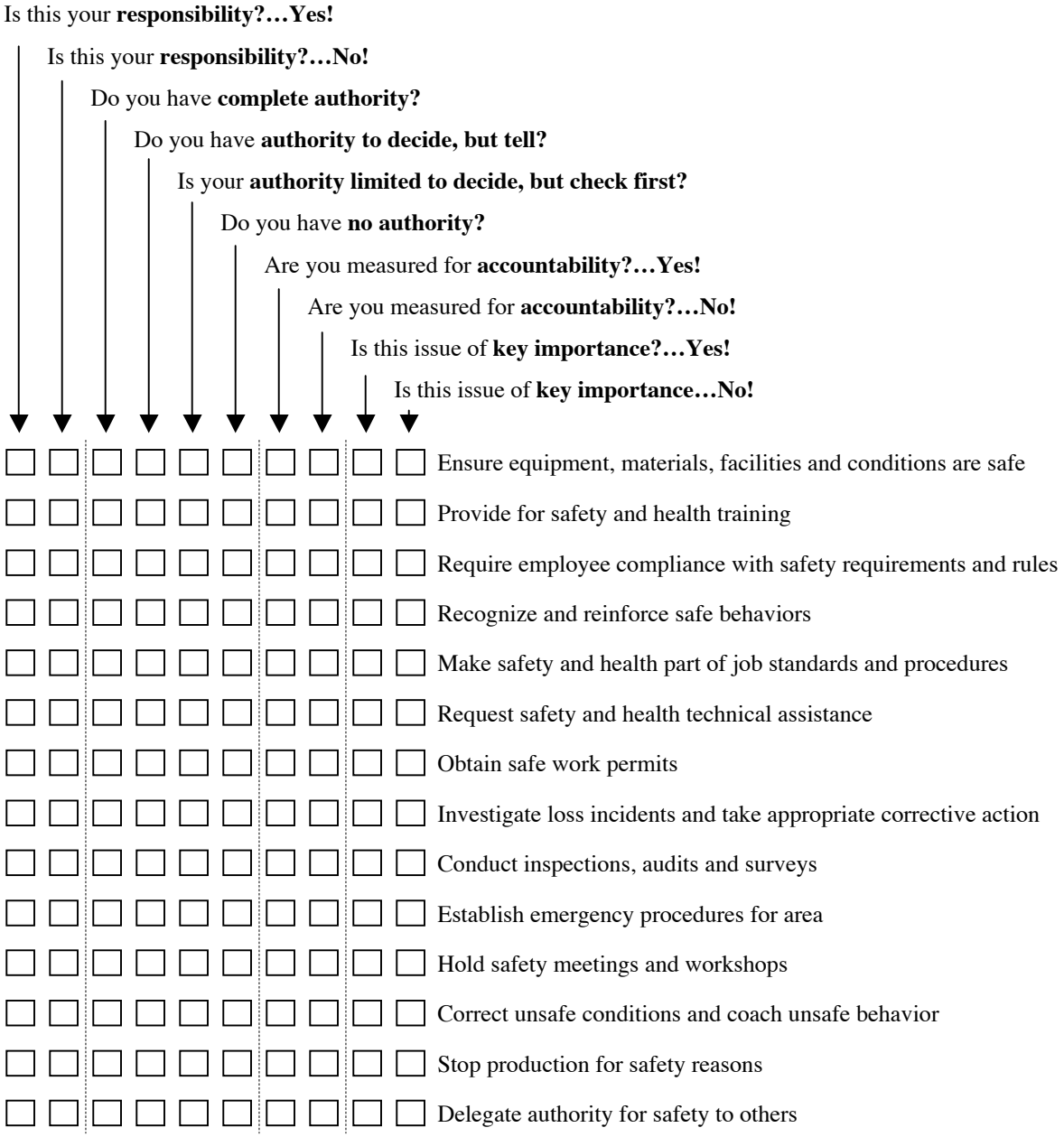

Figure 6.4

7

Employee Involvement

In This Chapter:

The nature of employees
Involvement and good science
Types of involvement
Involvement ground rules
Motivation and behavioral safety
Incentive programs
Safety Committees
Attributes of excellence for involvement

How do you feel about having employees involved in the operation of your business—really involved—suggesting solutions, raising hard questions, challenging your thinking?

I hope your answer is positive, affirmative, enthusiastic, but I wouldn't be surprised if it isn't. Actually, very little surprises me any more about the relationship between management and the line.

I was asked to do an assessment of a high tech electronics plant with about 200 employees. It was part of a larger company. The injury record was dismal and there were problems on every front. The parent organization had hit the management team in the year-end bonus backside and the local plant manager was feeling the heat.

I spent most of the day observing and chatting with people about their concerns and solutions. Most of what I needed I had. My final stop was in the office of the production manager.

"Jimmy", I said, "Why do you think you're having injuries?"

We're not having injuries! Jimmy (named changed to protect me) was in denial.

"Well, when you do have injuries, what do you think is causing them?"

Stupidity!

"I beg your pardon?"

I've got stupid people!

"Thanks." I left. I had all the information I needed to complete my report.

His people weren't stupid. I'd spent the day with them. They were creative, concerned, friendly, and helpful—everything you'd want in an enlightened workforce.

Beaten down day after day by Jimmy, they'd found their own ways to cope.

People doing bench-top soldering had fabricated their own local exhaust system with cardboard and cooling fans from the equipment they were making. Inadequate for good health, but it made them feel they had some control.

A fellow in shipping, tired of trying to carve Styrofoam blocks with a knife to fit the product, had fabricated his own tools to cut holes and other shapes. He'd also rigged a nice packing frame that supported and lowered the product into the packing box, saving both his back and the equipment from damage.

Another in the paint spray booth had reduced his solvent exposure dramatically by investigating and ordering alternative finishes which were better, safer, and cheaper, That's a job for the product designer or manufacturing engineer, but his problem hadn't seemed worthy of their attention.

Over the years, I've gained a lot of respect for the folks who do the work. Some have driven me or other managers nuts. They may have had their own agenda or been underhanded or just "difficult"—but they weren't "stupid."

At the risk of oversimplifying things, I've found that the vast majority of the workforce are good people who do the very best they can under some difficult circumstances. Even those who may test at the lower end of the intelligence scale have valuable contributions to make.

When people are less than what we think they should be at work, it's a very good possibility that we molded them to fit our environment.

After all, you didn't hire them that way, did you? Of course not. Unless your hiring process—which you've created—is so screwed up that you have no idea who you're hiring, you brought in good people full of enthusiasm and potential

Jimmy—my poster boy for bad management attitudes in Chapter 3's NIOSH study—was probably a "made man." I ran into him several years after that first meeting. He was smiling, enthusiastic, having fun. He'd moved to a new company and was having a wonderful time. He had changed so much that I didn't recognize him at first. I honestly believe that someone had made his life so miserable at the old company that he had passed it along to everyone else.

Everyone has an opinion about people at work and how to get them to do their best. But let's leave out opinion and look for scientifically proven approaches.

Robert Reich, U. S. Secretary of Labor during the first Clinton administration, was a strong proponent of viewing employees as assets to be developed rather than as costs to be cut. He found powerful support for his position with a USDOL/Ernst & Young study released in 1995.[26] Looking at innovative workplace practices in American companies, the study found that investing in people pays off in bottom-line profits. Here are some key points:

- Corporate investments in innovative workplace practices, especially when coupled with employee-focused workplace innovations, result in higher levels of customer satisfaction, increased product quality, greater profitability and productivity, and faster time-to-market.
- Business process and technology improvements integrated with high performance work practices (such as training and empowerment) maximize benefits.
- Companies investing in employee development enjoy significantly higher market values than their peers.
- Companies which have aggressive employee development and involvement practices (such as skills training and team-based management) make significantly larger productivity gains.
- Cross-training and participation yield significant reductions in manufacturing overhead costs.

[26] U. S. Department of Labor and Ernst & Young LLP, Study finds competitive gains from innovative workplace practices, News release, Ernst & Young LLP, New York, Jun 5, 1995

"The conclusions are unambiguous," said Reich. " Companies that invest in their workers and give their workers greater responsibility do far better than their competitors."

This study was not geared specifically to safety and health involvement. However, we've already determined that safety cannot be viewed as an isolated function out of the mainstream of company operations.

More safety-specific, an examination of the psychosocial work environment by one researcher had a number of implications for safety and health. Here are her findings:[27]

- Workers with greater control of their work lives are better able to address and change problems—both at work and in the rest of their lives.
- Workers with little control over work pace and methods suffer higher rates of health problems (mental strain, coronary heart disease, etc.)
- Formal (vs. informal) participation correlates well with increased performance and job satisfaction. The participation is nurtured by strong interpersonal relationships between employees and management.
- Direct (vs. representative) participation correlates with increased productivity.
- Long term (weeks or months) involvement in decision-making yields more commitment.
- Adult education in broad workplace issues allows people to gain control over their work lives—called "education for empowerment"—as opposed to the more traditional and narrowly focused safety and health training on technical issues that leaves them in a passive role.

Clearly, people who are allowed to get involved at work, who are part of something larger than themselves, and who have ownership of critical decisions impacting their work life are generally more motivated, productive and inspired to work safer than those who simply show up and follow instructions.

Employee involvement is synonymous with teamwork. Involved people are committed to common goals and generally have a better understanding of their roles and those of their peers.

Not every employee will be directly involved in every critical decision, but, each team member must be prepared at all times to take either a direct or supporting role. Each must be prepared, when necessary, to make decisions assertively that may impact others.

Look at the workplace culture and the involvement and participation continuum (Figure 7.1).[28] If you are a manager whose style is authoritarian, you probably won't make drastic changes instantly.

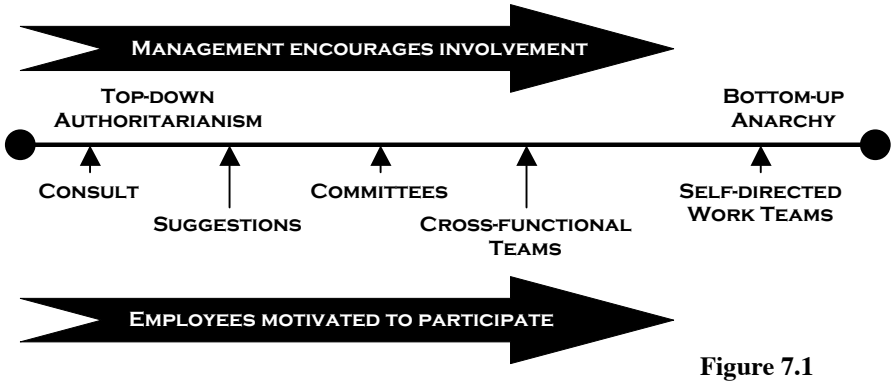

Figure 7.1

Try to encourage your workforce to participate by seeking their input—consult with them. Form a safety committee.

[27] King, P. M., The psychosocial work environment: Implications for workplace safety and health, *Professional Safety,* Mar 1995

[28] Nolen, L., Safety and Health Programs Assistance Training: Achieving Excellence, University of Alabama, College of Continuing Studies, 1997

Go to self-directed work teams only after some positive transition. Notice also that the extreme right end of the scale is anarchy. Don't go there.

You are still responsible for the operation! Establish clear guidelines for the type and degree of involvement you want. Invest in training.

Teach the business. Let your people know where the business and they stand. Keep them informed. Continually encourage their involvement.

You and they must learn to trust one another, an uncommon feat for many traditionally run companies.

Often employees think they'll be punished for speaking out on health and safety issues. OSHA consultants and compliance officers confirm that a strong intimidation factor still exists in many companies, even when the workers' own safety is at stake. In regularly run into people who do not want management to know I've spoken with them for fear of retaliation. All such fears must be laid to rest through multi-level involvement.

Here are guidelines to help with that effort.

1. OSHA is firm in its belief that involvement must be "on-the-clock". Pay people when they work on safety. It's a business effort from which the company benefits.

2. Make sure everyone understands that involvement in safety is important and legitimate work. Repeatedly, line employees have expressed to me their concern about being in trouble with supervisors. The charge: too many meetings, training sessions and inspections and not enough "real work" getting done.

3. Involvement and empowerment assume a firm foundation of knowledge and skills, resources, and motivation from management.

Remember the management inputs? Would you pass on company legal or accounting work to a shipping clerk because he or she wants to be "involved?" Of course not! But some managers will pass safety—which may have just as serious consequences to the health of the company—to anyone who steps forward and raises his hand with never a care about investing in the necessary training and resources to assure success.

4. The National Labor Relations Board (NLRB) has some thoughts about the nature of employee involvement. More about that later in this chapter.

5. Make sure the involvement is consistent with the workplace culture and consistent with employee involvement on non-safety issues. In other words, don't try total involvement for safety but exercise a heavy hand of management on other business issues.

6. Don't give away management responsibilities for safety. You can't do that. Use people to help you better meet your responsibilities, but do not dump safety on them. It isn't fair and it won't work.

Now for some easy ways to involve people.

Ask for input. Invite and reward suggestions looking for the pearl in even the most outlandish idea.

Form one or more committees or teams to gather data and help you with strategic and operational initiatives.

Tap peer pressure by pulling a lot of people into the process. Ask people to create and deliver safety training. Seek employee assistance on inspections and investigations.

Be open to ideas.

As you see, there is no pat formula. Just be sure to keep the cautions above in mind. Also be sure that the involvement approach meshes with, or supports, the strategic plan and the overall safety process you've established.

Two points may need further explanation. They are

1. Providing motivation, and
2. Establishing safety committees

Everyone needs motivation. It may come internally, but most workplace motivation comes from outside ourselves.

Managers spend much of their work lives trying to get people to do what needs to be done. They are the instruments of motivation.

In 1959, Frederick Herzberg discovered and reported that the things that dissatisfy people are not the same as those that provide satisfaction.[29]

Dissatisfaction, he found, comes from things such as salary, supervision, working conditions, and the way in which the company administers policy.

Once these issues are addressed to the point where employee dissatisfaction disappears, satisfaction does not magically appear.

Satisfaction, said Herzberg, comes from an entirely different set of factors—achievement, recognition, responsibility, and the work itself.

When asked to describe the characteristics of the best supervisor they ever worked for, employees consistently responded: Trusts me to do my work. Gives me challenging work to do. Treats me like and adult. Listens to my ideas. Provides the support I need to do the job. Praises me when I do well.

These characteristics, it turns out, are all satisfiers—and they are motivators. Trust, involvement, praise, listening—all quick, easy, effective ways to get people to do good work!

Sometimes the satisfiers come not from management but from fellow employees—the peer group. Long known for having strong influence on what work people do and how they do it, the peer group can be a great force for safety if everyone has been involved and "buys in" to the company efforts to continuously improve safety.

If management is not equally providing the satisfiers (motivation), then the peer group may be a force that undermines what little safety you have. Don't misunderstand. No one wants accidents. If the peer group encourages actions counter to safety, it is most likely that they do it out of ignorance (little knowledge or skill about safety) or because of strong opposing needs (meeting productivity quotas, incentive pay, less physical effort).

After decades of focusing on physical safety and compliance with regulations, managers and owners of businesses are beginning to understand why people do what they do. More and more people are pointing to behavioral safety as the approach most likely to get impressive results and a tool called performance management is at its heart.

Performance management is not a secret weapon and it's not magic. Instead, it's the practical application of scientific principles based on the work of B. F. Skinner.

[29] Herzberg, F., *The Motivation to Work,* Wiley & Sons, New York, 1959

For the past 30 years, Aubrey Daniels, through his writing, training efforts and experimentation, has been behind much of the performance management work in the United States. Leaders like Dan Petersen, E. Scott Geller, and Tom Krause have built much of their safety teachings around the concept.

Here's the basic idea. All people behave in ways that meet personal needs. Usually, these needs involve acceptance, recognition, and reward.

It may be applause from an audience for the performer, praise from a teacher for a problem solved, a hug from a parent for a task well performed or a tough chore attempted. It's the "nice job" from a respected supervisor and "thanks" from a co-worker.

All this is called "positive reinforcement" and it typically costs nothing. All it takes is a few seconds to see good in someone's behavior and respond immediately to it with a sincere comment, personally delivered.

Our culture has become so materialistic that it may seem hard to accept that behaviors can be changed through any non-cash reward but examples are everywhere. Hugs at the Special Olympics and high fives on the ball field bring smiles and renewed efforts. Pay doesn't enter the picture.

The mechanic who grins from ear to ear all day because the boss told him what a great job he had done fixing a critical machine won't even see a pay check for two weeks and it won't have extra money in it.

A press operator who's wearing his safety glasses and gauntlet gloves in 95-degree heat isn't doing it because he's paid to be miserable. He's doing it because his boss told him yesterday how impressed he is with his safety leadership and positive example for the newer operators.

By the same token, people almost instantly stop doing such behavior if they are ignored. Following the rules, taking time to set a job up safely, wearing personal protective equipment gets old in a hurry when the boss doesn't even notice the efforts and the rest of the team rides you for going the extra distance.

Even worse, if someone does what they believe is the right things for safety and gets chewed out by the boss for not working fast enough, the message is clear and it's not "safety counts."

87% of all communications in business are negative. Such a climate rarely fosters excellence in anything.

The first step in performance management is to set behavioral expectations. Everyone— supervisor and manager and employee—needs to know the behaviors expected to stay safe.

Next, people have to look for those behaviors in the workplace and when they see them, reinforce them by some simple act—a word or two of encouragement, a thumbs up, a cup of coffee, a pat on the back.

Failure to address the behavior says it doesn't matter and the person will start doing something else that gets him or her the reinforcement they need.

It's not always possible to reinforce the behavior you see. Sometimes, the behavior is wrong and you need to punish. Rather than viewing punishment as an aggressive act, view it more as coaching and correcting.

Rarely is punishment necessary to correct behavior and in these instances, it can usually be traced to past failure to effectively mentor or coach. If this isn't the reason, there is a much stronger reinforcer for inappropriate behavior.

As a general rule, try to reinforce at least four times as much as to punish or correct. Research proved that reinforcement is far more effective at changing behavior than punishment. It yields more positive reactions, tells people what behavior is wanted, and it tends to encourage maximum performance rather than the minimum compliance we get from punishment.

Reinforcement is most effective when it is positive, immediate, and certain (PIC) as seen by the performer (the person who's behavior we are reinforcing). Knowing this, we can also conduct problem behavior analysis. If we want to change behavior, we need to find a consequence that will counteract (or be stronger than) the PIC's that are driving the undesired behavior.

For example, if a person is not wearing his safety glasses even though we've made it clear that it is essential and our coaching and correcting has not been effective, examine the PIC's reinforcing the undesired behavior. W e might find that the glasses are heavy and poorly fitting, and cause pain on the bridge of the nose. By removing the glasses, the individual gets significant pain relief and much greater comfort—a PIC.

To counteract that behavior and introduce a stronger PIC that will reinforce wearing safety equipment, allow the individual to go to an optician and select a comfortable pair of lightweight glasses.

Now the employee is empowered to make his or her own decision, For the sake of this example, let's assume that the glasses are more attractive. The employee gets complimented on his/her taste—another positive, immediate and certain consequence. Since the glasses are light, the individual is comfortable wearing them—a personally delivered PIC. Finally, recognize the individual's efforts at solving their own problem—another PIC.

Performance management techniques are not secret. Typically, organizations that decide to use the concept, train everybody involved.

In training, time is spent understanding the fundamentals of human behavior, looking at different types of consequences and how they work, and reinforcing the need to treat everyone as individuals. Success is possible only when each situation is viewed as unique. This is not an approach where one size fits all.

Performance management has a proven, measurable level of success. Here are a few supporting facts.

- A marine transportation company in New Brunswick changed the culture, saved $30M, and gave the Canadian government a $7M subsidy rebate in the first year of using positive reinforcement![30]
- Two U.S. railroads cut unsafe behaviors in half in three months with positive reinforcement.[31]
- A school in Seattle guarantees a gain of 2.9 grade levels per year per subject using positive reinforcement—and all the students are learning disabled![32]
- An educator in Chicago has demonstrated a 60-month education gain in adult academic improvement in one month with positive reinforcement.[33]

Translated in safety terms, a researcher at a major university examined all the studies reporting the application of performance management to safety—hundreds of studies—and found that every single one had a positive impact on safety performance.[34] It doesn't get much better than that.

CAUTION! The behavioral safety approach using performance management is not an exclusive and universal cure for workplace injuries and unsafe behaviors. If you apply it in a workplace where the safety culture is poor or nonexistent, you'll fail—miserably!

Make all the other improvements covered in this book first. Implement the Safety and Health Program Management Guidelines. Modify the safety culture to the point where everyone agrees that safety is a key value.

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[30] Daniels, A. C., lecture, Rochester (NY), Nov. 10, 1994

[31] Petersen, D., *Safety Management: A Human Approach,* 2nd Edition, Aloray, Goshen, NY, 1988

[32] Daniels, A. C., lecture, Rochester (NY), Nov. 10, 1994

[33] ibid

[34] Krispin, J. and Hantula, D., A meta-analysis of behavioral safety interventions in organizations, Temple University, Philadelphia, Aug 1997

Make sure managers and supervisors are involved in leading the safety effort. Then—and only then—train all your people and introduce behavioral safety.

If your safety efforts are successful but could benefit from the extra effort, consider adding a behavioral approach. But if you are not willing to invest the time for study and training, do not try it. If poorly done, it will set you back not move you forward.

As for incentive programs, be especially careful. They can costs lots of money and have detrimental effects. They *may* work if there is a strong and effective safety culture and special care is taken about behavior being rewarded.

Assume company XYZ is experiencing about ten injuries per 100 people and they want to reduce this to five per 100 next year. They set up a program that gives everyone in the operation $25 in credit toward a gift of choice from the incentive catalog if the facility is injury free for the quarter. Sounds good. Only $10,000 (plus administrative costs) for 100 people.

What really happens? The first quarter is great. Everyone is excited and the supervisors are paying attention to safety because they also share in the prize.

With three days left, Ted gets hurt. It's bad enough that several people know about it. Since it's near quitting time, a couple of folks spirit him out the back door and take him to his doctor for treatment. Next day he's at work with a bandage because he "got hurt at home last night." No company report, No investigation. No corrective action. Three days later, everyone wins the prize. Management tells everyone how pleased they are and urge workers to do it again next quarter.

Next quarter, Frank and Helen get hurt, but the prize value is building and their injuries also go unreported. They did exactly what was asked. They hid accidents and management again rewarded them. The new culture is shaping up. Keep the safety record clean by any means and everyone wins—except the company and the people who get injured.

It doesn't always work like this. Sometimes the accidents can't be hidden and the workforce does lose the incentive. The inured party feels the wrath of co-workers who lost out because of him! If there's no safety effort behind the incentive program, the excitement of the rewards will fail quickly and the sought-for new low accident quota may slip by midyear.

Now what? No program and the incentive is lost. Business as usual—or worse. There's finger pointing all around. Morale has fallen off the chart and the safety program has now become a human relations crisis.

To avoid such pitfalls, here are some guidelines for incentives.

- Introduce them only if they are based on a solid safety process.
- Do not reward injury avoidance and similar end results that do not require some positive effort.
- Do reward positive safety achievements such as meeting a new level of observed safe behavior and completing certain necessary safety tasks.
- Follow the rules for performance management—short term, low value, personal to the individual, and specific to desired behavior.
- Make sure that the individuals actually control the means to achieve the reward. In other words, don't penalize a group for individual failure. Even more important, don't penalize others for your failure.
- Have some fun! Post the results, have parties or cake and coffee, celebrate, use incentives as the icing on a very good cake.

Now for the other item which needs additional detail—safety committees.

Long popular and widely used as a corner stone of safety in the workplace, safety committees run the gamut from highly successful, model involvement mechanisms to employee relations disasters. Studies suggest that over 95% of large companies (5000 plus employees) and 75% of the rest have safety committees.

Safety committees are so popular that OSHA has long considered mandating them. The current proposal for a regulation on safety and health programs would likely put such a requirement in place.

A number of states already require safety committees. Minnesota, for example, has a multi-page model of by-laws for the labor/management safety committee. It is required of all state employers. If you are operating in a state-plan state, be sure to check with your state safety and health authority on any requirements for safety committees.

However, there are some legal and practical pitfalls.

Since 1992, the National Labor Relations Board (NLRB) has offered a series of rulings that provide a strict interpretation of §8(a)2 of the NLRA enacted in 1934. Section 8(a)2 prohibits teams that are dominated by management when the terms and conditions of workers' employment are at stake.

Originally intended to prevent the creation of sham unions in order to fend off organizing efforts, the provision is now being used to prevent management from selecting people for committee participation and then controlling the direction and decisions of the group.

The current and highly positive efforts to bring workers into the business process, including safety and health, appears to be running head-on into a 65 year-old regulation established for other purposes entirely. Neither Congress nor the executive branch are happy about this and a variety of efforts to rectify the situation are underway.

To establish a partnership with your people and work together to solve problems and issues should be no problem. If you do all the things I've suggested so far—listen, find the good in all ideas, believe in your people, teach them about your business, build trust, and so on—you should have a strong safety culture and few legal problems.

Issues usually only reach the NLRB if there is discontent or disagreement sufficient to cause complaints to be filed. If you and your people are all doing the best you can to keep them safe and you trust each other, it's highly unlikely you'll make the NLRB list.

Obviously, these issues impact non-union facilities. If your people are organized, then you simply bring the union into the partnership and make the relationship work. If the relationship with the union is contentious, then you need to resolve that before you can do much about changing the safety culture and creating effective safety committees.

Now for the practical issue regarding safety committees.

There are all kinds of committees. Company-wide, departmental, cross-functional, task groups (investigation, inspection, etc.) are just a few of what you might find in other companies. In part, teams or committees are created to fit specific cultures. If it works—and the results are positive—that's fine.

But failures are everywhere.

I've seen committees that were too large or too small, had no resources, were untrained, had impossible responsibilities, had no authority and no leadership. I've actually attended meetings where committee members discussed, month after month, why they were there—no decisions, no action, no feedback, no accomplishments—just "what's our purpose?"

I was asked to observe a safety committee meeting at a mid-sized company and make some recommendations. After 90 minutes of frustration on the part of all 25 participants—which included considerable time spent on random speculation about the causes of the previous months injuries—the chairperson closed the meeting with the admonition for everyone to "get it together" for the next meeting.

Afterwards, I followed the manufacturing VP, my host, to his office. "See", he said, "there's no focus, no process. We're wasting time and money and nothing is being accomplished."

"Why don't you give them the focus and guidance they need?" I asked.

"I don't want to have too strong an influence on them," he answered.

Too strong an influence!? He had no influence! A company officer, present at every meeting, was providing no leadership. No wonder the committee was floundering. This manager simply did not have a clue about the need to establish guidelines and expectation.

Remember, guidelines and expectations are essential for your business to operate effectively. There's a lot of reasonable ground between authoritarianism and anarchy in our chart. This manager was opting for anarchy to prevent the appearance of authoritarianism.

Keep in mind that what the committee does depends on the organization's vision of safety, the culture, the organizational structure, the labor situation, and your style of operation. Here are my ten points to success:

1. Do not make the committee responsible for safety, management has that responsibility and it cannot be pushed off to a committee or individual.
2. Do have senior management involvement in the committee to help transform the words of commitment into action.
3. As a general rule, task the committee to help management develop strategy and advise on the safety and health process and how it's working.
4. Expect the committee to use data (incidents, rates, research, behavior analysis, etc.) to support decisions. They can also track the progress of goals and objectives and help management with the accountability part of the equation.
5. Avoid using the committee as an operating tool. In other words, do not have them do safety. Incident investigations, inspections, suggestion evaluation and hazard report analysis are better done by the line with fast turnaround. Using a committee that meets once a month (or even once a week) creates a black hole, not a quick and effective fix for problems.
6. Give the committee the tools to do their work. They need member time, funding, clerical support, and other resources.
7. By all means, do not let committee members become the enforcers. Enforcement must fall to management. One possible exception to this rule is when you have a behavioral safety approach fully and properly implemented. Then, and only then, can you have line people involved (along with management) in rewarding and coaching behavior related to safety.
8. Ensure the committee has a process to follow which is just like all the other organizational committees. It's not a place to let people gather so it can be said a committee exists. It is a place where important business must be done. Look at how committees are used for quality or operations. Use them as a model.
9. Consider the NLRB rulings on safety committees. Ask your human resources staff to help, or have a labor relations attorney review the mission and organization of the committee.

10. Build in some measures of committee success. Know when it's working. If it doesn't, make adjustments.

We've covered many tips, tools and pitfalls of employee involvement. Now let's look at the OSHA indicator and attributes of excellence.

Indicator 5—Employee Involvement

Indicator Description—Provide for and encourage employee involvement in the structure and operation of the program and in decisions that affect their safety and health, so that they will commit their insight and energy to achieving the safety and health program's goal and objectives.

Attributes of Excellence

A. Employees accept personal responsibility for ensuring a safe and healthy workplace.

B. The employer provides opportunities and mechanism(s) for employees to influence safety and health program design and operation.

C. There is evidence of management support of employee safety and health interventions.

D. Employees have a substantial impact on the design and operation of the safety and health program.

E. There are multiple avenues for employee participation.

F. The avenues are well known, understood, and utilized by employees.

G. The avenues and mechanisms for involvement are effective at reducing accidents and enhancing safe behaviors.

Most of the attributes are pretty straight forward, but the multiple avenues for participation (E) might need a bit of explanation.

A safety committee is one avenue, but committee members don't represent others, just themselves. To represent others puts you in an awkward position with respect to the NLRB.

Other avenues need to be open to those not on the committee, such as an open door policy that allows anyone to walk into your office to discuss safety ideas and concerns.

Suggestion systems are another avenue.

Task teams that do workplace inspections can allow others to participate in the process. All the work necessary to achieve goals and objectives opens a number of avenues for those who may want to do some quiet behind-the-scenes work.

Once identified, the avenues need to be publicized and people must be encouraged to use them.

Too often, people may try one approach and find that the response is ineffective or distasteful for them. Workers talk to one another. Soon, others feel the same way.

Back to performance management and positive reinforcement. Even if you can't use the input this time, be sure to give a strong message of appreciation for the input and actively seek that person's involvement in the future.

I've given you a number of points to consider in this chapter, but I've only scratched the surface. To examine involvement and empowerment in greater detail, do some reading in some of the excellent business texts available.

One book that I heartily recommend is **ZAPP! The Lightning of Empowerment** by Bill Byham.[35] Byham takes you on a journey through a fictional operation and lets you discover what you need to do. The book is an eye-opener.

The mantra: believe in people!

[35] Byham, W. C., *ZAPP! The Lightning of Empowerment,* Development Dimensions International Press, Pittsburgh, 1989.

8

Program Review

In This Chapter:

Selecting program components
Verifying effectiveness
Audits
Legal issues
Attributes
Perception surveys

No matter how much time and resources have been spent putting together a safety process, it must be reviewed periodically. The review is not a demanding process and there are two simple goals for the review:

1. To verify that components and approaches have been chosen that are most likely to be effective in the organization given its culture, climate, and people.
2. To verify that the chosen components are actually doing what was intended.

Look at the first reason—the right components.

Imagine that you want a new car—the best possible car you can get. You go to the local auto parts supplier and ask for the best transmission and the best engine and the best brakes and lights and stereo and…you get the idea. You're going to build that best possible car using the best individual components made today.

Now, imagine the end result.

Every piece will be mismatched and potentially incompatible. Components won't fit. The car probably won't run. It won't even look good. Using the best parts available without a master plan will result in a useless but very expensive automobile.

An amazing number of companies build safety processes just like that car. They get what they think are the best components, but they don't fit together and they don't work.

I've seen it. Safety videos that don't fit your business. Training no one can apply. Incentive programs that discourage injury reporting. Machine guards that employees remove. Job safety analyses that are a joke.

What a shame! Lots of expensive pieces, but no one thought to look at the big picture. Another failed safety effort.

This is where the value of program review becomes obvious. Program review helps make sure all the pieces are high quality and that they fit together in a sensible way.

The OSHA Safety and Health Program Management Guidelines are one source of quality pieces with a good fit. While they provide excellent direction, they still allow for flexibility to fit your company culture.

Trade associations, professional safety organizations and private sector vendors have created their own guidance documents for a comprehensive safety and health process. There are differences, but generally, they are more similar than not. Most people who understand safety agree on what the effective pieces look like.

Benchmarking is another way to find what works. Books have been written on benchmarking, so I won't go into detail here, but I will offer a couple of ideas.

Send a small team to other local companies on exchange safety visits. Call the owner/ manager first and reach a basic understanding about sharing information. Competitive information is off the table, but most responsible companies agree that safety should not be a competitive issue. Focus on the culture and processes for management, not technology and work methods.

Local employer's association, chambers of commerce, or trade groups can set up a safety benchmarking process within the organization. Surveys of members on effective safety initiatives already in use may be helpful. Don't discount telephone surveys.

Participate in local meetings of safety groups—or send your human resources manager or safety coordinator. Attend a safety conference and listen to successes speakers offer that have worked at their company.

There are many excellent safety and health magazines and journals available. Subscribe. Many are free and some also have good content on their Internet web site. Check in the resources chapter of this book for titles and subscription information.

After completing the research, trust your instincts. Build in pieces with which you've had good experience or that appear to mesh with your culture and style of operation.

You must step back and look at the interaction between the components. Make sure things are additive and complementary, not competing.

Now for the second part of the review process: make sure the selected components actually do what you want them to do.

Success verification can take several forms. You can do it all yourself—assuming that you have sufficient knowledge and expertise in-house to do the job.

You can call in a consultant to do the assessment. For a company of one or two hundred employees, a good review should take somewhere around eight hours for the safety part, depending on the complexity of the operation.

Written reports and detailed recommendations will require additional time. Also additional will be the industrial hygiene part of the review. This may require sampling for noise, ventilation, chemical exposure, radiation, and more and that is a time consuming process—but necessary to ensuring that your program is covering all the health issues.

The cost for a consultant will vary from nothing to several hundred dollars. The no-cost services can come from state consultation services that are funded largely by federal OSHA. Generally, state consultants assist employers with fewer than 250 employees at a single site and no more than 500 within the company.

Many insurance carriers also offer loss prevention services at no cost to insureds. Actually, both services do cost. OSHA values the cost of the state consultation service at $1,000 per day paid by taxes. The insurance company builds its cost into premiums.

OSHA consultants will use the OSHA guidelines as the basis for their evaluation. Insurance company consultants and other private consultants will use whatever criteria they have found effective. Their criteria, you must understand, may differ from what you've selected and you'll have to resolve any differences.

If you want to do your own program review but don't have all the necessary expertise, you can purchase audit or assessment packages from a number of vendors. Generally, these will take you through a detailed series of questions and result with a score or percentage of full implementation.

Use caution!

Do not plunk down thousands of dollars for a slick off-the-shelf audit without doing a careful review of the material and talking with others who have used it. I have a three-inch thick binder from one company filled with every imaginable safety process component down to the tiniest detail. There's enough material to make your eyes hurt and your mind fog over. Some pieces may actually be very good and fit the company. But no company has the time or resources to do everything suggested in this binder—and it is not needed.

Remember, your program's success should be judged—over time—against your criteria, no one else's.

Larger companies often do exchange audits—sending a team from one plant or corporate office into another operation to review the program. Some trade associations and business groups have established universal safety criteria. Independent consultants do program reviews using criteria they've established. All of it may be good as long as you agree with the criteria used.

But what's more likely is that what you get is a long list of work items needed to come into compliance with the auditors criteria, not yours. You don't need that. That's why I prefer the OSHA guidelines.

Notice that the guidelines are short—just 25 indicators. Even with attributes of excellence added, there are only 150 items. Modify if you like, but keep it short. You neither need—nor want—language that specifies every step of the process with excruciating detail.

Audit follow-up is critical! Fix what you find on the audit or program review. For legal and practical reasons, strong follow-up and feedback must be part of any audit system. The most common shortcoming of audit programs today is that they fail to ensure that problems identified are addressed in a timely and systematic fashion.

Robert Gombar, a Washington (DC) lawyer, says that all but the smallest companies can benefit from an audit. However, if you're not willing to fix problems that are uncovered, don't do the audit! Findings that aren't closed are "a roadmap or blueprint for liability."[36]

Attorneys and safety managers are mixed on whether to remove corrected items from the audit report. Some say leave it as long as things are corrected as a reminder to people to look for other items. One large company gives management 60 days to correct deficiencies before the final report is issued.

There is common agreement, however, to simply state facts and avoid saying that a finding is a violation of OSHA, admitting to an unnecessary liability. Avoid unnecessary exaggerations and inflammatory language. Give facts, and limit distribution of the report to those who need to take action.

OSHA has historically said it wants to look at internal safety and health audits if it makes a visit to your workplace. Such a threat can tend to put a damper on any enthusiasm to do program reviews.

Recently, however, OSHA has recognized that such a policy runs head on into the intent of the guidelines to do self-assessments and on October 6, 1999, published a policy statement which kept it's options open but relaxed the threat.[37]

Now, there will be no routine request for voluntary self-audits. Nor will audit reports be used as evidence of willfulness. The audits may qualify for a reduced penalty of up to 25% for good faith.

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[36] LaBar, G., After the audit, *Occupational Hazards,* Penton Media Inc., Feb 1994

[37] OSHA trade news release, Oct. 6, 1999

Obviously, OSHA can still exercise its options in bad situations—and I expect they will. Frank White, a Washington (DC) attorney, suggests that any effort by OSHA to use audit data should lead to the following response by companies (short of not doing audits).[38] They should:

- Assume OSHA will look at audits.
- Be careful when pointing out problems since statements can be used to show willful negligence.
- Develop a response plan for every problem and act on it.

Let me put this discussion into perspective. First, make a good-faith effort to do the right things for safety and health. Get your people on-board and begin building trust in each other. Audit—or review the program—because you want to catch any things you overlooked in the effort and get them fixed.

Does this sound like a company in trouble? Of course not! Rarely do good companies doing good things with good intent need to fear the agency.

Worry about OSHA searching out your internal audits when your organization is in turmoil and you and your supervisors are unresponsive. Workers are untrusting of management. Hazards are everywhere and people have given up.

Now let's look at what the guidelines suggest for program review.

Indicator 9—Program Review (Quality Assurance)

Indicator Description—Review program operations at least annually to evaluate their success in meeting the goal and objectives, so that deficiencies can be identified and the program and/or the objectives can be revised when they do not meet the goal of effective safety and health protection.

Attributes of Excellence

A. The safety and health program is reviewed at least annually.

B. The criteria for the safety and health program review is against the OSHA Safety and Health Program Management Guidelines or other national consensus criteria in addition to the facility goal and objectives and any other facility-specific criteria.

C. The review samples evidence over the entire facility or organization.

D. The review examines written materials, the status of goals and objectives, records of incidents, records of training and inspections, employee and management opinion, observable behavior and physical conditions.

E. Review is conducted by an individual (or team) determined competent in all applicable areas by virtue of education, experience, and/or examination.

F. The results of the review are documented and drive appropriate changes or adjustments in the program.

G. Identified deficiencies do not appear on subsequent reviews as deficiencies.

H. A process exists which allows deficiencies in the program to become immediately apparent and corrected in addition to a periodic comprehensive review.

I. Evidence exists which demonstrates that program components actually result in the reduction or elimination of accidents.

[38] OSHA Update, Does OSHA want your audits, *Occupational Hazards,* Penton Media Inc., Nov 1993

Some of the attributes require additional discussion.

Notice that the measurable criteria for the review are against the OSHA guidelines or other national consensus criteria in addition to the facility goal and objectives and any other facility-specific criteria (B). We discussed establishing criteria that fit your culture and organization earlier in the chapter. This is the additional piece that says check progress toward meeting goals and objectives and completing other company initiatives in addition to the broader, widely accepted criteria.

Obviously, the reviewer or review team will need to have access to the goals and objectives and any consensus criteria used. This isn't secret stuff. If you've got many people involved and progress is posted and charted as we suggested in the accountability section of Chapter 6, it will be easy for the reviewer(s) to see what you planned on doing and verify your activity.

Sampling evidence across the entire facility or organization (C) is necessary to keep this effort from becoming very long and unnecessarily expensive. There is no need to interview every one of your 100 or 200 employees. I normally find a 15 to 20 percent sample of people and paperwork plus closer focus on critical records or operations is sufficient.

Attribute D suggests the components or an audit of assessment. Physical evidence, paper work, required records, and opinions and perceptions are all fair game in this process. Also, here's where you can use a potentially valuable tool. It's called the *Safety and Health Opinion Survey* (Form 8.1) and is located at the end of the chapter.

Perception surveys are widely used these days. You may have some experience with them. Employer's and human resources organizations, college and university researchers, and many private sector vendors offer them as a way of finding out how employees feel about certain aspects of work.

The *Safety and Health Opinion Survey* is based on a form I developed for federal OSHA in 1994 called the *Safety and Health Program Assessment Worksheet*. Also known as the OSHA Form 33, the worksheet is used by OSHA consultants to evaluate and score companies with which they are working on the degree that they have implemented the Safety and Health Program Management Guidelines.

The worksheet offers a total score of zero to 100. It is heavily weighted toward employee involvement, so a score of 25 or less suggests little employee involvement and generally minimal safety efforts in most of the 25 indicators in the guidelines. Scores between 25 and 50 indicate some level of involvement. Between 50 and 75, a majority of people are involved in the company safety effort. Above 75 suggests involvement and safety efforts are nearing excellence.

While widely used and generally considered to reflect the intent of the guidelines, the form has not been validated. In other words, scientific evidence is not available which proves that a higher score means a company is better at safety than one with a lower score. Anecdotal evidence strongly suggests such a relationship, but it's not proven.

Since such proof is desirable for a federal safety form, academic researchers have been working on a validation effort since late 1997. A revised form, which combines elements of the Form 33 and the attributes of excellence, will eventually be issued.

Back to the opinion survey.

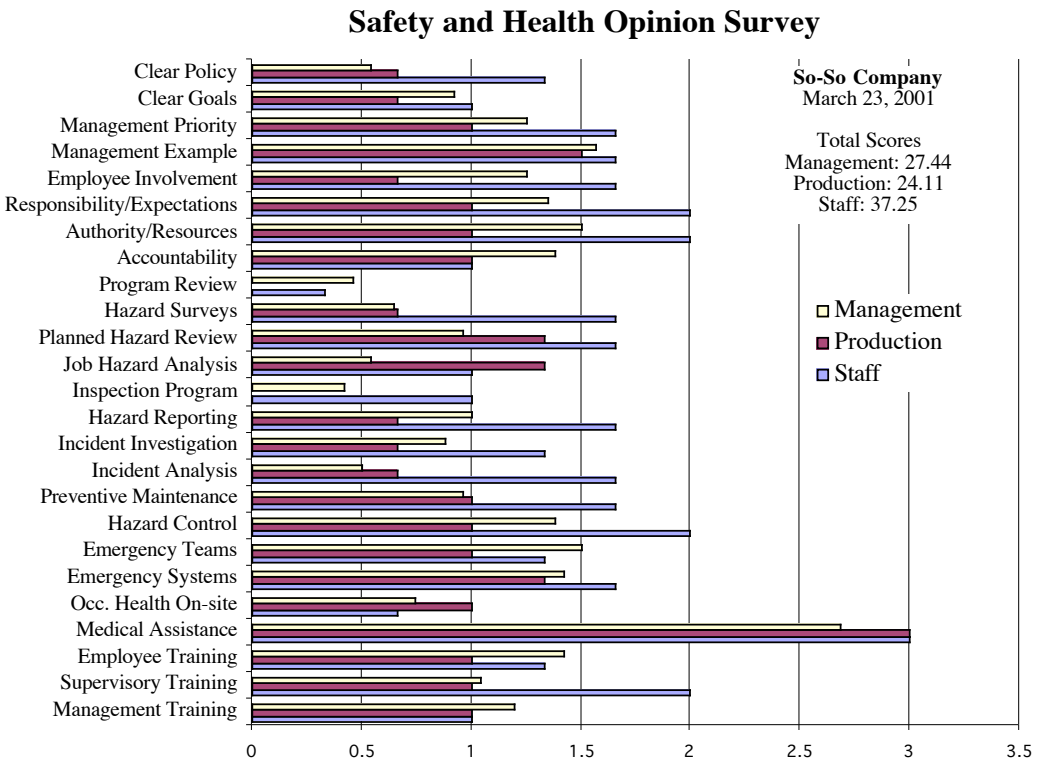
The language on the survey is identical to that in the Form 33. Lines on which consultants could make notes have been removed, but the text is the same. In this shorter format, it's easy to make copies and give it to all or a sampling of your people so that they can score your efforts at putting the guidelines in place. Notice at the top of the form that boxes are available for people to check their position or work category.

People sometimes say that they either do not understand some of the language on the form or they don't know enough to answer. That's okay. On a perception survey, lack of awareness or understanding of a topic is also telling. Clearly, they are not involved.

Don't worry about the scores. The form the auditor or reviewer completes may be fairly close to reality, but that's not the intent of an opinion survey. The value here is to determine how differently managers, line, and staff see things. It's called the perception gap.

For each group of people taking the survey, compute the average scores on each of the 25 items and plot the averages. As you see in Figure 8.1, there is typically some variance between the groups. Where the variance is wide, there are widely different understandings about the same subject. Now is an opportunity to get the participants around a table and talk about the reasons for the difference.

Figure 8.1



You might find, for example, that the effort you and the safety committee put into goals and objectives never reached the majority of employees. You might think that your hazard reporting system works just fine and that most of the hazards are corrected, but your people believe that they will get into trouble reporting hazards and they don't trust the system.

As I suggested above, the survey is a discussion starter. When you first use it, it may make you somewhat uncomfortable. Don't get defensive. Stay open and listen to what people say. Act on the input. Make adjustments to efforts and program elements.

After a while, conduct another survey—then another. Now you can plot the scores (more on this in Chapter 10) and display them for your people to see. Keep closing gaps, if necessary, but it's more likely that the perceptions will be closer and closer together as everyone becomes more aware of, and involved in, the safety improvement effort.

Back to the attributes.

(E) Illustrates the need for team competence. You'll notice here that broad skills are necessary on the part of the reviewer(s). The ability to scan records for important information and clues, observe key safety behaviors and physical conditions, and develop a comfortable and open questioning style are characteristics you'll need from both in-house and external members. They also need a high degree of technical and professional competence.

It may be difficult for you to tap this talent internally. It's not that you don't have good people. It's just that education in safety and health, considerable practical experience, and sometimes, professional certification are necessary to do an effective job. Program review for safety and health needs to be staffed the same way you would approach assigning finance, engineering or human resource tasks.

Once the review is completed and documented, necessary adjustments and changes must be made (F) and steps taken to ensure that any deficiencies don't occur in the next review (G). This reintroduces responsibility, authority, resources and accountability. It also makes sure that you are truly making progress, not just spinning your wheels covering the same ground.

Now let's look at (H) and the need to fold safety and health improvements into the process for quality management.

The program review step is the critical component that tells you that efforts are *really* making a difference in assuring a safe workplace. But program review isn't just something that gets done on a schedule. Nor is it an end in itself.

The more the review fits into a cycle of continuous improvement—as with quality management—and actually results in adjustments and corrections to efforts, the more effective it will be in keeping the safety process working at peak efficiency.

Program review becomes less important as the safety and health process and workplace culture improves.

If everything is working and people are empowered and motivated to solve problems when they crop up, program review will uncover few surprises. Do it anyway, but don't look at it as the grand solution to all problems.

Safety and Health Opinion Survey

Company/Organization _____

Please check appropriate box: ❑ Manager/Supervisor ❑ Line/hourly personnel ❑ Staff personnel

Safety and health needs to be a key element of operations at our facility. To help us know how we're doing, what improvements we need to make, and how far we have to go, we'd like to have you *circle* or *mark* the level you think we're at in each of the following 25 areas. When you're done, return this form to Human Resources. But, *don't* put your name on it. All responses are anonymous. When we get all the forms back, we'll give you a summary of the results and ask you to help us make the improvements necessary to eliminate accidents. Incidentally, the form comes from an approach the federal government recommends. We know there are some things we're not yet doing. ***Thanks for your help!***

I. Management Leadership and Employee Participation

A.	Clear worksite safety and health policy	1. (4) Workforce can explain, and fully embraces, S&H policy (3) Majority of personnel can explain policy (2) Some personnel can explain policy (1) Management can provide or state (where appropriate) a policy (0) There is no apparent policy
B.	Clear goals and objectives, set and communicated	2. (4) Workforce fully embraces goal, and can explain desired results and measures for achieving objectives (3) Majority of personnel can explain desired results and measures for achieving them (2) Some personnel can explain desired results and measures for achieving them (1) Management can provide or state (where appropriate) a goal and objectives (0) No apparent safety and health goal or objectives
C.	Management leadership	3. (4) All personnel can give examples of management's active commitment to safety and health (3) Majority of personnel can give examples of management's active commitment to safety and health (2) Some personnel can give examples of management's active commitment to safety and health (1) Some evidence exists that management is committed to safety and health (0) Safety and health does not appear to be a management value or significant concern
	Management example	4. (4) Personnel report management always follows the rules and addresses the safety behavior of others (3) Management follows the rules and usually addresses the safety behavior of others (2) Management follows the rules and occasionally addresses the safety behavior of others (1) Management generally appears to follow basic safety and health rules (0) Management does not appear to follow the basic safety and health rules set for others
D.	Employee involvement	5. (4) All personnel have ownership of safety and health and can describe their active roles (3) Majority of personnel feel they have a positive impact on identifying and resolving S&H issues (2) Some personnel feel they have a positive impact on identifying and resolving S&H issues (1) Employees frequently feel that their safety and health input will be considered by supervision (0) Employee involvement in safety and health issues is not encouraged or rewarded
E.	Assigned safety and health responsibilities	6. (4) All personnel can explain what performance is expected of them and all elements appear to be assigned (3) Majority of personnel can explain what performance is expected of them (2) Some personnel can explain what performance is expected of them (1) Evidence exists that performance expectations are generally spelled out for all personnel (0) Specific job responsibilities and performance expectations are generally unknown or hard to find
F.	Authority and resources for safety and health	7. (4) All personnel believe they have the necessary authority and resources to meet their responsibilities (3) Majority of personnel believe they have the necessary authority and resources to do their job (2) Authority and resources are spelled out for all; but there may be a reluctance to use them (1) Authority and resources exist, but most appear to be out of the control of the employee (0) Personnel do not appear to have adequate authority and resources to perform assigned responsibilities
G.	Accountability	8. (4) Personnel are held accountable and all performance is addressed with appropriate consequences (3) Accountability systems are in place; but consequences used tend to be for negative performance only (2) Personnel are generally held accountable; but consequences rarely follow performance (1) Accountability exists, but it appears to be generally hit or miss and prompted by serious negative events (0) There does not appear to be any effort at accountability

H.	Program review (quality assurance)	9. (4) In addition to a comprehensive review, a process is used which drives continuous correction (3) A comprehensive review is conducted at least annually and drives appropriate program modifications (2) A program review is conducted, but does not appear to drive all necessary program changes (1) Changes in programs are driven by events such as accidents or compliance activity (0) There is no evidence of any program review process

II. Workplace Analysis

A.	Hazard identification (expert survey)	10. (4) In addition to corrective action, regular expert surveys result in updated hazard inventories (3) Comprehensive expert surveys are conducted periodically and drive appropriate corrective action (2) Comprehensive expert surveys are conducted; but updates and corrective action sometimes lags (1) Qualified safety or health experts survey in response to accidents, complaints, or compliance activity (0) There is no evidence of any comprehensive expert hazard survey having been conducted
	Hazard identification (change analysis)	11. (4) In addition to team analysis, employees affected are involved in all reviews (3) A review of all planned/new facility, process, material, or equipment is conducted by a competent team (2) Planned/new facilities, processes, materials, or equipment considered high hazard are reviewed (1) Hazard reviews of planned/new facilities, processes, materials, or equipment are problem driven (0) No system or requirement exists for hazard review of planned/new operations
	Hazard identification (routine hazard analysis)	12. (4) In addition, employees have had input to the analysis for their jobs (3) A current hazard analysis exists for all jobs, processes, or phases and is understood by all employees (2) A current hazard analysis exists for all jobs, processes, or phases and is understood by many employees (1) A hazard analysis program exists; but few are aware of results (0) There is no routine hazard analysis system in place at this facility
	Hazard identification (inspection)	13. (4) Well trained employees at all levels conduct frequent and varied inspections, hazards of any kind rare (3) Inspections are conducted by trained personnel and all items are corrected, repeat hazards seldom found (2) Inspections are conducted by trained personnel, most items corrected; but some hazards still in evidence (1) An inspection program exists; but coverage and corrective action is not complete; hazards are in evidence (0) There is no routine inspection program in place at this facility; many hazards can be found
B.	Hazard reporting system	14. (4) In addition, employees feel comfortable identifying and self-correcting hazards. (3) A comprehensive system for gathering hazard information exists; is positive, rewarding, and effective (2) A system exists for hazard reporting; employees feel they can use it; but it may be slow to respond (1) A system exists for hazard reporting; but employees may find it unresponsive or be unclear on its use (0) No formal hazard reporting system exists and/or employees do not appear comfortable reporting hazards
C.	Accident/incident investigation	15. (4) All loss-producing incidents and "near misses" are investigated for root cause with effective prevention (3) All OSHA-reportable incidents are investigated and effective prevention is implemented (2) OSHA-reportable incidents generally investigated; cause identification /correction may be inadequate (1) Some investigation of incidents takes place, but root cause is seldom identified, correction is spotty (0) Injuries are either not investigated or investigation is limited to report writing required for compliance
D.	Injury/illness analysis	16. (4) In addition, all employees are fully aware of incident trends, causes, and means of prevention (3) Trends fully analyzed and displayed, common causes communicated, management ensures prevention (2) Data is centrally collected and analyzed; common causes communicated to concerned supervisors (1) Data is centrally collected and analyzed; but not widely communicated for prevention (0) Little or no effort is made to analyze data for trends, causes, and prevention

III. Hazard Prevention and Control

A.	Timely hazard control	17. (4) Hazard controls fully in place, known to and supported by workforce, with concentration on engineering controls and reinforced/enforced safe work procedures (3) Hazard controls fully in place with priority to engineering controls, safe work procedures, administrative controls, and personal protective equipment (in that order) (2) Hazard controls fully in place; but order of priority variable (1) Hazard controls are generally in place; but priority and completeness varies (0) Hazard control is **not** considered complete, effective and appropriate in this facility

B.	Facility/ equipment maintenance	18. (4) Operators are trained to recognize maintenance needs and perform/order maintenance on schedule (3) An effective preventive maintenance schedule is in place and applicable to all equipment (2) A preventive maintenance schedule is in place and is usually followed except for higher priorities (1) A preventive maintenance schedule is in place; but is often allowed to slide (0) There is little or no attention paid to preventive maintenance; break-down maintenance is the rule
C.	Emergency planning and preparation	19. (4) All personnel know immediately how to respond as a result of effective planning, training, and drills (3) Most employees have a good understanding of responsibilities as a result of plans, training, and drills (2) There is an effective emergency response team; but others may be uncertain of their responsibilities (1) There is an effective emergency response plan; but training and drills are weak and roles may be unclear (0) Little effort is made to prepare for emergencies
	Emergency equipment	20. (4) Facility is fully equipped for emergencies, all systems and equipment in place and regularly tested, all personnel know how to use equipment and communicate during emergencies (3) Well equipped with appropriate emergency phones and directions, most people know what to do (2) Emergency phones, directions, and equipment in place; but only emergency teams know what to do (1) Emergency phones, directions, and equipment in place; but employees show little awareness (0) There is little evidence of an effective effort at providing emergency equipment and information
D.	Medical program (health providers)	21. (4) Occupational health providers regularly on-site, fully involved in hazard identification and training (3) Occupational health providers there when needed and generally involved in assessment and training (2) Occupational health providers are frequently consulted about significant health concerns (1) Occupational health providers available; but normally concentrate on clinical issues (0) Occupational health assistance is rarely requested or provided
	Medical program (emergency care)	22. (4) Personnel fully trained in emergency medicine are always available on-site (3) Personnel with basic first aid skills are always available on-site (2) Personnel with basic first aid skills are usually available with community assistance near-by (1) Either on-site or near-by community aid is always available on every shift (0) Neither on-site nor community aid can not be ensured at all times

IV. Safety and Health Training

A.	Employees learn hazards, how to protect themselves and others	23. (4) In addition, employees can demonstrate proficiency in, and support of, all areas covered by training (3) Facility committed to high quality employee hazard training, ensures all participate, regular updates (2) Facility provides legally required training, makes effort to include all personnel (1) Training is provided when need is apparent, experienced personnel assumed to know material (0) Facility depends on experience and informal peer training to meet needs
B.	Supervisors learn responsibilities and underlying reasons	24. (4) All supervisors assist in worksite analysis, ensure physical protections, reinforce training, enforce discipline, and can explain work procedures, based on training provided to them (3) Most supervisors assist in worksite analysis, ensure physical protections, reinforce training, enforce discipline, and can explain work procedures, based on training provided to them (2) Supervisors have received basic training, appear to understand and demonstrate importance of worksite analysis, physical protections, training reinforcement, discipline, knowledge of procedures (1) Supervisors make reasonable effort to meet safety and health responsibilities; but have limited training (0) There is no formal effort to train supervisors in safety and health responsibilities
C.	Managers learn safety and health program management	25. (4) All managers have received formal training in S&H management and demonstrate full understanding (3) All managers follow, and can explain, their roles in S&H program management (2) Managers generally show a good understanding of their S&H management role and usually model it (1) Managers are generally able to describe their S&H role; but often have trouble modeling it (0) Managers generally show little understanding of their S&H management responsibilities

Are there any general comments, observations, or suggestions about safety and health you'd like to make? If so, please write your comments on the other side of the paper.

Form 8.1

9

Hazard Identification and Reporting

In This Chapter:

Baseline survey
Change analysis
Routine hazard analysis
Inspections
Employee hazard reporting

The last three chapters dealt with management leadership, employee involvement and the foundation part of the safety and health process. Now you know your role and what tools and techniques are available for getting people involved and keeping the process on track.

The program review reiterated that safety is much more than a one-person show.

Now let's consider more traditional safety and health activities, but with a fresh and somewhat expanded view.

People sometimes find hazard identification and reporting an end product. Conducting inspections and listening to employee complaints are the total safety effort in some facilities.

I was doing training for managers and supervisors. The company president dropped in for a brief "show of support" just as I said something about fighting brushfires.

We took a break shortly after that and he came up to me on his way back to his office. With, some pride, he said that he and his management team managed their way through somewhere around a dozen crises a day.

A dozen a day!? Once every forty minutes they dropped what they were doing to solve an unplanned crisis!

Imagine what they could accomplish if they had an effective process in place to correct problems before they jumped to the top of the To Do list.

I spent a week at another fairly large facility. As I talked with people about safety, they all told me how responsive management was to hazards and problems.

"Just the other day" one fellow told me, "a guy lost three fingers and management jumped in right away to find a fix to the cause!"

Feel a little sick from that story?

I am not the least bit impressed with responsive and reactive management. Being compassionate at the hospital and fixing the problem after the fact is the lazy way out. It doesn't take talent or foresight. All it means is that you can no longer avoid a situation.

Go after hazards and concerns before they hit you between the eyes. Anticipate. Poke at things. Dig into corners. Ask "why?" a hundred—a thousand—times!

Be an investigator. Look and listen for clues. Find problems and potential concerns before they grow. Now I'm impressed!

Once you find the problems, you're still not done. Hazards take you in two directions. One direction is toward the physical fix—the OSHA solution. The regulations and standards promulgated by the agency will often describe what's needed to eliminate that hazard.

The other direction is back into element One of the guidelines—to management commitment and employee involvement—and to the safety and health system.

Hazards point to deficiencies in the process. They tell you that maintenance is lacking, that training wasn't delivered or someone didn't grasp what was said, or maybe that a supervisor isn't fixing problems found on inspections.

This is a very basic process. A hazard opens a window into your safety and health system. Take a good look at what you see and fix what you find. If you do, you'll get fewer hazards and concerns and safer people and behaviors.

Now let's look at some of the tools available to find hazards.

Baseline Survey

Have you ever had a household sale? Maybe someone in the family died or moved after spending a lifetime in the same house and you were left with the responsibility of cleaning out the premises. Were you overwhelmed with the sheer quantity of stuff?

How did you determine values? Some family members may have had helpful information about some favorite pieces but contents of the attic, basement, trunks, and the backs of closets and cupboards were probably long forgotten by everybody.

Finally, in desperation, did you call in professional dealers and appraisers? It usually takes a team of specialists to separate junk from treasures and to determine current values.

So it is with hazard identification in the workplace. People get complacent with hazards that are around them every day. The risks become invisible, a byproduct of familiarity. It may be time to call in the experts.

An initial expert survey provides a baseline of hazards, risks and concerns. If it is part of an on-going process, it updates technical and professional information and educates those who are new to the operation so that hazard control and elimination can be effectively applied.

While company people can do an expert survey, safety engineers, industrial hygienists, and occupational health providers are the trained experts. They have professional training, broad experience, and certification (in many cases) and can spot things that workers and supervisors miss.

They can effectively raise the total level of awareness at the facility. Such experts can come from corporate offices, state consultation programs, private firms, insurance companies, and other local resources.

With the expert survey results, company personnel can now build improvement activities of their own into the safety and health action plan. They can watch for these and similar hazards when processes and operations change. They can use the information to train new members of the workforce and contractors, and to prepare personal protective equipment and emergency management plans.

While the same people may be involved in this effort as were in the program review, there are slight differences. The program review looks at the process and safety system while the expert survey looks at the physical workplace and the hazards it contains.

This may sound suspiciously like an inspection. It is not. It is actually an educational process for your people.

Understanding hazards changes as scientific knowledge around them expands. Using scientific knowledge and measurement, experts can move you and your staff from your present base point to a better understanding of risks and hazards—actual and potential.

Hazards can be physical, chemical, biological, and ergonomic. The expert survey can look at physical issues and determine, for example, if machine guards meet standards and maximum access measurements or if noise is at an acceptable level.

Chemical analysis can measure quantities in storage and airborne concentrations of vapors and dusts.

Ergonomic hazards are the growth area in the safety business and this expert can help you identify musculoskeletal disorder (MSD) potential and psychological issues.

The expert survey is like having a soil analysis done for your garden so you'll know how to improve plant growth and production. It's like seeing your family physician for a full health work-up or having a financial advisor review your retirement package.

It answers the question "where are we today and what's our baseline?" Once you know the answer, you can use other processes—such as inspections and employee hazard reports—to stay apprised of progress until it's time to take more measurements.

This is not a complicated process. The experts will do most of the work for you, but you do have some responsibilities as the guidelines and attributes show.

Indicator 10—Hazard Identification (Expert Survey)

Indicator Description—So that all hazards are identified: Conduct comprehensive baseline worksite surveys for safety and health and periodic comprehensive update surveys.

Attributes of Excellence

A. The surveys are completed at appropriate intervals, with consideration to more frequent surveys in more hazardous, complex, and highly changing environments.

B. The surveys are performed by individuals competent in hazard identification and control, especially with hazards that are present at the worksite.

C. The survey drives immediate corrective action on items found.

D. The survey results in optimum controls for hazards found.

E. The survey results in updated hazard inventories.

Notice that this is not a one-time process. Yes, the result is an immediate baseline but you will need help to stay current. It's like going to a physician for periodic blood work. You can manage your overall health, but you need regular readings or health indicators.

Attribute A suggests that surveys be done at "appropriate" intervals. Between you and the experts, you need to decide what is appropriate for your business.

On a construction site, things change daily and a fresh expert eye may be needed weekly or monthly. In manufacturing or business, it's possible that things change very little over time. The survey can be annual or even every two or three years.

Remember this, however—age happens. Machinery wears and makes more noise. Seals open and leak. Filters clog. People retire and get replaced. Change is constant even if we don't see the progress and often goes undetected.

Excellence—and liability—requires that you correct or control any items found to be out of tolerance or in violation with standards © and that you use "optimum" controls. In other words, use the most effective control practical.

Finally, update hazard inventories (E). You must be able to tell your employees and compliance personnel about the hazards present in the workplace. The best way to do that is with a hazard inventory. If you're in the chemical manufacturing or handling business, you may be required by regulations to keep chemical inventories. Here's a basic example of such a form (Figure 9.1).

Hazard Inventory

Facility/Location:

This inventory is the result of a hazards analysis conducted at this facility during (month/year) _____ and lists those materials, in order of potential impact, that could cause harm to people, property, or the environment in the event that control measures fail.

Chemical/Process	How Stored	Largest Container	Usual Quantity in Storage	Major Storage Locations	Safe Distance During Emergency

Figure 9.1

Hazards by themselves are not a problem. Not appropriately controlling them is. They are everywhere but so too are effective ways of handling them.

Every day, American workers form, mold, fabricate and mix metals, plastics and chemicals and other materials using heavy machines, sharp blades and lots of pressure. Yet most workers avoid injury because they are using effective hazard controls.

List your hazards. Awareness of them is critical to keeping them in control.

Change Analysis

In the global marketplace, things change constantly. Today you have a baseline survey, knowledge of risks and hazards and believe that you and your workers are in control of them. But what about tomorrow? You've got to have a process that ensures rapid reaction to change.

With change comes uncertainty. How will a new approach work? Is it the best choice? Will it be safe? While a new process, new materials or tools, or an entirely new operation may look good, only a thorough review will tell what new elements are the best, most efficient, or safest.

If you are investing in a new home, you'll probably check out the neighborhood, talk with neighbors, have a reliable contractor look at the structure, ask about the neighborhood school, have a title search performed, and talk with your family about their needs and concerns.

In the workplace, we do the same thing to help remove as much risk as possible and ensure that unknowns don't crop up later. Surprise risks are impediments to a safe, high quality process and costly to correct. This is the essence of change analysis.

It is like preventive maintenance. Examine each new process, job, building, material, equipment, etc. while it's still in the conceptual stage. Corrective costs are lower and problems far less complicated.

Time after time, companies that didn't do an adequate job of early planning had huge expenses retrofitting. For example, having the equipment manufacturer install a factory guard is far less expensive than having your in-house shop design and fabricate one.

Let's step through the attributes and consider some of the details of change analysis.

Indicator 11—Hazard Identification (Change Analysis)

Indicator Description—So that all hazards are identified: Analyze planned and new facilities, processes, materials, and equipment.

Attributes of Excellence

A. Operational changes in space, processes, materials, or equipment at the facility are planned.

B. Planned operational changes are known to responsible management and affected workers during the planning process.

C. A comprehensive hazard review process exists and is used for all operational changes.

D. The comprehensive hazard review process involves competent, qualified specialists appropriate to the hazards anticipated and the operational changes being planned.

E. Members of the affected workforce actively participate in the comprehensive hazard review process.

F. The comprehensive hazard review process results in recommendation for enhancement or improvement in safety and health elements of the planned operational change that are accepted and implemented prior to operational start-up.

First, make sure there is a planning process (A). Usually, planning gets the lowest score on the safety and health practices survey. Commonly, someone is assigned the task of making the change happen and somehow it gets done. No time to look at options and concerns and get others involved. Just do it!

Notice the language of this first attribute. "…space, processes, materials, or equipment…" are all fair game.

Does space just seem to fill up? Does a supervisor simply say "put it there?" Or do you actually consider the best use of space and think about the optimum flow of materials through the space?

When it comes to materials, the most basic changes can have a huge impact on safety.

If you specify a new finish on a product, components can radically increase health risks. Some floor finishes, for instance, have been known to cause widespread respiratory distress among workers.

New light bulbs can change the nature and intensity of the light they give off and impact both productivity and safety.

The second attribute (B) helps ensure that those impacted know about the planned changes. Time after time when I talk with line employees, I find that the machines and processes they are using just seemed to appear or evolve.

I also find that line employees are amazed at how unaware designers and engineers seem to be about the work process or actual operation. "How do they expect us to work with this machine?" is a common complaint.

It sometimes is not just line employees who are kept in the dark about changes.

I was training a group of supervisors on safety process one day and referred to an architect's rendering for a plant addition. I was making the point about the importance of planning and the opportunity for early constructive input.

The supervisors looked at each other quizzically and told me that this was the first they'd heard about any addition. The company president had told me and I was announcing it to his supervisors. Any chance the process was flawed?

As with so many other things we do for safety, keep the hazard review process simple! All it really means is that you do this:

1. Require that changes in space, processes, materials, or equipment be reviewed.
2. Involve those who are knowledgeable about the space, processes, materials, or equipment under review as well as those who are impacted by it—typically operators and mechanics.
3. Provide data on past experience within your operation as well as with others with similar circumstances.
4. Conduct a review of vendors and suppliers and literature for relevant information.
5. Seat everyone involved around a table and make sure the review involves a frank and open discussion of all the elements, issues and concerns.
6. Using plans, drawings, processes sketches, flow charts, test data—whatever is available—talk through the change in some logical order.
7. Require that the review recommendations be presented to senior management for consideration and appropriate action.

As the project gets more complicated, consider a more complex analysis process. You might find that approaches such as the What-if Checklist, Hazard and Operability Study (HAZOP), Failure Mode and Effect Analysis (FMEA) and Fault Tree Analysis can help. These approaches are beyond the scope of this book, but can be helpful when you get into new and complex territory with many linked elements. You can get more information on them from ***Guidelines for Hazard Evaluation Procedures***, which was prepared by the Center for Chemical Process Safety of the American Institute of Chemical Engineers.

We all have a tendency to complicate the daylights out of much of what we do. If you need HAZOP or FMEA, go for it. But I believe that you can achieve 99.9% of your goals by including all the players with knowledge in your own operation. Unless you're talking about something as technically challenging as changing from waterpower to nuclear energy, you've probably got all the knowledge and experience you need in-house.

Remember this critical fact, when it comes to new stuff, the folks who will use it are usually as smart as the engineers who design it. So get line workers involved every time—and early!

There's a small specialty plastics molding operation near me. They've improved safety dramatically in the last few years.

A fabrication team reviews each new job that a customer brings in. This team will not only do the product molding but will also make sure that fabrication can be done safely. About twice a year, a team will reject a job because it presents undue hazard that they are not equipped to manage. They may request specification modifications to the customer or recommend another shop that is equipped to handle the job.

Smart move—or dumb? Smart—very smart!

Trust is very high within the operation. Safety is exceptional. The empowerment pays off in much better attention to the overall process. And most interesting, customer loyalty is great because the customer knows that a highly educated and knowledgeable team understands their product better than they do!

Routine Hazard Analysis

The typical workplace is complex, even with seemingly simple processes. Human behavior, production or process variables, outside business and natural forces, raw material variables, normal wear and tear, and a multitude of other factors must be dealt with regularly.

We may think that our safeguard systems have created safe and healthful jobs, processes, and work phases. But one or more of the multitude of variables can sneak in and create a hazard—or several hazards.

A system is necessary for routine hazard analysis. No one should wait for a disaster to point to a safety system breakdown. Routine analysis can take most of the uncertainty out of the job.

Let me clear up some potential confusion. Two terms are used interchangeably. One is Job Safety Analysis (JSA). The other is Job Hazard Analysis (JHA). Pick the term you like and use it. The approach is the same. Here it is.

JSA/JHA is the process of taking a close, critical look at each step of a process or operation with an eye toward identifying and correcting the hazards or potential accidents in each step. It's a simple technique which forces a "buy-in" on the part of the people doing the job and ensures that they will do the job the same way—and safely—each time.

As I suggested above, a JSA can also be conducted as part of the planning for a new job or process. Prospective operators can sit in on planning sessions with engineers, designers, technical staff (including safety, environmental, and occupational health), and supervisors and talk through how a new operation should work. This may help predict and eliminate hazards. At this stage, making any design changes or training modifications will be significantly less expensive than debugging or retrofitting later.

The benefits of a JSA conducted on existing jobs are many:

- Accident-causing hazards are eliminated or appropriately controlled.
- The JSA provides a standard, written, carefully considered, safe listing of how to do the job for use in training.
- It allows for refresher instruction on irregular jobs.
- Workers, teams, and supervisors know better how the total job is done.
- Job methods improve, efficiency increases, quality is enhanced—and costs drop.
- The operator is kept involved in safety.

Before the JSA is started, decide who's going to be involved. Ideally, everyone involved with the job should form the project team. This elementary step assures that there is comprehensive input and complete buy-in.

If that's not possible, be sure that those doing the job at least have an opportunity to review and provide input.

It is common for management to require a completed JSA on all jobs in the operation. It's also quite common for subordinate managers and supervisors to cry bloody murder about the time this takes and lack of resources available to conduct the analysis. They're right—if the task is assigned to a single person or to the safety staff. But there's a better way.

A large company asked me to run a series of safety workshops for their managers and supervisors. Job safety analysis was to be a key topic for a very sound reason—all 800 unique jobs at the site were to be covered by completed JSAs by the end of the year.

It was May. Two jobs had been done. Management bonuses depended on doing the other 798 in seven months. The safety staff was overloaded with work already and the supervisors saw the task as overwhelming. My challenge was to make it appear easy.

Here's what I did.

In each training session, I broke the class into groups of five or six. Each group got fifteen minutes to draft a JSA on a workplace or home job they all understood. Most selected mowing the lawn, clearing snow (we're in Upstate New York, after all), or changing a tire.

In all, there were about fifty groups in all the sessions and *every one* had a draft we all agreed was between 80 and 90 percent complete. We also had a lot of fun.

They learned that if you build a team, which already knows the job, you've got nearly all the necessary information sitting around the table.

The group develops a synergy. One comment generates another and another. Agreement on certain key points is rapid, but others lead to some debate about the most effective and hazard-free way to do the step.

When I facilitate JSA sessions for clients, I take a flip chart to the job location and gather available operators, mechanics, and a supervisor. The session starts with "what's the first step in this job" and usually ends 20 to 30 minutes later with all the data filled in.

I clean it up on the computer, give copies to the participants for review and comment, and prepare a final version. Total time is no more than 45 minutes for the team and not much more than that for me.

By the way, the company finished all their JSAs. Fast, painless, and effective.

Now for the steps to complete a JSA. A basic JSA format (Form 9.1) is at the end of this chapter if you'd like to follow along using it.

Step 1: Select the job. Don't make it too broad (making a car) nor too narrow (pushing a button). Those suitable would be ones a line supervisor or team leader would normally assign.

Jobs that most need studying should be analyzed first. For example, those with the worst accident record, those that tend to produce disabling injuries, ones with a high severity potential, new jobs—then others as time permits.

Step 2: Break the job into successive steps. Describe concisely, without too much detail or generalization, what is being done.

Pick operators and others who are experienced and cooperative to help. Tell them that the objective is to study the job, not the individual who performs it, to make it safer. Work through the process asking the team what they do next and why.

Record the observation in the left-hand column using action words (lift, pull, close) and tell what object is receiving the action (lever, cover, arm). Finally, check to be sure that the steps are correct and in the right order.

Step 3: Identify the hazards and potential accidents. For each step in the process, search for all the hazards. Asking some questions may help.

Can anyone be caught in, on, or by objects? Can they slip or trip? Is straining possible? Are there environmental hazards? Is layout or placement a problem? Are tools and equipment adequate and in good repair? Does pain or discomfort come from any step?

Make sure that a change in one step will not create a hazard in another. Once all hazards are identified, check again with the team to be sure they've all had an opportunity to provide their input.

Step 4: Eliminate the hazards. Find creative and effective ways to eliminate the hazards and prevent the potential accidents and deal with them. Find a better way to do the job.

Start with the goal of the job. Work along several routes to the goal finding the one that is not only the safest, but also the most economical and practical.

Change the physical conditions that create the problem. Move something. Change a work height. Relocate a guard. Change the job procedure. Have the job done less frequently if exposure is a problem (especially in maintenance operations).

As with the previous steps, check solutions with the team. Watch one of them in operation. Carefully evaluate whether the steps and actions match the completed JSA. At this stage, it might also be helpful to record the steps on film or video/tape for use in training.

Step 5: Provide management oversight of the process. Build in things that management can and should do to ensure a safe job. Consider behavioral safety observations and coaching. Require a sign-off by a supervisor or co-worker following job set-up. Require a hazards check before job commencement with sign-off by the operator. Assign a safety checker for high potential risk jobs. Require a supervisor to audit the job once or twice a year to verify consistency between job and JSA and assess any necessary changes (similar to the audit of lockout/tagout procedures required by OSHA).

Once the JSA is complete, use it—don't file it. If possible, post it on the job. Many companies use it as the primary checklist for operators and encase the JSA in plastic right at the operators' station. A completed JSA (Table 9.1)—compiled using the approaches we're covered above—is at the end of this chapter. It was posted in just this way.

Review and update it periodically. Consult it whenever an accident occurs on a JSA-covered job and either revise it or insure that the correct procedure is being followed.

Make it an integral part of the job write-up. For example, try consolidating all of the documentation on the job into a single document laid out like the JSA form. Pull in standard operating procedures, quality specifications and notes, other procedures and references. If more than a few pages, put it all in a three-ring binder and have tabs at the back for material safety data sheets, lockout/tagout procedures, confined space procedures, and the personal protective equipment hazard assessment.

Remember, this is a prime area for employee involvement (indicator 5) and management leadership (indicator 3). If leadership and involvement are not in place, JSA or JHA activity will be a technical staff or engineering function, if it's done at all. Common experience says that when tools like this are prepared and given to employees, they are most likely to gather dust.

Here are the attributes for routine hazard analysis.

Indicator 12—Hazard Identification (Routine Hazard Analysis)

Indicator Description—So that all hazards are identified: Perform routine job hazard analyses

Attributes of Excellence

A. Members of management and of the workforce are aware that hazards can develop within existing jobs, processes and/or phases of activity.

B. One or more hazard analysis systems designed to address routine job, process, or phase hazards is in place at the facility.

C. All jobs, processes, or phases of activity are analyzed using the appropriate hazards analysis system.

D. All jobs, processes, or phases of activity are analyzed whenever there is a change, when a loss incident occurs, or on a schedule of no more than three (3) years.

E. All hazard analyses identify corrective or preventive action to be taken to reduce or eliminate the risk of injury or loss, where applicable.

F. All corrective or preventive actions identified by the hazard analysis process have been implemented.

G. Upon implementation of the corrective or preventive actions identified by the hazard analysis process, the written hazard analysis is revised to reflect those actions.

H. All members of the workforce have been trained on the use of appropriate hazard analysis systems.

I. A representative sample of employees is involved in the analysis of the job, process, or phase of activity that applies to their assigned work.

J. All members of the workforce have ready access to, and can explain the key elements of, the hazards analysis that applies to their work.

Note attributes (A-D), which address jobs, processes, and phases. Jobs and processes are those you'd typically find in manufacturing or service businesses. Phases refers to construction or assembly activity where the risks and hazards change daily as the work progresses.

Updates are addressed in attribute D with the suggestion that any known or recognized change in the job or any injury or near miss should prompt a review and update, if appropriate.

If there has been no change and no incident, then three years is the suggested interval for review. This is only to be certain that small or subtle changes introduced by familiarity or individual preferences are caught. This does not imply that the changes are wrong or unsafe. In fact, they may be better than the old method or step. A review is an opportunity to recognize that and get everyone else involved doing the job the same way.

Corrective action (F) is always critical with any process. If you don't reach acceptable closure with the effort, time and resources were wasted. Take another look at the sample JSA at the end of the chapter. In the right hand column, there are several recommended safe procedures with the notation SUPERVISORY ACTION REQUIRED. Such a notation on the working copy of the JSA makes it clear to everyone that the appropriate supervisor needs to do something. It's the flag that alerts management that help is needed before the process concludes. The Management Verification section is the final piece of the corrective action puzzle.

If you need some more help on the JSA process, OSHA has prepared an easy-to-use guide to the technique. Just ask your local area office for *Job Hazard Analysis,* OSHA 3071, or download it as a PDF file from the OSHA web site.

Inspections

The hazard analysis process has a number of checkpoints. Start with the expert survey, perform change analysis, and have routine examinations of jobs, processes, and phases of work. The last formal checkpoint is the inspection designed to catch hazards missed at other stages. While an alert and competent workforce is the

constant “real time” protection against accident and injury, inspections provide the final clear, concentrated focus on potential problems.

Asking a handful of people to walk the floors of the facility and “inspect” is virtually useless. The dentist who inspects your teeth at your semi-annual visit has years of training and usually knows your history and what to look for. So does the mechanic who inspects your car.

With this in mind, here are some things to consider about the inspection process

Always know why an inspection is being conducted!

There are many things inspections do for us—and some they don’t. I’ve heard from people on the inspection circuit who wonder out loud why they are searching out problems that show up time after time and that no one seems to care about.

Make sure that the objectives of the activity are known and clear to everyone involved. The objective could be to:

- Meet OSHA or other legal obligations
- Involve the team in safety
- Identify areas of undue risk and high loss potential
- Provide safety education
- Check past training and skill development
- Identify and develop positive safety attitudes
- Suggest better job methods
- Reinforce the positive efforts of people in the workplace!

Yes, reinforce positive efforts.

The term “inspection” seems to imply for most people that it’s an effort to find problems. Think about any workplace. Most things are working properly and most people are doing good things most of the time. On any inspection tour, you might find a handful of things which need correcting and hundreds of things working properly—if you bother to look. Don’t lose a reinforcement opportunity!

To make them more productive, change inspections to involve many people and reinforce good behavior.

OSHA conducts thousands of inspections or compliance visits annually, but the agency only recommends that you perform general workplace inspections in your facility. However, certain inspections are required—generally by a specific standard.

Check the standards to be sure you know what’s applicable in your facility. For example, the following items are generally necessary in most facilities; but this isn’t a complete list by any means. Check the standards for others not listed here.

- Cranes and derricks
- Industrial slings
- Manlifts
- Mechanical power presses and forging equipment

- Portable and fixed dry chemical extinguishers
- Powered industrial trucks
- Powered platforms (exterior use)
- Respiratory protection, including monthly inspections of emergency respirators
- Welding, cutting and brazing equipment

If you have any of the equipment listed above, take a few minutes and look at the standard that deals with it. Some have details about what you inspect and how often, others are less specific.

Some companies find it helpful to use checklists for their inspections to ensure that important items are not overlooked. If they help, fine. Use them, but your people should be trained to question anything that doesn't appear safe or proper and not limit themselves to what's on the checklist.

One fairly comprehensive collection of checklists is contained in the OSHA *Handbook for Small Businesses* (OSHA 2209). In addition, lots of vendors and organizations and books have inspection checklists they recommend or sell. Or, you can make your own checklist based on…

- Past problems
- Standards which apply to your industry
- Specific standards of concern to you
- Input from employees
- Your company standard practices or safety rule book
- Job procedures or JSA's

Other options include use of inspection teams with broad safety skills—include supervisors, mechanics and operators with specific backgrounds, or having trainees make up checklists based on training completed.

With any checklists avoid excessive detail, vague criteria, and forms that try to impress or overwhelm.

Remember, these are only tools to aid in training. Once your people are skilled inspectors, they won't need checklists and they probably won't let hazards sit until the inspection team comes by. Ideally, if the safety culture is strong, hazards will rarely crop up and most will be corrected on the spot by the first employee aware of the problem.

When it comes to documentation, write an inspection on notebook paper or anything else handy; but a standard format and approach helps keep things organized. You may find the inspection report form (Form 9.2) at the end of the chapter useful.

Here are some basic criteria for what to put on the report:

- Have a form which encourages answers to who (team membership), what (findings, both good and not so good), when (the date of inspection), why (does the finding exist and is action required), and where (the area being inspected). You'll need this information to get the correction process working.
- Make the form or report easy to follow and use. Managers and those taking action on the report should be able to see at a glance the status of their organization.
- Include recommendations so those taking corrective action have some guidance.

- Be helpful and encouraging. There is no need for an inspection to focus only on problems. If the team finds excellent conditions and positive safety behaviors, write it up! This is an opportunity for positive reinforcement!

- Rank findings and show status of correction so results can be tracked, plotted, and understood. For example, Figure 9.2 shows some coding at the bottom that tells at a glance how serious the findings are

Safety and Health Inspection Report

Date June 6, 2001

Area Inspected: Production

Team Members: H. Hogle, S. Parker, D. Petersen, W. Mitchell

Number/Class/Status	Findings (Positives and Negatives) and Action Recommended
1 C ✳	Razor knives have been left unsheathed on the packing table. It appears that knife holders could be installed on the front edge of the packing table for easy accessibility and safety.
2 B	Cartons of old paperwork have been stored on top of steel cabinets in the storeroom. If still of value, they need to be stored where they will not shift and fall.
3 B ✗	Old wooden stepladder is splintered. Supervisor destroyed ladder and placed it in the dumpster.
4	Housekeeping in the assembly area is excellent. People on that team were observed to be working very well together to keep conditions spotless. Team members and their leader were advised of our positive observations
(5 B)	Inspection tables were observed to be too low for the inspectors assigned to the job, causing them to work bent over in a stressful posture. Adjustable tables would solve the problem. In the short term, wooden blocks were placed under the tables.

Hazard Classification (potential outcome if left uncorrected)
A = Loss of life, body part, extensive damage
B = Serious injury or property damage
C = Non-disabling injury or damage

Status of Corrective Action
✳ = Old item
◯ = Intermediate action taken
✗ = Permanent action taken

Figure 9.2

and the status of corrective action.[39] You can also track the findings and corrections on a graph so it's easy for people to see how you're doing (Figure 9.3).

- Be sure all items are corrected! Inspections lose punch and management credibility for safety takes a real dive fast if results aren't obvious every time!

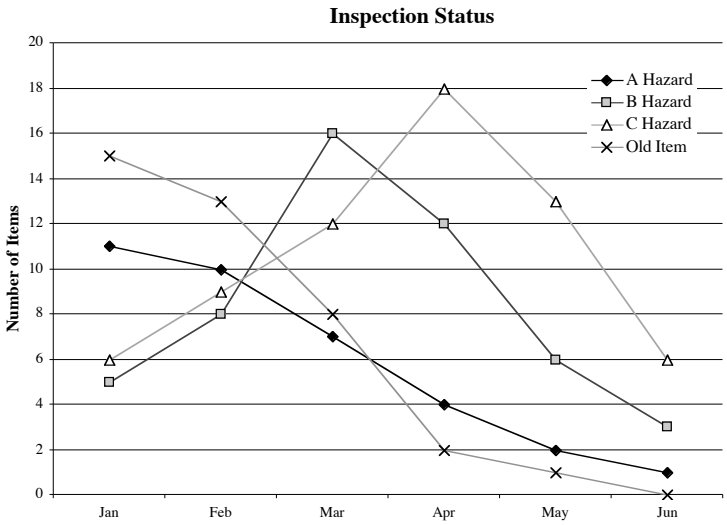


Figure 9.3

Indicator 13—Hazard Identification (Inspection)

[39] Hazard classification and status codes adapted from a form created by the Insurance Company of North America (INA), one of the ACE Group of Companies, © 1969 by INA and used with permission.

Indicator Description—Provide for regular site safety and health inspections, so that new or previously missed hazards and failures in hazard controls are identified.

Attributes of Excellence

A. Inspections of the workplace are conducted in all work areas to identify new, reoccurring, or previously missed safety or health hazards and/or failures in hazard control systems.

B. Inspections are conducted routinely at an interval determined necessary based on previous findings or industry experience (at least quarterly at fixed worksites, weekly at rapidly changing sites such as construction, as frequently as daily or at each use where necessary).

C. Personnel at all levels of the organization are routinely involved in safety and health inspections.

D. All personnel involved in inspections have been trained in the inspection process and in hazard identification.

E. Standards exist which outline minimum acceptable levels of safety and health and which are consistent with federal OSHA or state safety and health requirements, where they exist.

F. Standards cover all work and workplaces at the facility and are readily available to all members of the workforce.

G. All personnel involved in inspections have been trained on the workplace safety and health standards and demonstrate competence in the standards and their application to the worksite.

H. All inspections result in a written report of hazard findings, where applicable.

I. All written reports of inspections are retained for a period required by law or sufficient to show a clear pattern of inspections.

J. All hazard findings are corrected as soon as practically possible and are not repeated on subsequent inspections.

K. Statistical summaries of all routine inspections are prepared, charted, and distributed to management and the workforce so as to show status and progress at hazard elimination.

Employee Hazard Reporting

An effective hazard identification system should ensure a safe workplace. Trouble comes with the human element and wear and tear.

Hazards are typically created or allowed to exist because one or more people at some level in the organization failed to behave in a way which was, or should have been, expected.

For example, an employee may fail to keep the aisle adjacent to his/her workplace clear of obstructions. A supervisor or team leader may overlook the need to have maintenance performed on a fork truck with a leaky oil seal because of the pressure of production. A middle manager may react to budget pressures by failing to order new respirator cartridges.

The hazard identification process might eventually uncover all these things. But they should not exist at all - or for long - if alert, safety-aware employees have an effective method for getting the problems corrected. This is a case where safety is everyone’s responsibility. It should be part of the safety culture and nothing is as good as individual responsibility and a responsive system!

In many respects, an effective workplace hazard reporting system is like the medical self-examination process. Lumps, growths, and discomfort are best found by us when they first surface, rather than waiting for an annual physical. Early detection usually means we have fewer problems. We want to feel comfortable approaching our physician with our concern. A rude brush-off for taking his/her time with something that may not be a problem will make us less likely to call the next time. If there is a problem, we want help resolving it and we want to be kept aware of our progress back toward full health.

The main thrust here is employee involvement. If people are involved, it works. If they are turned off or skeptical, it won't.

I hear from OSHA compliance officers, consultants and from people in the workforce that raising safety concerns in some companies is an invitation to trouble. I've had employees caution me, "don't let my boss know I told you this but..."

Fear, well founded or not, does exist in some cases.

Take another look at the written policy (Table 9.2), which I first shared with you in Chapter 6. It's real, not fiction. Doesn't that just give you a warm and fuzzy feeling?

OSHA deals with this issue all the time. OSHA staff gets an earful in many of the places they visit. As a result, the agency has historically been *very* concerned about the possibility of sanctions against employees reporting hazards and has tended to support complex processes designed for employee protection.

If an employee claims that an assigned job or equipment is unsafe or might unduly endanger his/her health and, for that reason refuses to do that job or use the equipment, the employee shall immediately give the reasons to his supervisor in writing and shall request an immediate determination by a representative of the appropriate governmental agency as to the safety of the job in question.

Table 9.2

But I don't like complex processes—and I suspect you don't either. The more you build in to compensate for fears and possibilities, the less effective the process is likely to be.

Some companies have processes that go to great lengths to protect the identity of people using the reporting system. How nice. You get a report, which says there's some kind of safety problem, and now you've got to figure out where it is, whom it impacts, and what's behind it. Wouldn't it be better to be able to talk to the individual to get the details? Instead, you may never find the problem. In the meantime, at least one person is convinced you don't care about safety because you haven't taken action on his or her problem.

Hazard reporting is workplace culture dependent. In the traditional workplace, it may follow a formal and management-controlled process. In the empowered workplace, only those issues the employee can't solve get bumped up the line.

Regardless of the culture, a brush-off, a delayed response, lip service, or some sanction can make the employee stop reporting immediately and can quickly sour the whole process.

The policy on hazard reporting has to make sense. It's got to be easy to use, not an administrative nightmare. It's got to fix things now, not next week or next month.

Most importantly, it must be supported by the actions of all supervisors and managers.

Responsiveness, good employee relations, and plenty of positive reinforcement are the keys to making it work.

There are many options for a system or a process. If you're lucky, you've already got a process in place which you and your people trust.

It can be a suggestion system. Some companies put report forms in a box on the wall. Vendors sell reporting packages and systems to go with them, but be sure that your time and expense for installing such a program is actually necessary.

Sometimes the safety committee reviews all hazard reports, but do this only with great caution. I've seen items go to a safety committee which meets once a month and does not have the authority to correct the problem. Now you've got a black hole.

For a simple approach to problem identification and resolution utilizing employee input, consider Hazard Hunt.[40] Hazard Hunt was created by Dan Petersen and meets all the objectives of an effective employee reporting system—and then some.

Hazard Hunt starts much like other approaches. It asks employees to complete the front side of a Hazard Hunt card (Figure 9.4). It's fast and easy. They complete the phrase "I think the following is a hazard." They are not asked to justify their thinking or offer supportive evidence, just provide input based on training, experience, and observation.

Hazard Hunt

To: _____

From: _____

I think the following is a hazard: _____

Figure 9.4 (front)

Supervisors/Team Leaders Evaluation

Hazard Hunt # _____

❒ Is a hazard ❒ Not a hazard Matrix Score _____

❒ Corrected (date) _____ ❒ Scheduled for (date) _____

❒ Referred to _____ (date) _____

❒ Discussed with employee (date) _____

Final Resolution _____

Figure 9.4 (Back)

They don't need to know the details of the OSHA standards. Experience tells us that most people have a pretty good understanding of the hazards they see in their daily work. The system works best with mechanical hazards—less well with chronic exposure situations (because our senses may not immediately pick up hazards such as air contaminates or noise).

Every new person in a work group is given several of the forms and told where to get more. He or she is briefed on how the system works and why it's important. They are told to complete a form and turn it in to their supervisor. The rest is up to supervision.

The supervisor resolves any problems he/she can and gets staff or management help on the rest. The next step is what makes Hazard Hunt special. The supervisor uses the safety matrix (Figure 9.5) on the next page to set the priority of action to be taken on the hazard and then provides immediate feedback to the employee. The end result is that the employee is brought into the process and becomes a partner in the improvement and correction effort.

[40] *Hazard Hunt* was first published in **Safety Supervision**, by Dan Petersen, © 1976 by AMACOM, New York, and is included here with the permission of the author

The safety matrix considers two important elements—degree of hazard and ease of correction. By determining the appropriate descriptors, the supervisor arrives at a number (from 1 to 9) which is the priority.

Degree of Hazard	Difficult >15 days >$10,000	Moderate 3-15 days $500-$10,000	Easy <3 days <$500
Immediate High Risk	4	2	1
Moderate Risk Potential	7	5	3
Minor Risk Potential	9	8	6
	Ease of Correction		

The Hazard Hunt Matrix
The higher the number, the lower the priority

Figure 9.5

When the supervisor talks with the employee about the hazard identified, he/she first gets agreement on whether it really is a hazard. If it's decided it is, then the supervisor goes over the scoring process with the employee and gets agreement on the score.

After the score is agreed to, the supervisor might then say "Hazard Hunt is generating a lot of good input and I've got about 30 items we're working on. There are three 1's, five 2's, two 3's, and four 4's in addition to this one. Given the workload in maintenance and the current cash flow situation, I'm estimating that it will be about two weeks before we can work on the 4's. Does that sound all right to you?"

Now the employee has become part of the decision process. He or she knows what to expect and when and why the decision was made that way. In the old days, he/she might have submitted the concern and heard nothing. When asked by fellow employees what happened to his/her suggestion, the response might easily have been "I haven't heard anything. You know, they just don't care about us" (even though the supervisor really did intend to take care of the hazard).

Today, the answer can be "It's going to be corrected in a couple of weeks. It's a 4 on the priority order and there are a bunch of higher priorities getting fixed first. In the meantime, I've figured out a way to reduce the risk of the hazard until it gets fixed."

It's easy to modify the process or the form—or both—in order to make the technique fit your operation and team members. Consider your style of operation, related techniques such as those used for quality or team building, and resources.

The forms can be produced locally and can fit on file cards for easy use and storage. If you are using quality management processes to guide operations, data on numbers, priorities, and response times can be collected and displayed in the workplace for all team members to follow their progress.

Data on Hazard Hunt can also be plotted against inspection data and incidents to show correlations between hazards corrected and improved workplace conditions and fewer accidents.

Indicator 14—Hazard Reporting System

Indicator Description—So that employee insight and experience in safety and health protection may be utilized and employee concerns may be addressed, provide a reliable system for employees, without fear of reprisal, to notify management personnel about conditions that appear hazardous and to receive timely and appropriate responses; and encourage employees to use the system.

Attributes of Excellence

A. A system for employee hazard reporting is in place and is known to all employees.

B. The system allows for the reporting of physical and behavioral hazards.

C. Supervisors and managers actively encourage use of the system and employees feel comfortable using the system in all situations.

D. The system provides for self-correction through empowerment.

E. The system involves employees in correction planning, as appropriate.

F. The system provides for rapid and regular feedback to employees on the status of evaluation and correction.

G. Employees are consistently reinforced for using the system.

H. Appropriate corrective action is taken promptly on all confirmed hazards.

I. Interim corrective action is taken immediately on all confirmed hazards where delay in final correction will put employees or others at risk.

J. The system provides for data collection and display as a means to measure the success of the system in resolving identified hazards.

Job Safety Analysis

Descriptive title of job or operation:	
Job location:	Division/ Department:
Position or title of employee performing job:	
Date JSA performed:	Supervisor/Team Leader verification:
Names of those performing JSA:	
Significant hazards noted:	
PPE necessary for job:	

Basic Job Steps	Potential Hazards	Recommended Safety Procedure

Management Verification		
Corrective Actions:		
Process Actions:		

I certify that the actions listed above to ensure compliance with the recommended safe procedure have been taken

Form 9.1

Job Safety Analysis

Descriptive title of job or operation:	P-21 Automatic Machine		
Job location:	FMD Department	Division/Department:	FMD Department
Position or title of employee performing job:	Machine Operator		
Date JSA performed:	May 26, 2001	Supervisor/Team Leader verification:	*Heidi Campbell*
Names of those performing JSA:	Brady Hogle, Emerson Mitchell, Holley Wells, William Griffin, Chip Dawson (facilitator)		
Significant hazards noted:	Machine-caused hand injury, striking against machine, lifting and positing injury		
PPE necessary for job:	Safety glasses with side shields, hearing protection, safety shoes		

Basic Job Steps	Potential Hazards	Recommended Safety Procedure
1. Plug in machine to main air line	1a. Operator can't reach air connections	1a. Use drop lines
	1b. Damaged hoses can rupture and whip (100 psi air)	1b. Visually inspect hoses and listen for air flow
	1c. Water or rust can spray from connection	1c. Ensure Maintenance has blown out lines on schedule
2. Turn on electric power to machine	2. Machine interlocks could fail	2. No action required. Interlocks fail-safe.
3. Load bowl with parts, as needed	3a. Oil on shoes could cause slip from ladder	3a. Check for oil on shoes. Mop if necessary
	3b. Use of screens to lift parts could be awkward	3b. Use scoop only! Use of screens not permitted
4. Move air switch to "on" position	4. Free hand could be caught in air cylinder	4. Guard cylinder (SUPERVISORY ACTION REQUIRED)
5. Perform quality check on set of finished parts	5a. Hit head on support plate	5a. Extend discharge chute in curve so parts drop outside support edge (SUPERVISORY ACTION REQUIRED)
	5b. Hit shin or ankle on pallet alongside machine	5b. Make sure aisle is clear and open
6. Adjust machine or change tool	6a. Machine could index and catch hands	6a. Shut down machine and air, LO/TO as required
	6c. Awkward body positioning causes strain	6c. Set up comfortable positioning
7. Remove chips from machine	7. Chips can blow back at operator (60 psi air)	7. Use 30 psi air with anti blow-back protection (REQUIRES SUPERVISORY ACTION)
8. Put finished parts in oil bath	8a. Oil could splash in eyes	8a. Wear safety glasses
	8b. Reach over bath is awkward, strain possible	8b. Keep weight down by emptying pail and screen often
9. Clear jam, as necessary, and if trained	9a. Machine could operate	9a. Follow posted jam clearing procedure, including (1) shutting off machine and air, (2) emptying part pail, (3) clearing table, and (4) checking parts
	9b. Strike head on machine structure	9b. Stay alert to position of head and body
10. Shut down machine (reverse steps 4, 2, and 1 above in that order)	10. Airline can blow away and whip	10. Be sure to grip air line when disconnecting

Table 9.1

Safety and Health Inspection Report		Date
Area Inspected	Team Members	

Number/Class/Status	Findings (Positives and Negatives) and Action Recommended

Hazard Classification (potential outcome if left uncorrected)
A = Loss of life, body part, extensive damage
B = Serious injury or property damage
C = Non-disabling injury or damage

Status of Corrective Action
✳ = Old item
◯ = Intermediate action taken
✗ = Permanent action taken

Form 9.2

10

Accident Investigation and Analysis

In This Chapter:

Cause identification
Root causes
About "being more careful"
Recordkeeping and reporting process
OSHA recordkeeping requirements
Trends analysis

Cause Identification

Joe got hurt and the boss says I've got to do an accident investigation along with all the other things I've got to do. What a pain!

Poor Joe's accident has presented you with a golden opportunity. Obviously, your goal is no accidents but until that's achieved, investigations are unexpected gifts. They open a great window into the culture and nature of the organization and give you a clear look at why things are going wrong.

And in case you didn't already know, an accident is a thing gone wrong.

You may not be convinced that this is an opportunity unless you are clear on the purpose of accident investigations. It is a positive process! The intent is prevention and correction. The objective is to change the culture—to make everyone's work life better! It is never blame!

In business and industry, blame is counter-productive. Criminal investigations and insurance companies need to find blame. That's how charges are assessed. If it makes the media, "how did it happen?" and "who's responsible?" are asked in nearly the same breath.

That's not the case in the workplace.

Remember the discussion in Chapter 4 about accidents not being the exclusive fault of the individual? People tend to do things they believe the organization wants or supports. They don't just "screw up." They may make poor choices based on all of the information they are trying to juggle and sort.

But data and research confirm that very few people are intent on injuring themselves. To believe otherwise is bunk.

If someone with a history of injuries is put to work in an organization with high safety values, their rate of injury will decrease to be in line with those of the rest of the organization. If you take a work group with many injuries and change their supervisor to someone with high safety values and skills, injuries will go way down.[41]

[41] Analyzing Safety Performance, Garland Press, NY 1980.

If there is a screw-up, it's from a combination of factors that filter down through the organization. Start pointing at blame and the finger will eventually point to you.

Ready for another reason not to pin blame? Worker's compensation is a "no-fault" system. Except for intentional harm and intoxication, worker's compensation generally pays without regard to fault. You don't need to determine blame so why do it?

Many companies test for drugs and alcohol. Some mandate a blood test for anyone injured. If you do pre-employment drug testing, you've already screened out all but a few potential drug users. If you and your supervisors know your people, their habits and interests, you should have a good idea about any potential drug users or alcohol abusers and you've already found a way to intervene appropriately.

Test only if you have probable cause, but you risk sending the wrong message—we don't trust you—to everyone else if you routinely test everyone injured.

As a general rule, accidents should be investigated when these things apply:

- All injuries—even the very minor ones.
- All accidents with potential for injury.
- Property damage, product damage, and "near miss" situations—so you can consider and eliminate the root causes.
- OSHA requires investigation and a report for every injury or illness entered on the log (OSHA Form 300)—more about this later.

As a manager, your work life is devoted to keeping various systems working smoothly. If work isn't getting done, any manager would find out why and add people or schedule overtime or sub-contract parts of the job.

If quality is suffering, find out where things first start to go wrong and fix the root cause. If morale seems to be slipping, talk with people and do some survey work to pinpoint the problem and try to fix it.

You're an investigator. Use your skills and talent to eliminate the causes of accidents!

Some companies spend time on accidents in direct proportion to the degree of injury. Like the old saying in the newspaper business—"if it bleeds, it leads." But if you step back at the blind corner as the fork truck whizzes by, you may simply declare yourself lucky and go on about your work.

Remember, incidents are caused; their consequences are chance (Chapter 4). Near misses are hints about the safety system.

Property damage may be personal injury the next time. If you see storage racks all bent and buckled from repeated fork truck contact, that should tell you that a leg could be the object of the next contact.

Human nature says that most employees will shake off personal near misses and get on about their busy work life. Who wants to point the finger at himself anyway? So, if this is true in your organization, move the incident report focus to property damage for starters—and try to work toward reporting near misses over time.

In every situation where something goes wrong and injury could result, investigate and determine root causes.

Root causes are the background pieces of any incident. Investigate, and you'll usually find several. Correction of any one might break the accident chain.

Typically, there are root causes within the system and human based root causes. Search them all out. Let me give you an example.

A mechanic had been on the job for three weeks. He was assigned to change some equipment within a huge machine with a hydraulically controlled cover. The machine was off, but not locked out. His upper body was inside the machine as he worked.

A fellow mechanic walked right by him and went to the control panel fifteen feet away to repair a control circuit. When he started work on the circuit, the cover closed on the first mechanic and crushed him.

What do you think were the root causes?

Here's what my investigation found:

- The first mechanic was new to the job and inexperienced on the equipment.
- He had received almost no training on lockout procedures.
- Supervision had not checked his set-up for the work.
- Lockout procedures were not generally required in the workplace.
- The fellow mechanic failed to observe any activity around him.
- The fellow mechanic failed to use lockout procedures
- The fellow mechanic did not know how the cover controls operated even though he was experienced.
- The workplace was very noisy, which prevented the mechanic from hearing the cover operate or hearing a warning call from across the facility.

There may be others, but those are the primary root causes. If a supervisor had walked by and pulled the mechanic out of the machine to coach him on lockout procedures, the incident would have been a close call—but still worthy of investigation. In fact, had any of the root causes been removed, it's quite possible the fatality would not have occurred.

Thankfully, fatalities are not necessary to convince people about the value of reporting and investigating all incidents. Just encourage workers to come forward and promise that they will not get into trouble for reporting even the smallest incident.

Root causes discovered and eliminated will amaze you. As the system starts to work, the process will gain a life of its own.

Some companies ask the safety committee, safety coordinator or an investigative team to do investigations. This may put too much burden on one individual or group or delay the process, but if it works for you, that's fine.

The supervisor should be the chief investigator in my opinion. It's his or her operation and he/she should know it best. The investigation can start immediately. Most of the corrective action is under the supervisor's control.

The supervisor can, and should, pull in others as necessary to assist. A mechanic or engineer might be needed. The human resources staff might be helpful with understanding the human element. If things get complex, outside technical help might be needed.

Regardless of who gets selected, investigators need training. They need to know what questions to ask, how to collect information, how far to go in searching for root causes, how to put people at ease, and how to write a report which meets legal criteria and is an effective starting point for corrective action.

Sometimes a tool is helpful for the investigators to be sure they search out all the possible root causes. Looking at supervisory and managerial and operational issues for causes is often difficult unless there is a process everyone agrees is effective for your company.

One such tool is TOR Analysis, or Technic of Operations Review (TOR).[42] Since it was first published in 1973, it has evolved into one of the best tools for seeking out root causes. *The Dictionary of Terms Used in the Safety Profession* describes it as "an analytical technique driven by a sequence of yes-no decisions which reveal the supervisory-management deficiencies which may have caused or contributed to an accident, mishap, or undesired event; it is used in supervisory training, organizational development, and accident investigation."

In other words, TOR Analysis not only seeks root causes, it is designed to avoid finger pointing and blame and helps determine systemic causes of unwanted and unplanned events, and how to correct them. To get a copy of TOR, see Chapter 16.

Now to the investigative process. As I've suggested several times elsewhere in this book—do not complicate it.

First, make absolutely sure that everyone knows you're interested in looking at every possible incident and close call. The faster they get to you with that information, the fresher the information will be in the minds of the involved party and any witnesses.

Next, go to the scene of the incident. When management or supervision shows up right away no matter how minor the consequences, it tells people that this is important to you—and to them.

Take care to protect the physical environment and records. You'll need these for more complex investigations.

There is a natural tendency for people to clean things up and get back to work as quickly as possible. In these days of bloodborne pathogens, cleanup may have to follow a careful procedure to ensure that no one is contaminated or exposed.

Just as important, an incident scene can give trained investigators clues as to what happened even if those involved are unsure or unable to tell you. Collect work logs, check gauge or instrument settings, stop and save surveillance videos on continuous loops, leave equipment and tools where they are until you sort things out.

Protecting the incident environment is also necessary if there is the chance that OSHA or law enforcement investigators may respond to a serious incident. They want things left in place. Without physical evidence, they may draw conclusions that could be unfavorable to the company.

These may seem extreme precautions and may not be necessary for every incident. Certainly, take a balanced approach. But at least show that you are interested and the more complicated and the greater the potential for serious injury or death, the more cautions need be exercised.

Talk with the involved individual. If seriously injured, the discussion may have to wait until medical treatment is given and the individual is stable and comfortable. But do talk!

I am amazed when I read incident reports or court depositions that indicate that no one in authority ever talked with the injured party. Conclusions are drawn with no clue as to what the key individual was doing or thinking.

Here's a quick investigative tip. Don't get injured doing the investigation. This is not an urban myth. I personally know of such incidents.

In one case, a senior safety engineer with a national reputation was trying to determine how an employee had whacked off the tip of his finger in a poorly guarded fan. The engineer whacked off the tip of his finger. Needless to say, his national reputation was somewhat sullied. Obviously, you need to control very carefully any recreations.

Would you like an investigative guide? Use the five W's—who, what, when, where, and why? Of these, the most important one is why. Ask why and then ask it again and again until you get to the end of the line.

[42] TOR © 1989 by D. A. Weaver. Also published by Petersen, D., *in Safety Supervision,* AMACOM, NY 1976

"Why did you fall down? Oil on the floor.

"Why was oil on the floor? There was a loose bung on a drum of machine oil.

"Why was the bung loose? Receiving opens them to check the quality of the oil and some don't get tightened down when they are finished.

"Why are we opening drums to check oil quality? Because we had a quality problem five years ago.

"Have we had a problem since? No.

"Is the supplier now ISO/QS certified? Yes.

Then let's stop checking oil quality and notify the supplier that we are accepting their certification of quality. We'll save money on testing and eliminate the problem of loose bungs."

Next, force yourself to stay open minded. It's very easy when we have extensive experience and detailed knowledge of the operation to jump to conclusions. I've been in this business over thirty years and I still find that I'm often wrong—or off the mark—when I smugly conclude that I know what happened after hearing the first summary of an incident.

Remember that every incident will probably have multiple causes. You're on a treasure hunt.

Listen to people. Be empathetic. Stay cool—you're going to find faulty systems, but blowing your stack doesn't fix anything.

By all means, make sure that no disciplinary action is taken against anyone until the entire investigation is complete and solutions are well considered. Nothing is more unfair than to make an example of someone when many before have avoided discipline or to discipline line people and let supervisors and managers off the hook.

I got a call not long ago from a company representative asking about lockout/tagout procedures. Two mechanics were replacing a control on the outside of a machine with power off but no lockout. Their supervisor walked by, saw the activity, yelled at them about their lockout failure and then went some distance away and started throwing switches and locking them out himself. He next wrote the mechanics up for their violation and a "close call."

As it turns out, there was no lockout procedure for this particular job and the need to lock out was a judgment call anyway. The supervisor, not an authorized person under the lockout standard, managed to screw up some other equipment. Despite complaints from the mechanics, their discipline stood and nothing happened to the supervisor. No complete investigation. No identification of all root causes. No fairness in the consequences.

Once all the facts have been gathered and the root causes have been identified, write the report. The report is primarily for internal use, but if the report is for an injury covered by workers' compensation, your workers' compensation carrier will probably need a copy. OSHA may also be interested.

And—though I hope it doesn't come to this—your attorney may need a copy for any subsequent legal proceedings. I'm not giving legal advice in this book. Check with your attorney for that. However, there are some things you can do to prevent self-incrimination.

From a practical and experiential standpoint, I've found that an honest and candid report coupled with a prompt and effective set of corrective actions shows good faith. People like good faith. OSHA gives penalty credit for it. Employees appreciate it. In the court depositions I see, there are far more smoking guns and ducked issues than good faith efforts.

Cite all the facts and conclusions about root causes and then state actions to be taken. When the corrective actions are completed, enter what was done on the report or attach a copy to the report. Be factual. Don't report unsubstantiated opinion or speculation. If you don't know, say so.

A final tip—this is important—do not ever allow anyone to include the words "I told the person to be more careful" under corrective action! That's the easy way out used by millions of accident investigators over the years. Maybe it's used in your organization today.

It fingers the injured individual, leaves the solution totally up to him or her, and shows that you don't have a clue how to deal with the situation.

If you do have a situation where you believe more care is the solution, state specifically how that care is accomplished. Something like, "in the future, follow the job safety analysis on this job closely." Or, "employee is directed to operate her fork truck as instructed with respect to vehicle stability and to keep speed below the posted speed for the area in which she is operating."

As for the report forms, wide varieties are available from vendors, books, trade associations and others. You may already have one you like. Perhaps you use the one your insurance carrier offers.

I've included one I use at the end of this chapter (Form 10.1). It has space for all the basic information most forms include, but it does a couple of other things. First, it covers both injury and property damage. Since we want reports on all incidents, this division of incident consequences helps us get that.

Also on the form are boxes at the bottom for "loss severity potential" and "probable recurrence rate." Originally developed by the Insurance Company of North America (INA),[43] the two sections make it possible to quickly tell what the future potential of a similar incident might be and how frequently it might reoccur. This is valuable for anyone reviewing the case.

Rather than assuming that a minor incident is of little consequence, major potential or frequent recurrence will say "Pay Attention!" If you're tracking data—as we've suggested several times—you can chart the nature of incidents over time and see if the potential is dropping—as it should.

When it comes to OSHA-required documentation, you must also complete the OSHA Form 301, Injury and Illnesses Incident Report, or an acceptable substitute (such as Form 10.1) which includes information about the:

- Employer–name of person who completed the form, his or her title, phone number, and the date
- Employee–full name, home address, date of birth, date hired, and sex
- Physician or Health Care Professional–name, treatment facility and address if treatment given away from the facility, whether employees was treated in an emergency room and hospitalized overnight as an in-patient
- Case–Log number, date of injury/illness, time employee began work, and time of event
- What the employee was doing just before the incident occurred
- What happened
- What the injury or illness was
- What object or substance directly harmed the employee

[43] Loss severity potential and probable recurrence rate adapted from a form created by the Insurance Company of North America (INA), one of the ACE Group of Companies, © 1969 by INA and used with permission.

- If the employee died, the date of death

Practically speaking, nearly all workers compensation report forms I've seen cover this information—as may your own. However, it's worth looking at your form to be sure you haven't missed things such as the date of hiring and the time the employee began work.

When completed, get the investigative report promptly to those who need it—management, the OSHA log keeper, the workers' compensation carrier, the safety coordinator, the safety committee, and any others your process says should have a copy.

Next use the report for prevention. Don't hide it! Post it on the safety bulletin board. Cross out names if you're sensitive about that, but there's a good chance that everyone already knows about the incident.

Give a copy to trainers for use in programs. Attach a copy to the JSA for the job in question—and revise the JSA, if appropriate.

Indicator 15—Accident/Incident Investigation

Indicator Description—Provide for investigation of accidents and "near miss" incidents, so that their causes and means for their prevention are identified.

Attributes of Excellence

A. Workplace policy requires the reporting of all actual and "near miss" accidents.

B. All members of the workforce are familiar with the policy on accident/incident reporting.

C. All accidents and incidents are reported as required by policy.

D. Workplace policy requires a thorough investigation of all accidents and incidents.

E. All accidents and incidents are investigated as required by policy.

F. All investigations are conducted by personnel trained in accident/incident investigation techniques.

G. All investigations include input from impacted parties and witnesses, where possible.

H. All investigations determine "root causes".

I. Recommendations designed to adequately address root causes are made as a result of all investigations and result in prompt corrective action.

J. Completed investigative reports are routed to appropriate levels of management and knowledgeable staff for review and are provided promptly to government officials, as required, in accordance with law and applicable standards.

The Recordkeeping and Reporting Process

So far in this chapter, I've been talking about what you need to do for your purposes to fix the company safety system. The OSHAct—section 1904—places a variety of requirements on most employers regarding the records that must be kept of occupational injuries and illnesses and how they are to be reported.

For three decades, you and all the other employers in the country have been struggling with an ever increasing and confusing variety of rules and interpretations affecting incident recordkeeping. In January 2001, in the last days of the Clinton administration and after years of planning, OSHA issued a major revision to the recordkeeping requirements. It went into effect on January 1, 2002. Here's a summary of those new requirements:

- Unless exempt (see below), you must keep a log of occupational injuries and illnesses which occur during the calendar year.
- You must use OSHA Form 300, Log of work-related Injuries and Illnesses, or an equivalent form. Computer-generated forms are now acceptable as long as they have the same information.
- For each case on the log, you must have a supplementary record using either the OSHA Form 301 or an equivalent. We covered this on the preceding pages.
- Entries on the log and on the supplementary record must be completed within seven (7) calendar days. The clock starts when you (the company) first have knowledge of the incident.
- You must post a copy of OSHA Form 300A, Summary of Work-Related Injuries and Illnesses, which were recorded on the log showing all column totals by February 1 of each year covering the previous year's data and keep it posted until April 30. It must be in a visible location where your people would normally look for notices and it needs to be certified as true, accurate and complete by a senior manager.
- Your OSHA injury and illness records must be kept for five (5) years at the establishment.
- Records must be made available to Department of Labor and Department of Health and Human Services personnel who are working under the authority of the Act. They are also authorized to copy the records. If you are in a state-plan state, state officials have the same right of access.
- Your employees, former employees, their personal representatives, and their authorized employee representatives can view and make a copy of the log and summary as long as the access is in a reasonable manner and at a reasonable time and as long as names in privacy concern cases are not disclosed.
- If a fatality occurs, or three (3) or more employees are hospitalized as a result of a single incident, you are required to notify the local OSHA area director (or state official in state-plan states) by telephone or in person within eight (8) hours of the death or hospital admission. Treatment and release at a hospital emergency room does not count, just admission. When you notify, you must provide information on the circumstances, number of people affected, the extent of injuries, and who to reach (and how to reach them) for follow-up. Here's a tip: Get the facts and make the call yourself as quickly as possible. It shows good faith and concern. Don't wait for a public relations person to do it. Also, there's a good possibility that local law enforcement will call also and it would be nice if you got the jump on them.
- There are penalties for falsification of records and failure to keep them, but you're not going to do that, are you?
- If you take ownership of a company, you must retain the old employers records, but you're only responsible for records since you acquired the company.
- If your people don't work at a fixed location, you need to keep records at some central site where there is common supervision and let all your people know how they reach someone at that site for information and to make reports.
- If you have no more than ten (10) employees at any time during the year, you are not required to keep records required by part 1904, but the Act still applies to you and you must still report fatalities or hospitalization of three or more people.
- If you are in a low-hazard industry such as retail, services, finance, insurance, or real estate, you are exempt from recordkeeping the same as for small employers. But here there are some exceptions, so be

sure to check the details in Appendix A to Subpart B of 29CFR1904. You can find it easily on the OSHA web site (see Chapter 16).

- Each year, the Bureau of Labor Statistics sends out a survey to several thousand employers asking them to report details on their injury and illness history for the past year. If you are selected, you normally have 30 days to return the requested information. This applies even if you are exempt from normal recordkeeping as described above or if you are in a state-plan state. For this reason, you should always keep track of any occupational injuries or illnesses that occur to your people.

As a general rule, the following incidents are reportable under the Act if they occur in the course of the individual's employment in your organization:

- Fatalities
- Loss of consciousness
- Cases that result in days away from work beyond the day of injury.
- Cases that result in job transfer or restriction.
- Medical treatment beyond first aid
- Any "significant" work-related injury or illness diagnosed by a health care professional which involves cancer, chronic irreversible disease, fractured or cracked bones, or a punctured eardrum
- The following conditions if work-related: needlestick injury or cut from a sharp object if contaminated with blood or infectious material, a medical removal case, a standard threshold shift in hearing, and tuberculosis

First aid cases are not reportable. First aid is any one-time treatment—and any follow-up visit—for observation of minor scratches, cuts, burns, splinters, and similar injury, which does not require medical care. Again, see the regulation for a complete listing.

An important point: it's still first aid if it meets this definition even if treatment was provided by a physician or registered health care professional. Medical treatment is any other care administered by a physician or registered health care professional under the standing orders of a physician.

I've only given you the highlights of recordkeeping here. OSHA has prepared a full page on its web covering recordkeeping with forms and helpful guides. It's well worth a visit by you and your recordkeeper.

My personal advice: OSHA requires recordkeeping that keeps you in compliance with the law. What you use to help manage your safety effort may be something else entirely (as we'll discuss in the next section).

Over the years, I've heard many managers get all upset over cases that needed to go on the OSHA log as "lost time." "I couldn't control that...it shouldn't be counted."

In the grand scheme of things, a case or two like that will mean nothing. Keep your internal records in a way that helps you manage efforts.

If you're convinced you could do nothing to prevent the case, put it in the "acts of God" column. If you're planning to celebrate a year without a lost time injury and this case would mess it up, go ahead and have the celebration. If a manager's bonus depends on whether or not the case is counted, give the bonus anyway.

Do you get my point? Log the case! That satisfies OSHA. Now have another set of books to manage safety. In most cases, the books will probably be identical, but if they're not, it's not illegal or unethical.

As long as you keep the records OSHA requires, make your own decision about how you use the data internally. Life is too short to spend it fighting government definitions.

The completed record for reportable injuries and illnesses must be present in the workplace within seven (7) calendar days after the employer has knowledge of the incident. An additional comment is required about this one.

Since your state workers' compensation board and workers' compensation carrier also have reporting time frames, it's essential that all of your people involved in incident investigation realize that time is of the essence. Obviously, you can take more time for those incidents that are not reportable, but why bother? The quicker you get the report and take action, the safer everyone is.

That's it for OSHA recordkeeping and reporting—the short course, anyway.

To check on the new regulations, call your OSHA area office and ask. Or, if you have Internet access, check the OSHA Home Page and enter the word "recordkeeping" into the search engine. Then, tell the person who keeps your records where to find the details.

Trend Analysis

Those who cannot remember the past are condemned to repeat it, said George Santayana (1863-1952).

A review of the history of workplace accidents gives a broader picture and clearer understanding of what went wrong, and why, than does a detailed analysis of a single event. Typically, individual events point to issues in close proximity—the individual involved, the specific job, the problems of the day.

By pulling events together in an analysis, we begin to see if accidents are more prevalent in certain areas, with certain supervisors, at specific times, or involving certain body parts. Such an analysis helps an organization target fixes that have broader application to the facility and it's workforce. It also helps people understand that accidents and injuries are a significant drain on the resources of most companies and worth targeting attention.

Organizations traditionally accumulate data from injury reports on incidents that occurred over the calendar year. It makes for nice charting—especially in color.

"From this chart, you'll see that hand injuries accounted for 42% of all injuries, most often occurred on Mondays and Fridays at 10 AM to machine operators who have an average of 4.2 years on the job and are 28 years old."

Great presentation. Now what to do with this information.

Not much, if yours is like most companies.

Regurgitating cold data from a bunch of reports is a waste of time. With the information in the last paragraph, would you send all your managers out at 10 on Monday and Friday to look at the hands of machine operators with 4.2 years on the job to see what they did wrong? I seriously doubt it.

Here's the problem. With this process, we accumulate relatively rare single events that provide us with a gross view of our recent history. Data such as this is:

- Not predictive of the future.

A determination that out of millions of worker behaviors and thousands of close calls we get an insignificant number of hand injuries does not mean that the future outcome will be hand injuries—or even that injury outcomes will continue at the same rate or frequency.

- Not sensitive to change in small units.

You've got 20 people in your department and you had one injury last year. This year you had two! Your rate has doubled.

That's bad! What happened? Millions of behaviors, thousands of close calls, and now two, not one, injury outcome. No responsible statistician would make anything of that change.

- Failure-focused.

Do we know anything about all the good things you're actually doing to improve safety which are significant? Not at all. If we focus on those, everyone will have a much better and more accurate picture of your unit.

- Rarely relevant to current people and culture.

If you've had the same people working for you for the past ten years, your injury history may be relevant. But most of you have turnover. People come and go and with them—and your efforts—your workplace culture changes. The people and culture which created your record five years ago may be history, so who cares? You need to know about today.

History is Bunk, said Henry Ford (1863-1947). Ford *did* have a point. History is not necessarily predictive. It may provide a clear view of what was happening then, but it says little about the present or the future.

If accident analysis drives future activities, we may find ourselves way off track. People may be different—or have changed. Processes may be modified or replaced. Supervisors can change, and so can a host of other conditions and people.

Most companies accumulate hundreds or thousands of data points each day with which to manage the business. The adjustments made as a result of these data points occur quickly. They are "real time." In this context, injuries are rare events and insignificant with respect to numbers. You need better measures for safety!

By all means, continue to compute injury rates. It's the commonly accepted benchmark for safety and health in the world today. Calculate it. Share it. Just don't put too much stock in it.

At the state or national level, within large trade or business associations, and for very large companies, incident rates may be somewhat meaningful. But do not base your efforts on an annual incident rate, especially if the company is reasonably small (like 90% of employers).

Don't compare departments or work groups. Don't pay bonuses or rewards on the accident rate. As we saw in Chapter 4, far too many variables impact whether an injury even makes the count.

Now that I've told you to view rates and injury statistics with caution and consider them as one very small tool in a large toolbox, let's look at how you figure them—just in case you are curious.

Occupational injury and illness experience for an organizational unit is generally expressed by an incidence rate. The incidence rate is a means of adjusting the total number of cases occurring over a given period of time so that there is a common basis for comparison. Essentially, it removes the variables of workforce size or hours worked. The formula below yields BLS-OSHA comparable figures.

Before OSHA, most companies kept rates using the ANSI system. Some still do, but I see little merit in it given the other issues with rates in either system. If you still want to learn about ANSI calculations, see ANSI Z16.1.

The incidence rate is calculated as follows:

Incidence Rate = number of recordable injuries & illnesses x 200,000 ÷ employee hours worked

Incidence rates for calendar year 2004 for total OSHA-reportable incidents in private industry ran 4.8 while total manufacturing incidence rates were 6.6. National rates have been dropping steadily since 1992. More detail on

incidence rates by industry grouping is easily available by going to the OSHA Home Page and looking under "statistics".

The 200,000 figure shown in the formula is a constant and equals 100 employees working 40 hours per week for 50 weeks. The incidence rate is roughly the equivalent of the number of injuries and illnesses occurring in a group of 100 people over a period of a year. This figure, then, can be expressed as a percentage of the workforce suffering an injury or illness. The modified formula would look like this:

Incidence Rate = number of incidents x 100 ÷ person-years worked = Percent injured

The same formula is used to calculate the rate for both lost time and no lost time incidents. The total of each type of case is used in the calculation. The yield, once again, is a percentage of people in a given unit suffering lost time or no lost time injuries during the period of time over which the incidents occurred.

By the way, OSHA now calls the rate for the number of cases involving days away, restriction and job transfer (columns H and I on the 300 log) the DART incidence rate. Since it's new, referring to the DART rate will show you're current on your safety and health knowledge.

A measure of the absence rate due to injuries also uses the formula, but substitutes number of days lost from work for the number of incidents. Sometimes referred to (incorrectly) as the "severity" rate after the old ANSI Z16.1 formula, the incidence rate in this case is an indication of the number of days lost from work per 100 employees during the period of time over which the days were lost. This figure, however, does not convert to a percentage. The formula used is:

Incidence Rate = number of workdays lost x 200,000 ÷ employee hours worked

Since the same formula is used for each, it is important to understand just what factor is being measured (all incidents, lost time cases, no lost time cases, or days lost due to incidents).

Keep in mind that incidence rates are not an indication of how well a safety program is working. They are, instead, a crude measure of the degree of failure in the program. That's sobering, isn't it? If your rate improves a bit, you're a little less bad.

The solution to better measure the effectiveness of safety is to understand the history of accidents in an organization, and assess the events and behaviors of today.

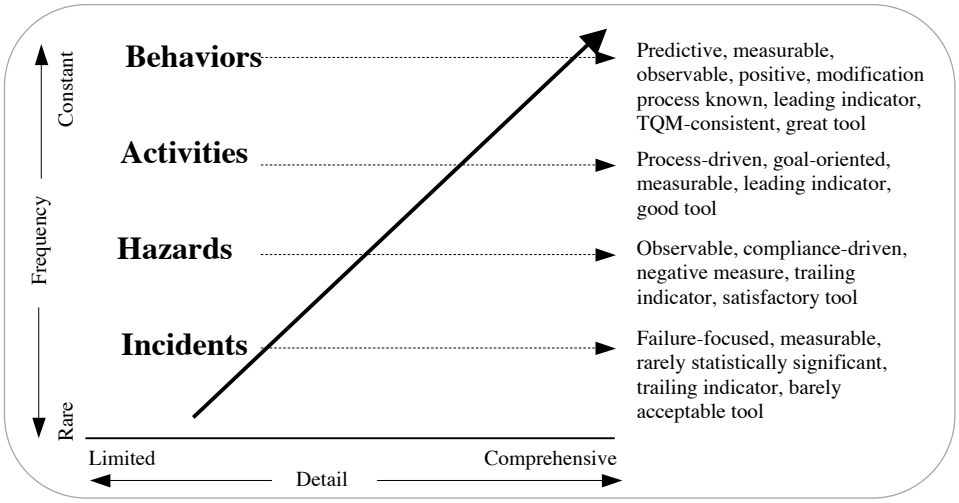


Figure 10.1

Events and behaviors are much more frequent and far more predictive. Today, choices abound for the use of data. As you see in Figure 10.1, we can view safety and health information over a continuum of time and a degree of detail that gives us past trends and future predictions. With these, we're getting to the big picture.

While injury data collection is still necessary, particularly in poorly performing companies, it is important to move companies up the trend analysis continuum to the point where they are finally able to address specific, critical behaviors.

As a first step, look at hazards in addition to injuries. Until the safety process is well established, hazards will give you another view into the system. They are relatively easy to observe and occur more frequently than injuries (fortunately). However, they are still trailing indicators (painting a picture of the recent past) and focus on the negative aspects of workplace activity.

For a positive aspect of safety utilizing a good tool, track all those safety activities you started as part of your strategic planning process. You probably have 100± discrete activities underway throughout the organization and every one completed is another step closer to safety excellence.

Track and celebrate the accomplishment of these activities. You'll find focus shifted to the *health of the process* (the safety and health improvement process) rather than on *end results* (such as lost time injury rate).

Finally, the current optimum measure of success at safety is the behavioral sample. Identify critical safe behaviors, tell your people what they are (unless they've been involved in their identification already), and then take mental snapshots of them as they go about their work. If you find workers are consistently behaving safely, you can be fairly certain that they will be injury free when left unsupervised.

Behavioral sampling is one thing. Modifying unsafe behaviors is another and not nearly as easy as may be implied.

Train people on the behavioral safety process and make sure everyone understands what is expected of them. This requires time to train, time to observe and coach or reinforce, time to resolve issues, and time to develop trust. It's worth doing, but it takes more than a couple of pages in this book to develop needed knowledge and skills. When you're ready, invest in the additional help to make it work.

As you move up the list of data choices, you'll find that there are benefits beyond safety. Using leading indicators, sampling, and the behavioral process introduce people to the total quality management and continuous improvement processes.

Interventions to correct unsafe behavior are much easier, cheaper, and more effective than those necessary to deal with injury events. People begin to see the bigger picture and the relationships that thread through the best companies and make all your processes stronger and more effective.

In Chapter 8, I covered the *Safety and Health Opinion Survey*. Twenty-five items on the survey relate directly to the OSHA guidelines and a score of 100 signifies excellence at the OSHA safety and health process. The safety activities I suggested you track above lead directly to improved scores on the survey.

With scores from the survey, plot the improvement in scores over time—weeks, months, whatever fits your improvement schedule. You can also plot key measures of safety success, such as the increase in safe behaviors observed during random samplings in the workplace (Figure 10.2)

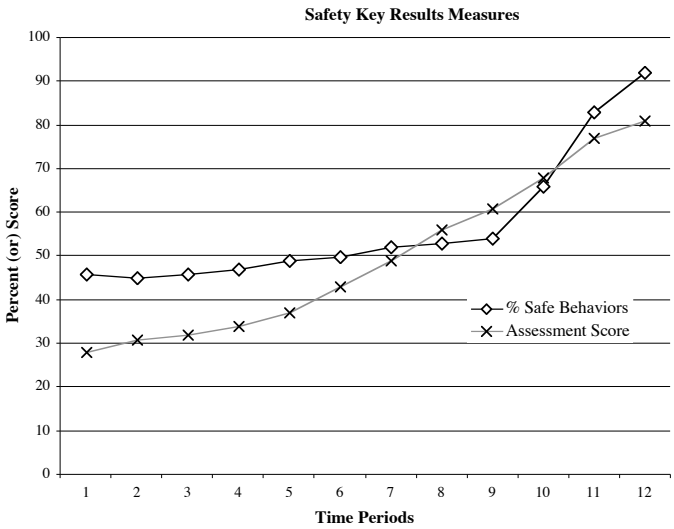


Figure 10.2

Charts may also be used to prove the impact of an intervention on safety and health. In Figure 10.3, the introduction of a performance management program is used to show how behaviors improved after intervention (the completion of training and the start of reinforcement for safety by supervisors).

The process works this way. Select the intervention, and then pinpoint both the results and the behaviors you expect from the intervention. Establish the measurement system and begin to collect the data. Provide feedback to the performers (employees) and reinforce their efforts to make the intervention work. Finally, evaluate the success of the intervention with the help of the data display.

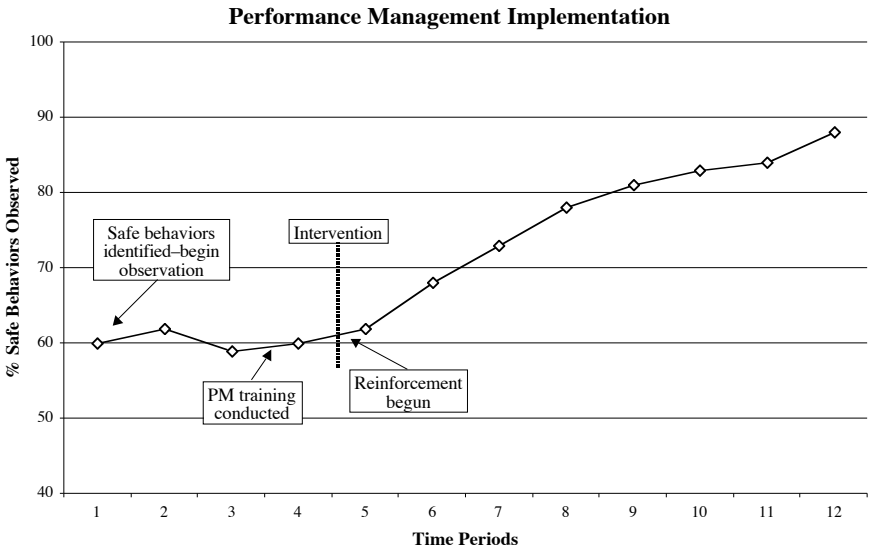


Figure 10.3

An even better approach is to track both experimental and control groups that will help you eliminate other casual influences occurring outside the study.

It may seem like a lot of trouble but proving effectiveness of interventions is important.

Managers continually put initiatives into place and have no way of knowing which ones actually work. There are things being done for safety in companies that are known to be ineffective or even counter-productive because no one has any hard data on success or failure. You need data! Test what you do!

Now look at the attributes for this indicator. Originally, OSHA called this section "injury and illness trend analysis." More recently—driven in part by the search for better measures of safety success—it's been titled "safety trends analysis" to reflect the importance of collecting positive and predictive data which is a reliable indicator of probably future performance— something injury and illness trend analysis fails to do.

Indicator 16—Safety Trends Analysis

Indicator Description—Analyze injury and illness trends over time, so that patterns with common causes can be identified and prevented.

Attributes of Excellence

A. A system exists which tracks trends in safety and health at the facility

B. The system addresses trailing indicators, including accidents, occupational injuries and illnesses, hazards identified, and complaints from employees and others.

C. The system addresses leading indicators of safety and health effectiveness, including employee attitudes and employee behaviors.

D. All personnel at the facility are aware of the need to provide incident and activity information to the system, and do so systematically, accurately, and consistently.

E. An individual, or group, is assigned responsibility for compiling and analyzing records for safety and health trends.

F. Trend data is consistently provided to all facility personnel.

G. All personnel are fully aware of safety and health trends, causes, and means of prevention.

H. Trend data is utilized to drive improvement and prevention activities.

I. Employees are active participants in the determination of collection methods, collection, analysis, and intervention selection.

Safety Incident Report

Company/ Division	Department/ Group	Incident date	Time of incident	☐ A.M. ☐ P.M.
Where did incident occur? *Address and specific location*			Time employee began work	☐ A.M. ☐ P.M.

Property Damage	Date reported to company	Building or equipment	
Nature of damage		Operator or witness	

Personal Injury	Date reported to company	OSHA Log case No.	Name of injured	☐ Male ☐ Female
Person's address		DOB	Employee number	Date hired	Date job assigned
Job title	Did employee seek medical attention? ☐ Yes ☐ No	Was employee treated in an emergency room? ☐ Yes ☐ No	Was employee hospitalized overnight as an in-patient? ☐ Yes ☐ No	
Lost time? ☐ Yes ☐ No	Treating HCP	If treated away from work, name & address of facility		
Body part(s) affected/how?		What object or substance directly harmed employee?		

What was employee doing just before incident occurred?
What happened?
Primary Investigator: describe incident, findings, and results of root cause analysis
Recommendations and proposals to fix the safety system

Name and Title *Printed*	Phone	Signature	Date

Loss Severity Potential	**Probable Recurrence Rate**	Management verification	
☐ Major ☐ Serious ☐ Minor	☐ Frequent ☐ Occasional ☐ Rare	Title	Date

Form 10.1

11

Hazard Prevention and Control

In This Chapter:

Hazard controls
Housekeeping
Preventive maintenance

Hazard Controls

Along about now, if you've done the exercises outlined in this book, reviewed hazard identification tools, and started uncovering hazards and safety issues, you are ready to yell "uncle! I give up!"

Don't. The hazards and issues were there all along. They were causing all kinds of problems. You just didn't know about them. Now you can actually make real improvements.

And great news: fixing the problems will not cost nearly as much money as you might suspect.

90% of all hazards can be fixed for under $50![44]

Sure, ventilation systems, heavy-duty machine guarding, and major overhauls of large systems will cost more—sometimes much more. But such expensive solutions are rarely necessary. It is much more likely that most hazards involve people failing to pay attention to early clues of deteriorating situations. Or perhaps failing to follow-up during high-pressure operations.

The fixes here are system fixes. Do some additional training. Pay attention to small details so people know you won't tolerate little lapses in the safety culture. Make it clear you expect people to fix problems when they first occur.

More good news: you already have the enormous pool of talent to handle all this and it's you own workforce. That is, if they've been trained and if they've been given the authority to keep things on track.

Most of the hazards I see in the workplace do not require costly management decisions, but if your hazard identification system is set up to bump all the findings to you or the safety coordinator or the safety committee, that's what you get.

If a machine guard is loose, make basic hand tools available to the operator so it can be tightened. If fork truck drivers know they may never set a load in the aisle, you don't have to spend a day each quarter rearranging the workplace. If you've taught basic ergonomics to operators, they can adjust their workstation before the pain of repetitive motion develops.

Another thing, hazards are everywhere. Life is hazardous. After a night sleeping with your wrist cocked under you, you may wake up with a numb hand. Pollen in the air triggers allergic reactions in millions of people. Driving to work is one of the most hazardous things any of us will do during the typical day.

[44] Hansen, L., Rate your B.O.S.S.: benchmarking organizational safety strategy, *Professional Safety,* Jun 1994

Hazards are to be expected and identified. Finding hazards in your workplace does not make you—or it—bad. Not taking reasonable efforts to control the hazards is bad.

Notice I said "reasonable." Federal standards—OSHA standards—define reasonable. Industry best practices often establish reasonableness for safety—and may often go beyond OSHA in suggesting controls. Where standards may be missing or fail to cover certain actions or work, your people will help you determine reasonableness.

For example, in the average American workplace, most people will agree (as does OSHA) that firing a missile by their heads at 100 miles per hour several times a day or slamming their heads on the floor with a force of 10 g's repeatedly is not acceptable. Yet in the workplace of professional sports, participants willingly accept such risks with only minimal efforts to reduce the hazard.

You are probably not involved in professional sports, so for practical purposes, making reasonable efforts to protect people from harm within the workplace is intelligent and good business.

Controlling hazards is a two-part process.

First, make sure that the safety system is working correctly. This helps ensure that hazards with unreasonable or unlawful risk are properly controlled before people are exposed to them. To repeat myself, hazards are a window into the system and culture of your company and they tell you where things are not functioning effectively.

Now follow a hierarchy of hazard controls proscribed by OSHA and designed to have the most effective controls come first. Here they are—in the order to be implemented.

1. Engineering controls
2. Work rules and procedures
3. Administrative controls
4. Personal protective equipment

Faced with a hazard that requires control, work through these four steps until the risk remaining is acceptable to you, your people, and the law.

Let's look at each one.

Engineering controls are those things designed to separate your people from the hazard—or to remove the hazard entirely. Generally speaking, they should work even if someone is inattentive or unaware. Some companies even go so far as to design engineering controls that prevent intentional access to the hazard area by an operator.

The most effective engineering control is elimination or removal. It stands to reason that if the hazard is erased, it can no longer be a source of harm.

For example, if you are using a solvent for parts cleaning it might present a dermatitis problem to employees, be a fire hazard, and also cause respiratory problems. Checks with vendors and tests may show that a water-based cleaner will work just as well and present none of the hazards. Eliminating the problem has controlled the hazard.

Most waste and water treatment plants once used chlorine gas for purification. They have converted to granular materials that offer none of the highly toxic risks to employees and the community that came from the release of gas clouds.

Look for ways to substitute less hazardous materials for sometimes traditional, but dangerous, materials.

Exhaust ventilation to a scrubber can ensure that the work zone air is free of dangerous contaminates. Redesigning a workstation to eliminate manual lifting of parts or materials can significantly reduce sprains and strains.

What's truly interesting, beyond the safety benefits, is that elimination of hazards usually seems to improve the process, enhance quality, shorten production or process time, and cost less. Much of this gain comes from peripheral activities. Lower hazard materials may mean environmental or pollution costs go down. The new materials may actually work better in the process. Less physical demand on the operator may mean fewer errors and greater capacity to do other critical functions.

Enclosing the hazard is another much used method of engineering control.

It is common to find a sound-deadening enclosure built completely around a noisy machine. The machine itself may give off sound waves well above the action level for workplace noise, but since it's in it's own room or sound enclosure, people outside are protected from the noise.

Closed tanks contain chemicals and fumes. Not only do they limit employee exposure, but they also prevent loss of material to the atmosphere that can be both costly and environmentally undesirable.

Sand or grit blasting is often done within a full enclosure with protective gloves and a viewing port installed to allow the operator to view and manipulate the work. Hoses for chemicals or pressurized gasses or liquids are often wound or encased in woven or spring metal to prevent or contain a rupture.

Machine housings or covers enclose a multitude of hazards—moving machinery, high or very low temperatures, high pressure, hazardous liquids or gasses. Just as television cases are sealed with warnings to the homeowner to "keep out! No user serviceable parts inside", all manner of industrial and service equipment hazards are kept away from the operator and casual observer by enclosures.

Robots are typically isolated behind a full enclosure. Since the equipment is computer controlled and is usually unable to recognize human activity within the zone of activity, entry into the zone is prohibited by the enclosure.

As a general rule, if equipment comes with enclosures, make sure they are always in place except during periods of authorized service. If enclosures are not installed over or around hazardous activity or substances, consider designing and installing your own.

If elimination or full enclosure still allows access to a hazard, consider barriers. Barriers simply block access to the hazard point by operators and others working in the area.

A classic barrier is the machine guard. Guards cover points of operation such as dies, shears, and rollers. They keep people away from other hazards such as dangerous energy, extremes of temperature and power transmission devices—gears, pulleys, drive belts, shafts, etc.

Lab hoods are barriers coupled with hazard elimination—they physically protect the technician and remove any hazardous gasses or vapors. Welding shields are barriers that prevent arc flashes from being seen by those without eye protection.

Barriers can be as simple as a guardrail around an elevated platform, floor opening, stairway or dock. Barrier tape—the black on yellow plastic ribbon—is often used to designate temporary areas of hazard that people must avoid.

In the case of engineering controls, do what's feasible. If your industry already does certain things, what's feasible has been established for you. If OSHA requires it, then the playing field has been leveled for everyone and that determines feasibility. But for other things, the only guidance you'll get is how you and your people feel about the risk. Do what's necessary to make everyone comfortable with the work.

Sometimes, you may find that the risk is too high and the cost to protect against it is more than you can afford. You may opt not to do that work.

If engineering controls are not feasible, move down the hierarchy of controls until you've effectively managed the hazards. If you still can't find effective controls and the risk is unacceptable, you may just have to drop the idea or farm the work out to a specialty company that is equipped to do the work safely.

While engineering controls are the highest form of protection from hazards, they are rarely perfect at separating people from the area of risk. Creative people—especially if motivated by production pressures and conflicting priorities—can find ways to defeat engineering controls and put themselves at higher risk.

This is where leadership comes in. By your daily actions, questions, and frequent coaching, make it clear to your people that engineering controls must not be defeated or circumvented.

Otherwise, employees routinely circumvent controls. Take interlocks for example.

Many machines have interlocks installed on guards or access doors. When the guard or door is opened allowing access to the hazard area, the interlock opens the control circuit and shuts down the equipment. Once stopped, it often takes time and extra work to get the equipment up and running properly again.

If an employee is feeling pressure to meet production quotas, he or she might try to tape or fasten the interlock switch so the circuit stays closed even when the guard or door is opened in order to clear jams or adjust the equipment "on the fly."

In over half the companies I visit where interlocked equipment is used, I find tape or wire keeping at least a few of the interlocks closed. I also find supervisors who express great surprise at this discovery. If they really don't know what goes on while their people work, I wonder how they do spend their workday?

As for the operators, each one has a credible story about the defeated interlock. Usually, they claim that manufacturing engineers don't know anything about how the job is really done and all their boss cares about is production.

Barriers keep good people who follow rules out of trouble. Nothing but strong safety values and attentive supervision can keep someone from standing on a railing to change a light bulb or jumping barrier tape to get a close look at the activity on the other side.

Engineering controls can take any form the hazard requires and the creativity of your people generates. The safety equipment industry continues to develop excellent tools for engineering controls. Call two or three local vendors to see how they can help. As with so much else in safety, effectiveness depends on you and your people.

After completing feasible engineering, move on to work rules or procedures. This is down a level. Gone are the physical blocks to keep people out of trouble. With work rules or procedures, you depend on compliance by workers and enforcement and encouragement by their supervisors. The safety culture that has been established is in full play now.

OSHA requires many of these rules and procedures. Energy control programs—lockout/ tagout—are classic examples of a work rule. A written procedure allows mechanics to by-pass the guards and barriers and enter the inner workings of a machine, but only under stringent operating rules that shut off energy to machines. Locks are placed to keep machines and the energy that operates them shut down.

Other examples of work rules and procedures include confined space entry, hot work or open flame control procedures, bloodborne pathogens exposure control plans, fork truck and crane operation rules and requirements. Basically, any time you prepare a procedure which tells people how to do a specific job or function safely and correctly, you've taken the first step in putting this second level of hazard control in place.

Whether the rule or procedure is in writing (preferred) or verbal, it means nothing unless it has been communicated effectively to all employees, they understand how to apply it, they know that it is important to supervision and that there will be adverse consequences if they fail to follow it consistently.

The real test of this hazard control is whether it's being followed every time. Give the slickest package of rules and procedures to a compliance officer and he or she will probably skim through it and then proceed right to the floor. They will want to see what you've written in use. If they don't find it, you will get cited.

To assure the greatest degree of success, be sure you understand the components of any OSHA required written programs that apply to your business. To provide general guidance to everyone, you will need to have a facility or plant-wide procedure for each component.

OSHA has model procedures for many of these programs on its web site, which you can download, and use as the core of your procedure. In several cases, however, you'll also need a companion procedure for specific machines or jobs.

This is where the job safety analysis (JSA) covered in Chapter 9 comes in. Start with the JSA and fold in applicable details from the site-wide program along with job write-ups, MSDS information, quality checks, and other job-specific information. You now have a fairly comprehensive process "cookbook" for the person doing the job.

The more involved your people are in the establishment of workplace safety rules and in the review of the language the rules will take, the higher the chance of success at compliance. Buy-in is critical and so is understanding. You get both if your people have substantial input.

Work rules and procedures are not all job specific. Many apply across the workplace to everyone. Keep all aisles clear. Wipe up spills. Keep fire doors closed. Report all emergency conditions to the emergency number before attempting to deal with the emergency.

At the end of the chapter is a *Loss Control Sample Policy* (Form 11.1). I've given this to clients for years as an example of general work rules and procedures. In addition to covering policy topics such as vision, intent, and general safety policy, there is also a fairly comprehensive section on requirements and expectations. Notice that this section is broader than workplace safety, covering some security and environmental issues, as well.

I'm a strong believer in tying things together for the workforce and this is just one way of helping them see the bigger picture in a single document. Codes show where OSHA requires training [T] or a written procedure [WP]. If people can find more detail in a company policy or procedure, [P] indicates that.

This is just a sample. The regulations change, needs and issues change, and terminology changes. Use the approach if it's helpful, but make it your own document.

One work rule has a huge impact on the workplace yet is often overlooked entirely. It's the good housekeeping rule.

The *first thing* compliance officers, visitors, prospective employees, and money lenders look at when they enter a workplace is it's physical condition—housekeeping, order, space—those things which are a significant component of hazard control!

Intuitive thinking about housekeeping has finally been supported by research. Science has correlated housekeeping and the injury rate for an organization.

The study found a strong correlation between poor housekeeping and higher OSHA recordable rates and first aid injury rates. The study also found, "the benefits of clutter control extend far beyond injury reduction (to impact) productivity, quality and morale."[45]

I once walked into a maintenance shop at a mid-sized company and was stopped dead in my tracks—there was no place to put my foot. Every inch of the floor was covered with new parts, used parts, waste, tools, raw materials, drawings, soda cans, and other undescribables. Every machine surface was covered with tools, parts, and scrap.

The ten people who worked out of the shop were on jobs when I looked in. I wondered how they could do their jobs if all their tools were spread round the room. I found out later that they don't do their jobs well at all. What a surprise.

That shop was the worst case, but I've seen many others. At the risk of oversimplification, I believe that housekeeping is a key indicator of the safety culture. If you can't get people to understand that they do better work, safely, when the workplace is in order, then it's a pretty good chance that you can't get them to do other things well either—including safety.

Here are the housekeeping rules. The OSHA standards say all places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition.

- Everything has a place and is to be kept in that place when not in active use.
- Things no longer needed must be removed or recycled.
- Minimize work in process.
- No place is housekeeping exempt.

I've also seen shops where the "house" is spotless and everything else seems to follow. My favorite example is my neighborhood ten-bay automotive garage. It is open, bright, with large windows between the customer area and the shop.

Tools are kept in the toolboxes when not in use. Mechanics get clean uniforms daily. The floor is scrubbed nightly. The neighborhood Christmas party is held 30 minutes after closing on a December evening. Children play on the floor and the atmosphere is festive. Can you imagine this in the shop where you take your car?

After engineering controls, work rules and procedures are in place; it's time to institute administrative controls.

Administrative controls are something of a special case. They are applied when exposure to some form of risk is acceptable for a short period of time, but not for an entire shift.

Administrative controls are used in your personal life all the time. For example, if you're painting a room in your house, you may stop periodically and walk outside for a breath of fresh air. That's an administrative control. Perhaps you enjoy dancing, but you and your partner sit one out for a rest. That break is an administrative control. So are the breaks you take for a cold drink and a cool-off period while you're working in the yard on a hot summer day.

In the workplace, turn to administrative controls to help lessen ergonomic problems and to stay within acceptable exposure limits for noise and chemical exposure.

[45] McCon, P. E., Housekeeping and injury rate: a correlation study, *Professional Safety,* Dec1997

Ergonomic risk factors such as repetitive motion, vibration, heavy lifting, awkward postures, and contact stress tend to reach the critical point after about two hours of exposure per day. Assuming that you've used engineering to eliminate as much risk as possible, the next step may be job rotation.

For example, you may assign people to teams, which can rotate jobs among themselves at regular intervals. If you have someone working on assembly who works certain parts of the body repetitively, that person may move to another assembly job that uses different body motions after 30 minutes and be replaced by someone on the team who was performing yet another job with different physical stress factors.

By keeping the total exposure to any particular type of body motion to less than two hours per day, you've used an administrative control to limit the risk for the entire team.

Longer rest breaks, use of relief workers, and exercise breaks designed to vary body motion are other examples of administrative controls.

Another use of administrative controls aims to reduce exposure to chemicals and other body stressors that have known acceptable limits.

If you are using a chemical which has a threshold limit value (TLV) of 10 parts per million (PPM) over an eight hour work day and your haven't been able to reduce the exposure using engineering controls and the employee reaches the limit in just four hours, you must administratively control his or her exposure by rotating the person out of the area of exposure.

It works that way with noise, as well. If someone is exposed to an average of 95 dBA, that individual can only be exposed to the noise for four hours. If it's 100 dBA, then they can only stay in the noise zone for two hours.

Another caution: threshold limit values, permissible exposure limits (PEL) and similar limits set by OSHA or by industry consensus are based on exposure believed to be safe for the average individual.

Obviously, no one is truly average. Some people may be less tolerant of the effects of exposure to body stressors. If people complain about aches and pains and other symptoms of possible over exposure, consider rotating them out of the area more quickly. It challenges your management skills, I know, but it's still much easier than trying to deal with lost time, compensation claims, and dissatisfied employees.

Yet another caution: most guidelines and limitations on work and exposure to stressors are based on a normal workday of eight hours.

If people are regularly working overtime or if they are on ten-hour days or twelve hour shifts, you need to consider that factor. The longer people work, the more you will have to adjust the upper safe limits downward. People get tired and the impact of stressors becomes cumulative. Long hours lead to more accidents and injuries and other related problems. Consider more breaks, effective rest periods, opportunities for healthy food and plenty of fluids, and sufficient people to allow for frequent job rotation.

Personal protective equipment (PPE) is an acceptable option in hazard control, but it is the fourth and final option. Apply this only after you have made a reasonable effort to implement the other three options in order (engineering, rules and procedures, and administrative controls).

There is wisdom in this approach. It forces you to find the best solutions first. You won't have to worry about exposure to chemicals if you select the least hazardous for the purpose and provide enclosures and proper ventilation. If you specify low noise equipment at the time of purchase, noise won't be an issue. If you pay attention to good ergonomic design, you'll reduce or eliminate the risk factors.

If you're really creative in the design of your workplace—and get plenty of help from your people and responsible vendors—you can design out many of the risks and also, as I suggested in Chapter 2, you can improve productivity and quality and probably cut environmental issues to near nothing.

Every business is different. I've been in some where there are no good solutions at the top of the hazard control hierarchy. But there are many more which surprised themselves when they really got to work on finding a better way.

Now let's look at PPE as a solution.

First, I agree that providing some form of protection for individuals may be the only choice. Professional sports, for example, depends almost exclusively on PPE. Carpenters, mechanics, and machinists never know when something will fly at them and so eye protection is a must. Baggage handlers and other flight line crewmembers have no choice but to use hearing protection. In the best of workplaces, material handlers can drop items so safety shoes are standard.

In 1994, OSHA issued major revisions to the personal protective equipment standards. You'll find them in 29 CFR 1910.132 through .140 and in the non-mandatory appendix B you'll find guidelines on how to conduct a hazard assessment. The hazard assessment is required, but how you do it is up to you.

The hazard assessment covers every part of your facility or operation. It involves a walk-through by a team of people who look at types of hazards and the source of those hazards that are present. In some cases, a job may have hazards to be protected against. In other cases, it may be the specific work area that has hazards.

In addition, the team looks at your specific experience and considers the type of risks found, the level of those risks, and the seriousness of any potential injury. Armed with that data, the team determines whether or not PPE use should be required. A PPE Hazard Assessment and Certification (Form 11.2) is at the end of the chapter and is something you might find helpful.

Don't forget protection for things such as sun or UV exposure, flying insects, and poison ivy, oak or sumac if any of those risks can impact your outdoor workers. Actually, the OSHA standards in this area are pretty helpful. A quick reading will give you lots of good ideas.

Once you've determined if and where PPE is necessary, be sure to involve the people who will be affected. As I've said before—buy-in is critical. Everyone needs to understand the logic behind the hazard assessment and the form of PPE that is most likely to provide acceptable protection.

Let workers help you select the PPE. I often hear from employees who say a particular item is heavy, uncomfortable, unattractive or some other adjective that justifies not wearing it. The best way to overcome this is to let them talk with vendors and try on a variety of samples until they find one that works for them.

Once the program is put in place and your people are outfitted with the PPE of their choice and they've been trained—OSHA requires good training in this area—there is required on-going program maintenance. That means enforcing and reinforcing use—letting people know that consistent use is expected and appreciated.

Be sure that it's easy for people to obtain the equipment. Most responsible companies provide the PPE for their people and recent OSHA rulings strongly support that. If the equipment can be taken home and used away from work (usually safety shoes and protective eyewear), you can ask employees to pay for part or all of the cost, but I find that such an approach really weakens your position. The cost for most PPE is relatively modest. Pay for it.

If employees need to go to a stock room to draw PPE, give them the authority to do that. Don't require a supervisor's signature. If the supervisor is in a meeting or unavailable and a worker can't get quick authorization, there's a strong tendency to do without. If you don't trust your people to use the authority wisely, you've got another much bigger problem. Deal with that first.

If you're concerned about employees taking PPE home, so what?! If you've helped instill a strong enough safety culture that they want to protect themselves and their family while doing work at home, you should be thrilled! If they get hurt off the job, it still costs you. If a family member gets hurt, they are distracted at work and it costs you. What better employee benefit can you provide at such a low cost?

The standards require the employer to ensure that defective or damaged PPE is not used. Worn straps, scratched lenses, cracked plastic, torn fabric are all examples of problems which suggest it's time to replace the gear.

Look for hidden problems, as well. For example, leather work shoes saturated with a solvent from a spill will never be solvent-free and are quite likely to cause dermatitis problems. Leather is notorious for soaking up chemicals and your only solution is to throw them out.

You are also required to keep the PPE clean and sanitary. For assigned items, that may mean coaching employees to perform periodic cleaning. For common use items—those shared by several people—the standards require cleaning and sanitizing after each use. A face shield at a pedestal grinder—or visitor hard hats—are good examples. Once worn, they should be washed with a mild soap solution, dried, and placed in a clear plastic bag ready for the next user.

I realize that such an action is so unusual that it gets a laugh. But think about the cost and the consequences. The cost is time—perhaps two minutes—between 30 and 60 cents at typical labor rates. The consequence is that you comply with the law, reinforce the safety culture, and give a message to employees and visitors that you care about the details of work. If all other things are equal, I'll always give my business to a company that presents a neat, clean, orderly image. How about you?

That's it for hazard control. The specific tools and techniques you use will require creativity, sensitivity to the needs of your people and your operation, a review of the applicable OSHA standards, and help from vendors and suppliers—lot's more than we can cover in these pages. But the effort will almost always result in strong financial and productivity benefits in addition to the positive impact on safety and the safety culture of your operation.

Now take a look at what the guidelines suggest as a checklist for success on this indicator.

Indicator 17–Timely Hazard Control

Indicator Description—So that all current and potential hazards, however detected, are corrected or controlled in a timely manner, established procedures for that purpose, using the following measures:

- Engineering techniques where feasible and appropriate;
- Procedures for safe work which are understood and followed by all affected parties, as a result of training, positive reinforcement correction of unsafe performance, and, if necessary, enforcement through a clearly communicated disciplinary system;
- Administrative controls, such as reducing the duration of exposure; and
- Provision of personal protective equipment.

Attributes of Excellence

A. Hazard controls are in place at the facility.

B. Hazard controls are selected in appropriate priority order, giving preference to engineering controls, safe work procedures, administrative controls, and personal protective equipment (in that order).

C. Once identified, hazards are promptly eliminated or controlled.

D. Employees participate in developing and implementing methods for the elimination or control of hazards in their work areas.

E. Employees are fully trained in the use of controls and ways to protect themselves in their work area, and utilize those controls.

Preventive Maintenance

Preventive maintenance is a new but related topic.

All those hazard controls you implemented must be maintained. Keeping the physical controls and general condition of the facility up to par forms the foundation for the behavioral elements. I've said it already—a positive safety culture cannot exist without a safe workplace.

Have you ever given much thought to what preventive maintenance means to you personally? Think about your car, your house, its heating and cooling system, your teeth and the rest of your body. Where would you be without regular preventive maintenance? Probably stuck on the side of the road. You limp home to a leaky house and find the heating system has stopped working. You gnash your sore teeth and drag your aching body to the phone (it works, thanks to preventive maintenance by the phone company) and call for help. What a life we'd have if we didn't believe in preventive maintenance.

Lack of routine preventive maintenance for all safety and health operating systems and equipment leads to accidents, injuries, breakdowns, shortened equipment life, lower quality, and higher operating costs.

Cutting back or avoiding maintenance is clearly a false economy, but many companies accept the consequences without making that choice. The order to watch costs gets interpreted by someone as a mandate to cut indirect costs and maintenance is usually viewed as an indirect cost.

I spent a day in one troubled manufacturing site. They did electronic assembly. Corporate management was threatening local management bonuses because of very high injury rates.

Two hundred employees worked in a fairly new one-story building. There was one mechanic. The PA system called him to a new location about every five minutes throughout the day. The roof and overhead equipment leaked water in over 40 places. Trashcans and tarps were everywhere.

A couple of engineers had even propped a trash can on a 3" water line four feet off the floor and wired it to screws driven into the block wall by their desks to keep it in place. The can had about 30 gallons of water in it when I found it and the 440-volt feed for that part of the building ran just under the water line, but they had forgotten about it.

Everywhere I looked there was more evidence of a breakdown in maintenance in this facility. For want of another mechanic and a maintenance plan, the entire operation was wearing out before its time and dragging safety, quality, and productivity down with it.

Several people told me they wouldn't want their children to work there. More than preventive maintenance was needed to turn things around—a change in management thinking, for one—but that lone mechanic had easily become the poster boy for failure.

As with the rest of a comprehensive safety process, preventive maintenance is simply good business. It doesn't cost much—and actually saves money in the long run. In progressive, forward-thinking companies, employee operators are trained to handle much of the routine preventive maintenance. The new breed of operator-mechanics enjoys job enrichment while they add value to the operation.

Here are the guidelines for the preventive maintenance indicator.

Indicator 18–Facility/Equipment Maintenance

Indicator Description—Provide for facility and equipment maintenance, so that hazardous breakdown is prevented.

Attributes of Excellence

A. A preventive maintenance program is in-place at the facility,

B. Manufacturers or builders routine maintenance recommendations have been obtained and are utilized for all applicable facilities, equipment, machinery, tools, and/or materials.

C. The preventive maintenance system ensures that maintenance for all operations in all areas is actually conducted according to schedule.

D. Operators are trained to recognize maintenance needs and perform or order maintenance on schedule.

Loss Control Sample Policy

Every business or organization concerned with preventing loss should have a clearly stated policy. The policy should come from management; but have the understanding and support of the entire workforce. The following policy is only an example. The specific content of any policy will depend on the style of management, company values, and the structure of the organization and should be developed specifically for the company. Ideally, it should provide behavioral expectations that appropriately guide people who already possess strong safety and loss control values.

LOSS CONTROL

Vision, Intent, Requirements and Expectations

_____ Company

Vision

_____ Company holds a vision of a workplace where losses through accident, fire, theft, environmental incident, and similar problems do not occur. Loss incidents are avoided because we believe that we can avoid the human errors that lead to them. We believe that all of us share the responsibility for loss control and that, by working together, we can help each other reach the vision. Our relationships are open, positive, and supportive. We are safe and secure.

Intent

As CEO of _____, I intend to have a climate which values quality and positive human relationships. We will take corporate risk to further the value of our company to our shareholders and customers; but we will not put our lives, our health, or our environment at risk. I intend to do this through positive communication, clearly assigning responsibility, granting authority to supervisors, teams, and individuals, and holding those in authority responsible for excellence in loss control.

Guiding Policy

PERFORMANCE : We will all perform in ways that prevent loss-producing incidents at home, on the road, in the community and at work.

FACILITIES : Will be designed and operated to prevent all forms of loss and business interruption.

EMPLOYMENT : Working safely is a corporate value and a core condition of employment.

ASSESSMENT : We will test how we are doing with audits, inspections, and investigations.

CORRECTION : Loss producing deficiencies will be corrected promptly upon identification.

RESPONSIBILITY : For loss control rests primarily and directly with line management and is supported by all members of the organization

KNOWLEDGE : Is essential for the effective control of loss by all of us at all times, so we will train frequently, share information freely, and coach others as necessary and appropriate.

Requirements and Expectations

The following are minimum requirements and expectations for loss control in our company. Operating teams and/or managers may establish more stringent requirements as conditions require or operations dictate or as necessary to meet applicable laws or regulations. It is expected that all of us will be trained on these requirements and that we will be given easy access to more detailed written information, where applicable. Training mandated by law is indicated by a [T] followed by the appropriate reference. A company procedure or policy which elaborates on a section is indicated by a [P]. Written programs mandated by law are indicated by a [WP} followed by the appropriate reference. Where additional OSHA guidance applies, the reference is indicated by (29 CFR 1910.xxx).

Abrasive Wheels and Grinders: Grinder safety guards and personal protective equipment are necessary whenever abrasive wheels are in use, unless specifically exempted by safety standards. (29 CFR 1910.215 and 243)

Access Control: In order to protect our information and equipment, and ensure their safety, we will ensure that all people and vehicles accessing our facilities are authorized, properly identified, appropriately protected and escorted, where there may be concerns.

Accident/Incident Investigation and Reporting: We will promptly investigate, thoroughly analyze, correct, communicate and report in writing to appropriate members of management: all incidents involving or having significant potential of causing personal injury, property damage or loss, business interruption and all crimes or fraud against the company. [P]

Accident Recordkeeping: All personal injury accidents must be reported promptly to supervision and to safety and health staff for appropriate corrective action and compliance with OSHA recording and reporting requirements. (29 CFR 1904)

Aisles and Passageways: All aisles and passageways are must be marked and kept clear to allow the safe movement of personnel and equipment. (29 CFR 1910.21-.32)

Audits: On a regular basis, we will have regular internal and external audits of our operations for compliance with these Minimum Requirements and Expectations. [P]

Bloodborne Pathogens: Where a risk of exposure to human body fluids exists, or may be expected to occur, we will train everyone potentially impacted on the risks of exposure, the universal precautions recommended to control exposure, and the practices to be used to clean up human body fluid in the workplace. For details on what's required, see the written program. [T][WP] (29 CFR 1910.1030)

Confined Space Entry: Because of the risk of problems or injury, we will follow the procedures outlined in the written program for safe entry into tanks, vessels, manholes and other enclosed or confining spaces. Provisions in the written program include requirements for written authorization, oxygen and explosivity testing, ventilation, isolation, lock out, monitoring and rescue. [T][WP] (29 CFR 1910.146)

Contractor Safety: Anyone dealing with contractors and sub-contractors will check to see that they have and enforce Loss Control standards for their people. This must be a job specification and integral part of each contract.

Control of Business Data and Process Control Computers: We will all take steps to ensure the control of business data and process control computers to keep them secure from deliberate intrusion, accidental threats, or natural disasters with appropriate contingency plans for disaster recovery.

Compressed Gas Cylinders: All compressed gas cylinders must be secured in storage and in use, with valves protected, and with fuel gas cylinders separated from oxygen cylinders or highly combustible materials be at least 20 feet or a non-combustible barrier. [T] (29 CFR 1910.252)

Cranes and Hoists: We will ensure that all our cranes and hoists are inspected daily, that all who operate them are appropriately trained, and that their rated loads are clearly displayed. [T] (29 CFR 1910.179 and .184)

Crime and Fraud: As a matter of business importance, our procedures call for the investigation, prosecution and restitution of cases where crime or fraud are committed against the company with appropriate communication of incidents to all members of the company.

Electrical: Electrical installations will be designed and well documented to: [T] (29 CFR 1910.301-.308)

- ❖ Conform to national codes/local regulations.
- ❖ Provide a reliable power source.
- ❖ Protect primary equipment with alarms and shutdown relays. *Devices must be tested at appropriate intervals*.
- ❖ Provide emergency power supply for equipment that may become a hazard under normal power source failure.
- ❖ Provide for grounding and bonding with regular testing.

Electrical Safe Work Practices: Everyone working with electrical equipment and who faces the risk of injury through electrical shock must adhere to written electrical safe work practices which deal with lockout/tagout, work on energized equipment, work near overhead lines, personal precautions and protection, and warning systems. Training is mandatory for everyone involved. [T][WP] (29 CFR 1910.331-.335)

Emergency Planning: We maintain an emergency plan which: [T][WP] (29 CFR 1910.38 and .39)

- ❖ Provides for all people (Company and non-Company) and on which all our people are trained.
- ❖ Provides a firefighting organization.
- ❖ Is coordinated with the local community and industrial neighbors.
- ❖ Is field tested and documented at least annually.
- ❖ Covers all potential incidents relative to that department, e.g., utility loss, hazardous/toxic release, fire, explosion, civil unrest, bomb threats, and natural disasters.

Employee Training and Job Operating Instructions: To ensure personal safety and effective operations, we must provide initial and continuing training for everyone on matters of safety, health, environmental protection, and operations. Our success in this area is measured by knowledge of the current procedures and behaviors that reflect them. [P]

Equipment and Piping: Equipment, piping and subsequent maintenance modifications must conform to the best design, fabrication, installation and documentation practices. Registration and inspection will conform to applicable Company and governmental requirements.

Ergonomic Design: It is essential that we protect the musculoskeletal health of our workforce through the appropriate design of tools, tasks, and workstations and through workplace training and education in the principles of ergonomics.

Exits: Everyone is expected to ensure that there are sufficient exits to provide alternative means of escape from all work areas, that they are kept unobstructed and operable, that they are clearly marked, and that they exit directly to the street or open space. In addition, responsible teams or managers must hold drills regularly to ensure everyone is able to exit safely in the event of an emergency. [T](29 CFR 1910.37)

Fire Fighting: All our people must be trained in the proper response to take in the event of a workplace fire. For most personnel, this will be training in hazard recognition and evacuation. Only those personnel designated and trained in first aid fire fighting may attempt to extinguish workplace fires. [T][WP] (29 CFR 1910.155-.165)

Fire Protection Systems: In all work areas, we will have an inspection and maintenance program for fire protection equipment and water supplies. This will include an adequate, reliable source of fire water sufficient for the area. Impairment of fire protection systems will be treated as an emergency and immediate repairs will be made or alternative protection provided.

First Aid: We will ensure that, when qualified medical personnel are not on-site, at least one individual within the work shift is qualified to render first aid and that first aid supplies, as approved by the consulting physician, are available for use. [T](29 CFR 1910.151-.153)

Flammable Liquids and Gases: Before flammable vapor-air or gas-air mixtures are allowed to exist in the flammable or explosive range, ignition potential must be determined and preventive/protective measures taken.

Floors and Floor Loads: All floor surfaces must be kept clean, dry, and free of projections, and must have the maximum safe load limit posted. (29 CFR 1910.22)

Fork Lift Trucks: Everyone must ensure that all forklift trucks are safe for service, appropriately guarded, and operated only by trained operators. [T] [P] (29 CFR 1910.178)

Government Regulations: We must always ensure that we have safety regulations equal to or better than applicable government safety regulations and we must be sure that we are all following them.

Guarding and Interlocking: All equipment must be guarded and interlocked when there is a reasonable probability that an injury can be prevented by such action. (29 CFR 1910.211-.222)

Hazard Communication: In all our areas, we will identify and list the chemical, physical, toxicological, and reactive properties of all hazardous materials utilized and/or produced there and regularly communicate this information to all with a need to know. Communication methods will include labeling, material safety data sheets, and periodic training in accordance with our written hazard communication program. [T][WP] (29 CFR 1910.1200)

Housekeeping: We will keep all our work areas and other facility spaces clean, orderly, and sanitary at all times. (29 CFR 1910.22 and .141)

Hot Work and Smoking: We will consistently control smoking and any work or operation of any equipment that may act as a source of ignition in areas where flammables and combustibles are present, e.g., welding, cutting, grinding, liquid or powder transfers, etc. [T][P] (29 CFR 1910.251-255)

Industrial Hygiene and Medical Program: It is important for us to detect and control potential health hazards that may affect the safety and health of our people and the local community. [P]

Instrumentation: We will use instrumentation and interlocks to monitor and/or control critical parameters such as temperature, pressure, reaction rate, etc., which may be indicative or lead to the existence of hazardous conditions. They will be redundant and/or physically independent of control devices as dictated by the control logic.

All control instrumentation must fail-safe and emergency controls must be located for rapid response. All devices critical to continued safe operation or orderly shutdown must be regularly tested.

Job and Process Operating Procedures: For all jobs, we will have and use written job and process operating procedures. They must be reviewed annually. Changes will be implemented only after appropriate review by management and/or impacted operating personnel. [P]

Ladders, Scaffolding, Work Surfaces, etc.: We will have, and use, safety equipment and safety devices for work that cannot be done safely from the ground or from permanent flooring or platforms. (29 CFR 1910.25-26)

Leak and Spill Control/Containment: We will have, and use, facilities for the detection of leaks and spills and we will be able to isolate significant quantities of material safely when handling hazardous materials. Protective features must be installed to minimize the potential for employee exposure, fire and explosion.

Line and Equipment Opening: We must use procedures for safe line and equipment opening operations. P]

Lockout/Tagout Procedures: In all our operations, we must follow rules for de-energizing, lock out, tag out and field-testing of power driven equipment prior to any work that requires exposure to unguarded equipment or hazards caused by unexpected starting. [T][WP] (29 CFR 1910.147)

Material Control: For a variety of regulatory and asset protection reasons, we control materials and goods entering and leaving the workplace. Activities that we control include: purchasing, shipping, receiving, storage, salvage, donation, employee sales, scrap and wastes. Check procedures or with a manager if there are questions. [P]

Noise Exposure: Routinely, we will determine if exposure to noise exceeds permissible levels and take appropriate steps to bring the noise below such acceptable levels by engineering, administrative measures, or personal protective equipment. [T] (29 CFR 1910.95)

Open Surfaced Tanks: Everyone who works with, or near, opened surface tanks will be trained on their hazards and on how to protect themselves. [T] (29 CFR 1910.94)

Personal Protective Clothing and Equipment: All of us will wear the proscribed eye, hand, body, face, head, hearing, respiratory and foot protection when there is a reasonable probability that injury can be prevented or minimized by use of such equipment. [T][WP] (29 CFR 1910.132-.140)

Posting Requirements: Certain notices and posters are required to be displayed in the workplace. They include:

- The OSHA employee rights poster
- A copy of the OSHA Form 300 during February through April for the previous year
- Copies of formal, official communications with OSHA
- Imminent danger notices
- Signs and labels regarding potential or actual exposure to toxic substances

Pressure Vessels: Pressure vessel design must conform to applicable governmental codes and local engineering standards. Pressure or vacuum relief systems will be installed, registered, inspected and documented to prevent damage and rupture to equipment or to prevent other hazardous situations.

Process Computers and Data Handling Equipment: Process computers, data handling equipment and records need to be protected from loss due to fire, explosion, theft, water damage and unauthorized physical or electronic access.

Proprietary Information Control: We are all responsible for protecting proprietary information with respect to classification, marking, printing, copying, distribution, use, storage, recording, retrieval, transportation and disposal.

Reactive Chemicals: Wherever we have chemicals, which can react with other materials, we will have a reactive chemicals program. Regular reviews of process reactive hazards are required for existing processes, new processes, and whenever key personnel or a process is changed, as well as a thorough review of laboratory or pilot plant data prior to scale-up. [P]

Records and Reports Required by OSHA: Many sections of the OSHA standards mandate that various records be kept and we will keep those records that apply to us. In general, records are required of:

- Emergency Action and Fire Prevention Plans (29 CFR 1910.38 and .39)
- Annual inspections of powered platforms (29 CFR 1910.66)
- Maintenance inspections of manlifts (29 CFR 1910.68)
- Noise exposure and audiometric test results (29 CFR 1910.95)
- Written plans for hazardous waste operations and emergency response, as well as training certification and medical surveillance (29 CFR 1910.120)
- Date of issue of respirators to employees and monthly inspection records for emergency use respirators (29 CFR 1910.134)
- Written procedures for the control of potentially hazardous energy and records of training and program inspections (29 CFR 1910.147)
- Written statement of fire guard policy (29 CFR 1910.156)
- Dates of recharge, testing, and inspection of fire extinguishers (29 CFR 1910.157)
- Either signs on sprinkler valves or central records covering design of system (29 CFR 1910.159)
- Records of testing and inspection of cranes and derricks, chain hoists, and ropes (29 CFR 1910.179-.181)
- Inspection and testing of industrial slings (29 CFR 1910.184)
- Records of periodic and regular inspections of power presses and annual recertification of presence sensing devices (29 CFR 1910.217)
- Periodic inspection and certification of welding, cutting and brazing equipment (29 CFR 1910.252)
- Exposure records on OSHA-regulated air contaminates (29 CFR 1910.1000)
- Records of occupational exposure to bloodborne pathogens and of employee training, where required (29 CFR 1910.1030)
- Accurate records of inventories of all flammable and combustible liquids (29 CFR 1910.101-.110)
- A written hazard communication program and a complete set of MSDS forms on covered chemicals (29 CFR 1910.1200)

Reproductive Health Hazards: It is important that our people are adequately protected from any adverse effects from materials that can adversely impact reproductive health. Personal protective equipment will be utilized where elimination, substitution, and engineering controls are unable to control exposure.

Rotating Equipment: Critical rotating equipment, which upon failure can lead to personal injury or significant losses, must be equipped with instrumentation to monitor and/or control hazardous operating conditions (e.g., temperature, pressure, speed, excessive loading and vibration).

Safe Operation of Motor Vehicles and Motorized Handling Equipment: All of us must follow procedures for safe operation of all motor vehicles, including operator-driven material handing equipment and work platforms. [P]

Signs, Labels, and Colors: Within our operations, *Danger* signs of red, black, and white will be used only where an immediate hazard exists. *Caution* signs of black on yellow will be used to warn against potential hazards or caution against unsafe practices. *Safety Instruction* signs with white letters on a green panel against a white background will be used only to provide instruction. Tags in similar colors and wording will be used as a temporary means of warning about conditions, potential hazards, and defective equipment. [T] (29 CFR 1910.145)

Spray Booths and Finishing Operations: All spray finishing operations must have adequate air velocity for the type of operation, unclogged filters, accessibility for cleaning, three feet of clear space on all sides, sprinkler protection, explosion-proof electrical fixtures, an absence of open flame, "no smoking" signs, and frequent cleaning of deposits. (29 CFR 1910.107)

Storage: All toxic, flammable, combustible or corrosive materials in storage must be separated and/or protected from fire exposures and be located to minimize exposure to other operations. All stored materials must be stacked, blocked, interlocked, and limited in height so as to prevent sliding or collapse. Storage areas must also be kept free of materials that create hazards from tripping, fire, explosion, or pests; and allow free passage and movement within the area. (29 CFR 1910.176-.190)

Testing of Emergency Alarms and Protective Devices: We will regularly test emergency alarms, protective and emergency devices and all devices critical to the continued safe operation or orderly shutdown of operations. [P]

Training: Training will be conducted on the loss prevention elements listed throughout these requirements and expectations for all personnel when initially assigned, when reassigned to a new job or function, when loss incidents suggest a new for refresher training, when jobs or processes change, and when otherwise required by law. As a minimum, the following training will be provided to our people:

- New employee orientation on safety, health, security, and environmental requirements and procedures prior to initial job assignment. [P]
- Hazard Communication training covering standard requirements, program operation, explanation of labels and MSDSs, location of the written plan, education on chemical hazards and workplace hazardous materials, protective measures employees can take, employer-implemented protection, and hazard detection methods; with annual refreshers. [T][WP] (29 CFR 1910.1200)
- Electrical Safe Work Practice training covering lockout/tagout and other required practices and precautions. [T][WP] (29 CFR 1910.331-.335)
- Confined Space Entry training at the time of assignment and whenever duties change, the hazards change, or evaluation suggests inadequate knowledge. The training must be certified as accomplished by an appropriate member of management. [T][WP] (29 CFR 1910.146)

Truck Loading: When loading or unloading road trucks, we will ensure that the brakes are set and that the rear wheels are chocked. (29 CFR 1910.23)

Welding: Operators of welding equipment must be trained and qualified in its use, the equipment must be safe for the application, with adequate mechanical ventilation, shielding from radiation, and use must be consistent with good fire prevention procedures. [T] (29 CFR 1910.251-.257)

Commitment

As Chief Executive Officer of _____, I am committed to loss control and to the vision, intent, policy, requirements and expectations outlined above.

_____

Date _____

As members of _____, we are committed to loss control and to the vision, intent, policy, requirements and expectations outlined above.

Form 11.1

Personal Protective Equipment Hazard Assessment and Certification

Work Area				Date		
Primary Jobs	Risk Level	High	4	2	1
		Med	7	5	3
Assessment Team		Low	9	8	6
			Low	Med	High
			Severity Potential		

Hazard Category *see reverse*	**Location/Source/Task** *see reverse*	**Score** *above*	**PPE Type/Style**

Certification of Hazard Assessment

I certify that I conducted the hazard assessment recorded above for the purpose of determining compliance with OSHA §1910.132(d)(2)

Assessment Guidelines

Assessment Scoring involves the determination of the probability of a hazard event occurring (the *risk level*) and the determination of the consequences of the event if injury occurs (the *severity potential*)

Hazard Categories include:	**Hazard Sources** include:
Impact	Motion…machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel could result in collision with stationary objects.
Penetration	Sources of high temperatures…resulting in burns, eye injury or ignition of protective equipment
Compression (roll-over)	Chemical exposure
Chemical	Harmful dusts
Heat	Light-generating operations…welding, brazing, cutting, furnaces, heat treating, high intensity lights
Harmful dust	Areas where objects can fall or be dropped
Light (optical) radiation	Sharp objects which could pierce feet or cut hands
	Rolling or pinching objects which could crush feet
	Workplace layout
	Proximity to other people
	Electrical sources

Eye and Face Protection may be required when there is the potential for:
Impact from chipping, grinding, machining, masonry work, woodworking, sawing, drilling, chiseling, powered fastening, riveting, and sanding.
Heat from furnace operations, pouring, casting, hot dipping, and welding.
Chemicals from acid and chemicals handling, degreasing, plating.
Dust from woodworking, buffing, and generally dusty conditions.
Light/radiation from arc welding, gas welding, cutting, torch brazing, torch soldering, glare.

Head Protection may be required when there is the potential for:
Impact and *penetration* from falling objects, where work is being done below other workers who are using tools and materials which could fall, where work is being done around or under conveyor belts which are carrying parts or materials, working below machinery or processes which could cause material or objects to fall.
Electrical shock or *burns* from working on or near exposed energized conductors.

Foot Protection may be required when:
There can be *impact* from carrying or handling materials such as packages, objects, parts, or heavy tools which could be dropped and for other activities where objects might fall on the feet.
There can be *compression* from fork truck or pallet truck tires, bulk rolls (such as paper or steel), around heavy pipes, in pinch points formed by stationary objects, and from handling objects such as drums.
Punctures can occur from sharp objects such as nails, wire, tacks, screws, large staples, scrap metal

Hand Protection may be required when there is the potential for:
Cuts from sharp objects, tools, raw materials, glass.
Abrasions from rough surfaces such as wood, stone, concrete, and abrasives.
Burns from hot materials, pipes and conductors, and high-speed tools and equipment.
Skin contact with all manner of chemicals.

Hearing Protection and **Respiratory Protection** hazard assessments are not required by the PPE standard since they are generally required when exposures are measured with instrumentation and are found to exceed the threshold limit value of either the sound or the specific chemical.

Form 11.2

12

Emergency Planning and Preparation

In This Chapter:

Need for planning
Summary of Laws
Emergency planning tips
Emergency equipment

The whole thrust of safety and health programs is to eliminate loss incidents in the workplace. But to assume that nothing will ever happen is foolhardy.

Much of life is beyond our control. Human nature nearly always interjects unpredictability into any task or process. An essential part of safety planning is to anticipate and plan for problems.

Emergency planning ensures that acts of nature, transportation incidents, problems at nearby facilities and the unsafe or malicious acts of people anywhere can be handled with the greatest likelihood of survival with limited loss. It involves anticipation, planning, involvement of everyone at the facility, and exercises to ensure that the appropriate responses will be automatic.

We expect the pilot of commercial aircraft in which we fly to have planned and trained to the point of automatic and proper reaction and for the crew to teach us what to do in an emergency, The same is true with workplace emergency preparedness. Everyone knows what to do and does it well.

I suspect that you know by now that emergency planning is much more than making sure people evacuate the building and calling the insurance company to cover the loss. Remember the BASF/Wyandotte study I covered in Chapter 2? It found that catastrophic events result in failure of the company in 43% of the cases and 71% would ultimately fail within five years. The dividing line between success and failure in business is often very narrow and you need every advantage you can muster. Emergency planning is one of those edges.

The discussion in this chapter will deal with physical threats to the business and people. There are related areas of expertise that deal with threats to information systems, product liability, and company image. All are important and all tie in to any emergency planning process, but they're outside the scope of this book.

Emergency planning requirements come under the auspices of a multitude of federal agencies, and if you're in a high-risk industry, you'll have to pay close attention to a wide variety of requirements. But, for most employers, it's not too hard to make sense of the process.

Start by looking at the various federal requirements.

A typical governmental response to emergencies and disasters is to write laws intended to prevent a recurrence and to dictate how such events will be handled in the future. As a result, there are many regulations that impact business and tend to mold the directions plans will take.

Laws and regulations are enacted at the federal, state and local level. Some are even conflicting, not a surprise when so many different people and agencies try to address so many different issues.

I've been in companies where as many as six different emergency response plans are on the shelf. Imagine, an emergency occurs and you run for the bookcase and quickly skim through six plans to decide which one applies. Ridiculous, isn't it!?

Of course you don't decide the appropriate response when the emergency is already underway. Your job is to interpret and digest all these requirements to create a single emergency response plan for your facility that best ensures the safety of your people and the community.

I spent 20 years as a naval officer. Everyone on the ship was schooled and drilled in emergency response to the point where you reacted automatically. That's what you want for your facility in the rare event you're tested someday.

Fortunately, the National Response Team (NRT) made the task a whole lot easier when it issued the Integrated Contingency Plan (One Plan) guidance in June 1996. The One Plan provides for the consolidation of all federally required plans into a single document.

It has three main parts: (1) an introduction, (2) a brief core plan, and (3) several response annexes, which augment the core plan. The guidance document can be obtained by calling the EPCRA/RCRA/ Superfund Hot Line at (800) 424-9346.

This summary is an effort to outline some of the best known requirements in U. S. law so you will have a starting point to be reasonably certain that your plan is appropriate for your location. Only federal statutes are reviewed here, not state or local laws.

You will want to be sure that you have a full copy of each of the applicable regulations in your area covering your type of operation and hazards. The bullets under each law are simply meant to give you the high points and cannot be considered complete.

Remember, this is a quick guide and not an authoritative and comprehensive set of regulations.

OSHA Employee Emergency Plans and Fire Prevention Plans, 29 CFR 1910.38 and .39—This section of the OSHA regulations provides blanket requirements for emergency action plans required by any other section of OSHA. They must be in writing (as spelled out in your emergency action plan).

Employee Emergency Plans must cover:

- Escape procedures and routes.
- Shutdown procedures and special hazards to be considered.
- Means to account for evacuated personnel.
- Rescue and medical duties.
- Means to report emergencies.
- Names or titles of contacts for further information.
- Employee alarm system.
- Training on safe and orderly evacuation.
- Review with employees when plan/responsibilities change.

Fire Prevention Plans must cover:

- List of major hazards and control procedures.

- List of potential ignition sources and control procedures.
- Names or jobs of those responsible for prevention and control systems.
- Housekeeping as part of written plan.
- Training on fire hazards, and procedures to be followed.

Notice that sections 1910.38 and .39 cover two plans that will be mandatory for your operation if any other part of the OSHA standards requires a plan. In some cases, you may be able to escape the requirement, but why look for an out?

These requirements are basic—they make good business sense—they are part of a comprehensive safety and health process that ought to be considered. Just do them and communicate the product and use them. It's not hard.

OSHA Hazardous Waste Operations and Emergency Response Rule, 29 CFR 1910.120—This section of OSHA was required as part of the Emergency Planning and Community Right-to-Know Act (EPCRA); but tends to have much broader application within industry. Even if you are not a covered facility under EPCRA, you may have to comply with this regulation if you ask any of your people to respond to a hazardous material release or spill. You may not be required to do much of the following if you are not a listed hazardous waste operation, so be sure to check the regulations before you start work on this. Here are the principle provisions:

- Covers hazardous waste sites and all workers responding to emergencies involving hazardous materials.
- Requires both a written safety and health program and an emergency response plan.
- Requires compatibility with, and integration into, community emergency response plans.
- Evaluation of the site characteristics by a trained person and considering immediately dangerous to life and health (IDLH) situations.
- A site control program including buddy system, map, work zones, communications, work practices, and medical assistance.
- Training and certification of all employees engaged in hazardous waste operations.
- Annual medical surveillance for all involved personnel.
- Programs to reduce worker exposure below action levels.
- Periodic air monitoring.
- An informational program with names of responsible individuals.
- Decontamination procedures.
- On and off-site emergency plans with preplanned coordination with local emergency services.

Emergency Planning and Community Right-To-Know Act (EPCRA)—This federal regulation has had a major impact on companies and facilities which produce, use, or store extremely hazardous materials. Be sure you analyze the requirements to know whether or not they apply to you.

The requirements do not preempt state or local laws. Curiously, they do not require an emergency response plan—just "cooperation" with the local emergency planning committee (LEPC). But you need an emergency response plan for other laws and to meet your requirements and it does require some elements of an effective

emergency response plan (notification, description of emergency equipment and facilities, and identification of people responsible). Provisions include:

- Establishes state and local commissions and committees to plan for emergency responses with participation by those who produce, or use or store "extremely hazardous substances" (this is an excellent way to link in to, and network with, community responders).
- Requires that facilities prepare a list of "extremely hazardous substances" around which planning is carried out.
- Requires reporting of releases of the "extremely hazardous substances" and CERCLA regulated substances.
- Mandates training of emergency response personnel at all levels and for emergency plan reviews.
- Notification of the community of "hazardous chemicals" used or stored, using MSDSs or chemical lists organized by site.
- Requires each site to appoint a "facility emergency coordinator" to work with the local emergency planning committee.
- Requires each site to provide a "hazardous chemical" inventory to the state commission, local committee, and fire department.
- Provides for a "toxic chemical" emissions inventory to be provided annually to the community.

OSHA Chemical Process Safety Management (PSM) Standard, 29 CFR 1910.119, 1992—While this regulation only applies to companies within certain chemical processing and handling fields, check to see if it applies to your operation. Its purpose, like many other recent regulations, is to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. Provisions include:

- A written emergency action plan for entire facility in accordance with 29 CFR 1910.38(a).
- A review of the emergency action plan with employees upon plan development, when duties or responsibilities change, and when the plan is changed.
- The emergency action plan must be kept at the workplace and be made available for employee review.
- Compliance audits are required every three years.

Resource Conservation and Recovery Act (RCRA), 40 CFR 264—While RCRA is primarily an environmental regulation, it also requires a written contingency plan and has a variety of other requirements you will need to meet. In most cases, the plan you prepare under other regulations will be acceptable under RCRA. But, once again, check the detailed RCRA requirements. Here is a summary of the principal requirements:

Personnel training (§264.16):

- Directed by a person trained in hazardous waste management.
- Must include instruction in hazardous waste management procedures and contingency plan implementation.
- Must ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems.

Required equipment (§264.32):

- Internal communications or alarm system.
- A device for summoning community emergency assistance.
- Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment.
- Water in adequate volume for fire fighting.

Arrangements with local authorities (§264.37):

- Familiarization for all community emergency responders in the facility layout, properties of hazardous wastes handled and associated hazards, places where people would be working, and facility access and evacuation routes.
- Designation of primary community emergency authority.
- Agreements with state emergency response teams, contractors, and equipment suppliers.
- Arrangements with local hospitals.

Contingency Plan (Subpart D)—Each operator must have a contingency plan for the facility designed to minimize hazards to human health or the environment from fires, explosions, or unplanned releases of hazardous waste.

Content of Contingency Plan (§264.52):

- Describe actions the facility personnel must take in response to emergencies.
- Describe the arrangements agreed to by the local police department, fire department, hospitals, contractors, etc.
- List the names, address, and phone numbers (both office and home) of all qualified emergency coordinators.
- List all emergency equipment at the facility, its location, a physical description of each item, and a brief outline of its capabilities.
- Have an evacuation plan for facility personnel, describing signals and routes to be used.

Emergency procedures (§264.56)—In an imminent or actual situation, the emergency coordinator must immediately:

- Activate the facility alarm.
- Notify appropriate state or local agencies.
- Identify the character, source, amount, and extent of the release of hazardous waste.
- Assess health and environmental hazards from the release.
- Take all reasonable measures to control and stop the emergency.
- Monitor for leaks, pressure buildup, and other problems.
- Provide for post-emergency treatment, storage, or disposing of recovered waste.

Many large companies and those with substantial risks in their processes have full-time emergency planners and highly trained responders. But, for the vast majority of you, all you really need is an effective plan which fits

your operation and risks and which your people know and understand. The objective is that people all respond appropriately, no one gets hurt, and any business loss is minimized, if possible.

As I've stated already, requirements for emergency response planning in industry come from a variety of sources. In most, however, there is common ground. The following tips and techniques reflect both the base legislation or governmental requirements and the approaches businesses have found helpful in meeting the requirements. In fact, most requirements in this area are performance based and open ended, leaving the specific approach to you. Here are some of the best of the ideas.

Reduction or elimination of risk pops up increasingly in legislation and continues to be proposed in pending legislation. To meet this requirement, process reviews are helpful since they examine the failure points and weak links in the process. Also, most companies now examine high-risk materials and operations with an eye toward modification, reduction, or elimination of the risk. Notice that this first step ties in with the engineering controls we covered in Chapter 11.

Another important factor in limiting the scope of an emergency is the **pre-emergency planning** effort. This includes forming an emergency coordinating committee, assigning an emergency planner (someone who can stay in touch with others in the facility and in the community to make sure the plan is always current and workable), writing and testing a simple emergency plan (which gets regular review and amending), and making sure that the high risk operations identified previously are covered by the plan.

Since line management is in charge of typical industrial emergencies, it is critical that they know their role. The senior person present at the facility at any time must be able to take charge and exercise line authority.

Chemical release modeling equipment is also an important consideration at this phase in the operation, if appropriate for the facility.

For the **emergency response organization**, include the identification of a site emergency coordinator (with an alternate). Usually, this is a senior manager or someone else who is respected and will be followed during an emergency. Emergencies are no time for consensus building and a democratic process. Decisions need to be made and followed instantly. The site emergency coordinator and his or her alternates must have those management skills.

Staffing for the organization should follow normal operating relationships to every extent possible. You spend eight hours (or more) a day establishing good working relationships. Use those normal relationships during an emergency rather than having emergency personnel working with people they do not know or feel comfortable with.

Personnel need to be trained in an effective incident command system (now a requirement under certain laws). People in complex emergency response jobs need detailed training and certification. Those in simple jobs can be briefed at the time of the emergency; but all need to have easily recognizable identification.

The **facilities, equipment, and procedures** required by the regulations may vary; but it's always advisable to have a well outfitted emergency control center which includes maps, drawings, lighting, communications equipment, reference material, equipment listings, and weather data access. A mobile command post with similar equipment may also be advisable. All equipment that might be needed in an emergency should be identified and key personnel should know the person controlling the equipment.

Fail-safe shutdown of equipment, especially critical operating units, should be considered and key personnel trained. Escape routes and shelters should be coordinated with neighboring facilities. Personnel accounting, emergency scene access control, and checklists for critical tasks are all important considerations.

The major problem with most emergencies is **emergency communications**. This area requires constant work; but can be helped greatly by having a variety of communications equipment available with a link to a site control center and a community emergency operations facility.

Media relations are another key factor in this area. Be sure a facility spokesperson is always available, can get to the scene fast, has a predetermined press release ready, and is able to view the media as a member of the team, not an adversary. A crisis communications plan is now viewed as critical in order to help the facility deal with the adverse press and public reaction from a site emergency. Finally, don't forget that employees, customers, and suppliers need rapid information on the status of any emergency and its impact on them.

It's great to have a plan; but it's useless if personnel have not had training on **recognition, control, and response** as required by the plan. First, personnel need to know how to tell when a situation is deteriorating and an emergency is developing. Drills are critical to ensure that the first response efforts by personnel to an emergency are automatic and correct. Some businesses find that cooperative training with other companies and community responders is helpful.

Notification systems are essential; but they must also be unique for emergencies and well understood by all. People need training and a means for sounding the alarm and getting aid. These links, along with those to the community, need to be regularly tested—especially those which notify personnel of a rapidly developing and serious incident.

Most legislation makes **personnel protection** mandatory in all emergency situations. In addition, industry practice suggests that no one be allowed into a situation that is immediately dangerous to life and health—even in an emergency. Decontamination—of both equipment and personnel—is another element of protection.

Finally, **community relationships are** critical in effective emergency management. Always involve community agencies in preplanning. Site plans must be integrated with community plans and compatibility ensured. Arrangements should be in writing (a RCRA requirement). The development of strong working relationships with the community is important; but it does not come easily—it takes hard work!

If you'd like more help with emergency planning, request or download the OSHA booklet *How to Prepare for Workplace Emergencies, OSHA 3088*. Now, let's look at the attributes of excellence for emergency planning.

Indicator 19—Emergency Planning and Preparation

Indicator Description—Plan and prepare for emergencies, and conduct training and drills as needed, so that the response of all parties to emergencies will be "second nature."

Attributes of Excellence

A. All potential emergency situations that may impact the facility are identified.

B. A facility plan to deal with all potential emergencies has been prepared in writing.

C. The plan incorporates all elements required by law, regulation, and local code (including the requirements of 29CFR1910.38, 29CFR1910.119, 29CFR1910.120, and RCRA, where applicable).

D. The plan is written to complement and support the emergency response plans of the community and adjacent facilities.

E. The plan is current.

F. The plan is known to all personnel at the facility who can explain their role under the plan and can respond correctly under exercise or drill situations.

G. The plan is known to community emergency response commanders.

H. The plan is tested regularly with drills and exercises.

I. Community emergency responders are involved, where appropriate, in the facility drills and exercises.

J. The plan is implemented immediately when an emergency at or impacting the facility is known.

K. The plan is effective at limiting the impact of the emergency on the facility and the workforce.

Emergency Equipment

In an emergency, all the preparation, training and drills undertaken at the facility will be limited in effectiveness if the tools, systems, and information necessary to handle the emergency are not in place and immediately available. In fact, many emergency management tools (such as sprinkler and alarm systems) will normally function even if no one is present at the facility.

Unfortunately, many of the catastrophic events in the history of business disasters got out of control when alarms were not sounded early, when control systems failed, and when people at the facility lacked simple reminders of what to do.

Equipment to support emergency reporting and help control the problem has proven time after time to be the critical element between a minor problem and disaster. For example, inoperative sprinkler systems have repeatedly resulted in the loss of multi-million dollar facilities from what started as a small and very controllable fire.

The emergency equipment indicator in the guidelines seeks to ensure that the tools and support systems will work when emergencies strike. Nothing complicated or terribly sophisticated here, just a need for diligence in making sure the support system exists for any anticipated emergencies.

Indicator 20—Emergency Equipment

Indicator Description—Plan and prepare for emergencies, and conduct training and drills as needed, so that the response of all parties to emergencies will be "second nature." (Same as 19)

Attributes of Excellence

A. Emergency communications systems are installed at the facility.

B. The communication systems are redundant (such as alarm boxes, emergency telephones, PA systems, portable radios).

C. The communication systems are operational.

D. The communication systems are tested at regular intervals (at least monthly).

E. All personnel at the facility are trained in the use of the communication systems and can demonstrate their proper use.

F. Exit signs, evacuation maps, and other emergency directions are installed at the facility.

G. Emergency directions are available, correct and accurate in all spaces, corridors, and points of potential confusion.

H. Personnel are aware of the emergency directions and can accurately describe the action they are to take in an emergency based on the directions available to them in their work area.

I. Emergency equipment appropriate to the facility (including sprinkler systems, fire extinguishers, first aid kits, fire blankets, safety showers and eye washes, emergency respirators, protective clothing, spill control and clean-up material, chemical release computer modeling, etc.) is installed or available.

J. Emergency equipment is distributed in sufficient quantity to cover anticipated hazards and risks, is operational and is tested at regular intervals (at least monthly).

K. All personnel at the facility are trained in the use of emergency equipment available to them and can demonstrate the proper use of the equipment.

Well there you have emergency planning and preparation. It looks like a lot and it is easy to complicate the process. Resist that urge. Keep it simple. I've seen plans of hundreds of pages, which no one could understand. Make it ten pages with a great drill and training plan associated with it and you'll probably be in fine shape.

13

Occupational Health

In This Chapter:

Occupational health providers
Emergency care
Injury and illness management

Occupational health is an interesting topic.

Except for larger companies where physicians or nurses are on staff and/or on site, attention to the health of employees is often something that occurs away from the facility and at the option of the individual—or not at all.

According to the National Institute for Occupational Safety and Health (NIOSH), only about six percent of American workplaces provide any form of on-site medical surveillance.[46]

But the cost of poor employee health is huge!

Every day that an employee is away from work due to illness—job-related or not—costs the company in wages, overtime, lost productivity, lower quality, higher stress levels, compensation and health care premiums. Run calculations and you'll see that you can't afford not to pay attention to the health of your people.

It's been estimated that if the average young employee spends an hour a day in a beneficial exercise program, his or her lifetime earnings will increase $250,000 because of less absence from work due to illness and an ability to work longer years.[47]

Here are three key aspects of occupational health—professional advice and counsel, emergency care, and early return to work after illness or injury. Each area is necessary and should be part of any comprehensive safety and health plan.

Occupational Health Providers

Let's start with getting good occupational health advice and counsel.

When you have a health problem or concern, you most likely go to your family physician who knows you, your history, your general health, and any on-going issues or problems with which you might be dealing. Hopefully, you trust your physician and it's a comfortable relationship.

Employers need that same relationship with an occupational health provider or group, which knows the company, it's products and processes, and its people. As with a personal physician, it's often part-time, but it is a relationship! To avoid establishing such a relationship is to declare a major part of the safety and health program unimportant.

[46] Murthy, L., NIOSH, in *BNA OSHR,* Nov 8, 1995
[47] *New York Times Magazine,* Aug 14, 1999

This is, in fact, a legal requirement. §1910.151 (a) states "The employer shall ensure the ready availability of medical personnel for advice and consultation on matters of plant health."

An occupational health provider is necessary even if you only have 5 or 10 people. It's like having a lawyer and an accountant. It's a professional trained in the field who can keep you out of trouble and help you become more productive and profitable.

Your personal physician is probably not qualified to advise on occupational problems. Would you call a divorce or patent attorney to advise on product liability matters?

Occupational health providers are specifically trained to recognize and treat problems that develop in the workplace. They may understand chemicals and chemical exposure, body mechanics at work, and other hazards and risks specific to your workplace.

A general practitioner or internist, no matter how well qualified, may simply never make the connection between cause and symptoms because they know nothing about your operation and how it might affect your people.

For example, one third of all adult asthma cases can be attributed to work exposure.[48] Can you imagine the frustration of treating someone with a problem whose source you don't know exists?

To find a qualified occupational health practitioner may require some creativity, especially in sparsely populated parts of the country. However, almost certainly t here are occupational health providers in or near major cities.

Make a trip to the city, make an appointment, and talk face to face with the practitioner. Ask if you can send a copy of your chemical inventory and facility hazard assessment to the doctor. Get in the habit of calling periodically to discuss any concerns.

Invite him or her out to the facility for a walk-through. You will no doubt be charged for his or her time but it's probably going to be peanuts compared to the help you'll likely get.

Some states have established occupational health networks. Teams of physicians and nurses and other specialists are available regionally to help small employers and those in remote locations.

In one western state, the employers in a small town realized the need for an occupational physician and went to the local general practitioner with an offer. If they paid for his specialty training, would he work toward certification as an occupational specialist?

He agreed and worked part-time for several years until he got certified. He, the employers, and the community all gained with this creative approach.

Occupational health providers can include occupational physicians, occupational health nurses (OHN), physical or occupational therapists, exercise physiologists, sports medicine specialists, or rehabilitation specialists. Each group brings a specialty you might need.

In general, occupational health providers can work with you on:

1. Prevention of hazards that cause illness and injuries,
2. Early recognition and treatment of work-related illnesses and injury,
3. Limiting the severity of work-related illness and injury.

[48] Wegman, D. H., MD, and Fine, L. J., MD, Contempo 1996, *JAMA*, downloaded Feb 4, 1998 from the electronic version of JAMA.

Here are the attributes of excellence for this element of your medical program. You may not be able to meet all the attributes, since size is something of a factor, as is availability of the occupational health specialist in the community. Do what makes sense for your situation.

Indicator 21—Medical Program (Occupational Health Providers)

Indicator Description—None specific to this indicator. See Indicator 22

Attributes of Excellence

A. The employer has an existing relationship with a health provider to deliver health services as requested by the employer.

B. The health provider is trained, experienced, and/or certified in the identification, treatment, and rehabilitation of occupational injuries and illnesses.

C. The health provider is familiar with applicable OSHA regulations and record-keeping requirements.

D. The health provider conducts periodic visits and walk-throughs of the facility to maintain familiarity with the jobs being performed and has participated in a safety analysis of those jobs.

E. The health provider is available to conduct training and is accessible to employees to discuss health concerns.

Emergency Care

Despite our best efforts to achieve zero injuries, momentary failures and conditions beyond our control may result in an occupational injury at the facility. In addition, members of the workforce may need assistance as a result of a serious illness or medical emergency.

A preexisting condition may result in additional trauma. An automobile accident may occur on the road in front of the plant or a natural disaster may cause injury to people. Maybe, despite our hopes and prayers to the contrary, the stress of your job may contribute to an acute heart problem.

Planning for such an eventuality by insuring that competent and qualified medical care is available on-site or within a very few minutes travel distance makes good sense and shows, in combination with other safety and health program elements, that management cares about the health and welfare of everyone in the workforce.

In fact, the ability to assist people in need of medical attention is an important human consideration. The National Safety Council figures that over 101,500 people die from unintentional injuries annually. Nearly 21 million suffer disabling injuries with a total cost to the economy exceeding $607 billion.[49]

Only a small percentage (less than 10%) of these figures are a direct result of workplace injuries, but nearly all impact workers and their families in some way.

A somewhat recent mindset has surfaced that questions "good samaritanism." *You'll do more damage,* or *you'll get sued.*

Anything is possible but getting involved typically reduces severity and cuts costs and lost time significantly. There is considerable evidence to suggest that proper treatment at the time of an injury reduces further damage, prevents infection, avoids complications and has a significant positive psychological impact on the injured individual and on co-workers.

[49] Injury Facts, National Safety Council, 1999

Look at it this way, if legal considerations rule, you'd probably not choose to be in business. In the present world, lawsuits are a part of doing business. So, do what's right and proper as well as you can. That's the best defense against a suit.

As you might guess, provisions for competent medical aid are more than just good business. OSHA requires planning and effective performance in this area.

Section 1910.151 (b) of the OSHA standards states, in part, "In the absence of an infirmary, clinic, or hospital in near proximity to the workplace which is used for treatment of all injured employees, a person or persons shall be adequately trained to render first aid."

Rulings and interpretations have expanded on this point to say:

(a) There are no exemptions for size (you and two employees, it still applies),

(b) The program must correspond to the hazards expected based on a workplace hazard evaluation (if it's chemical, provide for chemical exposure treatment or provide for traumatic injury treatment if you have power presses, for example),

(c) Life-threatening injury or illness requires a 3 to 4 minute response time,

(d) 15 minutes is acceptable for non-life threatening injuries,

(e) If emergency transportation is not available, the employer must make provisions for it, and

(f) Response (in case of injury under the standards) is either "to care" or "to the facility".

If an infirmary, clinic, or hospital is not close by, then at least one person on each shift of work should be trained and competent to render first aid. Training in any certified community first aid program is generally acceptable as long as the person(s) can deal with the injuries or illnesses that should be expected at your facility.

As a general rule, OSHA looks for competence in CPR as well as the treatment of traumatic injuries and such things as electrical shock. Repeatedly, employers are surprised to find that someone among their work force already has emergency trauma training. The employee may serve as an emergency medical technician or volunteer firefighter/first responder in their community and may be happy to use their skills at the workplace. Survey your people for applicable skills.

Consider covering the cost of training and providing training time for these people. Being a volunteer EMT, paramedic or first responder is not easy. Burnout coupled with training cost and time makes longevity in the field difficult. Anything you can do to help with that benefits you, them, and the community.

A set of National Guidelines for First Aid Training in Occupational Settings (NGFATOS) was issued in early 1999. The guidelines are a consensus, peer-reviewed document which is non-proprietary and in the public domain. One source for Internet downloading is http://www.pitt.edu/~cemwp/education/ngfatgos/ngfatos.htm.

The courts have ruled on some aspects of OSHA's first aid requirements. For example, the requirement that there be a clinic, infirmary, or hospital in "near proximity" has been interpreted to include a response by competent emergency assistance.

If the facility is a long-term care facility or nursing home with no acute care capability, it can't be counted. On the other hand, if you go to them and work out a plan whereby competent people can assist you whenever needed, you'd be okay.

Whether the person is taken to aid, or aid comes to the person, the courts have held that a response time of no more than three to four minutes is necessary for suffocation, severe bleeding, or other life-threatening injury or illness.

Where the injury is not life threatening, a fifteen-minute response time is acceptable. But answer this question. How do you know if the next medical emergency will be life threatening or not?

Care needs to be less than three to four minutes away or available consistently on site. In addition, care must be appropriate and of high quality. However, if you don't control the trauma equipment and medical emergency providers, you can't be sure that the responders will be there within the necessary time limits.

Traffic accidents and construction, weather, competing calls, address confusion, and a host of other common problems may keep outside responders from getting to your facility on time. My advice is, if you want to be sure good help is always available, have your own internal response capability.

If the injury or illness requires prompt hospital attention, call an ambulance! An ambulance carries trained people, necessary supplies and equipment, and communications equipment. A car or the facility pick-up truck or van likely has none of those things.

It is no help (and probably a source of harm) to throw someone in the back seat of a car and head for the hospital. If they stop breathing, go into shock, or have internal injuries which are aggravated by a bouncing car seat, you've got no way to help them.

If you have employees whose jobs require potential occupational exposure to bloodborne pathogens, then the bloodborne pathogens standard applies. Most of these people work in health care, emergency services, and related support fields such as housekeeping and laundry services. Also, if you have assigned people to be emergency responders for medical events, you'd need to implement the standard at your facility.

Here's what OSHA wrote in a 1994 letter to a representative of a public utility: "OSHA anticipates that this standard will impact upon all non-health care industries in a similar fashion, i.e., that employees who are designated as responsible for rendering first aid or medical assistance as part of their job duties are to be covered by this standard. Employees who perform "Good Samaritan" acts are not, per se, covered by this standard, although OSHA would encourage an employer to offer follow-up procedures to an employee who experiences an exposure incident as the result of performing a "Good Samaritan" act. The key to this issue is not whether employees have been trained in first aid, but whether they are also designated as responsible for rendering medical assistance."

Yes, you need to implement the standard, but it's not that big a deal. Write an exposure control plan, conduct some annual training, and take appropriate action if there is exposure.

The world has changed and all of us now need to be aware of the problems of exposure to bloodborne pathogens. Train all your people. It makes sense and marks you as a concerned and responsible employer.

If your employees are working with chemicals or the potential for burns exists, then safety showers and eye baths are required by the OSHA standards to be near the areas of potential exposure.

The current ANSI standards specify that the units be no more than 10 seconds travel time from the likely source of exposure.

Everyone in the work area should be trained to use, or assist with, the emergency shower or eye bath. They should also be aware of the need for periodic testing of the equipment and the need to maintain clear access.

A study of safety showers and emergency eye washes found that rapid flushing at a properly designed and full-flowing emergency shower or eye station could make the difference between major chemical burns and no apparent injury at all.

To reap these benefits, however, the injured individual had to get immediately into the water stream, disrobe, and get totally drenched with a good flow of cool or cold water. Nearby hoses, personal showers, and squeeze bottles did not have the same positive effect.

AED stands for automatic external defibrillator. It's the new hot tool in life saving and it is a device you might consider if you have the money and see a need within your population of employees, vendors, and visitors.

Nationally, about one thousand people a day die from sudden cardiac arrest and CPR—the old stand-by—is relatively ineffective at saving people.

With AED, the paddles we see in the hospital emergency room are moved into the field. When used, they deliver a jolt to the heart to correct fibrillation—rapid and erratic heart beat.

The units are simple, battery-powered, computer controlled devices that require minimal intervention by human operators. National standards have been set for training that can be achieved in about half a day. Good Samaritan laws protect operators from personal liability.

They are already in wide use in government offices, schools (mandated in New York State), shopping malls, sports venues, large companies, and other places where many people congregate.

Cost for the units is now as low as $1,200. Save rates approach 90% if the victim is reached in the first two minutes with the rate dropping by about 10% per minute. One large company reports a multi-year save rate of 92%.

You may not see a need for such a unit in your workplace, but they appear to be well worth considering and certainly send a message to your people that you care about them.

Now here are the applicable attributes of excellence.

Indicator 22—Medical Program (Emergency Care)

Indicator Description—Establish a medical program that includes availability of first aid on site and of physician and emergency medical care nearby, so that harm will be minimized if any injury or illness does occur

Attributes of Excellence–Emergency Care

A. The facility has a plan for providing emergency medical care to employees and others present on the site.

B. The plan provides for competent emergency medical care within three (3) to four (4) minutes and which is available on all shifts of work.

C. Competent emergency medical care, when needed, is actually provided in accordance with the plan.

D. All emergency medical delivery is done in accordance with standardized protocols.

E. Competent emergency medical care, if provided on-site, is certified to at least the basic first aid and CPR levels.

F. Off-site providers of emergency medical care, if utilized, are medical doctors, registered nurses, paramedics, emergency medical technicians or certified first responders.

G. All members of the workforce are aware of how to obtain competent emergency medical care.

Injury and Illness Management

Once emergency care has been provided to employees for those few situations where the safety and health prevention program has failed, it's time to focus on prompt and effective management of the illness or injury. The objective must be to return the individual to work promptly. It may be on light duty, but get them back!

Supervisors may whine that they need people who can do the whole job, not people on light duty. Nonsense! Since when is no work better than 50% of a good person who knows the job and the operation? If you're hearing this, exercise leadership. Make it clear that supervision means, among other things, effectively using the available resources, not hold out for the perfect scenario.

However, more than reducing company costs is at stake. It is critical to the emotional and physical well being of the individual. Severity of the illness or injury is usually reduced, personal and insurance costs are lowered, and the ability to enjoy a normal life is greatly enhanced.

There is also an important message transmitted to the workforce—the company cares! And yes, this holds true for both workplace-caused injuries and illnesses and those coming from non-work situations affecting your people.

Called *medical case management* or *early-return-to-work* (ERTW), the effort is a partnership between the employer, the employee, the occupational health provider, the personal physician, and the compensation carrier.

All parties need to understand the positive outcomes from managing the injury or illness with sensitivity and compassion and professional competence based on science, medicine and hard data.

Long gone are the days of "take a few weeks off", "the insurance company pays for it", "I don't have any light duty jobs" and other traditional, but poorly founded and often adversarial views of the recovery process.

Case management efforts, if based in honest and sincere concern for the well-being of the employee, work! If viewed as punitive or adversarial and uncaring, they are counter-productive. It takes trained and sensitive supervisors and human resource people to stay on the proper side of the fine line between the two.

The 1993 Michigan Disability Prevention Study I mentioned in Chapter 6 found that a proactive return-to-work effort which included active involvement of the injured person and the supervisor, creative placement, cross-department cooperation, and timely coordination with health care providers yielded better than a 13% reduction in disability absence for the effort.[50]

On the other hand, a disability case monitoring approach, which involved monitoring the validity of the absence along with tracking the progress and outcome of the lost time cases, tended to lengthen the period of absence by over 10%.

It all gets back to your culture and the perceptions of the involved employee. If he or she sees you and your organization as a caring one with his or her interest at heart, the absence will be shorter and return to full productivity will be quicker. If employees think you're out to get them or don't trust them, they'll use any problem as an excuse to stay away as long as possible.

So analyze your problem. If everyone who works for you is a malingerer, the chances are they hate working for you. You and your workplace culture are the problem.

Much more likely, there may really be one or two people who take every opportunity to duck work. If so, deal with them as individuals and don't establish programs and rules for absence that paint everyone with the same

[50] Hunt, H. A., and Habeck, R. V., Michigan disability prevention study: research highlights, the W. E. Upjohn Institute for Employment Research, Kalamazoo, May 1993,

brush. Creating a trusting and open culture isn't being soft. It's treating people fairly, with dignity, and it's good business.

One more point. Soft tissue injuries—the kind that occur with ergonomic problems and back problems—are hard to diagnose. The pain may be very real, but the solution may take time to identify. If someone chops a finger off, you know what you're dealing with and what work they can do on return. Not so with many soft tissue injuries which leads to an interesting fact. If the culture is supportive, people are much more likely to work through the pain and come to work.

Here are some basic tips for an effective return to work process:[51]

- Start with a written policy stating the company's intent to return workers to the job as soon as possible after an injury or illness occurs.
- Identify jobs that are suitable for light duty or can be modified to facilitate return to work.
- When an absence case develops, communicate by phone or letter with the individual's physician stating your desire to return the worker to productive employment as soon as possible and indicating that the limitations of the worker will be accommodated.
- Invite the physician to visit your workplace and also suggest that he/she talk with your occupational health provider so as to get a better picture of the ERTW support system.
- Ask the physician to let you know about any physical limitations the worker will have as well as his or her current capabilities so you will know clearly what the individual can and can not do.
- Provide a list of appropriate jobs to the physician from which he/she can select those suitable for the individual.
- Make a light duty job offer to the worker, in writing, and hand deliver it, if possible.
- Make it clear to all concerned that the well-being of the employee is foremost and that both the employee and the company win if the efforts are kept positive and supportive.

By the way, success will be nearly impossible if the relationship with occupational health providers is not solidly established.

As you probably realize, ERTW efforts have been driven in the past decade by workers compensation costs and great success at the effort in many parts of the country. Medical case management was not a part of the original 1989 OSHA guidelines, but was added in 1996 in response to the obvious need as part of a comprehensive safety and health program. Here are the attributes for this element:

Attributes of Excellence–Injury/Illness Management

A. An early-return-to-work program is in place at the facility.

B. Job descriptions are complete for all jobs and include the physical requirements of the job.

C. Light duty jobs have been identified which are productive, creative, and not demeaning to the worker.

D. The employer follows a prescribed protocol for early contact and close communication with the injured workers health provider which facilitates return to regular or modified work at the earliest possible date.

E. Employees are aware of, and fully support the early-return-to-work program.

[51] Gibbons, W., Safety and Health Programs Assistance Training: Achieving Excellence, University of Alabama, College of Continuing Studies, Tuscaloosa, 1996

14

Safety and Health Training

In This Chapter:

Employee Training
Supervisory Training
Management Training

Safety and health training comes at the end of the OSHA guidelines, but don't let that fool you. Think first, not last!

In Chapter 6, I told you about the management inputs and gave you a chart on the analytical system. The management inputs cover those critical factors management provides to the operational system to keep it moving smoothly—knowledge and skills, resources, and motivation.

In order of importance, knowledge and skills come first. If people neither know about all the necessary elements of safety at your facility nor have the opportunity to develop good safety skills, nothing else you do will help make their life and your operation safer.

As a result, make sure that once the safety system and process is in order, everyone is focused on delivering and acquiring safety knowledge and skill.

It's critical. It's mandatory. Let's examine it further.

Occupational training is a huge subject and I won't pretend to do it justice here. There's a wealth of "how to" information out there to help train effectively, so I'll skip the techniques, outlines and lesson plans.

What I will give you, however, are some unique tips and lessons I've learned over the years and I'll try to help you figure out what OSHA expects from your safety and health training effort.

Let's start with performance. It's a simple concept in safety and health training. People at all levels of the organization need to be able to perform safely.

Seems obviously enough, but many organizations seem to believe a signature on a training record is more important than effective performance. The most ineffective and inappropriate video with absolutely no relevancy to work actually being done is shown to workers. They need only view, sign the training record and poof! Training complete.

Here's a shocker. Anyone reviewing such a process—including OSHA compliance officers—has little interest in signatures. Instead, they'll question people about their knowledge of the subject matter and observe how they use the information. If the performance is sub-standard, the assumption is that training wasn't done.

Training—building the skills to do the job correctly—requires designing and delivering a program which meets specific needs and objectives, conducting the training using proven methods and techniques, and monitoring the effectiveness of the effort.

To do all this successfully takes time and skill.

I get calls all the time asking for safety video recommendations. The callers want to sit people in front of a television for 7 or 12 or 15 minutes—the shorter the better—and expose them to the "magic pill" of training.

Some people don't even ask for recommendations. They just order the least expensive video they can find on the subject and show it cold to meet their training requirements. You simply can't do that to people.

There are some good videos produced but most are awful! They have errors and generalizations and messages that are not just irrelevant, but sometimes harmful. If such information goes unchallenged, you're only making more problems.

I never give video recommendations. Only you can decide what works as a supplement to your safety message.

Training and education research has reported that only 20% of the material delivered in a safety lecture is retained. That's not the fault of the trainee—it may be due to poor delivery, competing information, human retention span, learning methods, and a host of other factors.

Work-place training needs to be delivered in ways that present good, valid information in a variety of challenging, creative ways with plenty of opportunity for questioning and problem solving. Anything less, and you'll be disappointed.

For the typical skill-building safety training, you need material that is work place specific, supported by a competent instructor(s), with questions and discussion and exercises. Cap that off with knowledge and performance tests and the likelihood of success is raised significantly.

For an example of such an approach in the OSHA standards look at the 1998 powered industrial truck operator training standard. It's a model of the new OSHA approach to training that sets out performance objectives and gives a variety of delivery options. This allows you to tailor the effort to your people and facility.

People may think this all sounds like an extraordinary expenditure of time and money, especially compared to prior ideas of budgets for training. Given preconceptions, it may be.

In Chapter 6, I told you that I had a call for help a while ago from someone whose job it was to get all the OSHA-required training done for her company. It bears repeating here. Training was to include lockout/tagout, confined spaces, bloodborne pathogens, powered industrial truck, emergency response, PPE—a long list.

She told me the time budget set by management was 45 minutes! —But she thought that an hour would be more reasonable.

Sometimes a laugh is the only appropriate answer!

In reality, such training might take 40 hours. In some of the better companies, training budgets for all subjects run from three to five percent of payroll.

Two weeks a year spent in training is not unreasonable. Those companies have learned that training is not optional, it's essential. And, it pays dividends. In every case I've found, the value of reduced accidents and injuries and less tangible improvement in morale and overall performance far outweigh the cost of delivering effective safety training.

Training can be done on lunch breaks or after regular work hours, but be prepared to pay for it. OSHA interpretations have stated that the employer is responsible for all the expenses of a training program, including any labor time and fringe benefits.

But why would an employer want to take this approach? Is all training done outside of normal work hours? If it is, then it might make sense for safety training. But, if other training is done during normal hours, the message being sent is that safety is less important and not worthy of being a mainstream activity.

A better choice is to tie the safety training into all the other opportunities you have to draw people together. When you have production updates, quality discussions, prestart-up gatherings, or shift-change discussions, for example, build mini-safety training into those sessions.

If you have an annual master plan for safety training and updates, simply package the material in a way that allows supervisors and team leaders to cover each topic as part of the daily course of work.

This approach works particularly well for updates and informing people of safety program changes. For new subjects and for new people, you simply have to bite the bullet and give them a comprehensive orientation before they begin work on their new job.

Who should do the training is the next question and if you've ever done training, you know that the most important criteria for an instructor is to be comfortable with the subject.

Having said that, nearly everyone involved in your operation should be comfortable with his or her knowledge of safety and health as it applies to your operation. You're not teaching graduate courses in safety and health, all you need to do is tell people who work for you how to be safe in your facility. It's rarely very complicated.

Look to your supervisors to do training. Can you think of a better way for them to know that their people are getting good information and for them to set the proper tone for safety?

Some companies seek out line employees with an interest in the subject and use them as subject experts and instructors. Others rotate the responsibility for mini-sessions through everyone on the team, which gives everyone a stake in ensuring the quality of your training effort.

Computer based training may be worth considering. People can work at their own pace, and the training can be customized for your operation. Various testing and tracking options will let you know the status of training.

But the human contact is missing—a live instructor to answer questions and make sure people are on the right track. It also requires some proficiency at computer use and, as with video, the quality can vary all over the place.

If you're covering safety on complex matters such as ergonomics and chemical safety, it might be helpful to have a recognized outside expert do a " train the trainer" session to prepare some of your key people to assume the responsibility.

To cover a new standard from OSHA or if training requires sophisticated support materials, a consultant might be in the best position to help you in the most cost effective way.

However, don't miss the opportunity to show your commitment to safety and your own awareness of the subject to employees. It's the risk you run when you let a consultant deliver basic safety training.

When it comes to training your managers, where the material is more abstract and deals much more with human behavior and concepts, a consultant might be your best bet.

Interestingly enough, there is no mandate from OSHA for general safety and health orientation. You'll find training requirements in specific standards and subject areas. Here is a listing of the most widely applicable training requirements for general industry.

- OSHA Recordkeeping
- Dealing with bloodborne pathogens
- Entry into, and rescue from, confined spaces
- Use of overhead cranes

- Inspection and maintenance of forging equipment and power presses
- Hazardous waste operations and emergency response
- Powered industrial trucks
- Installation and handling of LP-Gas
- Emergency action and response
- Lockout/tagout procedures
- Medical services and first aid
- Respirator protection
- All personal protective equipment
- Accident-prevention signs and tags
- Hazards and protection around open-surface tanks
- Use of welding, cutting, and brazing equipment

OSHA publishes an excellent guide that contains a summary of all the training OSHA requires along with suggestions on how to develop and deliver the training. Look for ***Training Requirements in OSHA Standards and Training Guidelines,*** OSHA 2254, at www.osha.gov or request it from your OSHA area office.

If you don't have a training department or people on staff with a lot of training experience, these suggestions should be helpful. It's also in this document where you'll find other industry-specific training requirements I may not have listed above.

Even though there's no requirement for general safety orientation, don't consider deleting that option from a hiring and intake process. You need the benefits from it and OSHA can still cite you under the General Duty Clause.

Don't assume new hires are already workplace safety trained. When I'm helping with safety orientation at companies, I usually ask people about their prior safety training. At least 50% of them tell me that they had no formal training at their previous jobs. Only a very few say they had as much as two or three days. What most of them know, they learned from experience—and not all of it positive.

More importantly, they don't know anything about your workplace and your safety culture. They need formal safety orientation to understand your rules and expectations and specific risks and procedures.

A while back I worked on a personal injury case involving a man in his forties who had been working at various jobs for over 20 years. On his first day working at a small company, which puts its product in blister packs using an indexing worktable and a hot, melt press, he was assigned to clean the work area.

On day two, the supervisor met the fellow at the time clock and told him he'd be working the hot melt press. The sum total of his training was the 20 second walk from the time clock to the press.

After only an hour into the workday, he was falling behind in his alignment of the blister packs as they moved under the press. He left his left hand on top of the pack as the table indexed and he reached for the next pack with his right hand.

The press guard was set too high—something training might have allowed him to see—and the 300°F press came down on his hand. He was an experienced worker, but not an experienced hot press operator. Absent physical safety conditions and lousy training made him an injury statistic within an hour of starting a new job!

People with less than one year on the job are at double the risk of injury as those with more experience. This includes people with many years on other jobs and at other companies.

When someone is facing the excitement and possible confusion of a new job, they need plenty of help from you to get oriented and to reduce their risk of injury.

In some cases, OSHA requires periodic refresher training, but this is not a universal requirement. As a general rule, you should be sure your people get training on specific safety subjects whenever:

- They are first assigned to a job requiring the skills,
- Their performance demonstrates that they do not have or understand the necessary knowledge and skills to perform safely, or
- New risks, hazards, or safety solutions make it necessary for you to update the information they have.

In my mind, few things can do greater harm to your safety effort than dragging people into a session that shows them the same video or film they've seen eight times before and boring them silly. If a specific standard requires annual or periodic refresher training, make it a discussion to test current awareness and to go over any changes in how the standard applies to your operation.

When it comes to safety knowledge and skills, there are really three broad choices.

Forego safety and health training and spend your time looking over everyone's shoulder telling them what to do. That's pretty labor intensive and you'll get worn out in a hurry—and those you weren't watching will still get into trouble.

You can let everyone fend for himself or herself, but that approaches workplace anarchy and you won't like the long-term results. Neither will they—or the regulators.

Or you can teach people what they need to know about safety and view it as a smart investment. Keep this point in mind. Safety training imparts knowledge, builds skills, creates values, and develops the ability to do things safely regardless of the physical hazards and human challenges thrown at the individual.

Wouldn't you rather have knowledgeable people who can always do the right thing even if you're not watching? It's your choice.

That's it for general safety training tips and ideas. Now, what about you, your employees, supervisors and managers?

Employee Training

We wouldn't let a pilot fly a plane without extensive training and licensing nor should we put people in the workplace without adequate preparation.

Employees need training to identify the hazards of the workplace and the control methods associated with them. They need to be tested to ensure that there are no false assumptions and that they truly know the rules.

Updates on training are necessary when conditions change, people change, or rules change— and workers need to be tested or evaluated again. While they are being trained is the time to give them expectations for safe behavior.

To reiterate, safety knowledge cannot be assumed. Training on a previous job or from a past employer is no insurance that they can do the job safely today.

Performance standards today require that employees demonstrate all the current aspects of safety on their job whenever necessary. Remember. As Red Auerbach said, *no pass is a good pass unless someone catches it*. In other words, training completion does not mean proficiency at application. Train, then test every time.

Workplace training for line and staff employees takes many forms, from formal classroom settings to one-on-one coaching; but every situation requires that the standards of effective training be followed.

Most of your people are exposed every day to the computer, the Internet, cable television, and other highly sophisticated uses of technology. If you figure that sitting on hard chairs for a half hour while someone drones on about the intricacies of the material safety data sheets in the three-inch source binder on the table is effective, think again.

The popular buddy system doesn't work if the buddy's knowledge is limited to "common sense" and he or she doesn't have a clue about what the standards (yours or OSHA's) require and how to transfer knowledge to someone else.

Give your trainers some instructor training so they understand basic training concepts and appreciate their critical role in the safety of the trainee and the organization. Next, give them an effective training tool to use.

Remember the job safety analysis (JSA) we covered in Chapter 9? The JSA is a great tool! In it, you've established just how the job should be done and the precautions to take. It's standardized so everyone gets the same message.

Finally, test the trainees. Ask questions. Observe them at work. Reinforce good behavior and coach poor until you and the trainer are satisfied.

Consider the managers at Mooney Chemical. Mooney is a small chemical facility with about 75 employees, an outstanding safety record, and they are my heroes![52]

The managers do the safety training at Mooney and the President attends every safety meeting. In the classroom, line people absolutely get the message that what's being taught is important. After the class, the managers wander around the plant, observing and asking questions about the recent training.

Imagine being a line chemical worker at Mooney. You're boss is going to walk up to you one day soon and ask you to describe the chemical labeling system used in the plant. Do you think you might be more inclined to listen attentively and ask plenty of questions when she teaches the class on the subject? I would.

Indicator 23—Employee Training and Ability

Indicator Description—Ensure that all employees understand the hazards to which they may be exposed and how to prevent harm to themselves and others from exposure to these hazards, so that employees accept and follow established safety and health protections.

Attributes of Excellence

A. An employee safety and health training program exists at the facility

B. The training is provided to all employees, unless proficiency in the knowledge and skills being taught has been effectively demonstrated.

C. The training covers all legally required subjects.

[52] Smith, S. L., The right chemistry for safety, *Occupational Hazards,* Penton Media Inc., Jun 1994

D. The training covers hazards (awareness, location, identification, and protection or elimination).

E. The training covers the facility safety system (policy, goals and objectives, operations, tools and techniques, responsibilities, and system measurement).

F. Training is regularly evaluated for effectiveness and revised accordingly.

G. Post-training knowledge and skills are tested or evaluated to ensure employee proficiency in the subject matter.

H. The training system ensures that the knowledge and skills taught are consistently and correctly applied by the employees.

Notice that the attributes go substantially beyond simply covering OSHA required subjects. If you're going to have your people involved in the safety process and seeing themselves as part of your overall business success, you'll need to make sure they understand how the process works and where you want to take the organization.

Attribute E can be a challenge for some. Hazards come and go and it's not as simple as having a comprehensive hazard inventory for people to study in training. In the employee training I do, I teach hazard concepts and general rules which can apply anywhere under any conditions.

The training usually starts with discussion of several "safety rules." Here's what I use:

- Ability—Ability varies all the time. Always be aware of your ability.
- Behavior and Safety—People who value safety always behave (act) safely…and do better work.
- Chance and Risk Taking—The more you behave unsafely, the more likely you are to have an injury. You are paid to work safely…always!
- Hazard Reporting—Hazards you know about can only be controlled if you report them to your supervisor.
- Asking Questions—Asking questions is one of the best ways to learn and shows you care about safety.
- Refusing Unsafe Work—People see risk differently and any concern is legitimate until safety is improved or better understood.
- Safety is a Right, a Responsibility, and a Duty—The right to safety carries a responsibility and a duty and all three must work together.

Following the safety rules, I cover some general tips on hazard awareness. Here they are:

- Eyes Forward—Always look in the direction your body, head, arms, or legs—whatever is leading—are headed.
- Line of Fire—Always look for the line of fire and get away from the line.
- Neutral Position—We are least likely to suffer sprains and strains when we are in the neutral body position.
- Physical Awareness—Always know what's around you, then slow to avoid fixed objects and move to avoid moving objects.
- Pinch Points—Any two objects that come together can pinch.
- See Hands—If you can see your hands, you always will know if they are near a hazard.

- Strength and Conditioning—Think like an industrial weight lifter. Train, stretch, and warm up before work!
- Use the Proper Tool—There are no universal tools. Inappropriate use of a tool increases the risk of personal injury and damage to equipment.
- Zero Mechanical State—Work in machines requires locking, blocking, isolating, releasing, controlling, retaining, and/or supporting all forces so nothing will move!

If you cover these key points, everyone will have a general understanding of where hazards come from and how to avoid them. After that, you'll need to give them workplace-specific training so they can apply the general concepts to your facility.

One more point about the tips for hazard awareness. These are a good starting point for behaviors you'll need to observe as you move into a behavioral safety approach.

I'm sometimes asked how attribute F can be evaluated. The answer can be found in the OSHA voluntary training guidelines and consists of (1) student opinion, (2) supervisors' observation of post-training performance improvement, and (3) workplace improvements. Attribute F evaluates the training while attributes G and H evaluate the trainee.

Employee safety training is where many companies stop. They may assume that people at other levels in the organization are inherently qualified on safety, but that's rarely the case. The other levels need comprehensive safety training. Let's look at supervisors first.

Supervisory Training and Ability

Front line supervisors and team leaders carry a lot of responsibility for ensuring workers are trained and reinforced for using the training. It takes continuous application and regular reinforcement to make training stick.

It's like learning a new language. If you take the class, listen to all the tapes, and gain a basic understanding of how to communicate, then go to where it is the language of choice, you'll get proficient. But, if you learn the language and rarely use it, you'll find over time that you can recall only a little of what you learned.

If supervisors challenge employees to use their new safety skills every day, it will become second nature. But to challenge line people to stay sharp on safety, you've got to know what's expected of them plus what's expected of you.

The supervisor or team leader determines training needs, schedules training, sends the trainees, performs after-training skill assessment, reinforces the learned behaviors, coaches people over the rough spots, and keeps the records. Except for the trainee, no one is more important!

The supervisor has a big job providing all the support and reinforcement around the employee's job. Merely bestowing the title "supervisor" is not enough.

Supervisory skills need to come from a careful, considered training program taught by highly competent people with knowledge of both safety and health and the management system. Senior management must also consistently reinforce these skills. This is no time to depend on the "school of hard knocks."

To be effective, supervisors must:

- Know safety and health expectations and rules as well as the employee.
- Have the ability to see actual and potential problems and hazards.
- Have the authority to pull in needed resources and support, and

- Know how to motivate and, through all of this,
- Have the will and enthusiasm to keep doing it!

Look to outside sources for effective supervisor training programs. If you have someone on your staff who is qualified by degree or certification to teach on the safety management process and your internal safety requirements, consider using them.

Just make sure that you are part of the program and give them lots of active support as they train. There is always a tendency for supervisors to discount in-house expertise.

If you go outside, look to safety consulting firms in the area with a proven reputation for excellence in training. Trade associations and employer's groups in your area may offer supervisory training, as do national organizations such as the National Safety Council.

OSHA, through the OSHA Training Institute and its regional training centers, offers technical safety training suitable for supervisors. Technical training is also offered through a wide variety of national and regional training vendors.

Before signing up for what may be very long and detailed training, be sure it's what you want and need. Intense technical sessions may deliver material your supervisors will never use and be expensive.

It's more likely that you need a competent overview of the standards and good coverage of the concepts and process of safety management. Be sure you're getting what you want before you sign people up.

If you can't find the training you want, consider using a good safety management book that covers your needs and have a weekly or monthly study session for all your supervisors. Make sections of the book required reading and then discuss the readings at the study sessions.

Your people will get your spin on what's important and the discussions may help you refine your safety strategic plan. If you've gotten this far into this book without putting it back on the shelf, use it as one required text.

Here are the attributes for supervisory training. They are pretty straightforward.

Indicator 24—Supervisory Training and Ability

Indicator Description—So that supervisors will carry out their safety and health responsibilities effectively, ensure that they understand those responsibilities and the reasons for them, including:

- Analyzing the work under their supervision to identify unrecognized potential hazards;
- Maintaining physical protections in their work areas; and
- Reinforcing employee training on the nature of potential hazards in their work and on needed protective measures, through continual performance feedback and, if necessary, through enforcement of safe work practices.

Attributes of Excellence

A. A supervisory safety and health training program exists at the facility.

B. The training is provided to all supervisors, unless proficiency in the knowledge and skills being taught has been effectively demonstrated.

C. The training covers all subject matter delivered to employees to the extent necessary for supervisors to evaluate employee knowledge and skills and to reinforce or coach desired employee safety and health behaviors.

D. The training covers the facility safety system (policy, goals and objectives, operations, tools and techniques, responsibilities, and system measurement).

E. The training covers supervisory safety and health responsibilities.

F. Training is regularly evaluated for effectiveness and revised accordingly.

G. Post-training knowledge and skills are tested or evaluated to ensure supervisory proficiency in the subject matter.

H. The training system ensures that the knowledge and skills taught are consistently and correctly applied by the supervisors.

Management Training and Ability

A successful safety and health program is achievable when everyone knows the role they play and understands the impact they have within the effort.

Management has the leadership role in defining safety excellence. It is critical that managers understand the elements of an effective safety and health program and how to lead the way.

Managers set the example for everyone else, even though some are not aware that anyone else notices. Failure to wear safety glasses on the plant floor is not simply an excusable oversight by a manager; it's a clear and strong message to others that safety glasses are unimportant.

Managers set the standard, so they must know what the standard is!

Training for managers is a two-part process:

1. They need good personal knowledge of the safety and health system and its requirements, and
2. They must actively support the training process for others.

Unfortunately, the tendency to see safety and health as a staff function not worthy of their attention will be one of the biggest drawbacks to the active involvement of managers in personal and company training efforts. This is where you come in.

Indicator 25–Management Training and Ability

Indicator Description—Ensure that managers understand their safety and health responsibilities, as described under "Management Commitment and Employee Involvement," so that the managers will effectively carry out those responsibilities

Attributes of Excellence

A. A management safety and health training program exists at the facility

B. The training is provided to all managers, unless proficiency in the knowledge and skills being taught has been effectively demonstrated.

C. The training covers all subject matter delivered to employees and supervisors to the extent necessary for managers to evaluate employee and supervisory knowledge and skills and to reinforce or coach desired safety and health behaviors.

D. The training covers the facility safety system (management concepts and philosophies, policy, goals and objectives, operations, tools and techniques, and system measurement).

E. The training covers management safety and health responsibilities.

F. Training is regularly evaluated for effectiveness and revised accordingly.

G. Post-training knowledge and skills are tested or evaluated to ensure management proficiency in the subject matter.

H. The training system ensures that the knowledge and skills taught are consistently and correctly applied by the managers.

It's obvious, I suspect, that the attributes for managers are very similar to those for supervisors. Without a detailed understanding of what things should look like on the shop floor or work area, you—and the rest of the management team—can make many innocent but potentially serious mistakes.

Well that does it for training. A huge subject, for sure, but if you approach it with an appreciation for its importance and the potential payback, it shouldn't be difficult.

15

All About OSHA

In This Chapter:

Now it's time to tell you all about OSHA, at least some things you might really need to know and some other things that are interesting but that you can file away for reference.

OSHA stands for the 1970 act of congress—the Occupational Safety and Health Act—which established the federal agency within the Department of Labor known as the Occupational Safety and Health Administration, also referred to as OSHA.

The "agency" as OSHA is often called, employs a total staff of around 2,220 people. About half (1,100) are compliance officers. Both figures are lower than they were five years ago.

Throughout the United States, there are about 143 million workers in nearly 7 million workplaces covered by safety and health regulations. The federal staff covers 29 states, the District of Columbia and one US territory. The rest of the country is covered by the 21 states that run their own safety and health programs designed to be equal to or better than the federal requirements. Those states employ a total of about 1,650 people with 1,247 inspectors and work in partnership with federal OSHA.

To pay for the federal portion of job safety and health, the budget for fiscal year 2005 (October 2004 through September 2005) was set at a shade over $468 million.

OSHA brings in about $85 million in fines and penalties from over 39,000 inspections annually, but all the money goes to the federal general fund. As a result, contrary to popular belief, there is no direct incentive to maximize citations and penalties.

The allotment from Congress is based on the merits of programs and services rather than the success of inspections. The states do another 57,866 inspections for which they assess penalties just over $74 million.

Those are the basic facts.

There are real people behind those figures. I've been in the safety business since before OSHA. I've participated in several dozen inspections in the past 35 plus years, worked with OSHA people on committees and conferences, and trained well over a thousand OSHA consultants and compliance officers on the fine points of safety and health programs.

I've found good people trying to do the best they can under frequently difficult circumstances.

I think of myself as a good judge of character and I've met a few who don't measure up to normal standards of professionalism. But what's unusual about that?

I've been in companies where managers come in pretty low on the character scale and I've seen a few employees I'd never hire for any job. In every society, there is a normal distribution of people with respect to intelligence, character, and ability. OSHA has a normal distribution.

Usually, if you are involved with either federal OSHA or a state enforcement group, you can expect to deal with reasonable people who will be fair and honest. But keep in mind; their job is to ensure that national standards for workplace safety and health are met in an effort to minimize the opportunity for injury and illness.

Beginning with the reinvention of government initiative of the Clinton administration, the agency has been working very hard to change its less than flattering image and its culture. Congressional interest has also helped them stay focused on the process.

OSHA realized that a strict focus on enforcement had not accomplished the dramatic reductions in workplace injuries that the Act had intended. It found that enforcement rarely changed the company culture and all too often inspectors never visited some of the worst workplaces.

Random targeting of workplaces for inspection has a tendency to annoy and frustrate the better sites and overlook those where hazards and conditions are bad. Much more productive, they found, was helping the millions of good employers get better by changing their safety culture and focusing limited resources on the few "bad actors" still out there.

The "New OSHA" initiative works like this. Enforcement will be targeted to those industries and those workplaces where the most hazards and injuries are known to occur. At the present time, landscaping, aoil and gas field services, fruit and vegetable processing, concrete products, steel, ship building and public warehousing are on the top of the list.

OSHA has statistical data from its annual injury and illness survey and has been using that data to select workplaces, especially those within the target industries, for compliance attention.

In 1998, the Cooperative Compliance Program (CCP) was created to give high-injury sites an option of working with OSHA and implementing a comprehensive safety and health program or saying "no thanks" and receiving an enforcement visit. The courts stopped this approach in 1999 because it required the companies to put a comprehensive program in place without going through the standards-writing process.

In 1999, OSHA replaced the CCP with a site-specific targeting (SST) plan that sent compliance officers to 2,200 manufacturing and service industry sites that had lost workday injury and illness (LWDII) rates above 16.0 per 100 full-time people. For 2005, the target was set at a "days away, restricted or transferred" (DART) rate of 12.0 or above and/or a "days away from work injury illness" (DAFWII) rate of 90. or more. About 4,400 high hazard organizations were impacted along with the worst 50% in nursing and personal care industries and 400 low-rate organizations for a recordkeeping check.

The national average for all industry is DART of 2.5 and a DAFWII of 1.4. Current data from OSHA shows that inspections are finding over four times the serious violations found with previous inspection efforts.

Also, OSHA sent letters to a secondary list of 12,500 additional worksites with DART rates of 7.0 or more and/or DAFWII rates of 5.0 or more advising that they seek assistance from either private or OSHA-funded state safety and health consultants.

By receiving such an alert from the agency, the employers have the option to better prepare for a compliance visit that might come later.

The targeting process tends to reduce significantly the chance of a compliance visit for those organizations with low injury and illness rates. In addition, compliance officers now have the authority to leave a site without making an inspection if they find that injury rates are low as shown on the site's OSHA log, the company has a comprehensive safety and health program in place and targeted hazards are well controlled. In 2005, targeted hazards included lead, silica, and causes of amputations under the National Emphasis Program (NEP).

In 1994, then deputy assistant secretary of labor for OSHA Jim Stanley put it this way. If the compliance officer asks "am I making a difference in this workplace for safety and health?" and the answer is "no", then leave the workplace! Now that's a culture change for compliance officers—and the agency!

Not only is the agency getting better about being tough on the really unsafe and uncaring workplaces and leaving the safer workplaces alone, but also it is working hard to forge creative partnerships with companies that have demonstrated excellence in workplace safety and health. As part of the Voluntary Protection Program (VPP), participating companies help OSHA with outreach and education for other companies seeking to achieve safety and health excellence.

Other partnerships are being formed with individual companies that have come to OSHA for help in improving safety at all their sites and with industry and trade groups that want to find successful ways to upgrade safety within the industry.

The thrust of all these partnerships is much more than compliance—it seeks comprehensive safety and health programs that are known to reduce risks and injury.

Finally, the new look at OSHA includes revamping the rulemaking process to make regulation development faster and the regulations much easier to read and understand. Some new standards are now written in a question and answer format that make the objectives clear, but leave the route to compliance up to you so that the approach fits your culture and processes and people.

When it comes to outreach, OSHA has a dozen regional training centers around the country that extends the impressive course offerings to the private sector. These are courses that OSHA gives to it's own people at the OSHA Training Center near Chicago.

Since they are non-profit, the centers provide opportunities for you to send your people to skill-building and train-the-trainer courses on many safety and health subjects at relatively low cost and not far from home. The OSHA Consultation program has also been strengthened. More on this later.

Now, you can call your OSHA area office with questions and concerns without fear of landing on an inspection list. In fact, many OSHA area offices have Compliance Assistance Officers who have no enforcement responsibilities and work only with those seeking assistance

If you implement the concepts in this book, you'll cut your chances of an inspection and probably reduce the severity and expense of any violations that might be found if you are visited.

There are now lots of free and low-cost assistance available to you to help you improve your safety culture. And getting information from OSHA is easy. They have a long list of printed materials available.

In the next chapter, you'll find lots of information about how to get help on safety and health and much of that will be from the agency directly. For example, OSHA publishes a neat booklet titled ***All About OSHA (OSHA 2056)***—which just happens to be the title of this chapter. That's why I'm not going to try to duplicate all that good, easy-to-read, readily available information here.

Coverage by the Act

One way or another, OSHA applies to nearly everyone working in the United States, the individual states, and territories.

In the most of the country, federal OSHA has jurisdiction over private sector workplaces (both profit-making and not-for-profit). In 21 states, the state provides coverage under OSHA-approved plans.

Federal government workers are protected in that their agency must comply with standards for safety as set by OSHA and OSHA may inspect federal facilities, but it can't issues citations. Local and state government workers are covered only if their state provides state coverage. Twenty-five states take this approach.

The Act does not cover:

- Self-employed persons
- Farms with only immediate family members employed
- Workplaces protected by other federal laws (such as mines)

OSHA *does* apply to employers with ten or fewer employees, except for the requirement to keep an OSHA 300 log. All other enforcement activity can, and often does, take place (such as responding to complaints, doing surveys, investigating fatalities, etc.)

On farms with 10 or fewer employees and no temporary labor camp within the past 12 months, no OSHA activity is permitted currently. But, even with reduced or no enforcement allowed, the provisions of the Act do apply.

Standards

When the Act was first passed in 1970, the agency had to put safety and health standards in place quickly, so they simply adopted many of the voluntary consensus standards that were already developed by standards-setting organizations such as the American National Standards Institute (ANSI) and the National Fire Protection Association (NFPA) and others.

This created problems for many employers since it raised the bar considerably on what was acceptable. Consensus standards were voluntary and often viewed as objectives to work towards. With OSHA adoption, they became the law and the minimum acceptable standard. Coming into compliance became a challenge.

Since then, OSHA has created many of its own standards through its development process and the agency always seeks broad national input. If you want to participate in that process or provide input, OSHA has several booklets that will tell you how it works and how to get involved. You can start with ***All About OSHA (OSHA 2056).***

It's also modified or dropped some of the consensus standards and generally made an attempt to simplify the language in recent years. That's not to say they are easy to read or understand—or even find. But, if you use the Internet and OSHA's web site www.osha.gov, a search engine will do a lot to help you find what you need.

The easiest, fastest, and least expensive way to learn if a standard applies to you is to call your OSHA area office and ask. Generally, the folks at the area office are delighted when someone shows an interest in workplace safety

and they'll do their best to help you. Keep in mind, however, that the response will be verbal and is considered advisory and is not something you can consider definitive and legally binding on the agency.

Another really good way is to go to the OSHA home page www.osha.gov, select on "standards" and locate the standard about which you have questions. As you move through the section of interest, you will find some of the paragraph numbers are underlined and form blue hyperlinks (1910.38(a), for example). If you click on the hyperlink, it will jump you to an index page of all the interpretation letters OSHA has written over the years related to the subject of the selected paragraph..

It will take a few minutes to select the most promising titles and read the letters, but the chances are high that you will find your answer. And—this is important—the letters are official OSHA policy.

OSHA does not have standards covering every single potential workplace hazard. For example, they do not regulate motor vehicle operation—one of the leading causes of workplace fatalities. They also do not regulate in the area of ergonomics and repetitive stress injuries, a major cause of lost time and disability. Well actually, they did for about two months in early 2001 until Congress overturned the regulation.

If a hazard is not covered, however, you're not off the hook. In section 5 of the Act, Congress included a phrase on duties, which has come to be known as the General Duty Clause. It reads that each employer "shall furnish…a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

The meaning is simple. If you know of a hazard, find a reasonable way to fix it. Go to a consensus standard for guidance. Call a safety specialist. Contact your business or trade association for guidance. Pull your people together and develop an acceptable solution. Check related OSHA standards for workable approaches.

If you fail to protect against a recognized hazard, OSHA can—and often does—cite and fine you under the General Duty Clause.

A formal process for both temporary and permanent variances is spelled out in ***All About OSHA (OSHA 2056).*** To get a variance, you must show that your approach to providing employee protection is at least as effective as that required by the regulation. It's not enough to plead hardship.

Go for it if you think you've got a great case, but most companies I talk with find it easier to work toward compliance rather than face the administrative process and OSHA variance inspection.

Records and Reports

OSHA requires you to maintain records about occupational injuries and illnesses, with some exceptions. In order to know how a specific company is doing on safety and to evaluate the nation-wide picture of workplace incidents, most employers must maintain a log of all occupational injuries and illnesses on the OSHA Form 300 and supplement the log with more detail for each specific case using the OSHA 301 form (or an acceptable alternative form).

If you have ten or fewer employees, you need not keep injury and illness records unless specifically requested by the Bureau of Labor Statistics (BLS) or OSHA. You are also exempt from recordkeeping in retail trade, finance, insurance, real estate, and service industries. Again, there are exceptions, so you should check the OSHA web site under "recordkeeping" where you'll find the specific NAICS codes exempted.

The OSHA 301 form is fairly basic and I find that nearly all company or insurance injury report forms will meet the requirements of the OSHA form. A summary of the OSHA log (OSHA 300A), which includes the totals for the year, must be posted in the workplace from February 1 through April 30 the following year. Your employee bulletin board is generally the best place.

Since injury and illness recordkeeping has historically been a very complex subject with many guidelines about what goes on the log and what does not, you really need to be sure that the person doing the recordkeeping in your organization is up to speed. Start by providing him or her with downloaded booklets and forms on recordkeeping from the OSHA web site. If possible, you might also want to send the person to a short course in your area on OSHA recordkeeping.

Of course, you also need to keep a variety of records on training, inspections, and medical tests and histories. These are spelled out in specific standards, so check each of the standards that apply to your facility for any such requirements.

Whenever someone from OSHA comes to inspect, they will start by looking at the log. Then, they'll look at your written programs for specific standards and will probably check all your other records. Deficiencies can lead to suggestions to improve or even to citations, depending on the impact of the deficiencies on actual workplace safety.

But there are other ways OSHA knows what's happening with you. Every year, BLS sends detailed injury and illness survey forms to about 80,000 employers nationwide. If you get one, you're required to complete it and return it within the time allocated.

If you have a workplace injury or illness which results in a fatality or which requires the hospitalization of three or more employees, you must report the incident and circumstances to OSHA within eight (8) hours!

Notice this is eight clock hours, not work hours. Usually, this report is made verbally by phone to the OSHA area office that covers your area. You also need to report amputations and power press injuries.

This requirement puts quite a demand on you and your supervisors. If a serious event occurs, you can't wait for a detailed investigation, carefully prepared press releases, or the results of a team meeting on the next workday. Make sure that you've got reliable facts on what occurred and to whom and make the call—day or night. If you have an evening shift, be sure the supervisor of that shift knows time is of the essence and that he or she is expected to manage the incident properly and make the call to OSHA.

Don't be surprised on a serious injury if OSHA already knows about it. Often, local law enforcement will respond to workplace injuries with the ambulance and will make a courtesy call to the agency. There's no legal requirement for them to do so and it does not relieve you of the responsibility, it's just something that they feel they need to do.

Inspections

Your day is going well. Business is brisk. You've got several important things to accomplish and you're making progress. The phone rings and your receptionist says, "OSHA is here. What should I do?"

Isn't it amazing how quickly your day can change?

From the employer's perspective, this is the OSHA they have come to know and fear. I'll try to help you understand the process a little better and suggest how you should react.

Nearly all OSHA visits are unannounced. No warning, they just show up at your door—often at a very inopportune time.

The only times the law allows an advanced notice of an inspection is when OSHA believes that employees are in imminent danger and they want you to stop the job before their arrival, when a visit must be after normal working hours or special preparation is required, when notice is required to ensure you and an employee representative are present, or when the OSHA area director believes advanced notice will yield a better inspection.

Even if you get advanced notice, it will usually be less than 24 hours and that's hardly enough time to do more than a little clean up. Compliance officers are smart enough to know whether or not what they see is normal and they can also talk with your employees to determine if heroic efforts were taken to come into compliance.

You don't need advanced notice to know if you're going to have a compliance visit. If you're smart, you'll have some very clear warnings. Here's what I mean.

OSHA has a priority system for inspections.

First priority goes to imminent danger situations. This is where there is a high expectation that one or more of your employees are at serious and immediate risk of death or serious physical harm. They know about these situations because employees call them to report dangerous situations they can't get the company to correct. Or, a call might come from a family member or a vendor on your site. It's even possible that someone driving by may see an imminent danger situation and call. If you allow situations like this to exist, then a visit from OSHA should come as no surprise.

Next on the priority list are catastrophes or fatal accidents. They find out about these from your call or from the police or other public-sector responders. Again, these visits should be expected promptly after your call.

After serious accidents come employee complaints in the third priority position. These are calls or letters that report that you have unsafe conditions or standards violations other than those of an imminent danger type.

If you have labor unrest, chronically unsafe working conditions, poor employee morale, or have just terminated a disgruntled employee, it's reasonable to expect that a call to OSHA may be one outcome of the situation.

Complaints are formal (complaint by current employee or employee representative with identification known to OSHA) or non-formal (anonymous or not a current employee). With formal complaints, OSHA will probably visit your facility fairly quickly. But for nonformal complaints, you'll most likely have the complaint called or faxed to you asking for you to review the situation, correct any problems, and report promptly back to OSHA on your findings and corrections. The cover letter or fax will tell you what to do and the time you have to investigate and respond.

In many cases, you may have a good idea about the identity of the complainant. If you do, keep it to yourself. If you don't, don't speculate. The Act protects employee complainants and OSHA takes employee protection very seriously.

Even if the complaint has no merit, look at it as an opportunity to verify your safety efforts and get on with work. Making life miserable for the complainant—or terminating the individual for the action—serves no purpose and is more likely to lead to more compliance and legal problems.

The fourth priority goes to programmed high hazard inspections. If your industry is known to have injury and illness rates higher than the national average or people in your industry are working with a particularly toxic or hazardous material, all of you in that industry might be subject to special emphasis inspections.

These can be nationwide or just within your area or region. Usually, OSHA will let the industry know that it is going to take a close look at safety and you will have some time to upgrade your safety and health process.

In a recent (and on-going) special emphasis effort in the health care industry, OSHA even offered industry wide workshops at no cost to the employer, which covered all the standards and areas of concern that would be examined during inspections. These were followed by offers of specific assistance, where needed. By the time they were inspected, those facilities that heeded the warning and took advantage of all the OSHA assistance were in fairly good shape.

Next on the priority list are follow-up inspections which spot check the corrective action a company has taken in response to previous violations. The only companies caught here are those which think they can fool OSHA by reporting abatement of a violation without actually doing the work.

Don't even think of doing it. If you're caught, you'll end up giving a fairly sizable donation to the federal general fund.

Last, after all the other activity, comes the inspection you most likely will find a true surprise. It's called the general schedule inspection and OSHA uses a master listing of all employers in the country and a random numbers table to pick the visits for the next day. Neither you nor the compliance officer will know until your company name comes up at random.

Take heart. You saw the number of federal inspectors earlier (1,100) plus the state inspectors (1,277) and the figure of 7,000,000 plus workplaces to visit and all the other things those 2,377 men and women do before they do a general schedule inspection.

Depending on the workload in the OSHA regions and the state-plan states, it would take 109 years to do general schedule inspections in every workplace.

In fact, it may really be *never* for most of you with a better than average safety effort and a comprehensive safety and health process in place.

Since 1999, site specific targeting and programmed high hazard inspections have taken the bulk of OSHA's time. The agency has generally found this approach more productive in terms of finding and forcing correction of significant problems than using the general schedule inspection approach.

The feds do 38,714 inspections annually, Complaint or accident-related comprise 23.4% of their visits. High hazard targeted inspections make up another 55.1%; Referrals and follow-ups round out the efforts at 21.5%.

The total is 100% and, as you can see, does not include general schedule inspections. The states tend to do a higher percentage of high hazard targeted visits at 59%. Fifty-seven percent of the OSHA inspections are in the construction industry where the most serious hazards tend to be found even though construction workers make up only six percent of the nation's workforce.

If you want to be OSHA-proofed, put a comprehensive safety and health process in place, eliminate or effectively control hazards, and treat your people fairly and it's a good possibility you'll never see someone from OSHA.

If you do get an inspection, however, you'll know that you've made a good effort to have a safe workplace and a safe culture and that any findings will be minor and easily correctable.

You can anticipate what to expect from an OSHA inspection by reviewing the booklet ***Inspections (OSHA 2098),*** but let me give you a summary and some tips.

Depending on the nature of the inspection, the compliance officer may be either a safety or an industrial hygiene specialist. Sometimes, they may team together and even pull in other specialists to help.

They will show up at your reception area and present their credentials. Be sure to look at the credentials carefully since there have been rare cases of impostors trying to get a look at company secrets posing as OSHA compliance officers.

Make sure that your receptionist, security people, front office staff, and facility supervisors all know that OSHA people are to be greeted politely and invited to be comfortable in your reception area while you or your designated representative is called. If they arrive at an entrance other than that designated for visitors, make sure your people know to direct them outside the facility to the appropriate entrance.

Once they meet up with you or your designated host and escort, they will ask for an opening conference. It is here that you, your safety manager, and your employee representative (if you have a union or an employee safety committee) and others you think need to be involved will learn the purpose of their visit and discuss how the process will unfold.

You have the legal right to request a warrant for entry to your facility, but give very careful thought to the reason for denying entry. Studies have shown that both violations and the resulting penalties are doubled, on average, if you do require the compliance officer to go to court for a warrant.

The fact is, OSHA inspectors nearly always have their request granted by the courts quickly, so you buy little time and manage to really annoy the compliance officer who's already got more work than he or she wants.

My advice after many, many inspections is cooperate! Be polite, respectful, and accommodating—nothing more, nothing less.

If you find that the inspection will be made only in a specific area or at a specific machine, don't offer or give a facility tour on the way there. Anything they see while in the plant is fair game. You are well within your rights to take them to the specific area of need by an outside route or any other route of your choosing. Don't invite more problems than you already have.

Here's another important rule. Always have a trained and knowledgeable escort accompany the compliance officer. This is someone who knows the operation and knows the difference between giving factual responses to specific questions and offering random thoughts and opinions.

An OSHA visit is much like a court proceeding. The compliance officer is going through a discovery process and you are under no obligation to help.

You must give honest and factual answers to specific questions, but nothing else is required. Avoid any speculation on problems, causes, and solutions. Say, "I don't know, but I'll be happy to let you know once we have the facts."

Compliance officers can gather data, take samples, and take testimony from employees at random. They may also take photographs or videotape if they believe a visual record is necessary.

You should take companion samples, photographs, video, and records. Keep exact duplicates for your records. Most of the time there won't be a problem, but on the rare possibility when you disagree with the data, you've got your own set to help you prepare.

Ensure that everyone, including the compliance officer, follows safety rules on the visit. They'll generally have all their own PPE and equipment, but you may need to tell them when you enter a specific PPE zone.

Most of the time, violations will be fairly easy to correct, especially if you've got a good safety process in place. You'll know if the compliance officer sees a violation and it is both appropriate and beneficial to correct any obvious problems on the spot.

Often, on-the-spot corrections of non-serious problems will not make it to the final list of violations and it shows good faith. Good faith, if you haven't guess, is very important in this process.

It's quite possible that the compliance officer will be in an area where you have trade secret concerns. You can ensure the protection of company confidential information by informing the officer specifically of any trade secrets and asking that any trade secret materials or records be given appropriate protection in the OSHA file.

At the end of the visit, the compliance officer will meet with you in a closing conference where findings will be summarized and you will be able to ask questions and present any other data or information you think the officer needs to reach appropriate conclusions on the visit and the status of safety in your operation.

You may find the compliance officer a little noncommittal about specific violations and potential fines. That's because the OSHA area director always makes the final decision on those after the entire case file has been reviewed.

Also at the closing conference, the compliance officer will give you a copy of the booklet ***Employer Rights and Responsibilities Following an OSHA Inspection (OSHA 3000).*** This will help you understand the rest of the process.

Citations and Penalties

Citations and any proposed penalties will be delivered to you by certified mail. Once you have the paperwork in hand, you must post copies at or near the place where the violation occurred for three days or until the problem is abated, whichever is longer.

The booklet on ***Inspections (2098)*** will give you summary of the various penalties you might face for any violations found. The summary I've included below shows the maximums authorized by Congress, but in many cases they will be reduced downward for good faith, a good history on any previous violations, and size of business. In all cases, it will be the OSHA area director who decides when to assess a penalty and the amount.

- Other than Serious…Optional to $7,000
- Serious…Mandatory $300 to $7,000 per violation
- Imminent Danger…Same as Serious
- Willful…Maximum $70,000
- Failure to Abate…Optional $7,000 per day
- Willful Resulting in Death…Courts to $70,000 and/or six months. Double for second
- Giving Advanced Notice of Inspection…$1,000 and/or six months
- False Records or Reports…Courts to $10,000 and/or six months
- Posting Violation…Up to $1,000
- Killing a Compliance Officer…Up to life
- Assault…$5,000 and/or three years

Each year, OSHA publishes a summary of the inspections it made during the previous fiscal year. Here's the summary for October 2004 through September 2005 for the top ten standard sections for general industry (part 1910) and construction (part 1926).

Number Cited	Subject/Standard Section
9423	Scaffolding (1926.451)
7444	Hazard Communication (1910.1200)
6433	Fall Protection (1926.501
4402	Respiratory Protection (1910.134)
4163	Lockout/Tagout (1910.147)
3207	Powered Industrial Trucks (1910.178)
3112	Electrical Wiring (1910.305)
3002	Machines, General (1910.212)
2402	Ladders (1926.1053)
2349	Electrical Systems Design (1910.303)

What I see when I look at these is that OSHA is not going after obscure and hard-to-understand sections. All of these standards are ones which have gotten lots of attention in the press, for which OSHA has published plenty of guidance, and which have resulted in large numbers of injuries when ignored or downplayed.

These are well-known and serious issues in safety and health. Every workplace ought to be able to get these right!

Appeals

There is a formal process that allows you to contest a citation. You must file a formal Notice of Contest with OSHA within 15 working days after receipt of the citation. Once in, you're officially in litigation and any further dealings while the contest is pending will be with an OSHA attorney. This is a right you have and you can certainly use it, but I much prefer the informal conference.

When you get your citation and notice of penalty, read it over and see how you feel about it. If you agree you were in violation and the penalty seems fair, abate the violation(s) and pay the fine.

But if you think the fine is excessive, you disagree with one or more of the violations, you need more time to abate, you're not sure how to abate the hazard(s), you've got problems with employee behavior related to the citation, or you have any other questions or concerns related to the case, schedule an informal conference.

The informal conference can be set by phone with the OSHA area director. Do it promptly since your 15-day contest period is already running and you don't want to lose out on that if you really need it. You'll meet with the area director and, most probably, the compliance officer(s) involved. You can chat openly and candidly about what's on your mind and suggest alternatives. The area director, who is the person who originally approved the citation, has the option of entering into an informal agreement with you, which may well eliminate a violation or reduce the penalty further.

Here, as with other dealings with OSHA, you need to be honest, factual, polite and respectful. The folks you are dealing with are professionals and do this every day. But it is entirely possible that the compliance officer may have overlooked or misunderstood something and this is the opportunity to set things right. You may not get everything you wanted, but the chances are good that you will be pleased you took this informal opportunity to work with the agency.

OSHA-Approved State Plans

If you are in an OSHA-approved state plan state, you'll find most functions and operations very similar to the federal OSHA approach. Since the state plan states must have requirements equal to or better than the federal requirements and since they get half of their funding from the federal government, you won't find major differences. Just ask your state OSHA office to send you material on their requirements and how they function and look it over. Ask if you have questions.

Services Available

Since OSHA's role is to enhance safety and health in the United States, the agency has done a great job preparing all kinds of services to help you do your job at safety and health better. You'll find those services listed in the resources chapter of this book and in many of the booklets and on-line information sources published by OSHA. But there are a couple which deserve specific mention here.

One is consultation. Under the Act, OSHA is obligated to provide assistance to small employers with up to 250 employees at a site and with no more than 500 employees nationally. The agency does this through consultation grants to the various states and territories, which actually provide the service. You'll find your state consultation service listed under the state listings in your phone book or you'll find contact phone numbers in the ***All About OSHA (OSHA 2056)*** booklet.

Consultation is a really great deal! It costs you nothing. The consultant identifies your hazards, recommends approaches to deal with them, and evaluates and makes recommendations about your comprehensive safety and health process. You pay no fines or penalties. And, it may even earn you an exemption from OSHA general schedule inspections for a year. Your only obligation is to agree to correct or control the hazards he or she identifies.

There's no direct reporting or management relationship to enforcement from consultants. They don't share offices. In most cases, consultants work for either the state department of labor or a designated state university.

More importantly, they are prohibited from contacting enforcement about you and your operation with one very small exception. If you refuse to correct the serious violations the consultant finds and continue to drag your feet, after repeated efforts to get you to take action, the consultant is obligated to notify enforcement.

You control the process. As long as you take reasonable action to correct, you need not fear a referral to enforcement.

For more information on consultation, check out the ***Consultation Kit (OSHA 3184),*** or request a copy from your OSHA Area Office.

Another service for you to consider is the Voluntary Protection Program (VPP). This is an OSHA program that recognizes excellence in safety and health management. I think of it as something like the safety equivalent of the Baldrige Award for quality. You've got to be pretty good to consider it and it takes a lot of paperwork and effort to qualify, but its great recognition for the efforts you and your people put in to safety. Just the process of preparing and working with other VPP sites is bound to sharpen your process.

As for training and other assistance, we've already covered some of what OSHA has to offer. You'll find more in the resources chapter.

Employer Responsibilities and Rights

What follows comes, for the most part, straight out of ***All About OSHA (OSHA 2056),*** but it's a good summary and worth the space to include it here. Employers have many responsibilities and rights under the Federal Occupational Safety and Health Act. Some say the responsibilities far exceed the rights, but you be the judge. Here they are—briefly.

*Responsibilities…*as an employer, you must:

- Meet your general duty responsibility to provide a workplace free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees, and comply with standards, rules and regulations issued under the Act.
- Be familiar with mandatory OSHA standards and make copies available to employees for review upon request.
- Inform all employees about OSHA.
- Examine workplace conditions to make sure they conform to applicable standards.
- Minimize or reduce hazards.
- Make sure employees have and use safe tools and equipment (including appropriate personal protective equipment), and that such equipment is properly maintained.
- Use color codes, posters, labels or signs when needed to warn employees of potential hazards.
- Establish or update operating procedures and communicate them so that employees follow safety and health requirements.
- Provide medical examinations when required by OSHA standards.
- Report verbally or in person to the nearest OSHA office within 8 hours any fatal accident or one that results in the hospitalization of three or more employees.

- Keep OSHA-required records of work-related injuries and illnesses, and post a copy of the OSHA 300A during the period February 1 to April 31 each year if you have more than 10 employees.
- Post, at a prominent location within the workplace, the Job Safety and Health Protection Poster, OSHA 3165 (English) and/or 3167 (Spanish) informing employees of their rights and responsibilities.
- Provide employees, former employees and their representatives access to the Log of Occupational Injuries and Illnesses (OSHA 300) as specified in 29CFR1904.
- Cooperate with the OSHA compliance officer by furnishing names of authorized employee representatives who may be asked to accompany the compliance officer during an inspection. If there are none, the compliance officer will consult with a reasonable number of employees concerning safety and health in the workplace.
- Not discriminate against employees who properly exercise their rights under the Act.
- Post OSHA citations at or near the worksite involved. Each citation, or copy thereof, must remain posted until the violation has been abated, or for three working days, whichever is longer.
- Abate cited violations within the prescribed period.

*Rights…*as an employer, you have the right to:

- Seek advice and off-site consultation as needed by writing, calling or visiting the nearest OSHA office. OSHA will not inspect merely because an employer requests assistance.
- Be active in your industry association's involvement in job safety and health.
- Request and receive proper identification of the OSHA compliance officer prior to the inspection.
- Be advised by the compliance officer of the reason for an inspection.
- Have an opening and closing conference with the compliance officer.
- File a Notice of Contest with the OSHA area director within 15 working days of receipt of a notice of citation and proposed penalty.
- Apply to OSHA for a temporary variance from a standard if unable to comply because of the unavailability of materials, equipment or personnel needed to make necessary changes within the required time.
- Apply to OSHA for a permanent variance from a standard if you can furnish proof that your facilities or method of operation provide employee protection at least as effective as that required by the standard.
- Take an active role in developing safety and health standards through participation in OSHA Standards Advisory Committees, through nationally recognized standards-setting organizations and through evidence and views presented in writing or at hearings.
- Be assured of the confidentiality of any trade secrets observed by an OSHA compliance officer during an inspection.
- Submit a written request to NIOSH for information on whether any substance in your workplace has potentially toxic effects in the concentrations being used.

Employee Responsibilities and Rights

Employees within business covered by the Federal Occupational Safety and Health Act enjoy many rights and some important responsibilities. These include:

Responsibilities…as an employee, you should:

- Read the OSHA poster at the job site.
- Comply with all applicable OSHA standards (but any sanctions or punishment of the employee for failure to comply is up to the employer, not OSHA).
- Follow all employee safety and health rules and regulations, and wear or use prescribed protective equipment while engaged in work.
- Report hazardous conditions to the supervisor.
- Report any job-related injury or illness to the employer, and seek treatment promptly.
- Cooperate with the OSHA compliance officer conducting an inspection if he or she inquires about the safety and health conditions in your workplace.
- Exercise your rights under the Act in a responsible manner.

Rights…as an employee, you have some very important rights and protections under the act.

- Employees have a right to seek safety and health on the job without fear of punishment. That right is spelled out in Section 11(c) of the Act. The law says employers shall not punish or discriminate against workers for exercising rights such as:
- Complaining to an employer, union, OSHA or any other government agency about job safety and health hazards.
- Filing safety or health grievances.
- Participating on a workplace safety and health committee or in union activities concerning job safety and health.
- Participating in OSHA inspections, conferences, hearings or other OSHA-related activities.
- Review copies of appropriate OSHA standards, rules, regulation and requirements that the employer should have available at the workplace.
- Request information from your employer on safety and health hazards in the area, on precautions that may be taken, and on procedures to be followed if an employee is involved in an accident or is exposed to toxic substances.
- Request the OSHA area director to conduct an inspection if you believe hazardous conditions or violations of standards exist in your workplace.
- Have your name withheld from your employer, upon request to OSHA, if you file a written and signed complaint.
- Be advised of OSHA actions regarding your complaint and have an informal review, if requested, of any decision not to inspect or to issue a citation.

- Have your authorized employee representative accompany the OSHA compliance officer during the inspection tour.
- Respond to questions from the OSHA compliance officer, particularly if there is no authorized employee representative accompanying the compliance officer.
- Observe any monitoring or measuring of hazardous materials and to see these records, as specified under the Act.
- Have your authorized representative, or yourself, review the Log of Occupational Injuries (OSHA 300) as specified in 28CFR1904.
- Request a closing discussion with the compliance officer following an inspection.
- Submit a written request to NIOSH for information on whether any substance in your workplace has potentially toxic effects in the concentration being used, and have your name withheld from your employer if you so request.
- Object to the abatement period set in the citation issued to your employer by writing to the OSHA area director within 15 working days of the issuance of the citation.
- Be notified by your employer if he or she applies for a variance from an OSHA standard, and testify at a variance hearing and appeal the final decision.
- Submit information or comment to OSHA on the issuance, modification, or revocation of OSHA standards and request a public hearing.

16

Resources

In This Chapter:

OSHA
Books
Periodicals
Standards developers
Internet
Vendors
Trade and professional associations
Private consultants
In-house talent

I talked about this earlier. In the pre-OSHA days of the late 1960's, in a top engineering school's library, safety books filled one shelf in the library stacks to a width of about three feet. That's three feet! My personal safety library today covers fifteen feet of shelf space and that's but a small fraction of the great resources available.

The school wasn't at fault. That was close to the total of material available on the subject and much of that was old and dated. How things have changed in 30 years!

We can thank OSHA. The 1970 law gave a lot of folks a huge whack on the side of the head. Reading, studying, trying to get it right has lead to a wealth of helpful material.

We can also thank the nation's colleges and universities. The need for people who understood all the fine points of managing and administering safety in the workplace was met by schools with courses and programs and research. It's the academic research—of critical importance to doing the right things for safety—that has generated countless books and papers and reports such as the one's I've cited in these pages.

Finally, thank the insurance companies and the larger corporations. For varied reasons, they realized early on that the historic toll in human lives and limbs could not continue and they initiated or contributed to research. Their employees wrote many of the books and moved into the colleges and universities to teach safety and health.

In the last thirty years, safety has been legitimized as a profession. Resources for the leader/manager and the safety practitioner have flooded the field. What follows is a relatively short listing of those I think you might find most helpful. I am sure that I will omit many which are excellent and I apologize to their authors, creators or developers.

OSHA

The Agency has done an outstanding job of making sure that you have what you need to ensure the safety of your people. You could read for months and not get through all their material. Fortunately, you don't have to do that much reading. It's usually pretty easy to find the specific answer you need. Here's how you go about it.

If you have access to the Internet, everything is as close as your screen. If you don't have Internet access, get it! Anything else is slow and time consuming and probably dated.

The OSHA web site is wonderful. It's got a nice search engine that allows you to call up what you want with a few carefully chosen words. Even if you just want to browse, the site is easy to get around and has a nice index.

If you don't have Internet access but do have a computer, you can get a CD ROM from OSHA for about $40 that has lots of the material on the web site and includes three updates over the course of a year.

If you are still committed to hard copy, look at the list of publications and fact sheets I've included below and call your area OSHA office for copies. Usually, they'll send you what you need free if they have it. If you must order it from the Government Printing Office, there may be a modest fee.

Now let's go back the OSHA Internet site. Publications (booklets of varying length providing a detailed look at a subject), fact sheets (short one or two page summaries of key information), and standards (the compliance requirements you must meet) can all be viewed on the site and printed, downloaded directly, or downloaded as a PDF file—depending on how they are listed and formatted. For PDF files, the agency even gives you access to the Adobe Acrobat Reader necessary to open and read or print the file on your own computer.

Since OSHA does a wonderful job of adding and updating material on it's web site, I urge you to go directly to the site using the links below and see what's there. I suspect you'll find all you need to conduct training, prepare procedures, and keep everyone in your operation current on OSHA.

OSHA Publications, see www.osha-slc.gov/pls/publications/pubindex.list

OSHA Fact Sheets (by subject), see www.osha-slc.gov/OshDoc/toc_fact.html

OSHA eTools and Electronic Products for Compliance Assistance, www.osha-slc.gov/dts/osta/oshasoft/index.html

eTools are "stand-alone," interactive, Web-based training tools on occupational safety and health topics. They are highly illustrated and utilize graphical menus. Some also use expert system modules, which enable the user to answer questions, and receive reliable advice on how OSHA regulations apply to their work site.

While you are in this section, I strongly recommend that you take a look at the Safety and Health Management eTool for two reasons: (1) it's a good supplement to this book, and (2) I wrote about a quarter of the material in the e-CAT as part of the OSHA/University of Alabama project. I'm sure you'll recognize it when you see it.

OSHA Standards

When you select on "standards" on the OSHA web site, you'll be offered the choice of selecting those for general industry (1910) or construction (1926)…as well as some options. After making your choice, you can go to the section you want in the index or conduct a search for the specific item. The entire body of OSHA standards is available electronically and this is by far the best way to find what you want. As I mentioned earlier, you can jump to OSHA interpretations for each section if you want help understanding the full impact of the standard on your operation.

When you find what you're looking for, you can read it on the screen or download the section for future reference. Another nice feature is the ability to select only the text you want and copy it to your computer where you can insert it into your company procedures, annotate the information, or manipulate it any way you want.

You can still order hard copy of the OSHA standards from the Agency, buy their CD ROM, or subscribe to one of the commercial firms which repackage and add their own explanatory text to the books and CD ROM's they sell. It's your choice, but the cost (free) and the convenience (24 hours a day year around on my own computer screen) keeps me going back the OSHA web site.

Books

Books on every aspect of safety and health abound. You can find fairly current listings of new releases in both the National Safety Council (www.nsc.org) and American Society of Safety Engineers (www.asse.org) web sites and magazines (see below). You can also order many safety books from the bigger bookstores and their on-line counterparts, but you'll rarely find them on the bookstore shelves.

All of us in the business have our favorite books. Mine tend to be those that deal with the effective management of safety and provide good tools and concepts I can apply fairly easily. If you want to do further reading, just be sure you know what you need. Many safety and health books are written for the highly technical audience of engineers and safety practitioners and they are excellent. But, as a manager or company owner, they will probably give you more detail than you'll ever need.

Now, here are my most-used books:

Bringing Out The Best In People, Aubrey C. Daniels, McGraw-Hill, New York, 1994. Success stories, tips, approaches, and arguments in favor of the performance management approach. $39.95 available from most booksellers, the ASSE, or from Aubrey Daniels International.

Human Error Reduction and Safety Management, 3rd Edition, Dan Petersen, Van Nostrand Reinhold, New York, 1996. Another in the series of leading-edge safety management books from one of the nation's clearest thinking safety writers. $96.95 (print-on-demand) from Wiley, www.wiley.com.

Injury Facts, National Safety Council, Chicago, annual updates. A compilation of valuable data and statistics about injuries and losses at work, home, on the highway and elsewhere. $34.95 available from NSC.

Safety Management, 5th Edition, John V. Grimaldi and Rollin H. Simmonds. A comprehensive safety reference book. $14.95 (soft cover) from ASSE.

Safety Management—A Human Approach, 3rd Edition, Dan Petersen, ASSE, 2001. Relates the behavioral sciences to practical safety management in a basic reference document for the manager and safety professional, includes lots of practical tools. $79.95 from ASSE

Total Quality Safety Management, Edward E. Adams, ASSE, 1995. A widely read approach to linking safety to quality and the organizational process. $11.95 (soft cover) from ASSE

And here's where you can get the books:

ASSE [The American Society of Safety Engineers], 1800 East Oakton Street, Des Plaines, IL 60018-2187, (847) 699-2929, fax (847) 768-3434, www.asse.org

Aubrey Daniels International, 3353 Peachtree Rd NE, Suite 920, Atlanta, GA 30326, (678) 904-6140, fax (678) 904-6141, www.aubreydaniels.com

NSC [National Safety Council], 1121 Spring Lake Drive, Itasca, IL 60143, (630) 285-1121, fax (630) 285-1315, www.nsc.org

Periodicals

There are a number of good periodicals and journals being published today in the United States. Many are supported by the safety and health equipment trade and advertisers and come at no cost to you. Check with your safety and health equipment vendors to see what they have available to send to you.

The government, safety and health professional organizations, and safety-related trade organizations publish others. For these you must pay for a subscription or a membership in the organization. Listed below are three of

the better periodicals that you might find most helpful in keeping current on developments in the occupational safety and health arena.

Industrial Safety & Hygiene News (ISHN) is a monthly publication from BNP Media in tabloid format with short, easy–to-read articles and current news. The editorial staff is top-rate and you get both safety and industrial hygiene content. Subscribe on-line at www.submag.com/sub/jv or through www.ishn.com.

Safety + Health is a monthly publication from the National Safety Council that contains very readable and broad ranging articles and news reports on safety and health with a primary focus on occupational issues. A subscription comes with NSC membership or is available for a fee. Call the NSC at (630) 285-1121 or visit the web site (www.nsc.org)

Professional Safety is published monthly by the American Society of Safety Engineers and contains excellent peer-reviewed articles on safety and health research and the practical application of good science. Some of the best current thinking on occupational safety and health can be found in Professional Safety. A subscription comes with ASSE membership or is available for a fee. Call (847) 699-2929 or visit the web site at (www.asse.org).

Occupational Hazards Magazine, published monthly by Penton Media, is an excellent and quite readable source of occupational safety and health information. Many articles report on safety successes in specific industries or companies. Subscriptions are free (advertisers cover the cost). Call (216) 696-7000 or check on the web at (www.occupationalhazards.com). The web site has considerable additional information and links to other sources.

Standards Developers

Most of those early OSHA standards came from the **American National Standards Institute (ANSI).** ANSI is a private, non profit organization with nearly 1,400 company, organization, government agency, institutional and international members and coordinates the development of the more than 13,000 American National Standards now approved. Only some of those relate to safety and health, however. In most cases, you'll find that the OSHA standards suffice. If you do need to buy a specific standard, you can contact ANSI on the web at (www.ansi.org).

The **National Fire Protection Association (NFPA)** is the prime source of fire prevention codes and standards, and research and education on fire and fire safety in the United States. Codes and standards can be ordered by phone (800) 344-3555, from the web site (www.nfpa.org/) or downloaded in PDF format. There is a fee in all cases and it can be fairly high.

Tools

Most of the tools—forms, techniques, solutions—you'll need as a manager you'll find right in the book. But there's one you'll need to send for and I'd encourage you to do that.

TOR, which I described in Chapter 10, includes a packet of forms and instructions. The packet is available by writing D. A. Weaver, 9 Brooks Place, Pueblo, CO 81001. It was also published in **Safety Supervision**, Dan Petersen, AMACOM, NY 1976, but the form and its content has changed somewhat from that version.

Internet

The Internet is an extremely fluid resource for safety and health—or any subject, for that matter. Sites come and go and the content can vary from official, verifiable, and extremely valuable to gossip, opinion, and urban legend. With the possible exception of government sites and some long-time, often-used commercial sites, listing specific addresses here may prove frustrating for you…and me. As an alternative, www.osha.gov/SLTC/generalshreferences/otherresources.html has listings of hundreds of sites, including many that I use regularly. Starting here is probably your best bet. You need to be the judge as to the value to you. If

you question anything you see on any of the sites, verify it with OSHA, your insurance carrier, or a trusted consultant before you apply it. If you want more on a particular subject than you can locate through the OSHA resource, just put the key words into your web browsers search engine and see what you get.

Vendors

Vendors are in your phone book, in your mail, in your trade journals, on the Internet, and standing in your lobby. In safety and health services, it's a competitive business and there is no end to good vendors looking for your business. In this section I'm not going to mention all of the training providers and I'm going to limit the resources for supplies and equipment to two. That's it! Two very reputable and comprehensive sources.

Lab Safety Supply is my personal source for equipment and supplies. They are a seller of all kinds of safety and health support equipment and consumables. They've got plenty of good competition, but I haven't found anyone to match the absolutely impressive customer service they provide. You can reach Lab Safety Supply by phone at (800) 356-0783 or at www.labsafety.com.

Grey House is a different animal. The two volume ***Grey House Safety and Security Directory*** comes out annually, is over three inches thick, and includes OSHA standard extracts, training articles, and buyers' guides. For any topic, subject, or item you can name, they list multiple suppliers with names, address, phone, fax and Internet addresses. Grey House, you see, doesn't sell products, theirs is a service that links you and all those folks who are selling. It's a great resource. Contact Grey House at (800) 562-2139 or at www.greyhouse.com/safety.htm.

Trade and Professional Associations

Founded in 1911, the **American Society of Safety Engineers (ASSE)** is the world's oldest and largest professional safety organization. Its 33,000 members manage, supervise and consult on safety, health and environmental issues in industry, insurance, government and education. ASSE has 12 divisions and 148 chapters in the United States and abroad. The organization publishes the excellent peer-reviewed safety journal ***Professional Safety*** that comes as part of an ASSE membership or can be ordered separately. Call (847) 699-2929 or visit the web site at (www.asse.org).

The **National Safety Council** is chartered by Congress as a nongovernmental, not-for-profit, public safety service organization. You'll find that NSC has a wealth of information about public, traffic, home and occupational safety and is a prime source of national injury statistics. Individual memberships are relatively inexpensive, as are those for smaller companies. A research department assists members with answers for all types of safety-related questions and many texts, reference books, and training packages are available for sale. The Council's monthly journal ***Safety + Health*** is filled with helpful information and is available with membership and on a subscription basis. Call the NSC at (800) 621-6244 or visit the web site (www.nsc.org)

Private Consultants

The growth of safety and health as a business imperative coupled with early retirements and downsizing in industry has opened the door for many safety and health specialists to move into the consulting ranks. Some have academic degrees in the field, most have valuable work experience, and all have areas of strength or specialty. If you need outside help, be sure to look for a fit between your needs and company safety culture and the consultant who responds to your call for assistance.

You'll find that fees and services and the final product can vary considerably. As a general rule, those with greater strengths and experience will charge more, but the old expression that "you get what you pay for" holds here. The better consultants will guarantee your satisfaction with their work and they will be fairly efficient at providing the service. Ask for references, look at past products, and ask pointed questions about their beliefs and approaches suggested.

Usually, employers associations and trade groups will have a handle on consultants who work in your area. One excellent national source is the ***National Directory of Safety Consultants, which lists over 2,000 men,*** and women who work in 150 different specialties. The directory is compiled and published by the American Society of Safety Engineers. Call (847) 699-2929 for details.

In-house talent

Now it's time to go back to a central theme of this book. Get your people involved in the safety and health process and you'll be way ahead of the curve. The in-house talent you have, even if you employ only a few people, is one of the best resources you have. Safety is not that complicated from a technical and rules standpoint. You just follow the language of the law—read the cookbook—and do what it says.

The complicated part is getting the safety culture and the positive working relationships right. That's where your people come in. When you take basic ideas, get excited about them, and infect the rest of the work team, the culture change starts to take place.

I've seen line employees develop and deliver the entire body of safety orientation and on-going training for a plant of 500 people. I've talked with shipping clerks who had created several tools that made the packaging process infinitely safer. A paint spray technician had a dozen ideas about improving the safety of his operation which were so good that they constituted the sum total of my report to management—with full credit to him with his agreement!

The high point of nearly every facility assistance visit I make is the opportunity to hear and feel the excitement of line people as they describe what's possible—or what they've already accomplished. It's infectious. When you decide you need help, ask your people for it. I doubt you'll be disappointed.

A Final Thought

Since I'm wrapping up this book with some suggestions on resources, let me tell you what makes books like this one valuable. It's the resource you provide as a user! For the next edition, I'd love to have your feedback. What tools and ideas did you find most helpful? What success have you had with implementation of the concepts? Have you actually made your workplace safer with this information? What would you like to see more of in the next edition? Is there material we should drop?

Send your feedback to me by mail or e-mail.

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Acknowledgement

Writing a book can be a humbling experience. You do it because you have information you want to share, but as you pore over the words, you realize from where the information came. It's from a lifetime of contact with thousands of people, from the authors of hundreds of books and articles, from teachers and friends and associates. To all I owe a debt of gratitude.

But, there are some who have had a profound impact on my professional life and they deserve individual mention.

When it comes to workplace safety, Dan Petersen heads the list. Prolific author, inspired speaker, critical thinker, and friend, he's been shaping my view of the safety world for a quarter century. You'll hear from him often in this book.

From the management perspective, Tom Peters has fed my hunger for ideas and possibilities. The title of one of his books says it all—WOW!

Were it not for the project team at the University of Alabama, this book would not have been written. As we developed and delivered training for all of OSHA's consultants nation-wide, they made sure that I understood what safety and health program management was all about. Dennis Daniels talked this Yankee into the Deep South and shepherded us through a fascinating multi-year project. Bill Weems and O'Neal Smitherman provided the tough questions and the inspiration. Larry Nolen, my second phase training partner, shared endless insight into the management and cultural process. Special mention, and deep gratitude, is reserved for Billy Gibbons, my first phase training partner. Billy's infectious enthusiasm made a book seem easy. She raised the idea, brainstormed the content, and helped hammer out the rough outline. What a gal!

Back at the OSHA National Office while I traveled the U.S. as both a teacher and student of safety and health program management was a wonderful group of people. Joe Collier, Tyna Coles, Melody Sands, and Paula White managed various parts of the project at various times and made what we were doing absolutely fun! When I write in the book about the new OSHA, these people are the benchmark.

Finally, I come to my inspiration, editor, best friend, mother of my children and love of my life, Shirley. She makes doing what I do worthwhile. No Shirley? No book!

I hope you'll enjoy and profit from what all my good friends and I have accomplished in these pages.

About the Author

Chip Dawson brings a unique background to the pages of this book. His is a skill mix not often found in business and industry, combining the talents of a 35-year safety practitioner with those of an industrial middle manager. With this background and an ability to see many sides of an issue, he's earned wide respect from those who seek his counsel.

Today, he's a consultant in occupational safety and health management and counts major corporations, small businesses, government, and education among his clients.

From 1992 until the project ended in 1998, he was under contract to the University of Alabama as a principal in the development and delivery of occupational safety and health program management training for OSHA consultants nation-wide. He continues to consult with OSHA and state safety agencies.

Based in Rochester, New York, much of his time is spent with the Rochester Business Alliance (RBA) and it's over 3,500 member companies and organizations. The RBA, the regional Chamber of Commerce and employers association, utilizes Chip as its manager of health, safety and environmental affairs.

Prior to joining the Industrial Management Council (an RBA predecessor organization) consulting team in 1992, Chip was a manager at the Kodak Park site of Eastman Kodak Company. At the time of his retirement, he had over 23 years experience with Kodak, having served in a variety of key operational and middle management roles at the 25,000 employee photographic materials manufacturing site. Over a decade was spent as the Director of Industrial Safety where he had management responsibility for as many as 500 men and women involved in emergency communications, fire suppression, neighborhood relations, safety, and security.

Chip taught for many years as an adjunct faculty member at Rochester Institute of Technology and is a frequent instructor in occupational safety and health and emergency management for the RBA and his other clients. On the national level, he is a regular presenter at state and regional conferences.

He is a past member and former chairperson of the Monroe County Local Emergency Planning Committee (LEPC), served for over eight years as an advisor to, and active volunteer with, local law enforcement, and represented the IMC on the 1992 Rochester mayor's Community Mobilization Against Violence and chaired it's business and industry subgroup.

Chip is a 1964 graduate of Oklahoma State University and did graduate work at the University of Illinois. He is a retired U. S. Naval Reserve Commander, a husband of 43 years, father of two girls and grandfather to four. He is a member of the National Safety Council and a professional member of the American Society of Safety Engineers.