



# Introduction to Safety Management

According to the OSHA Act, every employer has a legal obligation to furnish a place of employment free from known hazards. Learn how to develop an effective proactive safety management system using time-tested methods that have proven successful in all organizations. This course discusses critical elements of a successful safety management system, including developing safety programs, policies, plans, processes, and procedures.

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# OSHAcademy Course 700 Study Guide

## Introduction to Safety Management

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This study guide is designed to be reviewed off-line as a tool for preparation to successfully complete OSHAcademy Course 700.

Read each module, answer the quiz questions, and submit the quiz questions online through the course webpage. You can print the post-quiz response screen which will contain the correct answers to the questions.

The final exam will consist of questions developed from the course content and module quizzes.

We hope you enjoy the course and if you have any questions, feel free to email or call:

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## Course Introduction

### Management's Responsibility

According to the OSHA Act every employer has a legal obligation to furnish employment (work) and a place of employment (workplace) free from known hazards that could cause serious injury or death.

This course is designed to give you some ideas to help meet that obligation and apply effective management principles to the function of workplace safety. The ultimate goal is to help you understand these principles so that it affects your thinking, beliefs, decision and finally your actions to improve your company's safety management system and leadership culture.

### Safety is smart business!

If you want to reduce the costs and risks associated with workplace injuries, illnesses and fatalities, you should place as much emphasis on safety and health in your workplace as you do on other management issues such as production, sales, transportation and quality control. The old phrase, "Safety First", may sound nice, but safety is more effective if it's thought to be a priority. In a highly competitive environment, priorities can change rapidly. To survive, a company must both produce and be safe. Turn safety into a core value that never changes. Change "Safety First" to "Safety Only."

"Safety Only" emphasizes the idea that it's fine to produce as hard and fast as you can if you can do it safely. High productivity is desired, but if a safety hazard or practice is discovered that might cause serious physical harm or death, it should be corrected immediately, even if that means shutting down production. That's commitment to safety!

### The Eight Elements of a Safety Management System

In this course, each of the modules will discuss one of OSHAcademy's eight elements of an effective Safety Management System (SMS). Each of the elements listed below are critical to the success of the SMS.

1. Commitment and Leadership
2. Accountability
3. Safety Involvement
4. Safety Communications

5. Hazard Identification & Control
6. Accident Investigation
7. Education and Training
8. Continuous Improvement

### Getting Started

- Study the key elements of an effective safety and health program covered in this course and come up with a plan to suit your individual workplace.
- Decide exactly what you want to accomplish, and determine what steps are necessary to achieve your goals.
- Some of the elements may already exist, needing only minor changes to make them more effective.
- Next, plan how and when each step will be carried out and who will do it. If your company has a safety committee, its members can be a great help in this effort.
- Put the plan in writing. It's smart to put your plan in writing so everyone can read it and get involved.

OSHA has developed a [Safety and Health Program Advisor](#) that will help you analyze and evaluate your organization's safety and health management system. We encourage you to use this resource.

## Module 1: Element 1- Commitment and Leadership

### Getting Top Management Commitment

It is essential to the success of your company's safety and health program that top management demonstrates not only an interest, but a long term serious commitment to protect every employee from injury and illness on the job. But, if you think you don't have that level of commitment, how do you get it? Real commitment doesn't just appear out of thin air. What is the secret?

### The Elements of a Safety Management System

Management commitment to safety will occur to the extent each manager clearly understands the positive benefits derived from their effort.

Understanding the benefits will create a strong desire to improve the company's safety culture. Managers will invest serious time and money into effective safety management by developing each of the following elements in the SMS:

- **Vision statement:** Tells the world what the company would like to have accomplished in the future. A vision statement is based on an organization's strategic and organizational objectives.
- **Mission statement:** Tells the world why the company exists. Its purpose. What it does.
- **Objectives:** Intended outcomes that support the mission and vision.
- **Policies:** General guidance formulated and implemented by managers at all levels.
- **Programs:** Describe coordinated strategies that support policy.
- **Plans:** Give clear written (formal) guidelines on how to implement programs and policies. Includes long-term strategies and short-term tactics.
- **Processes:** Make sure safety is integrated into operational processes.
- **Procedures:** Ensure concise formal/informal step-by-step instructions.
- **Budgets:** Support investment in all the above.
- **Rules:** Clearly state specifications and performance standards.

- **Reports:** Reflect process and measures results. Evaluates effectiveness of all the above.

**1. When will management's commitment to safety occur?**

- a. When management is forced to comply by the employees
- b. When management clearly understands the positive benefits
- c. When employees ask for it
- d. When higher level management forces lower level management to comply

## Management Commitment

It is essential to the success of your company's safety and health program that top management demonstrates not only passive interest, but a long term serious commitment to protect every employee from injury and illness on the job. If we don't have that level of management commitment, how do we get it? Real commitment doesn't just appear out of thin air. What is the secret? Let's find out.

## Why Managers Make a Commitment to Safety

Managers make a commitment to safety to fulfill one or more corporate obligations. They invest time and money in safety to fulfill one or more of the following obligations.

### Social obligation

Commitment to fulfill this obligation is most effective in the long term. Management has come to the realization that long-term corporate survival depends on more than maximizing short-term profits. Managers tend to value and tap into the creative potential of each employee. They perceive safety as a core corporate value that does not change when the going gets tough. When managers value safety at this level, they naturally do safety to fulfill the other obligations.

### Fiscal of financial obligation

Commitment to safety to meet this obligation can be quite effective because it makes good financial sense. Managers are motivated to invest in safety because they understand the financial benefits of an effective safety culture. They feel obliged to operate the business in a financially prudent manner. They do whatever needs to be done to proactively and reactively reduce direct and indirect safety costs. Safety may be a high priority if it pays. However,

because safety is not considered an unchangeable value. It may be given a lower priority if "the going gets tough."

### **Legal obligation**

Commitment to safety is given only to fulfill minimum legal requirements.

Consequently, this is the least effective reason for doing safety. Managers want to stay out of trouble, so they do only what has to be done to meet OSHA requirements. Safety is not a priority or value but thought of as just the cost of doing business. Safety strategies are typically reactive because safety is not a problem unless there is an accident. OSHA may be considered the "bad guy" because management doesn't understand how OSHA works. You can see how OSHA works by reading [OSHA's Field Operations Manual](#).

**2. Managers who perceive safety as a core corporate value are most likely to fulfill the company's \_\_\_\_.**

- a. social obligation
- b. financial obligation
- c. legal obligation
- d. employee obligation

### **Leadership**

Every day, employees, supervisors and managers have many opportunities to communicate and act in ways that demonstrate safety leadership. Unfortunately, these opportunities may go unanswered because they are not seen as opportunities. Employers and managers may not understand that demonstrating tough-caring safety leadership can result in enormous benefits. The inability to perceive leadership opportunities as they arise limits the company's potential to succeed.

It's appropriate to assume that employees at all levels of the organization are good people trying to do the best they can with what they've got. The problem is, they don't always have the physical resources and psychosocial support to achieve the kind of results expected of them. Why? Ultimately, the workplace culture may not support effective safety management and leadership.

The way we perceive the safety culture, or "the way things are around here," is greatly influenced by management leadership styles. Leadership styles are, in turn, influenced to a great degree by the thoughts and opinions managers have about safety. In the next section, we'll discuss three fundamental leadership styles and how they relate to the three management obligations we discussed above. Let's look at this association.

**3. Why don't workers achieve the kind of results that are expected of them at work?**

- a. There are too many OSHA regulations
- b. There is not enough consistent discipline
- c. They do not have the physical resources & psychosocial support
- d. They just don't care enough

**Tough-coercive leadership**

Managers with a tough-coercive leadership style are tough on safety to protect themselves from litigation and OSHA citations. They are motivated by a need to fulfill their legal obligations and that's it. Tough-coercive leadership has the following characteristics:

- The manager's approach to controlling performance may primarily rely on the threat of punishment.
- The culture is fear-driven because management resorts to an accountability system that emphasizes negative consequences.
- What managers do and say communicate messages that create negative untrusting relationships with employees.
- Employees perform only to the level that avoids negative consequences. They will comply, but excellent performance is rare.
- Employee turnover is high due to the lack of job satisfaction and increased stress.

Here are some examples of what a tough-coercive leader might communicate to employees:

- "If I go down, I'm taking you all with me!"
- "If you report hazards, you will be labeled a complainer."



- "If you violate any safety rule, we'll fire you on the spot!"

As you might guess, fear-driven cultures, by definition cannot be effective in achieving world-class safety because employees work only to avoid a negative consequence. Bottom-line: a fear-driven safety culture will not work. It can't be effective at any level of the organization. It may be successful in achieving compliance, but that's it.

**4. Which of the following would be the primary motivation for a tough-coercive leadership approach?**

- a. To fulfill the company's legal obligation
- b. To fulfill the company's financial obligation
- c. To fulfill the company's social obligation
- d. To fulfill the company's employee obligation

### **Tough-controlling leadership**

Managers using a tough-controlling leadership approach are tough on safety primarily to control losses. They consider safety as a "loss control" function. They may have high standards for behavior and performance and feel the need for tight control of all aspects of work to ensure compliance.

Tough-controlling leadership approach has the following characteristics:

- It is considered the "traditional" management model.
- Management is interested in effective safety to successfully reduces injuries and illnesses, thereby cutting production costs.
- Managers may rely on a balance of negative and positive reinforcement to control behaviors.
- Tight control is necessary to achieve numerical goals.
- Communication is typically top-down and information is used to control.
- A safety "director" is usually appointed to act as a cop: responsible for controlling the safety function.
- The safety culture is less fear-based, yet compliance is still the primary safety goal.

Examples of what you might hear from a tough-controlling leader include:

- "If you have an accident, you'll be disciplined."
- "If you don't have an accident, you won't lose your bonus."
- "If you comply with safety rules, you will be recognized."

**5. Why are tough-controlling leaders tough on safety?**

- a. To scare employees to work safely
- b. To get rid of non-performing workers
- c. To control losses
- d. To create a fear-based culture

**Tough-caring leadership**

Tough-caring leaders are tough on safety because they care about the success of their employees first. This approach is similar to the more familiar "[servant-leader](#)" model in which leaders serve those they lead.

The tough-caring leadership model represents a major shift in leadership and management thinking from the tough controlling model. Characteristics of this approach include:

- Managers understand that complying with the law, controlling losses, and improving production can best be assured if employees are motivated, safe, and able.
- Management understands that they can best fulfill their commitment to external customers by fulfilling their obligations to internal customers: their employees.
- Communication is typically all-way: bottom up as well as top-down.
- Information is used to share so that everyone succeeds.
- The safety manager is considered a consultant, not a cop.
- A high level of safety involvement and ownership, mutual respect, and trust exists between labor and management.

What are you likely to hear from a tough-caring leader? Here are three examples:

- "If you comply with safety rules, report injuries and hazards, I will personally recognize you."
- "If you get involved in the safety committee, you will be more promotable."
- "If you suggest and help make improvements, I will personally recognize and reward you."

**6. In the tough-caring leadership model, communication is \_\_\_\_\_.**

- a. one-sided
- b. all-way
- c. lacking
- d. used as a tool for discipline

### Committed Management

Top management may communicate their support for safety, but the real test for commitment is the degree to which management acts on their communication with serious investments in time and money. When management communicates their interest in safety, but does not follow through with action, they are merely expressing support, not commitment.

### Leaders get what they give!

Real commitment is an expression of tough-caring leadership by example. Integrity, character, and self-discipline are values that all managers seek in their employees.

Employees will demonstrate these important attributes when (and only when) they see management exhibiting these values first. Great leaders truly care about those they lead. What better way to demonstrate leadership than by providing a safe and healthful place of work for all employees?

Just food for thought: If you're a manager or supervisor, ask yourself, "Do I really like my people?" If the answer isn't yes, start now to rethink your opinion because it's almost impossible to demonstrate caring leadership if you don't actually like your people.

*"We choose to have zero injuries. We choose to have zero injuries this day and do this, not because it is easy, but because it is hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept,*

*one we are unwilling to postpone, and one which we intend to win, because we care for ourselves and others too." S. Farnham, Safety Manager, Contrack, International*

**7. How does management demonstrate commitment to safety?**

- a. They communicate the importance of safety
- b. They commit serious time and money on safety
- c. They talk about safety at every occasion
- d. They put safety sign up in the work area

**Managers get what they design!**

They say, "perception is reality." If you perceive a lack of top management commitment to safety and health, what can you do about it? First of all, think about fixing the system, not the blame. It's all about system design.

If management is not demonstrating commitment through action, you have an opportunity to become a key player to get things moving. With the help of the safety committee you can "educate up" to help management gain the all-important vision and understanding needed to positively affect attitudes and subsequent behaviors that give workplace safety the emphasis it deserves. Now let's take a look at what you can do.

**8. You're a new safety manager at XYZ, Inc. If you see a lack of management commitment, what should be your first priority?**

- a. Start by firing top management
- b. Fix the safety management system
- c. Fix the blame for the lack of safety
- d. Leave and find another job

**Vision and Mission Statements**

The **vision statement** lets the employee and customer know who you are by defining the role your company plays and what its basic values are. The vision statement reflects the corporate culture. One way to understand corporate culture is to think of it as the company's unique "personality" setting it apart from all others.

## Sample Vision Statement

*XYZ Widgets values its "relationship with customer" above all. To be successful we treat all employees as valued internal customers. We respect their ideas, value their work, and provide whatever is needed so that they may accomplish excellence in a safe-productive manner. Doing this empowers our employees so that they may manifest our values daily with our external customers.*

The **mission statement** tells the world what you do -- why your company exists, by stating its intended purpose. The mission statement lets everyone know what your company's product or service is; who its customers are; what its service territory is.

## Sample Mission Statement

*It is the mission of XYZ Widgets to safely manufacture and deliver the highest quality megalithic cyberwidgets to our valued customers throughout the world.*

If your company doesn't have a mission statement, try to develop one and convince management of the benefits that will result from a written mission statement. Now let's take a look at two basic approaches employers may adopt in safety and health program management.

9. The \_\_\_\_\_ tells everyone what you do and the \_\_\_\_\_ lets everyone know who you are.

- a. safety values statement, safety program
- b. safety management system, company policy
- c. vision statement, mission statement
- d. mission statement, vision statement

## Reactive vs. Proactive Safety Strategies

Don't just react to safety

It's sad but true - some companies have adopted an approach to safety and health that emphasizes a **reactive strategy**. A reactive approach assumes that accidents just happen, and there's not much that can be done about it. Consequently, the company places most of its effort into reacting to accidents after they occur. A reactive response occurs **after** an injury or illness and usually has the purpose of **minimizing the costs** associated with the injury or illness.

Reactive safety programs always cost much more than proactive programs...always...because they aren't implemented until an injury or illness has occurred. When management emphasizes

a reactive approach to safety and health, it sends two negative messages to employees, (1) we don't care about you, and (2) it's all about money, not your safety.

### Be business smart...be proactive

A **proactive strategy** emphasizes prevention: doing whatever it takes to make sure accidents never happen in the workplace. There are no excuses for an accident. A proactive response to safety and health in the workplace occurs **before** an accident has occurred. It **anticipates** and tries to prevent accidents.

By emphasizing **accident prevention**, management sends a message of caring to all employees. Proactive strategies are always less expensive than reactive strategies because the company makes **investments** that result in potentially huge returns. Remember, proactive programs are implemented to prevent future injuries and illnesses.

**10. Which of the following strategies cost less in the long term and focus on preventing accidents?**

- a. Reactive strategies
- b. Proactive strategies
- c. OSHA strategies
- d. NIOSH strategies

### Goals and Objectives

So now you have a vision and mission statement developed. The next step is to proactively develop some goals and objectives to improve your company's safety and health program. The problem is, most people think goals and objectives are the same thing: They're not.

### Goals

Goals are short unstructured statements and are easy to write. They're nothing more than wishes. For instance, a goal might be to:

- "Promote the safety suggestion program"
- "Get everyone trained"

## SMART Operational Objectives

On the other hand, objectives are structured statements that provide much more detail. Objectives should be structured so they're **SMART**: **S**pecific, **M**easurable, **A**ction-oriented, **R**elevant, and **T**imely.

Action-oriented objectives are also called operational objectives should describe specific job-related actions that can be measured. The results should be achievable and relevant, or important, to the company. And finally, the objective should set a time limit.

## How to Write an Operational Objective

However, operational objectives take a little more thought.

Objectives should have the following elements present:

- **Starts with an action verb.** (Decrease, increase, improve, etc.)
- **Specifies a single key result** to be accomplished.
- **Is quantifiable.** Uses numbers to measure a desired change. (i.e., 50% increase)
- **Specifies a target date** for accomplishment.

For example, operational safety objectives might be written like this:

- "Increase the number of safety suggestions to 25 a month by July 31st."
- "Reduce the number of back injuries in the warehouse by 70% by the end of 2018."

Remember to work with the safety committee to share the goals and objectives with everyone in the company. By the end of this course you should be able to think of many more ways to increase management commitment.

**11. Which of the following statements is written as an objective?**

- a. Improve safety and health awareness through increased training.
- b. Gain credibility with the local community.
- c. Lower our workers compensation costs this year.
- d. Lower the number of serious accidents by 20% by the end of the year.

**Talk money - the bottom line**

Have you ever proposed a recommendation to correct a hazard or improve a procedure, only to have it fall on what appears to be deaf ears? The odds are, management cares very much about safety and health in the workplace, but like you, they are very busy. When a busy manager receives a recommendation from the safety committee, and it's merely a vague one-liner like, "We need to install a new guardrail in the warehouse," the likely response might be to put it on the back burner.

Dan Petersen, author of *Safety Management: A Human Approach*, states that, "Management is first of all interested in how the safety professional's ideas relate to the profits of the organization. That is, what will management get in return for the money it is being asked to spend? Thus, safety people ought to be dollar-oriented when talking to management. Even if management understands the language of frequency and severity rates, dollar indicators ought to be used instead."

**12. According to Dan Petersen, management is first of all interested in how the safety professional's ideas relate to \_\_\_\_.**

- a. workers compensation
- b. OSHA
- c. safety
- d. profits

**Effective recommendations describe costs and benefits**

When talking to management about the bottom line benefits of safety, it's important that they understand the relationship between indirect and direct accident costs.

- **Direct Costs** are medical costs and indemnity payments.



- **Indirect Costs** refer to production time lost by the injured employee, fellow workers and supervisors; spoiled product, unhappy customers; cleanup time; schedule delays; training new employees; overhead costs; legal fees and an increase in insurance costs.

According to the National Safety Council, when considering all industries nationally, the average direct and indirect claim costs for a lost time injuries is more than \$40,000, and fatalities average over \$1 million.

### Indirect/Direct Cost Ratios

Typically, indirect costs average 2.7 times the direct costs. However, it's important to understand that indirect costs may be much higher. Here are three important points to remember when estimating indirect to direct accident cost ratios:

- Generally, the lower the direct cost, the higher the ratio between the indirect and direct costs. Because there is no such thing as a "typical" injury, indirect costs can be difficult to compute. The Department of Labor puts the ratio of indirect to direct costs anywhere from 1:1 to 20:1.
- If accidents occur at capital intensive operation where large sums have been invested in facilities, it's likely that higher indirect/direct cost ratios will be experienced.
- If accidents occur at labor intensive operations where more investment is made in labor than capital assets, lower indirect/direct cost ratios will likely be experienced.

**13. Typically, the indirect costs of accidents average \_\_\_\_\_ the amount of direct costs.**

- a. 1.5 times
- b. 2.7 times
- c. 3.5 times
- d. 4.7 times

### Safety Pays!

Take a look and download OSHA's Safety Pays at [www.osha.gov](http://www.osha.gov) software program that can be helpful in determining direct and indirect cost.

### Annual Return on Investment (ROI) in Percent

$$(\text{COST} \div \text{INVESTMENT}) \times 100$$

Management may ask you what the Return on Investment (ROI) will be for an investment in safety. Let's say you recommend a \$1,000 investment in taking corrective action to eliminate a hazard that could cause an injury resulting in accident costs of \$28,000. To determine the ROI, divide \$28,000 by \$1,000 which gives you 28. To express it as a percentage, multiply 28 by 100 and you discover that the ROI is 2800 percent.

### Payback Period in Months

$$\text{COST} \div (\text{INVESTMENT} \div \text{MONTHS})$$

Management may also want to know how quickly the \$1,000 investment will be paid back: what the Payback Period is. To determine the payback period, divide the accident cost of \$28,000 by 12 months (1 year) and you arrive at \$2,333 per month in potential accident costs. Divide the investment of \$1,000 by monthly accident cost of \$2,333 and you'll see that the \$1,000 investment will be paid back in only .43 months. After that, the investment is actually saving the company money.

If you want, take a closer look at some key elements of an [effective recommendation](#).

### Plan the Work, Work the Plan

Now you have some ammunition to help motivate and increase top management commitment to make an investment in safety. You'll receive many more tips and ideas about this throughout the course. An important step in making sure the above ideas are effectively applied is to develop an action plan to get top management commitment. An action plan is nothing more than a set of long-term strategies and short-term tactics ("how" statements).

**14. If an investment of \$1,000 is needed to correct a hazard that is certain to cause an accident within one year, and the employer would realize a total cost of \$25,000 to cover the accident, what would the Return on Investment (ROI) in percent be? Hint:  $(\text{COST} \div \text{INVESTMENT}) \times 100$**

- a. 25 percent
- b. 250 percent
- c. 2,500 percent
- d. 25,000 percent

## Module 2: Element 2- Accountability

### Introduction

Accountability ranks right at the top with management commitment as a critical element in a company's safety and health management system. Accountability is one of the answers to the question, "why do we behave the way we do in the workplace?" So, it's important that we understand what it is and how it should work as part of the safety management system.

Management may impose all kinds of safety policies, programs, written plans, directives, rules, and training on the workforce, but as you'll soon learn, none of that effort will matter unless the appropriate application of effective consequences within a culture of accountability exists: only then will desired behaviors be sustained. After all, employees must believe they are going to be held accountable for the decisions they make and the actions they take, or you can be sure that any safety management effort is ultimately doomed to failure.

1. **Desired safety behaviors will occur with the application of \_\_\_\_\_.**
- a. sustained enforcement
  - b. effective consequences
  - c. zero tolerance
  - d. behavioral controls

### What is Accountability?

You hear the terms "responsibility" and "accountability" a lot when dealing with safety and health, and sometimes people speak as though the two terms have the same meaning. But, as used in OSHA standards and throughout our courses, these two terms have very different meanings. Let's find out why.

Go get your dictionary. You'll find responsibility and accountability defined something like:

- **Responsible** - expected or obliged to account for or answer to; involving obligation or duties. Responsibility - able to account for or answer to.
- **Accountable** - responsible; liable; legally bound or subject to giving an account (or explanation), answerable. Accountability - able to give account or answer to.

If you examine only these two definitions, it's understandable why we might conclude that these two terms have virtually the same meaning. However, the notion of being "liable or

legally bound" sets accountability apart. When applying these two concepts to management in the workplace, they take on very important and distinct differences in meaning and application.

- **Responsibility** may be thought of as simply the "**obligation to fulfill a task.**" To be responsible, you need only be assigned one or more duties.
- **Accountability** may be thought of as establishing the "**obligation to fulfill a task to standard or else.**" When you are held accountable, your performance is measured against some specific criteria or standard and consequences are applied appropriate to the level or quality of performance.

2. When you \_\_\_\_\_, your performance is measured and consequences are applied.

- a. are assigned responsibility
- b. are held accountable
- c. are designated
- d. are authorized

### The Six Elements of an Effective Accountability System

Accountability is one of the most important elements within the safety management system. The safety manager and safety committee may use the guidelines in the six elements of an accountability system to help design, develop, and deploy an effective accountability system. With that in mind, let's take a look at each of the six elements.

#### Element 1: Formal Standards of Performance

OSHA has developed rules in occupational safety and health which serve as standards of performance for employers. Similarly, employers are required to establish company policies, procedures, written plans, processes, job descriptions and rules to clearly convey their standards of performance in safety and health to employees.

It is important that safety policies and disciplinary procedures be clearly stated in writing and made available to everyone. In fact, it is necessary to educate all employees on these policies and procedures. Make sure they certify that they have read, understood, and



Clearly state standards of performance

will comply with those safety policies and procedures. Do this when they are hired, and annually thereafter.

If standards of acceptable behavior and performance are not established and clearly communicated to employees, an effective accountability system is impossible. Management may not be justified in administering discipline without clearly written and communicated standards.



**3. Who should be educated on all safety policies and disciplinary procedures?**

- a. Management only
- b. Employees only
- c. All employees
- d. Only new employees

**Element 2: Adequate Resources and Psychosocial Support**

Before employers are justified in administering appropriate consequences, they should **first** provide their employees with the means and methods to achieve the standards of performance that have been established. Employers should provide a safe and healthful physical workplace and supportive psychosocial workplace environment.

- **Physical resources.** Helps to ensure safe and healthful conditions and exposures. Examples include safe tools, equipment, machinery, materials, workstations, facilities, and environment. State and Federal OSHA agencies emphasize this category.
- **Psychosocial support.** Ensures safe behaviors. Effective safety education and training, reasonable work schedules and production quotas, human resource programs, safe work procedures, competent management, tough-caring leadership. Through the years, Federal OSHA and professional safety organizations have demonstrated more emphasis in this area as evidenced by increased interest in developing rules requiring a comprehensive safety and health program, and workplace violence standards.

Examples of psychosocial factors that increase stress include job dissatisfaction, monotonous work, pressure to work fast, limited job control, and lack of positive consequences.

Examples of ways to support the psychosocial environment that reduce stress include effective safety education and training, reasonable work schedules and production quotas, human resource programs, safe work procedures, competent management, and tough-caring leadership.

**4. What is the primary purpose of psychosocial support in the workplace?**

- a. Increase line production
- b. Reduce employee stress
- c. Improve company profits
- d. Decrease errors in production

**Element 3: A System of Performance Measurement**

Once again, when applied to safety behavior and performance, accountability demands more than simply being answerable. In an effective accountability system, the quality or level of safety performance is measured regularly and often. Measurement processes include informal/formal observations. Real measurement means more than merely observing behaviors. It also includes quantifying observations - adding up the numbers. Those numbers form the statistics that you can use to improve the safety management system.

Examples of measured safety behaviors and performance at various levels include:

**Top/mid-level managers:** Unfortunately, measurement at this level typically includes lagging indicators or results statistics over which top managers have little direct control. These measures include:

- Accident rates
- Experience modification rate (MOD Rate)
- Workers' compensation costs

This situation may cause top managers to put pressure on supervisors to hold down the number of accidents in their departments. Consequently, the result may be ineffective measurement at all levels. Appropriate leading indicator behaviors and activities to measure at top/mid-level management include:

- Involvement in safety management system formulation and implementation;
- Developing effective safety policies, programs, procedures;

- Arranging management/supervisor safety training;
- Providing physical resources and psychosocial support;
- Involvement in safety education/training;
- Supporting involvement in the safety committee.

**Supervisors:** Supervisors may not be able to completely control the results (such as the accident rate) of their work area. They do, however, can control their safety management and leadership activities. Therefore, measurement at this level should primarily include personal safety behaviors and activities such as:

- Making sure workers have safe materials, tools, equipment, machinery, etc.
- Ensuring a healthful psychosocial environment
- Following company safety rules
- Conducting safety inspections
- Enforcing safety rules
- Training safe work procedures
- Recognizing employees for safety
- Conducting safety meetings

**Employees:** Measurement of employees should include appropriate behaviors such as:

- Complying with company safety rules
- Reporting injuries immediately
- Reporting hazards
- Making suggestions
- Involvement in safety activities

If the behaviors and activities above are expected and recognized, the results that we all worry about will take care of themselves. Improve the process and watch the outcome follow! Is this all "pie in the sky"? It doesn't have to be.

**5. Top/mid-level managers typically measure \_\_\_\_\_ like accident rates over which they have little control.**

- a. leading indicators
- b. lagging indicators
- c. resultant indicators
- d. dependent indicators

### **Accountability and Control**

A basic rule for developing accountability criteria for measurement is that a person should be held accountable for a responsibility only if that person has control, authority, and ability to fulfill that responsibility.

If managers and employees are being measured and held accountable for results over which they have no control, they will attempt to somehow gain control over the results. The attempt to establish control may include inappropriate strategies.

For example, a supervisor who's measured only on department accident rates may threaten to fire anyone who completes an OSHA 301, Incident Report. Not only is that behavior counterproductive for the company, it is illegal!

OSHA assumes the employer ultimately controls all the many operational variables such as raw materials, equipment, machinery, work schedules, personnel, and policies that make up the day-to-day work environment. Therefore, employer performance in providing resources and implementing policies, etc., should be measured.

On the other hand, employees may have very little control over operations in the workplace. They do, however, have control over their own behavior. Employees have the ability to make a choice:

- to work safe, or
- to take chances

In the workplace, managers should measure supervisor activities and behaviors, and it's important that supervisors measure their employees' safety behaviors. Employees can choose to comply with safety rules, and they may choose to report injuries and hazards in the workplace. Consequently, we need to measure these personal behaviors.



OSHA doesn't merely observe, they inspect, investigate, and issue citations that may include monetary penalties: Now that's measurement with consequences, isn't it?

**6. When should a person be held accountable for an assigned responsibility?**

- a. When a supervisor asks them to do something
- b. They should never be held accountable
- c. Only when management forces them to be responsible
- d. If that person has control, authority, and ability to fulfill that responsibility

**Element 4: Application of Effective Consequences**

**What is a consequence?**

A "consequence" is anything that happens because of something that happens. Another way to express it is to think of cause and effect: the initial behavior is the "cause" and the consequence is the "effect" of the cause. For every cause, there is an effect.

In each example below, the initial behavior or action is the cause and the reaction is the effect or consequence. Let's look at some examples:

- If you hit your thumb with a hammer (cause), the natural consequence is pain, injury, embarrassment, etc. (effect)
- If you think safety is not important, you take unsafe shortcuts that can get you injured.
- If a supervisor yells at you, you might yell back, apologize, go home, or even quit.

**Is there any escape from consequences?**

Not in the workplace. It's important to understand there is no such thing as "no consequence" for an action. You cannot NOT have a consequence. For instance, if a supervisor thanks a worker for making a safety suggestion, the supervisor's recognition is a consequence (positive). If the supervisor ignores the worker who made the safety suggestion, the "act" of ignoring is also a consequence (negative).

**Every cause has an effect. Every action has a consequence.**

Effective consequences increase desired behaviors or decrease undesired behaviors. If employee safety performance meets or exceeds the standards set by the employer, some sort of recognition should follow. On the other hand, if the employee makes an informed choice not

to comply with the company's safety rules, some sort of appropriate corrective action should follow.

**7. In the statement, "If you hit your thumb with a hammer, your thumb will hurt," which part of the statement describes the effect?**

- a. "If you hit"
- b. "with a hammer"
- c. "If you hit your thumb"
- d. "your thumb will hurt"

### Positive and Negative Reinforcement

There are various strategies for administering positive and negative consequences. Careful planning is critical to ensure consequences are effective. So, let's first take a look at positive and negative reinforcement, and why positive reinforcement is best in producing a world-class safety culture.

#### Positive Reinforcement

Positive reinforcement is the use of consequence strategies that attempt to increase the frequency of desired behaviors through positive recognition and/or reward. Workers think that if they do something well, they will get recognized. Consequences for safe behaviors that meet or exceed expectations usually include some form of positive recognition and/or reward.

Important criteria to remember about positive reinforcement include:

- It will increase desired behavior.
- The desired behaviors may be safe or unsafe.
- Workers perform to receive a positive consequence.
- Workers may perform far beyond minimum standards - discretionary effort.
- If the desired behavior is to work safe, no matter what - it's a success-based strategy.
- If the desired behavior is to work fast, not necessarily safe - it's a failure-based strategy.
- This strategy is more effective if the goal is to achieve a world-class safety culture.

It's important to know that "desired" behaviors may not always be safe behaviors.

Unfortunately, this may be true in safety cultures where it's more important to work fast than

safe. Working fast, not safe is top priority. This is especially true when the employer is under pressure to finish a project on time. Here are some examples that show how perceived positive reinforcement can increase both safe and unsafe behaviors:

- If you comply with safety rules, the supervisor thanks you.
- If you take safety shortcuts to get work done ahead of schedule, your supervisor gives you time off.

### Negative Reinforcement

Negative reinforcement is the use of consequence strategies that attempt to increase the frequency of desired behaviors by withholding perceived negative consequences. Workers think that if they do something the employer wants, they will avoid negative consequences. If safety is what the employer wants, these strategies will be less effective because workers are generally only trying to do what is necessary just to "stay out of trouble". Important criteria of negative reinforcement include:

- Workers perform only to avoid the perceived negative consequence - nothing else.
- The desired behavior may be safe or unsafe.
- The intent is to increase desired behaviors by withholding an unwanted consequence.
- Workers perform to minimum standard but not beyond: just enough to stay out of trouble.
- The focus is on compliance, not excellence. - it's a fear-based strategy.
- This strategy is less effective if the goal is to achieve a world-class safety culture.

Once again, the outcome is dependent on the behaviors that the employer actually wants. Hopefully, the employer prioritizes safety, but that's not always the case. Here are some examples that show how perceived negative reinforcement can increase both safe and unsafe behaviors:

- If you comply with safety rules, the supervisor says you won't be reprimanded.
- If you take safety shortcuts to get work done ahead of schedule, your supervisor does not get upset.

**8. Which of the following consequence strategies will be most likely cause workers to perform far beyond minimum standards?**

- a. Positive reinforcement
- b. Negative reinforcement
- c. Negative punishment
- d. Positive punishment

## Positive and Negative Punishment

### Positive Punishment

Positive punishment occurs when a worker's safety behavior or performance results in a perceived negative consequence that serves to decrease the probability of that behavior in the future.

For instance, a supervisor might yell at a worker who is violating safety rules. If the worker stops violating safety, the supervisor ceases yelling. The supervisor's yelling serves as a positive punishment because the supervisor adds an unpleasant response in the form of yelling.

### Negative Punishment

Negative punishment occurs when a worker's behavior or performance results in the removal a perceived positive consequence. Removal of the consequence decreases the probability of that behavior in the future. For instance, the supervisor withholds positive recognition if workers do not achieve certain standards of behavior or performance.

### Why Recognition Programs Fail

Both positive reinforcement and negative punishment occur in safety recognition programs that reward one employee for being first, best, or most improved. At the same time the one winner receives positive reinforcement, everyone else receives negative punishment because they are, in fact, losers. Everyone else may have performed quite well, but since they were not the best, positive recognition is withheld. The result is one winner and many losers.

Recognition programs that reward only the best performer can actually demotivate most workers. This form of negative punishment is one of the primary reasons safety recognition programs do not work. Recognition programs should be criterion-based that recognize everyone who meet the criteria for recognition. The goal is to have many winners who all meet or exceed management expectations.

9. Recognition programs that reward an employee for being first, best, or most improved are less effective because \_\_\_\_\_.

- a. everyone considers themselves as winners
- b. they produce many winners but only one loser
- c. they create one winner and many losers
- d. they recognize everyone for participation

### Ignoring

Ignoring, intended or unintended, is a common form of negative punishment. You might think ignoring employee behaviors is withholding a consequence. No such luck. Every response, including ignoring, is a consequence. In fact, ignoring desired behaviors in the workplace is usually the least effective consequence because it leads to extinction of those behaviors. Think about it. Have you ever been ignored when you thought you should have been recognized? I bet you were upset. And it didn't matter why you were ignored either: you didn't like it. So, let's take a look at some of the characteristics of extinction:

- It is the withdrawal of recognition;
- The worker is ignored and no matter what, desired behavior becomes less frequent. For instance:
  - If workers break safety rules and are ignored, they may perceive it as a positive consequence and will less likely behave safely in the future.
  - If workers comply with safety rules and is ignored, they may perceive it as a negative consequence and will more likely break safety rules in the future.
- Workers eventually perform without an expectation of recognition.
- No relationship with management exists.
- It is the most common form of consequence in the workplace - It's epidemic in organizations.
- Examples of the thoughts and beliefs produced when people are ignored include:
  - "It doesn't matter how hard I work around here."
  - "Apathy is rampant, but who cares."

**10. What is the effect of ignoring desired behaviors in the workplace?**

- a. An increase in desired behaviors
- b. Extinction of desired behaviors
- c. A decrease of undesired behaviors
- d. Elimination of undesired behaviors

**Element 5: Appropriate Application of Consequences**

Without the expectation of consequences, accountability has no credibility and will not be effective. No consequences...no accountability. Consequences need to be appropriate as well as effective. This is the element with which everyone is probably most familiar. Unfortunately, in some companies, consequences are either not appropriate, not effective, or both.

**Criteria for appropriate consequences**

- They are justified.
- They correspond to the degree of positive or negative results of the behavior.
- They are applied consistently throughout the entire organization.

**Justified Consequences**

Negative consequences are justified when the person administering discipline has fulfilled their own accountabilities first. Positive consequences are justified any time employees meet or exceed expectations. Here's an important principle (I call it the 5-R principle): The more Regularly you Recognize and Reward, the more Rarely you'll have to Reprimand.

**11. Which of the following is NOT an appropriate criterion for consequences?**

- a. They are justified
- b. They always take the form of a reprimand
- c. They correspond to results of behavior
- d. They are applied consistently

**“Five Stars” Leadership is the Key**

It's critical to understand that **before** administering progressive discipline, managers and supervisors exercise real leadership when they first ask five important questions to how well they have fulfilled their own obligations to employees. Doing this is important to make sure they are actually justified in administering corrective actions. The negative impact on the company if employees are discipline inappropriately can be dramatic over time.

The good news is that determining if discipline is appropriate doesn't have to be difficult. When conducting a self-evaluation, managers and supervisors can use the "**STARS**" acronym to the right to help them remember their five basic safety obligations to employees. Let's take a look at each of the five obligations:

1. **Supervision:** Adequate supervision means "detecting and correcting hazards or unsafe behavior before they cause an injury or illness." If supervisors are stuck in the office all day, it's not possible to oversee the work employees are doing. Lack of supervision is a major reason disciplining employees after an accident is usually inappropriate. Managers and supervisors should ask, "Did I catch them violating safety rules before they got hurt?"
2. **Training:** Employees must be provided with the required knowledge and gain the skills to comply with safety requirements. Employees, then, have the necessary knowledge and skills to understand the natural and system consequences of noncompliance. Managers and supervisors should ask, "Have I provided (or has the employee received) quality safety training?"
3. **Accountability:** Do employees believe they will be disciplined if they're caught violating safety rules? Or, do they know that all you will do is shake your finger and threaten them without following through. If supervisors allow employees to violate safety rules, all justification for discipline disappears. Managers and supervisors should ask, "Have I applied safety accountability fairly and consistently in the past?"

4. **Resources:** Do employees have the physical resources and psychosocial support to comply with safety requirements? Supervisors need to provide adequate tools, equipment, materials that make it possible for employees to work safely.
5. **Support:** Supervisors should also manage workloads, schedules, employee relations so that the workplace is as stress-free as possible. When the employee believes working fast is more important than working safe, supervisors are failing in this area. Managers and supervisors should ask, "Have I provided the employee with a safe and healthful workplace?"

If managers and supervisors can honestly answer "**YES**" to each of the above five questions, it may be appropriate to administer discipline because the five basic leadership obligations have been fulfilled. However, if they cannot honestly answer "yes" to each question, then an apology would be in order, and a promise to make personal and system improvements (provide better training, resources, expectations of enforcement, supervision and leadership).

**12. Before administering discipline, supervisors should first \_\_\_\_\_.**

- a. make sure everyone knows they will be reprimanded
- b. be sure they consistently reprimand for every violation
- c. confirm they have fulfilled their own obligations
- d. make sure they are legally covered

### How Severity and Responsibility Affect Consequences

- **Severity:** The level of consequences administered should increase with the severity of the potential injury or illness that might result from the behavior. If an employee is performing an unsafe work practice that could result in a fatal injury to himself or another employee, that certainly warrants a severe consequence. On the other hand, an employee who performs a behavior that violates a safety rule, yet will not result in an injury or illness, a less severe consequence is more appropriate.
- **Responsibility:** The level of consequences administered should increase with the level of responsibility of the person performing the inappropriate or unsafe behavior. If an employee neglects to perform a safe work practice such as wearing ear protection, a safety rule has been violated and discipline may be in order. However, if a supervisor ignores employees who are violating mandatory safety rules, those safety rules have, in effect, been legally transformed into discretionary guidelines. Consequently, as mere guidelines, they are not legally auditable or enforceable.



In the examples above, a more severe level of discipline would be in order for the supervisor because the supervisor or manager, in fact, gives permission for all employees to violate the same safety rule. The negative impact on the safety of employees has the potential to be much greater when the supervisor or manager violates a safety rule.

On the other hand, if a supervisor or manager does something positive, the net impact will likely be greater than that of one of his or her employees. Consequently, more significant positive consequences are certainly in order.

### Consistent Application of Consequences

To build a high level of trust between management and labor, accountability must be applied consistently at all levels of the organization: up and down, and across functions. Every supervisor and manager must be held accountable in the same fair manner consistent with employees. If labor perceives the accountability system as applying only to them, they will naturally consider it unfair: the primary failure mode for accountability systems.

**13. Which of the following safety violations should result in the most severe consequence, if justified?**

- a. Employee doesn't wear proper gloves when working with chemicals
- b. Worker fails to report a workplace hazard
- c. Project superintendent tells employees to ignore safety rules
- d. Supervisor ignores employees lifting improperly

### Element 6: Continuous Evaluation of the Accountability System

Although as a supervisor you may not be responsible for formally evaluating the accountability system it's good to know that someone is. Usually, the safety coordinator and/or safety committee are involved in this activity. In some "state-plan" states, like Oregon, the safety committee is required by law to conduct an evaluation of the employer's accountability system.

The process usually involves three levels of activity:

- **Identification:** Inspect the accountability system policies, plans, procedures, processes to identify what exists.
- **Analysis:** Dissect and thoroughly study each accountability system policy, plan, procedure, process to understand what they look like. The devil is in the detail.

- **Evaluation:** Compare and contrast each accountability system policy, plan, procedure, process against benchmarks and best practices to judge their effectiveness.

### Evaluating for Accountability

OSHA looks primarily for two program elements when evaluating an employer for accountability: policy and consequences. OSHA does not mandate or require specific recognition/disciplinary procedures: that's the responsibility of the employer. But, an effective accountability policy that is written and clearly communicated should be in place. Make sure your company has a written policy that addresses accountability including the three key components.

- specific performance expectations
- who is accountable - both management and employee
- appropriate consequences such as progressive discipline

If you believe there are weaknesses in your employer's accountability system, make sure to take notes on the behaviors and conditions you see in the workplace that may be pointing to accountability system policies, plans, processes, and procedures that are inadequate or missing.

**14. Which two accountability program elements will OSHA primarily look at during an evaluation?**

- a. Supervision and support
- b. Training and orientation
- c. Policy and consequences
- d. Support and leadership

### Last Words

Well, that was a lot of information. You learned that the components of responsibility and accountability are different. Accountability has three basic components: established standards, methods of measurement, and consequences. You also learned that supervisors have accountabilities associated with controlling the workplace, and employees have accountabilities related to personal behavior.

## Module 3: Element 3- Safety Involvement

### Introduction

It's difficult to have an effective safety and health program without developing a corporate safety culture that encourages genuine employee involvement. As we discovered in Module Two, employees are held accountable by the employer for three personal behaviors:

- complying with safety rules,
- reporting workplace injuries immediately, and
- reporting hazards.

We also learned that making safety suggestions and involvement in a safety committee or team are two very important behaviors that, although not mandated, should be strongly encouraged. It makes sense for the company to develop strategies that promote these employee behaviors.

This module will explore some of the effective strategies for increasing employee involvement in workplace safety. We'll primarily address effective recognition because, as we learned earlier, we do what we do to avoid negative consequences or obtain positive consequences. Recognition as a positive consequence can be quite effective in dramatically increasing daily involvement in safety.

**3. Which of the following is a non-mandatory behavior that should be strongly encouraged by the employer?**

- a. Reporting injuries
- b. Making safety suggestions
- c. Reporting hazards
- d. Complying with safety rules

## What is Employee Involvement? Michael D. Topf

### What does it look like?

Employee involvement... "means participation by employees at every level." When used as part of the term employee ownership, "employee" does not refer uniquely to line or hourly workers, but to everyone involved in the organization at every level and in every department.

### What does it require?

For any safety, health and environmental improvement process to become self-sustaining and successful, it needs to become a seamless part of the organization. This is doubly true if the desired end result is employee ownership. To that end, the process and its benefits must be seen as having value for the employees, their families and others in the company." Michael D. Topf, President, The Topf Organization [www.TopfOrg.com](http://www.TopfOrg.com) Occupational Hazards, May 2000.

**4. According to Michael Topf, what must occur for any safety, health and environmental improvement process to be self-sustaining and successful?**

- a. The process must be able to recycle at least annually
- b. It must use limited resources and statistics
- c. It must be driven top-down by management
- d. It needs to become a seamless part of the organization

### Successful recognition programs require smart management and strong leadership

It's important to understand that administering "programs" is basically a management function requiring effective organizational skill. Many companies develop and implement formal safety recognition programs because, well, that's what they've been told works best and that's what everyone else does. There are many different types of safety recognition program strategies used and promoted these days. Of course, some are more effective than others, but there is certainly no one-fits-all program available today. To be successful, the recognition program must fit the unique culture of the organization.

For instance, you can't work a highly participative safety recognition program successfully in an oppressively authoritarian corporate culture. It just won't work. On the other hand, a world-class safety culture may not develop a managed safety recognition program with formal procedures. Rather, managers will likely perceive the process of recognition as their opportunity to demonstrate leadership so that ultimately, positive working relationships are established or reinforced.

## Example

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OSHAcademy Student Feedback: I set up a new suggestion box at my last office. Employees were informed it was there to use for any suggestions they may have. I would check it once a day and they could either sign their suggestion or not. All suggestions would be looked into and [the] person making the suggestion would be advised of the outcome within (5) days or, if the suggestion was unsigned, the outcome would be announced at our next safety meeting.

Because of the feeling it was all a big joke anyway and no one really cared, only one person in 12 months made a suggestion. I handled it just as I said I would. If the employee's suggestion was such that I could fix it without getting approval, I did so. Didn't seem to encourage others. The real problem was they had heard it all before and just didn't believe anymore.

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You will find that safety recognition programs work best when they exist within a framework of strong leadership. However, if your company does not currently have a formal safety recognition program, it doesn't necessarily mean safety incentives and recognition are not in place and being used effectively. It just means a formal program has not been established. In the best-case scenario where there is the presence of strong, tough-caring safety leadership, a formal program may not be needed because leaders are regularly providing meaningful incentives and recognition informally, one-on-one to their employees.

So, in evaluating your organization for the need for incentives and recognition, take a good look at the current quality of leadership. If you believe safety leadership could be improved, it's probably a good idea to think about introducing and implementing some of the ideas presented in this module to your safety committee or safety director so that your company may implement an effective recognition program that can also act as a catalyst to help move the corporate culture towards strong safety leadership.

### **5. When do safety recognition programs work best?**

- a. When they exist in a framework of strong tough-caring leadership
- b. When management mandates regular employee participation in the program
- c. When employees can submit suggestions anonymously
- d. When employees are recognized at least annually

## Recognition and rewards

Safety rewards come in many colors, flavors, and varieties. We are all motivated by primarily two types of rewards: extrinsic and intrinsic.

- **Extrinsic rewards** are tangible and external. You can touch, eat, see, smell, or otherwise use them.
  - Money - raise, bonus, stocks
  - Awards - plaques, pins, cups, certificates, jackets
  - Trips
  - Time off from work
  - Social - parties, lunches
- **Intrinsic rewards** are intangible, internal, and housed within us. They are expressed through the positive recognition other give us and the positive thoughts think about ourselves.
  - Improved self-esteem
  - Increased sense of purpose
  - Higher credibility
  - Feeling of accomplishment

Now, consider this: Is it the tangible reward, itself, that changes behavior, or is it the underlying recognition - the intangible reward - you receive that matters most? Like many others, you probably think it's the recognition behind the reward is most important, and we agree. We like to be recognized and appreciated for what we do by people who are important to us. It makes us feel valuable, important, and a part of a team...something bigger than ourselves.

**6. Which of the following is an example of an extrinsic reward?**

- a. A bonus
- b. Improved credibility
- c. A greater sense of purpose
- d. A feeling of accomplishment

## Effective Recognition - Simple and Sincere

When designing safety recognition programs, it's important to remember it's not the tangible "thing" awarded to the recipient that determines the effectiveness of the recognition. The secret to truly effective recognition is to:

- identify the appropriate behavior so the recipient knows specifically why they are being rewarded, and
- show appreciation in the right way so the recipient feels appreciated.

If you want to effectively recognize others, check out Steve Geigle's [Rules for Radical Recognition](#)

## You Get What You Give

The old adage, "you get what you give," certainly applies when it comes to recognizing employees.

- If you're sincere in your appreciation for a job well done, your heart-felt sincerity will come across in the tone of your voice and through body language. Your sincerity will be felt and will result in a heart-felt expression of appreciation from the recipient. The recipient will know you mean it and will feel appreciated. The recognition will achieve the desired effect with lasting positive results - mission accomplished!
- If you're not sincere when you express appreciation, the recipient will know it, and you'll not likely receive a sincere appreciative response or improvement in future performance. Hence, the act of recognizing will not have the desired effect: in fact, if the recipient thinks the recognition is not sincere, the recognition may actually be counterproductive in terms of morale and performance - mission failure!

**7. The secret to effective recognition is to \_\_\_\_.**

- a. wait until the next meeting
- b. identify the behavior and show appreciation
- c. delegate it to another person
- d. tell other employees about it

## Reactive safety incentive programs

In Module One, we learned about the concepts of [reactive and proactive safety programs](#). Safety incentive programs can be both reactive and/or proactive, depending on the behaviors that are being recognized and rewarded.

Believe it or not, most companies implement reactive safety incentive programs that reward inappropriate behavior. What might this most common behavior be?

### They reward "withholding injury reports."

That's right! Look for a banner or a sign that says, "80,000 bazillion work hours without a reported accident!" When you see that, you'll know the company is rewarding its employees for not reporting their injuries. Sure, they might have 80,000 hours without a reported accident, but that doesn't mean the workplace is accident free: only that accidents aren't being reported. However, the workplace may be full of the "walking wounded" who don't report an injury or illness.

The problem occurs when employees do not report their injuries because they want to be thought of as loyal team players. They do not want to ruin the safety record for their department. In some instances, the peer pressure is so great they will not report an injury until the pain becomes so severe that they miss work and must report it to their supervisor. Consequently, the actual number of injuries in the workplace may decline, but the severity of each injury increases, as to the accident costs. In such cases, everybody loses.

Of course, the employer is not intending to encourage or promote "not reporting," but, because the inherent strategy of the program is flawed, it functions unintentionally to do just that. The employer believes he or she is doing the right thing by having a recognition program, but the result is that doing so hurts the safety and health program rather than helps it. So, let's see how we can improve the incentive program so that it's truly effective.

**8. Which behavior is recognized when employers reward employees for working a number of days without an injury?**

- a. Reporting injuries
- b. Withholding injury reports
- c. Working safely
- d. Submitting injury claims



## Proactive safety recognition programs

Companies are discovering the most effective safety recognition programs are primarily proactive. Proactive recognition programs reward employee behaviors that are both:

1. mandated by the employer and/or OSHA regulations, and
2. encouraged but not required.

While reactive safety programs and resulting behaviors only help to minimize the impact of accidents that have already occurred, proactive programs and behaviors help to prevent future accidents. These behaviors represent highly professional behavior that should also be recognized, and when justified, rewarded. Take a look at examples of proactive behaviors below:

For management:

- Providing the resources for a safe and healthful workplace.
- Providing effective safety education and training.
- Providing effective safety supervision - oversight.
- Providing and maintaining a culture of tough-caring accountability.

For employees:

- complying with company and OSHA safety rules
- reporting injuries immediately
- reporting hazards

For all:

- making safety suggestions
- involvement in safety (committees, teams, events, etc.)

When employees are recognized and rewarded for these behaviors, their overall involvement in safety and health increases greatly. They become more aware, interested, and involved in uncovering unsafe work conditions, unsafe practices, and system weaknesses. They know that reporting hazards as soon as they occur reduces lost work time and accident costs.

**9. Which of the following safety behaviors is NOT proactive?**

- a. Failing to report an accident
- b. Correcting a hazard
- c. Reporting an unsafe condition
- d. Providing safety training

**Proactive recognition programs that work**

Here are a few ideas for developing a proactive safety recognition program for your company:

- *Safety Bucks:* Supervisors carry safety bucks, and when they see someone doing something right, they reward them. The employee can take the safety buck to the company cafeteria for lunch, or they can use it at a local participating store to purchase items.
- *Bonus Programs:* When an employee identifies a hazard in the workplace that could cause serious physical harm or a fatality, they are rewarded with a bonus check. In some cases, the bonus check is a fixed amount. In other programs the bonus check is a small percentage of the potential direct cost for the accident that might have occurred.

By the way, the average direct cost for a disabling claim in is around \$10,000. Doesn't it make sense to reward an individual with \$100 for identifying a hazard that could potentially cost the company thousands?

- *Safety Heroes:* After an extended period of time, employees are rewarded with a certificate or bonus check for complying with company safety rules.
- *Reporting hazards, incidents and accidents:* Reporting hazards, incidents and accidents: Wait a minute: do I mean that employees should be recognized for reporting injuries? That's right. If employees report injuries immediately, they not only minimize the physical/psychological impact of the injury on themselves, they reduce the direct/indirect accident costs to the company. Both the individual and the company win if the employee reports injuries immediately.

These are just a sample of many ideas available. There are many other ways to recognize employees being used by companies across the country. Call your local OSHA office to see if they know of companies in your area that have developed successful proactive safety recognition programs. Use those companies as benchmarks.

**10. Which of the following will increase overall participation in safety recognition programs?**

- a. Display an "Employee of the Quarter" photo
- b. Include achievements in performance appraisals
- c. Always recognize the top performer
- d. Be sure recognition occurs at least annually

## Module 4: Effective Communication

### Introduction

In module three, we learned about the importance of recognizing appropriate safety behaviors to improve employee involvement: the third element of a world-class safety and health management culture. In this module, we'll continue learning about increasing employee involvement through effective communications.

Providing an open, positive environment that encourages open all-way communication about safety and health is critical to a successful safety management program. It's important to design multiple communication pathways including orientation, instruction, training, meetings and open-door policies.

Effective communication is extremely important to the goal of increasing employee involvement in safety and health. Skilled safety communications will support leadership, at all levels, from the CEO to the employee. So, let's get started with a review of some basic communications concepts and principles.

**1. Each of the following is an important safety communication pathway, EXCEPT**

\_\_\_\_\_.

- a. orientation and instruction
- b. closed-door policies
- c. training
- d. meetings

### Return to sender...

A simple model of communication consists of a sender, a message, a channel where the message travels, noise or interference, a receiver, and interpretation and feedback.

The scope of the communication and characteristics of the sender and receiver may be quite different. For instance, communication may take place between individuals, groups, companies, nations, and sometime in the future - maybe - between worlds.

Although the scope of the communications process may expand, the process still boils down to a sender and receiver communicating over various channels.

Here's how it works: the sender initiates the message and the receiver receives and interprets the message. The receiver, now, becomes the sender and responds to the message with

feedback. It's important to know that it's actually the "tone" of the message more than the content of the message, that influences how it is interpreted by the receiver. It's the interpretation that determines the nature of the feedback to the original sender.

Where and how the process ends depend on the purpose of the communication and the dynamics of the process itself. Even the simplest communication between individuals may be a very complicated process.

**2. What is the greatest influence on how a message is interpreted by the receiver?**

- a. The content of the message
- b. the "tone" of the message
- c. the impact of the message
- d. the length of the message

### **Content vs. Relationship Communications**

Another important concept in communications is the Two-Level Model which states that in any communications process messages are sent and received on two levels: The Content Level and the Relationship Level.

#### **Content-What is Said**

The first level is called the content level and describes only what is sent. The only information transferred at this level is data, usually in the form of spoken words.

Speaking of data... Data, the android on Star Trek only communicates on the content level. If you are familiar with this character you know that the failure to communicate on a relationship level prevents him from becoming more like his human counterparts.

#### **Relationship-How it is Said**

The second level of communication exists on a higher, more abstract plane. It's called the relationship level which describes the communication that establishes the relationship between the sender and the receiver. It is how the message is sent that sets up the relationship. Relationships between sender and receiver are always established with every communication. Generally, the tone of voice and body language combine to set up relationships.

Back to Star Trek (the original series): James Kirk, the Captain of the Starship Enterprise, always communicated on both the content level and relationship level, while Mr. Spock, our favorite Vulcan, also tried with some difficulty to communicate, but he could only do so on the "logical"

content level. Consequently, he always appeared cool, calm, cold, and mechanical, and he also found it hard to relate with humans.

**3. In the Two-Level Model, the first level of communication is called the \_\_\_\_\_ and describes the “what” is sent.**

- a. relationship level
- b. fact level
- c. content level
- d. feeling level

### **It's not what you say, it's how you say it!**

Let's take a closer look at the dynamics of content/relationship communications:

#### **Scenario 1**

---

Gloria Pendergast is reading the morning paper while her husband, Charlie, is cooking up some eggs (They take turns cooking). Gloria suddenly looks up from the paper and asks rather flirtatiously, "Oh dear, when are those eggs going to be finished?" Charlie perceives he is receiving positive attention from Gloria and responds casually with, "Here they come now, dear," and brings her a nice plate of sausage and eggs and gives her a big kiss.

---

#### **Scenario 2**

---

Charlie Pendergast is at the table reading the morning paper while his wife, Gloria, is cooking up some and eggs for breakfast. Charlie, face buried in the paper and obviously irritated, verbally assaults Gloria with, "Oh Dear, WHEN ARE THOSE EGGS GOING TO BE DONE?!" Gloria, feeling hurt and unappreciated, slowly turns, fire in her eyes, and says, "Here they come now...DEAR!" and throws the plate full of eggs down on the table in front of him, and stomps off to the bedroom.

---

In both scenarios, the content of the sender's message was exactly the same. However, the relationship set up between the two in the second scenario differed greatly from that established in scenario number one. Consequently, the receiver gave a vastly different response. In the first scenario, Charlie sent a positive relationship message. In the second scenario, the relationship message was very negative. To the receiver, how the sender sent the message had far more impact than what was said.

**4. According to the Two-Level Theory, why may the response from someone receiving the same message be so different?**

- a. The message may require a different response
- b. What was sent in the message encourages a different relationship
- c. How the message was sent establishes a different relationship
- d. The message is not sent directly to the receiver

### **I'm Okay - You're Okay**

So how does all this about communication fit into workplace safety and health? Let's look at three situations and the messages sent:

- When the supervisor recognizes an employee for safe work behaviors, it reinforces and makes that behavior more likely to occur in the future. It sends a very positive message, doesn't it?
- On the other hand, if a supervisor yells at an employee for "complaining," a very negative message is sent. The complaining may continue, but probably not in front of the supervisor.
- The worst situation occurs when an employee is totally ignored by a supervisor. It sends a message that employee is invisible, unimportant, and of little or no value. After a time, the result is a very unmotivated employee.

As we mentioned earlier in the course, ignoring others who are trying to communicate is the worst response possible. People won't care why they are being ignored: They just don't like it. They'll make all kind of assumptions about why they're being ignored and be upset about it.

Here's a tip. If you want to have better working relationships with co-workers, always be the first to say "hi" when you meet them for the day. Always be first. It sends a very positive message. It says you consider the employee to be important. I guarantee the result will be better working relationships!

**5. Jack's supervisor walked up to him and thanked him for wearing fall protection. What will Jack's behavior likely be in the future?**

- a. He is more likely to continue to wear fall protection
- b. He will forget fall protection equipment
- c. He will not come to work
- d. He would quit his job

### **A most important responsibility!**

If you are a safety committee representative, think about the relationship set up between you and your co-workers. What happens when you receive their concerns and suggestions, report them to the safety committee, but fail to provide feedback in a timely manner? Aren't you ignoring them? Again, it's the worst of all possible responses.

Make sure that you get back with your co-workers as soon as possible to let them know the status of their concerns or suggestions. This is probably your most important job as a safety committee representative.

### **Imagine, workers competing to be on the safety committee**

Are your co-workers just "dying" to be a member of the safety committee? Most likely not. Why not? They really don't perceive much benefit from it, do they? So how do we increase employee involvement in the safety committee? Well, that's one of the subjects discussed in OSTN Course 701, Safety Committee Operations.

**6. What could potentially be your most important job as a safety committee representative?**

- a. Selecting employees who may talk during safety meetings
- b. Ignoring complaints you believe to be unimportant
- c. Responding to co-worker concerns as soon as possible
- d. Reporting all employees who don't work safely



## Module 5: Element 5- Hazard Identification and Control

### Introduction

In module four, we studied about communication and how it can be used to improve employee involvement in the company's injury and illness prevention program. In this module, we'll take a look at how employees can get involved in proactive hazard identification (eh-heh...that should be hazard investigation) to help eliminate hazards in the workplace.

### Hazard Definition

Before we study identifying, investigating and controlling hazards in the workplace, it's important to know how OSHA defines a hazard:

*“Any workplace condition or a person's "state of being" that could cause an injury or illness to an employee.”*

### Look Around Your Workplace

I'll bet if you look around your workplace, you'll be able to locate a few hazardous conditions or work practices without too much trouble. Did you know that at any time an OSHA inspector could announce their presence at your corporate front door to begin a comprehensive inspection? What would *they* find? What do *they* look for? Now, if you used the same inspection strategy as an inspector, wouldn't that be smart? Well, that's what I'm going to show you in this module!

1. **A/An \_\_\_\_\_ is any workplace condition or a person's "state of being" that could cause an injury or illness to an employee.**
  - a. exposure
  - b. hazard
  - c. incident
  - d. unsafe behavior

### The Hierarchy of Controls

Controlling hazards and exposure to occupational hazards is the fundamental method of protecting workers. Traditionally, a hierarchy of control strategies have been used as a means of determining how to implement feasible and effective controls. The hierarchy of controls includes the following five strategies:

1. Elimination
2. Substitution
3. Engineering controls
4. Administrative and work practice controls
5. Personal protective equipment

**2. Traditionally, \_\_\_\_\_ have been used as a means of determining how to implement feasible and effective controls.**

- a. manufacturer's recommendations
- b. hazard control strategies
- c. the hierarchy of control strategies
- d. job hazard analyses

**Elimination** and **substitution**, while most effective at reducing hazards, also tend to be the most difficult to implement in an existing process. If the process is still at the design or development stage, elimination and substitution of hazards may be inexpensive and simple to implement. For an existing process, major changes in equipment and procedures may be required to eliminate or substitute for a hazard.

**Engineering controls** are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The initial cost of engineering controls can be higher than the cost of administrative controls or personal protective equipment, but over the longer term, operating costs are frequently lower, and in some instances, can provide a cost savings in other areas of the process.

**Administrative/work practice controls** include policies, procedures, training, safety rules, job rotation, signage, or temporary barriers to warn of a hazard or describe safe procedures. These methods for protecting workers have also proven to be less effective than other measures primarily because methods to control human behavior to reduce exposure are more difficult than higher-level controls that remove or reduce the hazard, itself.

**Personal Protective Equipment (PPE)** such as safety glasses, gloves, hearing protection, respirators, safety boots, and hardhats place a barrier between worker and the hazard, but they

don't prevent the occurrence of the incident. PPE is considered the least effective method of controlling a hazard because it depends on proper selection and fit, employee compliance, and availability.

The first three strategies, elimination, substitution and engineering controls are the most important because they can eliminate or reduce hazards. The last two strategies eliminate or reduce exposure to hazards, but they don't do anything to the hazards themselves. That's why administrative controls and PPE are the less important strategies in the hierarchy. Basically, the idea is that if you can eliminate the hazards, you don't have to worry about exposure to the hazards, nor the resulting accidents.

**3. \_\_\_\_\_ eliminate or reduce hazards through design or redesign.**

- a. Administrative controls
- b. Engineering controls
- c. Personal protective equipment
- d. Elimination

### The Five Workplace Hazard Categories

Look for hazards in each of these five categories. To help identify workplace hazards it's useful to categorize them into an easy-to-remember acronym: "MEEPS". Let's take a closer look at each of the five hazard categories:

#### 1. Materials

Hazardous materials include:

- Liquid and solid chemicals such as acids, bases, solvents, explosives, etc. The hazard communication program is designed to communicate the hazards of chemicals to employees, and to make sure they use safe work practices when working with them.
- Solids like metal, wood, plastics. Raw materials used to manufacture products are usually bought in large quantities and can cause injuries or fatalities in many ways.
- Gases like hydrogen sulfide, methane, etc. Gas may be extremely hazardous if leaked into the atmosphere. Employees should know the signs and symptoms related to hazardous gases in the workplace.

## 2. Equipment

This area includes machinery and tools used to produce or process goods. These examples all represent hazardous conditions in the workplace.

- Hazardous equipment should be properly guarded so that it's virtually impossible for a worker to be placed in a danger zone around moving parts that could cause injury or death. A preventive maintenance program should be in place to make sure equipment operates properly. A corrective maintenance program is needed to make sure equipment that is broken, causing a safety hazard, is fixed immediately.
- Tools need to be in good working order, properly repaired, and used for their intended purpose only. Any maintenance person will tell you that an accident can easily occur if tools are not used correctly. Tools that are used while broken are also very dangerous.

**4. Which of the five workplace hazard categories includes chemicals, solids, and gases?**

- a. Materials
- b. Environment
- c. Systems
- d. People

## 3. Environment

- This area includes facility design, hazardous atmospheres, temperature, noise, factors that cause stress, etc. Are there areas in your workplace that are too hot, cold, dusty, dirty, messy, wet, etc. Is it too noisy, or are dangerous gases, vapors, liquids, fumes, etc., present? Do you see short people working at workstations designed for tall people? Such factors all contribute to an unsafe environment.

## 4. People

- This area includes unsafe employee behaviors at all levels in the organization such as taking short cuts, not using personal protective equipment, and otherwise ignoring safety rules.

## 5. System

- Every company has, to some degree, a safety and health management system (SHMS). It's good to think of the "state" of the SHMS as a condition. For instance, management may develop and implement ineffective policies, procedures and safety rules.

Here are some important points to remember:

- The first three categories, materials, equipment and environment, represent hazardous physical conditions that, according to SAIF Corporation, account for about 3% of all workplace accidents.
- The fourth category, people, describes behaviors in the workplace which may contribute up to 95% of all workplace accidents.
- The fifth hazard category, systems, includes all elements of the safety management system. System hazards may contribute to both the hazardous conditions and unsafe behaviors, and therefore, may be ultimately responsible for up to 98% of all accidents in the workplace.

To remember the five hazard areas, just remember the acronym...

**MEEPS** = Materials, Equipment, Environment, People, and System.

**5. Which of the five workplace hazard categories might include policies, procedures, and rules?**

- a. Materials
- b. Environment
- c. Systems
- d. People

### Identification and control strategies

To identify and control hazards in the workplace, two basic strategies are used: the walk-around safety inspection and the job hazard analysis (JHA). The most common strategy is the walk-around inspection, and we'll cover that strategy first. Here are some important points to remember about safety inspections:

- Most companies conduct safety inspections in compliance with OSHA rule requirements. But, is that good enough? Safety inspections may be effective, but only if the people conducting the inspection are properly educated and trained in hazard

identification and control concepts and principles specific to your company. In high hazard industries, which see change on a daily basis, it takes more than an occasional inspection to keep the workplace safe from hazards.

- In world-class safety cultures supervisors, as well as all employees inspect their areas of responsibility as often as the hazards of the materials, equipment, tools, environment, and tasks demand. It's really a judgment call, but if safety is involved, it's better to inspect often.
- Employees should inspect the materials, equipment, and tools they use, and their immediate workstation for hazardous conditions at the start of each workday. They should inspect equipment such as forklifts, trucks, and other vehicles before using them at the start of each shift. Again, it's better to inspect closely and often.

**6. Which two procedures are commonly used to detect hazardous conditions?**

- a. Annual safety inspections and quarterly job hazard analyses (JHA)
- b. Third-party evaluations and safety manager inspections
- c. Regular safety inspections and Job Hazard Analysis (JHA)
- d. OSHA inspections and safety committee analysis

### Inspection checklists

Use the following steps if you are asked to write questions for a safety inspection.

- Determine the area to be inspected.
- Ask workers in the area what tasks/jobs they do.
- Get a copy of applicable OSHA rules. When you receive the rules (don't panic) read through the applicable sections and mark those rules that you feel might result in serious injury if violated.
- Change each marked rule into a simple question. Questions will start with the words: Do, does, is, are.
- Construct your checklist using the questions you have developed.
- Show your boss. He or she will be surprised! (You will probably become a safety director!)

You may use this [Self Inspection Checklist](#) published by OSHA.

## The safety inspection's flaw

By its very nature, the walk-around inspection is ineffective in uncovering unsafe work practices because most inspectors look primarily at hazardous conditions and do not take enough time to effectively analyze individual task procedures. Sometimes the inspectors walk into an area, look up...look down...look all around...possibly ask a few questions, and move on to the next area. In fact, the safety inspection may be effective in uncovering only about 3 percent of the causes for workplace accidents because the process only looks for conditions. Isn't it possible to inspect a workplace on a Monday, and then experience a fatality on Tuesday as a result of an unsafe work behavior that the inspection failed to uncover the day before? You bet it is.

**7. Why is the safety inspection process ineffective in uncovering the causes for most accidents?**

- a. Inspections only uncover hazardous conditions
- b. Inspections are never conducted often enough
- c. Inspections only uncover unsafe behaviors
- d. Inspections are too long and tedious

## The Job Hazard Analysis (JHA)

The Job Hazard Analysis (JHA) can answer weaknesses of the walk-around inspection process. It uncovers unsafe work practices as well as hazardous conditions because sufficient time is given to close analysis of one unique task at a time. A typical JHA uses the following steps:

1. While the employee accomplishes several cycles of the task, the supervisor or other person observes and takes notes about what's being done.
2. Once the observation is completed, the analysts divide the task into a number of unique steps which are listed sequentially.
3. Next, each step is analyzed to uncover hazardous materials, equipment, tools, and unsafe exposures are involved.
4. Next, the hazards and exposures of each step are analyzed to determine the safety precautions required to eliminate or at least reduce any hazards or exposures present. This might include the use of personal protective equipment (PPE), using new or redesigned equipment, or changing the procedure itself.

5. Finally, a written safe work procedure (SJP) is developed for the entire task. The SJP is reviewed prior to accomplishing the task and it can also be used as a lesson plan to conduct training.

Check out OSHAcademy Course 706 for more information on the JHA and Course 703 on training.

**8. What is the next step in the JHA process after identifying the hazards in each step?**

- a. Divide the task unique steps listed sequentially
- b. Analyze each step to uncover hazardous materials, equipment, tools, and unsafe exposures
- c. Develop a written safe work procedure (SJP) for the entire task
- d. Analyze the hazards and exposures to determine safety precautions

**Key Principle**

Involvement is one of the key principles in making sure your safety management system (SMS) is effective (gets desired results). Management should involve employees in all aspects of SMS development so that they will gain a sense of buy-in or ownership in the system.

Employee involvement in the JHA process helps ensure they will use the safe job procedure developed by the JHA when not being directly supervised. Employees want to work efficiently, and that means they're more likely to use procedures they believe will get the job done most efficiently. If they're not involved in developing safe job procedures, they're more likely to see their own (possibly less safe) procedures as more efficient.

Bottom line, when employees are directly involved, supervisors can be sure their employees are using safe job procedures.

**9. Why is it important (and smart) to involve employees in safety management system development process?**

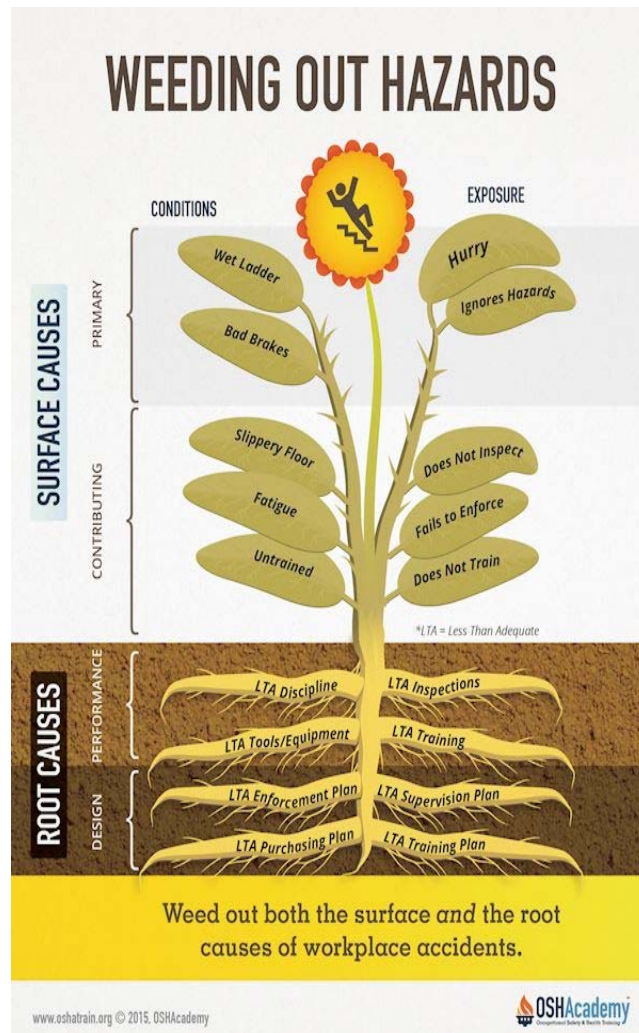
- a. Employees will not have to be on the safety committee
- b. Employees can go over the heads of their immediate supervisors
- c. Employees will gain a sense of buy-in or ownership in the SMS
- d. Employees will get out of regular duties



## Dig up the roots!

When analyzing hazards discovered in a walk-around inspection or JHA, it's important to dig up the root causes that have allowed those hazards to exist in the workplace. Taking this approach is called root cause analysis. It's important to conduct root cause analysis to eliminate the ultimate causes for accidents in the workplace: system weaknesses.

Check out the well-known "accident weed" below.



**Direct Cause of Injury.** The flower represents the actual accident resulting in an injury. The injury is the result of the transfer of an excessive amount of harmful energy from an outside source to the body. This is called the direct cause of the injury. For example, the direct cause of a broken arm would be the excessive kinetic energy transferred when the arm strikes the floor.

**Surface Causes.** The leaves of the weed represent the surface causes for accidents. They are the unique hazardous conditions and individual unsafe or inappropriate behaviors. When an unsafe or inappropriate behavior exposes an employee to a hazardous condition, an accident may occur. We place surface causes into two categories: primary and secondary.

- Primary surface causes are the immediate unique conditions or individual behaviors that cause accidents.
- Secondary surface causes are the conditions and behaviors that indirectly contribute to the accident.

**Root Causes.** The roots of the weed represent the pre-existing root causes of accidents. Root causes may feed and nurture hazardous conditions and unsafe work practices. We place root causes into two categories: performance and design.

- Performance root causes are those behaviors and actions that managers and supervisors engage in that somehow contribute to accidents. Performance root causes are influenced by deeper root causes. For example, a performance root cause might be a situation in which the employer fails to conduct safety inspections.
- Design root causes are those SMS policies, programs, plans, processes, and procedures that are missing or inadequately designed.

Unique hazardous conditions represent only a small percentage of the causes for accidents in the workplace. On the other hand, individual unsafe behaviors cause many more accidents. Ultimately though, virtually all workplace accidents (except for "acts of God") are caused by system root causes, under the control of management, that result in unique hazardous conditions and/or unsafe work practices.

**10. Which of the following cause categories represents unique conditions and individual unsafe behaviors?**

- a. Actual causes
- b. Root causes
- c. Direct causes
- d. Surface causes

## The missing guardrail

You are conducting a walk-around safety inspection when you notice the guardrail along an elevated platform area is missing. As you now understand, the missing guardrail represents a hazardous condition and would be considered a surface cause if an accident occurred. But it is actually a symptom of deeper root causes or system weaknesses.

To best make sure the guardrail gets replaced, and remains in place, you must always consider and correct the root causes/system weaknesses that allowed the hazardous condition in the first place. So, what were the system weaknesses in this example? Here are some questions you might ask to dig up the root causes for the missing guardrail:

- Are corrective and preventive maintenance programs in place?
- Are employees reporting hazards?
- Does safety training cover the guardrail requirements?
- Is an incentive program in place to motivate employees to report hazards?

Well, there it is: a few basic hazard identification, investigation and control concepts that will help you keep your workplace safe and healthful for all employees. If you develop effective inspection and JHA procedures, and always go after the root causes of the hazards you find in the workplace, you will be successful in proactive accident prevention. But don't rush off: it's time for a checkup!

**11. A hazard is actually \_\_\_\_\_ of deeper root causes or system weaknesses.**

- a. a pre-warning
- b. the end-point
- c. a symptom
- d. a precursor

## Module 6: Element 6- Accident Investigation

### Introduction

The process of analysis is extremely important in identifying and eliminating those conditions, behaviors and system weaknesses that result in workplace accidents. In this module, we'll be discussing the various concepts, principles and procedures related to the analysis process so that you can, hopefully, transform your workplace, as close as possible, into a "risk free" zone.

### Fix the system not the blame!

If your safety program fails to eliminate workplace hazards, chances are very likely an accident will result. When it does, it's important to conduct an effective accident investigation. Wait a minute! Did I say "investigation"? Well, wash my mouth out with soap. It's important that we get beyond accident investigation and perform an accident "analysis."

In most workplaces, the term "investigation" implies that the primary purpose of the activity is to establish blame. That may be why OSHA conducts their investigations, but to be most effective, you can't afford to get stuck in that rut. You've got to conduct this activity for the express purpose of improving your safety management system. The only way to receive any long-term benefit from accident analysis is to make sure system weaknesses are uncovered and permanently corrected.

Although accident investigation is a valuable and necessary tool to help reduce accident losses, it is always considerably more expensive to rely on accident investigation than hazard investigation as a strategy to reduce losses and eliminate hazards in the workplace. In some cases, it may cost hundreds of thousands of dollars more as a result of direct, indirect, and unknown accident costs.

But, when the accident happens...it happens. And it's important to minimize accident costs to the company. This can be done if effective accident investigation procedures are used.

**1. The purpose of an accident investigation is to fix the \_\_\_\_\_, not the \_\_\_\_\_.**

- a. blame, system
- b. behavior, employee
- c. system, blame
- d. condition, behavior

## Accidents just happen...don't they?

If a company has 20 disabling injuries one year, and sets an objective to reduce the accident rate by 50% by the end of the next year, aren't they planning 10 accidents for that year? If they reach that goal, won't they be happy and content? They might say, "Hey, let's kick our feet up, pat ourselves on the back, and relax!" Is that really acceptable? You can't ever afford to relax or be content in your safety performance.

## Severity – Just a Matter of Luck

Historically, safety professionals have assumed that for every fatality, there would be a greater number of serious injuries, an even higher number of minor injuries, and even more near misses. While these ratios might be true for large samples, we do not believe you can make this assumption for small samples experienced within one company. We should not assume that if we reduce the number of minor injuries, we will automatically reduce the number of serious injuries. It just doesn't work. After all, the severity of an injury is much more a function of plain luck than repetitions in exposure.

For instance, if five painters fall off the same ladder at different times throughout the year, the severity of the injury each painter suffers will depend on their orientation when they impact the surface: and that's the result of any number of variables. Every one of the five falls might result in a serious injury. On the other hand, they might all result in no injury. It's not the number of falls that determines the nature of the injuries: it's the unique variables inherent in each fall - and that depends on just plain luck - the roll of the dice.

### **2. More than anything else, what does the severity of an injury depend on?**

- a. The age of the worker being injured
- b. The type of accident that occurs
- c. Just plain luck
- d. The number of times a given accident occurs

## Incident and Accident defined

What is the difference between an incident and an accident? We'll use the following definitions for these two terms in this module:

- An incident is an unexpected event that may result in property damage but does not result in an injury or illness. Incidents are also called, "near misses," or "near hits."
- An accident is an unexpected event that may result in property damage and does result in an injury or illness to an employee.

A typical accident is the result of many related and unrelated factors (conditions, behaviors) that occur sometime, somewhere that somehow all directly or indirectly contribute to the injury event or accident. It is estimated that there are usually more than ten factors that contribute to a serious accident. Other experts claim there are over 20 factors somehow contribute to most serious accidents. What's the point here? Explaining why an accident occurred may not be an easy task.

**3. A(n) \_\_\_\_\_ is an event that results in an injury or illness.**

- a. incident
- b. accident
- c. near-miss
- d. near-hit

## Plan the work...work the plan!

When a serious accident occurs in the workplace, everyone will be too busy dealing with the emergency at hand to worry about putting together an investigation plan, so the best time to develop effective accident investigation procedures is before the accident occurs. The plan should include, as a minimum, procedures that determine:

- Who should be notified of accident?
- Who is authorized to notify outside agencies? (fire, police, etc.)
- Who is assigned to conduct investigations?
- Training required for accident investigators.
- Who receives and acts on investigation reports?

- Timetables for conducting hazard correction.

**4. Which of the following determinations should NOT be part of the Accident Investigation Plan?**

- a. Who is at fault and resulting discipline
- b. Who is assigned to conduct the investigation
- c. Who receives and acts on investigation results
- d. Who should be notified of the accident

### Accident Scenario

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You've just been notified of an injury in the workplace and immediately swing into action. You grab your investigator's kit and hurry to the accident scene. By the time you get there, the Emergency Medical Team (EMT) is administering first aid. It's a serious accident so the victim is transported to the hospital. Now it's safe to investigate.

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### What's next? Secure the Scene

The first task after you arrive is to secure the accident scene, but don't start until it's safe to do so. And, you don't want to get in the way of emergency responders. The easiest way to do this is to place yellow warning tape around the area. If tape is not available, warning signs or guards may be required. Make sure nothing is moved because you'll be taking photos and measurements later.

Remember, at the request of OSHA, the employer must mark for identification, materials, tools or equipment necessary to the proper investigation of an accident. It is important that material evidence does not somehow get lost or "walk off" the scene.

**5. What is the first thing that needs to happen before investigating an accident at work?**

- a. Start writing an accident report
- b. Send all workers home
- c. Secure the scene
- d. Nothing, leave the scene alone

## Gathering Facts

The next step in the procedure is to gather useful information about what directly and indirectly contributed to the accident.

Interviewing eyewitnesses to the accident is probably one of the most important techniques in gathering information. Take initial statements from eyewitnesses and others. They can give you a lot of information about the circumstances surrounding the accident. You should tell those who you initially interview that you may conduct follow-up interviews if more questions surface. Interview other interested persons such as supervisors, co-workers, etc.

Primary investigation tools include:

- taking photographs of the scene
- videotaping the scene
- Making sketches of the scene.
- making observations about the scene
- taking measurements

You should also review any records associated with the accident, including:

- training records
- disciplinary records
- medical records (as allowed)
- maintenance records
- EMT reports
- police reports (rare)
- coroner's report (fatalities)
- OSHA 300 Log (past similar injuries)
- safety committee records

Remember you are gathering information to use in developing a sequence of steps that led up to the accident. You are ultimately trying to determine surface and root causes for the accident. It is not your job, as an accident investigator, to place blame. Just gather the facts.



**6. What is one of the most important techniques for gathering information during an accident investigation?**

- a. Taking photographs of the scene
- b. Interviewing eyewitnesses
- c. Including measurements
- d. Observing the scene

**Determine the Sequence of Events**

Now you've gathered tons of information about the accident, and it's piled high on your desk. What do you do with it? It's important that you read through the information initially to develop an accurate sequence of events that led up to and included the actual injury event. See what an accident investigation sequence of events might look like. OSHA Academy Online Safety Training Course 702, Effective Incident/Accident Investigation, covers this topic in more detail.

It's important to understand that the attempt to determine fault is inappropriate at any time during the investigation. If the purpose of the investigation is to determine blame, the investigation stops once blame seems to be determined. When the investigation stops, root causes are not determined.

On the other hand, in a "fix-the-system" safety culture, analysis is more in-depth and focused on finding system weaknesses, not fault. The question of fault is not appropriate and does not occur until the degree to which system weaknesses contributed to the accident has been determined. If system weaknesses did not, in any way, contribute to the accident, the question of discipline be carefully addressed after the investigation report has been completed.

**7. When is it appropriate to discuss the question of discipline during the investigation?**

- a. When OSHA tells you who is responsible for the accident
- b. When the surface causes point to the person at fault
- c. As soon as it becomes obvious who committed the safety violation
- d. It is never appropriate during the investigation process

## Determine the Causes

After developing the sequences of events, the next step is to determine surface causes. This step may be difficult because you are first searching for the surface causes of the accident in each step. This can take some time. From the clues you uncovered during this phase of the analysis, you'll be able to determine the system weaknesses or root causes.

### Surface causes

As we mentioned earlier, surface causes are the conditions and behaviors that directly or indirectly produce the accident. A readily apparent reason for an accident/incident usually appears early in an accident/incident investigation. A long-lasting corrective action does not come from a surface cause. A surface cause leads to a root cause.

- **Primary surface causes** directly cause the accident and usually involve the victim and some object or behavior.
- **Secondary surface causes** are unique conditions or behaviors that indirectly contribute to the accident.

Secondary surface causes can occur anytime, by any person in the organization, and at any location. Conditions are objects or "states of being." Behaviors describe some sort of action, activity. Here are some examples:

- unguarded saw (condition)
- horseplay (behavior)
- not using hearing protection when required (behavior)
- slippery floor (condition)
- inadequately trained employee (condition)

**8. \_\_\_\_\_ can occur anytime, by any person in the organization, and at any location.**

- a. Primary surface causes
- b. Secondary surface causes
- c. Root causes
- d. Actual causes

## Root causes

Root causes are the underlying system weaknesses that indirectly produce the primary and secondary surface causes leading to the accident incident/accident. The system weaknesses always exist prior to the surface causes that produced the accident. They are the programs, policies, plans, processes, and procedures in any of the seven elements or activity areas in a safety management system. It takes more in-depth investigation and results in long-lasting corrective action that can prevent repetition of the accident. A root cause may be referred to as a "basic" cause in OSHA accident investigation reports.

Here are some examples of root causes:

- inadequate or missing safety training plan
- no clearly stated supervision
- no inspection procedures
- inadequate hazard reporting process
- inadequate purchasing policy
- no progressive discipline process

**9. Which of the following is an example of a root cause system weakness?**

- a. A defective tool
- b. Inadequate safety training plan
- c. An employee with a poor attitude
- d. A supervisor who ignores safety rules

## The Accident Report

Now that you have developed the sequence of steps leading up to, and including the accident, and determined surface and root causes, it's time to report your findings. Some employers also ask accident investigators to make recommendations for corrective action, so be prepared for that.

Most companies purchase accident investigation forms. That's fine, but some forms leave little room to write the type of detailed report that is necessary for a serious accident. If you use such a form, make sure you attach important information like the sequence of events, and findings which include both surface and root causes.

A better idea is to develop your own report form that includes the following five sections:

1. Section One (Background Information):

- This is the who, what, where, when, why, etc. It merely tells who conducted the inspection, when it was done, who the victim was, etc.: Just a fill-in-the-blank section.

2. Section Two (Description of the Accident):

- This section includes the sequence of events you developed to determine cause. Just take the numbers off and make a nice concise paragraph that describes the events leading up to and including the accident.

3. Section Three (Findings):

- This section includes a description of the surface and root causes associated with the accident. List the surface causes first, and then their associated root causes. Remember, your investigation is to determine cause, not blame. It's virtually impossible to blame any one individual for a workplace accident. Don't let anyone pressure you into placing blame.

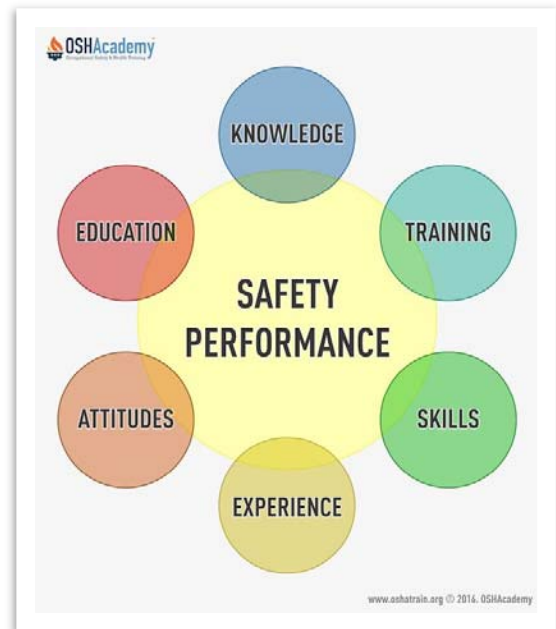
4. Section Four (Recommendations):

- This section may be part of your report if requested by your employer. Recommendations should relate directly to the surface and root causes for the accident. For instance, if one of the surface causes for an accident was a slippery floor, the related recommendation should address eliminating or substituting the hazard, [engineering controls, administrative controls, and personal protective equipment \(PPE\)](#).
- It's crucial that, after making recommendations to eliminate or reduce the surface causes, you use the same procedure to recommend actions to correct the root causes. If you fail to do this, it's a sure bet that similar accidents will continue to occur.

5. Section Five (Summary):

- In this final section, it's important to present a cost-benefit analysis. What are the estimated direct and indirect costs of the accident being investigated? These

represent potential future costs if a similar accident were to occur. Compare this figure with the costs associated with taking corrective action? You may want to address return on investment also. Information on cost benefit analysis is presented in OSHAcademy course 702.



**10. What will happen if you fail to correct system weaknesses identified in an accident?**

- a. Similar accidents will occur
- b. Employees will thank you for it
- c. The company will save money
- d. You won't discover who was at fault

## Module 7: Education and Training

### Introduction

This module will introduce you to general OSHA requirements for education and training. However, I will emphasize "getting beyond compliance" by addressing best practices in effective safety and health education programs. To learn more about safety education and training, be sure to complete OSHA Academy Course 703, Introduction to OSH Training.

### The Big Picture

Safety education and training is extremely important to ensure all processes in your company's safety and health management system are effective. If this critical element is missing, none of the other system elements can, or will be effective. But, this element is often neglected or managed ineffectively because the benefits may not be immediate, tangible, and directly related to profits. Managers may find it difficult to see the long-term improvements in process and product quality that result from an effective safety education and training program. It's hard to see the accidents that don't actually happen.

- 1. Why might management give safety training less support and commitment than it deserves?**
  - a. OSHA doesn't have local offices
  - b. Managers see safety as self-sustaining
  - c. Benefits may not be immediate and tangible
  - d. Safety slows down work too much

### What are the OSHA training requirements?

OSHA's training requirements are found within each of the five categories of OSHA standards: General Industry, Maritime, Construction, Agriculture, and Federal Employee Programs.

OSHA has many types of educational materials in English, Spanish, Vietnamese and other languages available in print or online. These include:

- Brochures/booklets;
- Fact Sheets;
- Guidance documents that provide detailed examinations of specific safety and health issues;

- Online Safety and Health Topics pages;
- Posters;
- QuickCards™ that provide brief safety and health information; and
- QuickTakes, OSHA's free, twice-monthly online newsletter with the latest news about OSHA initiatives and products to assist employers and workers in finding and preventing workplace hazards. To sign up for QuickTakes, visit OSHA's Quicktakes Page.

To view materials available online or for a listing of free publications, visit OSHA's Publications Page. You can also call 1-800-321-OSHA (6742) to order publications. OSHA's web site also has information on job hazards and injury and illness prevention for employers and workers. To learn more about OSHA's safety and health resources online, visit OSHA's A-Z Index Page.

OSHA's training requirements guide, Training Requirements in OSHA Standards and Training Guidelines (PDF), is must-have publication for anyone responsible for the company's safety training program. This booklet covers many OSHA training requirements and gives you some ideas on training strategies.

- 2. Training requirements may be found in each of the five OSHA industry standards, EXCEPT \_\_\_\_\_.**
- a. General Industry
  - b. Transportation Industry
  - c. Agriculture Industry
  - d. Construction Industry

### **Beyond OSHA compliance**

We want to make sure you firmly understand that, to be effective, your program must include safety instruction and safety training. But, how do the objectives differ between instruction and training?

### **Education, Training, and Experience**

The learning process may be thought of as including three basic components: safety instruction, hands-on training, and experience in the workplace. Instruction and hands-on training are usually integrated in the learning process, followed by experience in what has been learned. However, it's important to know that they each have a different purpose.

So, what is the process we can use to make sure employees can most effectively be educated to improve safety performance? We call it the KSA Education Process, and it involves three basic strategies to educate employees, so they can gain knowledge, increase their skills, and improve abilities: instruction, training, and experience.

1. **Instruction** transfers **Knowledge**. This is where the educational process begins. We must know something before we can do something.
2. **Training** provides initial **Skills**. Once we know something, we can focus on learning **how** to do something.
3. **Experience** over time improves **Abilities**. Learners gain experience outside the classroom, where the "real education" occurs. Only with experience will we improve our overall performance.

We'll focus primarily on the first two components of the educational process in this module. But first, we'll look in the next section at the psychological process of being educated. Understanding the underlying psychology of the process of being educated will help us understand that everything we experience, both internally and externally, educates us.

When employees know both why safety is important and how to work safely, they will demonstrate personal safety leadership by working safely, even when performing hazardous tasks when working alone. For example, Gary, a recent OSHA Academy student wrote:

"I stress to my co-workers that a life jacket is mandatory on deck. We hired a young guy who was a swimmer in college. He felt his swimming skills were such that he did not need the jacket. We educated him on hypothermia and that he could not save himself if he fell over in 35-degree water. Once he understood the hazard, he wore the jacket at all times, because he wanted to, not because he had to."



**3. When will employees most likely demonstrate personal safety leadership when working alone?**

- a. When they know they'll get in trouble for being unsafe
- b. When they know how to do a task safely
- c. When they don't think they can get away with taking shortcuts
- d. When they know why and how safety is important

**Educate to Show Why**

There are many definitions for education. Within the context of occupational safety and health, education describes who, what, where, when, and most importantly why safety procedure and practice are necessary. By transferring knowledge through instruction, this part in the educational process informs, persuades, and motivates to affect attitude.

**The number one reason employees don't follow safety rules is that they don't know why they are important!**

To make sure safety education is effective, it's necessary to tie the resulting performance to consequences. One of the most effective ways to do this is to emphasize the natural and system consequences that result from the appropriate application of what's being learned. Consequences represent the why in safety education.

**Natural consequences** describe the type of injury/illness that might result if we don't follow procedures. For instance:

- An employee breaks an arm or leg as the result of a fall.
- An employee escapes injury by properly using a personal fall arrest system.

**System consequences** describe the organizational response to performance. For instance:

- An employee would be subject to a disciplinary process for failing to comply with safety rules.
- An employee might be recognized for meeting goals or exceeding expectations.

Remember, we do what we do in the workplace because of the consequences. Safety education and training must make consequences clear.

**4. What is one of the most important ways to make sure safety education is effective?**

- a. Repeat the safety rules
- b. Emphasize the consequences
- c. Use powerpoints and show videos
- d. Keep the education session short

**Train to Show How**

As we mentioned earlier, safety training has, as its ultimate goal, to provide the skills employees need to work safely. The most effective way to do that is through "hands-on-how-to" demonstration and practice. This is especially important when learning how to perform hazardous tasks.

For instance, you may show how to safely accomplish the steps of a particular task or procedure by:

- practicing lockout/tagout procedures of a machine prior to servicing or maintenance.
- going through the steps in cleaning up an incidental chemical spill.
- performing confined space entry team procedures in a simulated confined space.

**5. What is the most effective training method to improve employee skills in performing hazardous tasks?**

- a. Video and written exams
- b. Lecture
- c. Hands-on demonstration and practice
- d. Asking questions

**Importance of Education**

Earlier we said that instruction tells why safety is important. In safety and health, knowing why safety is important can save a person's life. By far, the most common reason workers do not follow safety rules (or any rule) is that they don't understand why doing so is important. They don't understand the consequences.

For instance, your company probably has a list of safety rules that they ask you to read when you are first hired. Did anyone discuss each rule with you at that time, and why that rule was

important to follow? Maybe not. (There's always an exception to this, and if you are one, congratulations!) If you only have a list of rules, you may want to suggest incorporating a short paragraph explaining why the rules are important.

If your company attempts to institute change in any part of the safety and health program (or any other program), the effort will fail if the company only trains people how to change without educating in such a way that not only informs, but also motivates and persuades workers that the change is necessary and in everyone's best interest.

**6. What is the most common reason workers fail to follow safety rules at work?**

- a. They don't know why the rules are important
- b. They are confused by too many rules
- c. Others never follow the rules
- d. They don't care about the rules

**"Show and Tell"**

Safety education doesn't have to be difficult or expensive: it's not rocket science. So, what is the best and most common method to train specific safety procedures? On-the-job show and tell.

**The Safe On-The-Job Training (OJT) Process**

Hands-on-How-To safety training should be simple, safe, and completed where the actual procedure is performed. Hopefully the supervisor - the person responsible for their workers' safety - is involved in the training. Why? Well, if a supervisor doesn't have the personal knowledge and skills to train safe procedures, how can he or she properly supervise, recognize inadequate skills, and effectively hold employees accountable for their performance?

In the next few sections, we'll discuss the seven-steps in the safe OJT training process that makes sure learners don't get hurt while being trained: That might sound funny, but it's happened. You'll notice in Step 4 that the learner must get permission to continue so he or she doesn't get hurt.

**7. Why should a supervisor have adequate knowledge and skills on the procedures his or her employees perform?**

- a. He or she can't supervise a procedure if not trained on the procedure
- b. To make sure he or she knows who to blame if something goes wrong
- c. So the supervisor can properly track work
- d. Because OSHA requires supervisors be trained on all procedures

**Step 1- Introduction:**

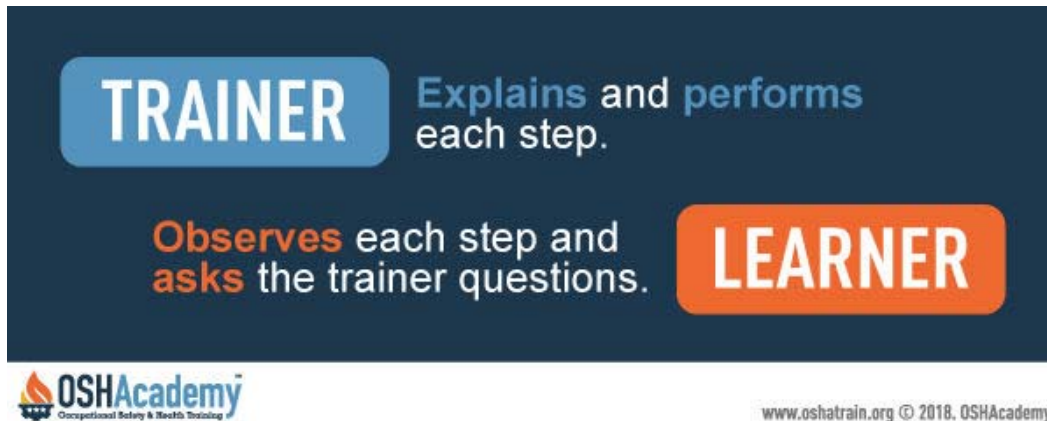
During this first step, the trainer discusses the learning objectives and answers any questions the learner might have. The trainer should:

- Describe the procedure that's going to be trained.
- Discuss the acceptable standards of knowledge and performance.
- Emphasize the importance of the procedure to the success of the production/service goals.
- Invite questions and concerns learners might have about the procedure.
- Emphasize the "why" by covering natural and system consequences of their performance after training.

**Step 2- Trainer shows and tells:**

In this step the learner becomes familiar with safe work practices in each step and why they are important. The trainer explains and demonstrates each step and responds to any questions the learner might have.

The trainer continues to demonstrate and explain each step until the learner understands what to do, when and why to do it, and how to do it. But, you might ask how the trainer can know the employee understands the procedure completely? Easy, if the employee can correctly restate each step in the procedure, and how to do it, the trainer can be sure the employee has adequate knowledge.



**8. In Step 2 of the OJT procedure, how can the trainer know the learner has adequate knowledge of the steps in a procedure?**

- a. The learner can correctly restate each step
- b. The learner says he or she knows the steps
- c. The learner correctly answers a question or two
- d. The learner nods agreement with each step

**Step 3- Learner tells and Trainer shows:**

This is the "safe" step that tests the learner's knowledge. This step is only necessary when exposure to hazards inherent in the procedure could cause injury, illness or equipment damage. It protects the trainee because the trainer performs the procedure. It also tells the instructor if the learner actually has the knowledge to perform the step. If the procedure is not hazardous in any way, you can skip to Step 4.

- First, explain the step to the trainer and, if correct, the trainer performs the step. This gives the trainer an opportunity to discover whether there were any misunderstandings in performing the step.

- If the learner directs the trainer to perform a step incorrectly, the trainer can stop, question the learner and review the step. The trainee also responds to trainer questions.



#### Step 4- Learner shows and tells:

Now it's time to see if the learner has both adequate knowledge and skills to perform each procedure step. Since training usually involves hazardous procedures and practices, requiring permission from the trainer prior to performing each step is necessary to prevent injury, illness or equipment damage if the step is not performed correctly. The learner tells the trainer what he or she is going to do, the trainer gives permission to proceed, and only then does the learner perform each procedure step. Here's how this step works:

- The trainer directs the learner to perform the steps in the procedure.
- The learner explains each step, gets permission to perform the step and then performs it.
- The learner may also try to perform the task too quickly, before the trainer has time to prevent the action, increasing the probability of an injury.
- If the learner does a good job of explaining and performing each step in the procedure, the trainer can be sure the learner has adequate knowledge and skills to be initially qualified to perform the procedure on the job.



**9. In Step 3 of the OJT process, what should the learner do when exposure to hazards inherent in the procedure could cause injury, illness or equipment damage?**

- a. Perform the step and asks if it is correct before moving on
- b. Explain the step, and if correct, the trainer performs the step
- c. Perform all steps in the procedure slowly
- d. Ask permission and then do the step as the trainer watches

**Step 5- Conclude:**

Once the formal training is finished, the trainer should:

- Recognize the student's accomplishment - "Good job!"
- Re-emphasize the importance of the procedure and how it fits into the overall process.
- Remind the employee about their responsibilities and accountability by discussing the natural consequences (hurt/health) and system consequences (reprimand/reward).

**Step 6- Validate:**

After the conclusion of the OJT session, the trainer, or better yet, the supervisor should observe the employee applying what they've learned in the actual work environment. Doing so results in strong documentation that helps to legally protect both the employee being trained and the employer.

**Recommendation:** To prove the employee has the knowledge and skills to a job safely, have the employee teach you how to do the job. If the employee can effectively train you how to do the job, he or she is qualified, and you can sign them off. If they can't, you should not qualify them; it's time for some retraining.

By the way, when OSHA inspects, the compliance officer may ask employees about the job they are doing. The employees won't be able to hide their ignorance and it won't take long for the compliance officer to determine if the employee is qualified to do the job.

### **Step 7- Document:**

The well-known OSHA adage, "if it isn't in writing, it didn't get done," is true for any kind of safety training. For OJT training, documentation should be more than an attendance sheet.

To document the training, the trainee certifies:

- training was accomplished
- questions were answered
- opportunities provided to do procedure
- accountabilities understood
- intent to comply
- The instructor certifies the trainee has:
  - demonstrated adequate knowledge
  - developed the skills to complete the procedures

See the sample training certification documents in [Course 721, Module 5](#). It represents one possible way to document training.

**10. To protect the learner in Step 4 of the OJT procedure, what must the learner do before performing a step?**

- a. Observe the step from the trainer and then perform it
- b. Wait until everyone has gone home to perform the step
- c. Explain the step and ask for permission to perform it
- d. Write the step down and then perform the step



## Module 8: Continuous Improvement

### Introduction

In this module, we'll take a look at some basic Continuous Improvement concepts and see how they apply to all elements of the safety management system. Since we're talking about "life and limb," continuous improvement is all the more important to make sure all elements of the Safety Management System (SMS) are in place, top quality, and effectively maintained.

Adopting continuous improvement principles and methods is key to world-class safety and health. The basic idea is to begin with a basic program and simple goals and grow from there. If you focus on achieving goals, monitoring performance, and evaluating outcomes, your workplace can progress along the path to higher levels of safety and health achievement.

Important principles have evolved from companies that perform continuous safety improvement planning and implementation; they represent best practices in continuous safety improvement:

Determine the current situation using objective (fact-based) data analysis, not subjective feelings.

- Set a goal to always address the root causes/system weaknesses. Assume root causes always exist.
- Focus work and resources on the people, machines, and systems that add value.
- Improve safety processes through continuous controlled experimentation using the Plan-Do-Study-Act (PDSA) and other methods.
- Make decisions based on long-term systems improvement.
- Update or create standardized processes to reduce variation and waste and promote continuous improvement.
- Employ partnering and knowledge sharing within the company and with external suppliers, customers, and other stakeholders.

**1. Which of the following is a key principle of continuous improvement?**

- a. Make radical changes based on surface causes and feelings
- b. Focus on improving short-term processes and productivity
- c. Make decisions based on long-term systems improvement
- d. Increase variation and diversity in the company

### The Deming Cycle

Dr. W. Edwards Deming is considered by most to be the father of Total Quality Management and Continuous Improvement. He was probably more responsible than any other person for Japan's meteoric rise in manufacturing after World War II. He believed that statistics hold the key to improving processes, and that management must take responsibility for quality in the workplace because management controls the processes.

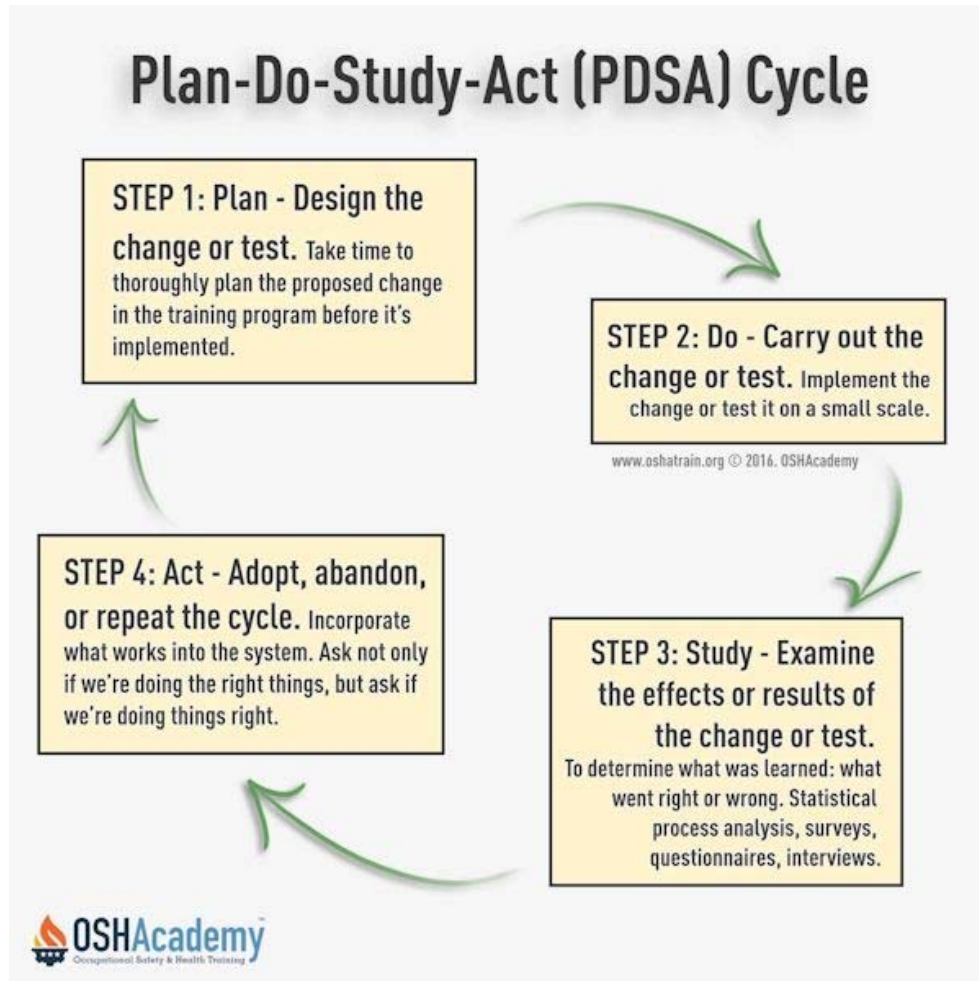
Dr. Deming modified a process developed by his mentor, Dr. Walter Shewhart, and called it the Plan-Do-Study-Act Cycle (PDSA). The PDSA Cycle uses a systematic series of steps to gain data for the continual improvement of a product or process. The process is called a "cycle" because the steps are continually repeated. As the image below shows, the PDSA Cycle contains four primary steps. These four steps are repeated over and over as part of a never-ending cycle of continual improvement.

Let's see how we can apply these steps to develop a safe work procedure:

- **Plan.** Identify a new safety procedure to be developed.
- **Do.** Implement the components of the new safety procedure.
- **Study.** Monitor and collect data to study the success of the procedure.
- **Act.** Use the learning to make small changes to the procedure and repeat the process.

In the example above there are three basic actions to take based on what was learned:

- If the safety procedure works, we keep it, and deploy it.
- If the procedure needs improvement, we repeat the cycle making small changes
- If the procedure does not work at all, we throw it out and start over.



**2. Which process did W. Edward Deming promote to improve manufacturing in Japan?**

- a. The Shewhart Program
- b. The Deming Improvement Process
- c. Factual Charts and Graphs
- d. The Plan-Do-Study-Act (PDSA Cycle)

## Deming's Fourteen Points Applied to Total Quality Safety

Deming's developed his famous "14 Points" that form some of the most important concepts and approaches to continuous quality improvement philosophy. The focus of this module is to better understand and apply each of Deming's 14 points to workplace safety. So, let's see what he says about quality, and how it might be applied to safety.

**Point 1: Create a constant purpose to improve the product and service, with the aim to be competitive, stay in business, and provide jobs.**

Deming spoke about the "problems of today and the problems of tomorrow," and that management in America today tends to focus only on today's problems when it should be placing increased, if not most emphasis, on tomorrow's threats and opportunities to improve competitive position, stay in business, and provide more jobs.

- Management should focus constantly on improving the safety of materials, equipment, workplace environment, and work practices today so that it can remain successful tomorrow.
- The goals should be to continually work toward a world-class safe and healthful workplace today, so that fewer injuries and illnesses occur in the future.
- Management should continually communicate a clear, consistent message that safety is a core value, and that there are "no excuses" for accidents.
- Management must understand that if the company considers safety only as a priority that may be changed when convenient, constancy of purpose is not achievable.

**3. Deming believed that the reasons for focusing on tomorrow's threats and opportunities included each of the following, EXCEPT \_\_\_\_\_.**

- a. improving competitive position
- b. maximizing profits, minimize costs
- c. staying in business
- d. providing more jobs

**Point 2: Adopt a new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for a change.**

Safety can never be understood or properly appreciated if management takes only the short-term view: it must focus on the long-term. Only by focusing on the long-term benefits will management gain the vision to properly and consistently demonstrate real safety leadership.

The old philosophy accepts as fact that a certain level of injury and illness will result from a given process, and that the associated costs should represent one of many costs of doing business.

The new safety philosophy strives to:

- Prevent injuries and illnesses by continually analyzing and improving upstream factors such as work practices, equipment design, materials, and the workplace physical and cultural environment through education, training and recognition.
- Improve product safety for the benefit of the customer.

**4. According to Deming, which of the following is a basic principle of the "new philosophy"?**

- a. Accept a certain level of error
- b. Improve process and product quality/safety
- c. Focus on the immediate goals
- d. Error is the cost of doing business

**Point 3: Eliminate the need for mass inspection by building quality into the product or process in the first place.**

Deming was referring to the practice of inspecting every piece of product at the end of an assembly line to separate out the defects. Instead, he encouraged improving the quality of the process to decrease the defects, thus eliminating the need for mass inspection.

When we apply this to safety, Deming would encourage us to focus on measuring and improving the Safety Management System, including employee behaviors, procedures, and equipment design (leading indicators) instead of measuring only incidents and accidents (lagging indicators).

Measuring only results statistics (accident rates) is like driving a car down the road and trying to stay in your lane by looking through a rear-view mirror. All you can do is react, after the fact. Accident rates tell us nothing about why accidents are happening. Incident rates, accident rates, MOD rates, etc. all measure the end point, and since these measures are inherently not predictive, these statistics provide little useful information about the surface and root causes for injuries and illnesses.

**5. Which of the following indicators should be the focus of analysis in the continuous improvement process?**

- a. Short-term indicators
- b. Long-term indicators
- c. Lagging indicators
- d. Leading indicators

**Point 4: End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.**

Quality safety and personal protective equipment, materials, chemicals may cost a little more but will save in the long-term through fewer injuries and illnesses. Management should write safety specifications that meet their safety and quality requirements into contracts.

With respect to personal protective equipment (PPE), "cheap" is not better. Ensuring employees have high quality personal protective equipment is smart business. If you spend \$5,000 for various types of PPE and any one piece prevents a serious injury, your company has just paid for all the PPE. The money spent on PPE should be thought of as an investment that may result in substantial returns (reduced direct and indirect accident costs) to the company.

Relying on a single supplier for safety equipment, such as personal protective equipment, may have many benefits. Supplier representatives, calling on an employer over a period of years, will become familiar with the particular safety equipment needs of the employer. The employer who establishes a long-term close relationship with the supplier is more likely to receive the attention and higher quality equipment when requested. Developing a close, cooperative partnership between the employer and the supplier of safety equipment is extremely important for the success of both parties and is possible by applying the single supplier principle.

**6. According to Deming, what is a benefit when an employer develops a long-term relationship with one supplier?**

- a. Extra equipment and cheaper prices
- b. More attention and higher quality equipment
- c. More selection and the cheapest possible prices
- d. More expensive equipment available for less

**Point 5: Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.**

A Safety Management System (SMS) refers to a number of integrated safety policies, plans, programs, processes and procedures that have been standardized. Everyone does something the same way. What safety process or procedure might be standardized to improve your company's safety and health management system? The purpose of safety improvement is to increase the quality/safety of the SMS which will decrease the cost of doing business.

Management must integrate safety as an element of quality into operations so completely that it disappears as a separate function. It must be viewed by each employee, supervisor and manager as his or her personal responsibility; one that is important in not only improving the production process, but in saving lives.

**Point 6: Institute training on the job.**

Unfortunately, some companies today consider safety training as a cost without any real benefits. Many companies rely on the safety director or the human resources department to train safety. The new employee receives a safety overview when hired, and a safety "expert," conducts more specific training related to the employee's job exercise. The supervisor, in many instances, does not think he or she is getting paid to train safety.

However, who is better suited to do the training than the person responsible for the safety and health of his or her employees? After all, if the supervisor can't train safety, how can he or she have the knowledge to effectively oversee safe work practices? Finally, as Deming states, the company should focus on hands-on On-the-Job (OJT).

**7. According to Deming, to what extent should safety be integrated with quality?**

- a. To the extent safety replaces quality at every level of the organization
- b. To the extent that safety takes priority over quality
- c. To the extent that safety disappears as a separate function
- d. To the extent quality has less focus than safety

**Point 7: Adopt and institute leadership. The aim of supervision should be to help people and machines do a better job. Supervision of management is in need of overhaul, as well as supervision of production workers.**

The key to adopting and instituting leadership, of course, lies at the top. Management needs to lead by example, action, and word. The leader "cares" about those he or she leads. After all, the leader's success is tied to the success of his or her workers. The "servant leadership" model fits well into the ideas expressed by Deming and others.

There is no better way to demonstrate these principles of leadership than in making sure employees use safe work procedures in a workplace that is, itself, safe from hazards. Ensuring safety is one of the most visible undertakings that management can take to show employees that they are not merely hired hands who can be replaced but are valued human resources...part of the family.

**Point 8: Drive out fear, so that everyone may work effectively for the company.**

You must begin here. Driving out fear is the most important requirement when implementing a Safety Management System. Management controls the workplace and influences the behavior and performance of its employees by creating cultural norms that dictate what are and are not acceptable behaviors. Strategies using fear to control are rarely, if ever successful.

Management may rely solely on safety rules and progressive discipline to control performance, but it's never successful in producing anything beyond mere compliance. What develops from such a strategy is a controlling, compliance driven climate of mistrust and disgust; only a shell of an effective safety and health management system.

In a world-class SMS, management drives out fear through fact-finding to improve the system, not fault-finding to punish someone. They emphasize uncovering the weaknesses in the system that have allowed unsafe work practices and hazardous conditions to exist. Management's motto is "Fix the system, not the blame."



**8. According to Deming, what is the most important requirement when implementing a safety management system?**

- a. Collaborate with OSHA
- b. Compete against each other
- c. Cooperate with each other
- d. Drive out fear in the workplace

**Point 9: Break down barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.**

We should only compete with our competitors, not ourselves. Internal cooperation and external competition applies to safety as well. Cooperation among all internal functions is another key to effective safety.

### **Competitive safety incentive programs**

Reactive safety incentive programs that challenge departments to compete against each other for rewards set up a system that may promote illegal behaviors by creating situations where peer pressure causes the withholding of injury reports. Consequently, the "walking wounded syndrome" develops that eventually results in increased injury costs and workers' compensation premiums. The performance of one employee impacts the success of others in the department. Employees will do virtually anything, in some cases, to ensure the department gets their pizza parties, saving bonds, or safety mugs. The fix: Reward/recognize employees individually for appropriate behaviors: complying with safety rules, reporting injuries and reporting workplace hazards. Reward activities that enhance cooperation.

### **Bringing management and labor together**

Cooperation at all levels of the company to identify and correct hazards is very important. Of course, the process designed to promote this kind of cooperation is called the safety committee (or safety improvement team). A world-class safety system will take advantage of the cross-functional makeup of safety committees to bring management and employees together in a non-adversarial forum to evaluate programs and make recommendations for improvement in workplace safety.

**9. Reactive incentive programs that challenge departments to complete may foster which inappropriate safety behavior?**

- a. Collaborate with OSHA
- b. Failing to identify hazards
- c. Working too much overtime
- d. Withholding injury reports

**Point 10: Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.**

What! Zero defects is not an appropriate goal? Does that apply to safety too? Remember, Deming is talking about product defects here. The related safety goal might be "zero accidents." Although this goal may be unachievable, it's the only morally appropriate goal to have because we are dealing with injuries and fatalities. If we set a goal of anything less than zero accidents, what's going to happen? If we reach the goal, we pat ourselves on our collective back, sit back with our feet up on the desk, and believe we "have arrived." When this occurs, you can bet your accident rate will start rising once again. Contentment is a dangerous condition in safety. If we set zero accidents as our goal, we may never reach it, but that's fine. We should never be content anyway. We should always be frustrated...never satisfied to make sure we continually improve the system.

If we set a goal to reduce accidents by 50%, we will design a less effective system to get us to the goal, but no farther. If we set a zero-accident goal, we will design the more effective system to reach that goal.

On another line of thought: In safety, the "happy poster syndrome" is a common occurrence. Managers think that by placing a safety poster every thirty feet on a wall, they have a successful safety awareness program. Employees, for the most part, ignore the posters, and may not believe the message that management is trying to convey. The Fix: Get rid of the posters and meaningless slogans. Replace them with action, example, and word. Each supervisor and manager becomes a walking safety slogan.

**10. What is the problem with having too many safety posters hanging on the job site?**

- a. They must be continually changed
- b. Employees eventually ignore them
- c. They just add to the clutter
- d. Employees make fun of them

**Point 11: Eliminate numerical quotas for the workforce and eliminate management by objectives. Eliminate numerical goals for people in management. Substitute leadership.**

The problem with measuring the success of a company's safety effort using incident rates is that once the rate has been reduced to what management feels is an acceptable level, complacency sets in, the effort to reduce incident rates relaxes, and incident rates begin the inevitable rise to previous unacceptable levels. Management reacts to the increase in incident rate with a renewed safety emphasis. This reactive management approach to loss control, based on end results (defects), creates an endless cycle of rising and falling incident rates.

Deming would look upon such a situation with dissatisfaction (and wonder). He would probably encourage management to do away with any numerical quotas or goals based solely on unpredictable measures such as accident frequency rates. He would stress the need to measure upstream activities such as the degree of safety education and training, number of safety meetings, individual safe work behaviors, and the safety of materials, chemicals, and equipment purchased by the company.

In emphasizing continuous improvement principles, the company may never realize sustained zero accident rates, but the critically important ingredient in a successful process, that of continually journeying closer to that end state would be realized. Focus on the journey, not the result.

Relying solely on quotas in the "production" system results in management looking the other way, when unsafe work practices, and hazardous conditions exist. A macho (it is part of the job) attitude by management, under pressure to produce the numbers, results in higher rates of injury and illness. Very little thought is given to the human tragedy involved with serious injuries or fatalities. Even less thought to the indirect and 'unknown and unknowable' losses to the company. Management must understand the danger of the pressure ever-increasing quotas place on supervisors and employees. Short cuts in work practices are inevitable, and along with them, injuries and illnesses.

Remember, managers and employees should be held accountable only for what they can control. It's difficult to control statistical results. However, as we learned earlier, they can control activities.

**11. Which of the following is an upstream activity over which management has control?**

- a. Number of hazards identified by department
- b. Variation in workers' compensation premium
- c. Annual incident/accident rates
- d. The number of safety-trained employees

**Point 12: Remove barriers that rob people of pride of workmanship.**

According to Deming, the responsibility of supervisors must be changed from sheer numbers to quality. Remove barriers that rob people in management and in engineering of their right to pride of workmanship. Abolish the annual merit rating and adopt continual feedback processes. Deming offers some interesting ideas here, but they are crucial to success in safety as well as production.

Supervisors must ensure their workers receive equipment and materials that are as safe as possible. Employees should work at stations that have been ergonomically designed for them to decrease the possibility of strains and sprains, and repetitive motions disease which represent the greatest category of workplace injury and illness in the workforce today. Workers require and deserve the highest quality personal protective equipment to protect them from workplace hazards. The highest quality safety equipment, materials and environment all contribute to pride of workmanship.

**Point 13: Institute a vigorous program of education and self-improvement for everyone.**

Continual learning is an important concept. It's important that employees be educated in personal and professional skills. Safety certainly applies here as well. Return on the investment made in education is well worth the money.

Weekly or monthly safety education and training sessions, when conducted properly by supervisors, can go far in improving the performance of employees, and would send a strong message to all that safety is a core value in the company. Unfortunately, most companies do not see the wisdom in adopting the principle that to be successful today, each manager and employee in the company must be continually learning. Currently, most employees receive very little safety training, internal or external, on safety related topics.

**12. According to Deming, the responsibility of supervisors must be changed from \_\_\_\_\_ to \_\_\_\_\_.**

- a. quality, sheer numbers
- b. sheer numbers, quality
- c. input, output
- d. output, input

**Point 14: Take action to accomplish the transformation.**

Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job. What a concept! Put everybody to work to accomplish the transformation. How can we do this when it comes to safety and health?

Here's the hard part. Someone must have the vision: If not top management, who? How do you shift responsibility for safety from the safety director and/or safety committee to line management? If the effort does not have the blessing of the CEO (with action), the transformation may never be successful. The safety committee may serve as the catalyst to initially begin the planning for the transformation. Expanding the size of the committee, then breaking it into "safety teams" specializing in various process functions in the company might be a way to go. However, educating up is crucial if top management balks at the need for the transformation. The safety committee must provide the education (usual data... sorted... objective... bottom line) to influence the perceptions that ultimately shape the transformation. Uphill all the way.

**13. Whose job is it to create a successful transformation in continuous improvement?**

- a. Supervisors
- b. Employees
- c. Upper management
- d. Everybody