Preventing Workplace Violence

Systems of Safety

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Preventing Workplace Violence

What is workplace violence?

Workplace violence is any act or threat of physical violence, harassment, intimidation, or other threatening disruptive behavior that occurs at the work site. It ranges from threats and verbal abuse to physical assaults and even homicide. It can affect and involve employees, clients, customers and visitors. Homicide is currently the fourth-leading cause of fatal occupational injuries in the United States.

Who is at risk of workplace violence?

Nearly 2 million American workers report having been victims of workplace violence each year. Unfortunately, many more cases go unreported. Risk factors may include exchanging money with the public and working with volatile, unstable people. Working alone or in isolated areas may also contribute to the potential for violence. Providing services and care, and working where alcohol is served may also impact the likelihood of violence.

OSHA recommends that employers establish and maintain a violence prevention program as part of their facility's safety and health program. The prevention program should be made available to all employees, including managers and supervisors.

The main components of a facility's Violence Prevention Program should be:

Management Commitment and Employee Involvement:
Demonstrated concern for employee emotional and physical safety and health, incorporated into a written program for safety and security.

Worksite Analysis: A step by step common sense look at the workplace to find existing or potential hazards for workplace violence.

Hazard Prevention and Control: Implementation of engineering and work practices to prevent and control identified hazards.

Safety and Health Training: To make all staff aware of security hazards and how to protect themselves through established policies, procedures and training.

Recordkeeping and Evaluation of Program: OSHA required recordkeeping, and evaluation.

The Small Group Activity Method

Basic Structure

The Small Group Activity Method* is based on a series of problem-solving activities. An activity can take from 45 minutes to an hour. Each activity has a common basic structure:

- **Small Group Tasks**
- **Report-Back**
- **Summary**

1. Small Group Tasks: The training always begins with groups working together at their tables. Each activity has a task, or set of tasks, for the groups to work on. The task asks that the groups use their experience and the factsheets to solve problems and make judgements on key issues.

2. Report-Back: For each task, the group selects a scribe that takes notes on the small group discussion and reports back to the class as a whole. During the report-back, the scribe informs the entire class as to how his or her group solved the particular problem. The trainer records each scribe's report-back on large pads of paper in front of the class so that everyone can refer to them.

3. Summary: Before the discussion drifts too far, the trainer needs to bring it all together during the summary. Here, the trainer highlights the key points of the activity and brings up any problems or points that may have been overlooked during the report-back.

*The Small Group Activity Method (SGAM) is based on a training procedure developed by England's Trades Union Congress (TUC) in the 1970s. The Labor Institute and Oil, Chemical, and Atomic Workers Union (now part of the United Steelworkers) used a similar method around economic and health and

safety issues for workers and further developed the procedure into SGAM.

Three Basic Learning Exchanges

The Small Group Activity Method (SGAM) is based on the idea that every training is a place where learning is shared. With SGAM, learning is not a one-way street that runs from trainer to worker. Rather SGAM is a structured procedure that allows us to share information. It is based on three learning exchanges:

- **Worker-to-Worker**
- **Worker-to-Trainer**
- **Trainer-to-Worker**

Worker-to-Worker: Most of us learn best from each other. SGAM is set up in such a way as to make the worker-to-worker exchange a key element of the training. The worker-to-worker exchange allows participants to learn from each other by solving problems in their small groups.

Worker-to-Trainer: Lecture-style training assumes that the trainer knows all the answers. With SGAM it is understood that the trainers also have a lot to learn and this is the purpose of the worker-to-trainer exchange. It occurs during the report-back and it is designed to give the trainer an opportunity to learn from the participants.

Trainer-to-Worker: This is the trainer's opportunity to clear up any confusion and make points they think are key. By waiting until the summary section, trainers know better what people need to know.

The Factsheet Reading Method

The process described below focuses everyone on the important information in the factsheets.

The process is as follows:

First, select a scribe for this Task.

Each of you will be assigned a small number of factsheets to read. You will then share the factsheet information with your table.

Your trainer will assign your individual factsheets this way:

Starting with the scribe and moving to the left, count out loud from 1 to 8. Keep going around the table until all numbers (factsheets) are distributed. The assigned numbers correspond to Factsheets 1 through 8 on the following pages.

Once everyone has read their assigned factsheets individually, your scribe will go around the table and ask each of you to explain to the group what you have learned. Factsheets should be explained in the order assigned (1 through 8), since the factsheets build on the previous one. In this way, we all start at the same place and with the same information.

Systems of Safety

Purpose

To introduce the concept of Systems of Safety and accident prevention and its relationship to the preventing workplace violence.

This Activity has two tasks.

Task 1

Scenario 1:
A worker was recently assaulted by a client's family member at Employer XYZ. A client called her husband and informed him she had been waiting for hours and that the worker was ignoring her. The husband confronted the worker and pushed her down. The worker suffered a back injury. A health and safety committee investigation of the incident revealed the following:

1. The emergency alert call button in the conference room was not working. Regular inspections and maintenance for the call buttons had not been performed for over two years.

2. When the husband entered the building, he ignored the receptionist' pleas to return to the desk. The security guard who should have been stationed at the desk was on another call. Employer XYZ had recently made a decision to cut its security personnel.

3. The worker was working alone in conference room at the time of the assault.

4. A previous incident with the same client and family member had occurred only days before (with another staff member on a different shift) but was never reported.

5. The main entrance was an open area with people coming and going all day.

6. Employer XYZ had no written policy or procedures for dealing with violent clients or family members.

7. XYZ workers were never trained to deal with potentially violent situations.

8. Employee parking was in a remote area with limited lighting and ornamental shrubbery and trees blocking surveillance.

Task 1

1. Review the factsheets on pages 5 - 15. Then in your groups, pick a scribe and list the safety systems *and* subsystems that are flawed in each paragraph above. You can list *more than one* failed system or subsystem for each paragraph.

- Factsheet 1 defines Systems of Safety.
- Factsheets 2-7 explain each of the systems.
- Factsheet 8 includes a chart showing all the systems and examples of subsystems. You will also find a tear-out version of Factsheet 8 on page 25.
- Factsheets 9 -13 show how systems of safety can relate to OSHA's Hazard Communication and Process Safety Management Standards.

Flawed System(s) and Subsystem(s)
a. System(s): **Subsystem(s):** **b. System(s):** **Subsystem(s):** **c. System(s):** **Subsystem(s):** **d. System(s):** **Subsystem(s):** **e. System(s):** **Subsystem(s):** **f. System(s):** **Subsystem(s):**

g. System(s):
Subsystem(s):

h. System(s):
Subsystem(s):

Safety Systems and Sub-Systems Worksheet

Safety Systems	Design/ Engineering	Mitigation Devices	Mechanical Integrity	Warning Devices	Training & Procedures	Personal Protective Factors
Safety Sub-System Note: There may be additional sub-systems that are not included in this chart. Also in the workplace many subsystems are interrelated. It may not always be clear that an issue belongs to one subsystem rather than another.	Job Pre-Planning Resource Allocation Design of Work Area, Equipment, Procedures, and Software Safe Siting Chemical Selection and Safer Chemical Substitution Management of Change Process Design Standards, Codes, and Policies such as: OSHA Standards, and Fire or Electrical Codes **Work Organization** Staffing, Scheduling, and Workload Skills and Qualifications Management of Personnel Change Joint Committees Communications	Shutdown and Isolation Devices Relief and Check Valves Enclosures, Barriers, Fencing, Dikes and Containment Machine Guarding Seat Belts and Air Bags Fire and Chemical Suppression Devices Back-up Generator System and Emergency Outlets	Inspection and Testing Preventive Maintenance Parts Quality Control Turnarounds and Overhauls Equipment Failures Machinery or Equipment	Monitors Emergency Notification Systems Process Alarms Facility Alarms Community Alarms Life Support Systems Smoke or Carbon Monoxide Detectors Back-up Alarms on Vehicles Caution Signs, Cones, or Movable Barriers	Up-to-date Operating Manuals and Procedures Emergency Preparedness and Response Training Workplace Violence Training Hazard Assessment and Analysis Maintenance Procedures Pre-Startup Safety Review Permit Programs Refresher Training Communications Proper Disposal Spill Preparedness Process Safety Information Recordkeeping OSHA 300 Logs Mold Removal Training and Procedures	Personal Protective Equipment Respirators, Gloves, Eye and Hearing Protection Worker Participation and Decision-Making (HF)
Hierarchy of Controls	Elimination or Substitution	Engineering Controls	Administrative & Work Practice Controls	Administrative & Work Practice Controls	Administrative & Work Practice Controls	Personal Protective Equipment

(HF) Indicates that this subsystem is often included in a category call Human Factors.

* There may be additional subsystems that are not included in this chart. Also, in the workplace many subsystems are interrelated. It may not always be clear that an issue belongs to one subsystem rather than another.

Factsheet #1

Systems of Safety

When we think about safety we usually focus on injuries and fatalities suffered by individual workers. We generally don't spend much time thinking about the safety systems that exist.

A system of safety can be defined as the use of specific labor/management programs that actively seek to identify and control hazards (a proactive system). This begins in the conceptual (planning) phase of a new project or work application and continues throughout the entire process.

Major Systems of Safety
Design & Engineering
Mechanical Integrity
Mitigation Devices
Warning Devices
Training and Procedures
Personal Protective Factors

There are many subsystems that make up these major systems of safety. For example, process alarms would be subsystem of warning devices.

You may have additional systems of safety at your site. They may be organized differently and have different names, but all of our facilities have systems of safety in place.

Source: Adapted in part from Harold Roland and Brian Moriarty, *System Safety Engineering and Management*, New York: John Wiley and Son, 1983.

Factsheet #2

The Design/Engineering System

A central purpose of the Design/Engineering System of Safety is to eliminate hazards through the selection of safe or low-risk processes and chemicals whenever possible.

One example of good design safety is the substitution of a less hazardous chemical such as sodium hypochlorite (bleach), for chlorine in treating cooling water. A release of toxic chlorine gas can travel in the wind for miles, whereas a spill of bleach is inherently less dangerous.

Primary prevention eliminates or significantly reduces the possibility of injuries on the job.

Important elements of the design/engineering system may include:

- Design and engineering of equipment, procedures and software;
- Management of change;
- Chemical selection and substitution;
- Safe siting;
- Workload; and
- Work organization.

Factsheet #3

The Mechanical Integrity System

Properly designed equipment can become unsafe if it isn't appropriately maintained, inspected and repaired. An effective mechanical integrity system should be evaluated based on its performance in eliminating the use of breakdown maintenance.

Important elements of the mechanical integrity system include:

- Safety and skills training for employees and subcontractors involved in installing, maintaining, repairing or inspecting equipment;
- Maintaining regular preventive maintenance schedules;
- Keeping spare parts readily available;
- Adequate staffing to eliminate work order and preventive maintenance backlogs;
- Employee involvement in developing and overseeing this system;
- Written procedures for each task performed; and
- Use of proper materials, equipment, tools and spare parts, including use of a quality control program.

Factsheet #4

The Mitigation System

The mitigation system of safety involves the use of equipment that automatically acts to control or reduce the adverse consequences of hazardous incidents. Mitigation devices do not require any action on the part of employees in order for the equipment to function.

The mitigation system provides opportunities for secondary prevention. Mitigation equipment does not eliminate hazards; it only controls the severity of incidents.

Typical examples of mitigation devices are:

- Backup generator systems;
- Other automatic trip devices;
- Automatic sprinkler systems;
- Enclosures, barriers, fencing, dikes and containment;
- Machine guarding; and
- Seat belts and airbags.

Factsheet #5

The Warning System

The warning system of safety includes the use of devices that warn employees that a dangerous or potentially dangerous situation is occurring. These warning components require worker intervention to control or mitigate the hazardous situation. Workers must be able to understand the warning. They must also be able to respond in a timely manner and understand what actions are necessary.

Examples of warning devices include:

- Facility alarms;
- Process alarms;
- Emergency notification systems;
- Caution signs, cones or movable barriers;
- Community alarms;
- Monitors; and
- Back-up alarms on vehicles.

Factsheet #6

The Training and Procedures System

Work practice procedures reduce the likelihood of exposures and injuries. The process relies on a comprehensive system of training and written procedures. The greater the hazard, the greater the need for training and procedures.

Parts of an effective training and procedures system include:

- Procedures and training that consistently incorporate an emphasis on the importance of the safety;
- Employee involvement in developing and overseeing training and procedures activities;
- Methods developed by management and employees to ensure that training is understood, promotes safety, and is not punitive;
- An emergency response plan and training that are in place and routinely practiced; and
- Procedures and training that identify all potential hazards, the possible consequences of these hazardous conditions and the actions needed to prevent or respond to each hazard or potential hazard.

Factsheet #7

Personal Protective Factors

Personal protective factors are the last line of defense among the various systems of safety. They define the traditional roles that employees play in health and safety and generally include obeying the rules (individual behavior) and wearing Personal Protective Equipment (PPE). Unfortunately, in far too many situations, PPE and behavior are used to compensate for hazards that are built into the work process.

Being Proactive
A better approach is to view the role of workers as proactive and engaged in the process of making the facility a safe and healthy environment. This perspective requires the entire staff to look critically at the workplace, work together to identify the hazards and then contribute ideas, experience and know-how to correct the system flaws.

When workers are actively engaged in the process of identifying systems flaws and correcting them using higher-level solutions such as Design and Engineering, the hazards can be eliminated or significantly reduced.

Factsheet #8

Safety Systems and Sub-Systems Worksheet

Safety Systems	Design/ Engineering	Mitigation Devices	Mechanical Integrity	Warning Devices	Training & Procedures	Personal Protective Factors
Safety Sub-System Note: There may be additional sub-systems that are not included in this chart. Also in the workplace many subsystems are interrelated. It may not always be clear that an issue belongs to one subsystem rather than another.	Job Pre-Planning Resource Allocation Design of Work Area, Equipment, Procedures, and Software Safe Siting Chemical Selection and Safer Chemical Substitution Management of Change Process Design Standards, Codes, and Policies such as: OSHA Standards, and Fire or Electrical Codes **Work Organization** Staffing, Scheduling, and Workload Skills and Qualifications Management of Personnel Change Joint Committees Communications	Shutdown and Isolation Devices Relief and Check Valves Enclosures, Barriers, Fencing, Dikes and Containment Machine Guarding Seat Belts and Air Bags Fire and Chemical Suppression Devices Back-up Generator System and Emergency Outlets	Inspection and Testing Preventive Maintenance Parts Quality Control Turnarounds and Overhauls Equipment Failures Machinery or Equipment	Monitors Emergency Notification Systems Process Alarms Facility Alarms Community Alarms Life Support Systems Smoke or Carbon Monoxide Detectors Back-up Alarms on Vehicles Caution Signs, Cones, or Movable Barriers	Up-to-date Operating Manuals and Procedures Violence Prevention Training Emergency Preparedness and Response Training Workplace Violence Training Hazard Assessment and Analysis Maintenance Procedures Pre-Startup Safety Review Permit Programs Refresher Training Communications Proper Disposal Spill Preparedness Process Safety Information Recordkeeping OSHA 300 Logs	Personal Protective Equipment Respirators, Gloves, Eye and Hearing Protection Worker Participation and Decision-Making (HF)
Hierarchy of Controls	Elimination or Substitution	Engineering Controls	Administrative & Work Practice Controls	Administrative & Work Practice Controls	Administrative & Work Practice Controls	Personal Protective Equipment

(HF) Indicates that this subsystem is often included in a category call Human Factors.
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Factsheet #9

Root Causes

When we look at the causes of an injury, accident or chemical exposure we have to look beyond employee behavior. Unsafe acts, unsafe conditions and accidents are symptoms of failed systems of safety. System failures are the “root” causes of accidents and exposures.

Root causes are sometimes referred to as “basic” causes because they are the prime factors that cause an accident. There are almost always several root causes involved in an incident, accident or near-miss. For example, the root causes of an electrocution might include improperly designed or maintained equipment, poor lockout procedures or inadequate training. Root causes are always found in management safety systems. Effective prevention of similar incidents requires changing management systems.

Factsheet #9 continued

Examples of Root Causes:

- Poor design of process units and equipment;
- Poor layout of control room indicators and controls;
- Difficult access to equipment;
- Unsafe siting and spacing of process units and equipment;
- Lack of preventive maintenance or inspection;
- Inadequate procedures or training for both normal and emergency situations;
- Excessive overtime; and
- Inadequate staffing levels.

Sources: Mine Safety and Health Administration, Accident Prevention, 1990, pp. 35-38. Center for Chemical Process Safety, *Guidelines for Investigating Chemical Process Incidents*, New York: American Institute of Chemical Engineers, 1992, pp. 129-131. American Institute of Chemical Engineers, *Guidelines for Auditing Process Safety Management Systems*, Environmental Protection Agency Proposed Rule, Risk Management Programs for Chemical Accidental Release Prevention.

Factsheet #10

Systems vs. Symptoms

When attention is focused on worker injuries, we are only seeing the tip of the safety iceberg. Focusing on “unsafe behaviors” when a worker is injured does not take us down the road to prevention. Worker injuries, unsafe conditions and accidents are symptoms of something wrong in the facility’s systems of safety. The root causes of incidents are found in system failures such as faulty design or inadequate training which lead to worker injuries, illnesses and accidents.

Too many facilities use injury and illness statistics (the ones recorded in OSHA 300 injury and illness log) as a key measure of safety in the workplace. There are serious problems with this. Recent studies have demonstrated that OSHA 300 logs seriously under-record actual job injuries and illnesses.

Task 2

In your groups, pick a scribe. Discuss an accident or near miss situation that you or a coworker experienced. Then, based on your own experience and what you have learned about systems of safety, complete the worksheet on the next page.

In the first column: Describe what happened.

In the second column: Identify the failed systems and subsystems (there may be more than one system or subsystem involved). Also list any systems and/or subsystems you think may have failed but would need more information in order to determine if it's flawed.

Be prepared to discuss any recommendations you may have to address the failed system(s).

What Happened? (Please explain in detail)	Flawed Systems/Subsystems
	System: Subsystems: Do you need more info—Yes or No? If so, where will you find it? Recommendations: System: Subsystems: Do you need more info—Yes or No? If so, where will you find it? Recommendations: System: Subsystems: Do you need more info—Yes or No? If so, where will you find it? Recommendations:
	System: Subsystems: Do you need more info—Yes or No? If so, where will you find it? Recommendations:

Summary: Systems of Safety

1. Proactive Systems of Safety are the key to preventing disasters and injuries.

2. Major Systems of Safety include:
   - Design and Engineering;
   - Maintenance and Inspection;
   - Mitigation Devices;
   - Warning Devices;
   - Procedures and Training; and
   - Personal Protective Factors.

3. The Design and Engineering System can provide primary prevention by eliminating the possibility of a serious accident. The other Systems of Safety provide secondary prevention by reducing the probability or severity of an accident.

4. Each workplace may have different structures and names for its Systems of Safety, but all facilities have Systems of Safety.

5. Active management and union/employee involvement in Systems of Safety are essential for these systems to be effective.

6. Understanding the hierarchy of Systems of Safety (with design as the primary system) enables workers to become active participants in developing and implementing safe work practices (“training and procedures”).

7. Unsafe conditions, unsafe acts, and accidents are symptoms of failures in Systems of Safety. System failures are the “root” causes of accidents and exposures. Effective prevention of similar incidents requires changing and improving the systems.

8. Effective Systems of Safety help fulfill the of OSHA’s recommendations for Preventing Workplace Violence.

Safety Systems and Sub-Systems Worksheet Tear-out Page

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Hierarchy of Controls	Elimination or Substitution	Engineering Controls	Administrative & Work Practice Controls	Administrative & Work Practice Controls	Administrative & Work Practice Controls	Personal Protective Equipment

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