

How to Sell Safety to Management by Preparing and Presenting

Effective Safety Recommendations



OR-OSHA 107
0602-01



Presented by The
The Public Education Section
**Oregon Occupational
Safety and Health
Division (OR-OSHA)**



OR-OSHA Mission Statement

To advance and improve workplace safety and health for all workers in Oregon.

OR-OSHA Services

Oregon OSHA offers a variety of safety and health services to employers and employees:

Consultative Services (all field offices)

Offers no-cost, confidential on-site safety, health, and ergonomic assistance to Oregon employers for help in recognizing and correcting safety and health problems in their workplaces.

Our consultants can also introduce you to the Safety & Health Achievement Recognition Program (SHARP) and Oregon's Voluntary Protection Program (VPP).

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Provides compliance assistance, specific abatement assistance to employers who have received citation, and offers pre-job conferences for construction employers.

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Welcome



Welcome to the “Developing Effective Recommendations” workshop. One of the basic premises of the course is that, as safety coordinators and committee members, we perform the role of consultants to employees and to the employer. One of our most important responsibilities as consultants is to provide useful ideas for successful improvement. Here’s what Peter Block, author of “Flawless Consulting” had to say about consultants:

“Your goal or end product in any consulting activity is some kind of change. Change comes in two varieties. At one level, we consult to create change in the line organization of a structural, policy, or procedural nature - a new compensation package, a new reporting process, a new safety program. The second kind of change is the end result that one person or many people in the line organization have learned something new.”

The purpose of this program is to introduce you to the principles and methods of writing and presenting effective recommendations to improve safety and health in the workplace.

This workshop is designed to include you as much as possible in the learning experience. The more you contribute, the more you will get out of this training, so please don’t hold back.

Goals



- Gain a greater awareness of the tools and methods to sell safety to management.
- Understand and apply the seven steps of an effective recommendation process.
- Understand and apply proven presentation techniques. (8 hour course)

Form Teams

Introductions

Elect a team leader _____

Select a team spokesperson _____

Everyone is a recorder _____



Please Note: This material, or any other material used to inform employers of compliance requirements of Oregon OSHA standards through simplification of the regulations should not be considered a substitute for any provisions of the Oregon Safe Employment Act or for any standards issued by Oregon OSHA.

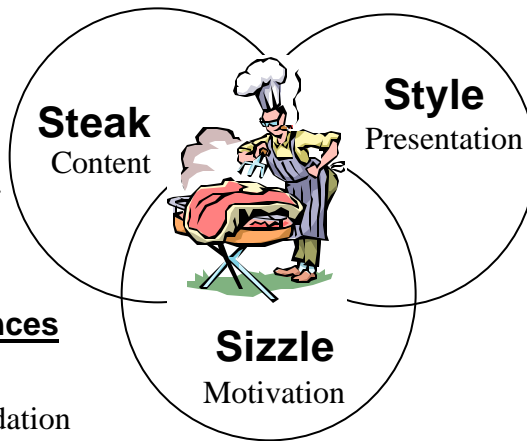
Section 1: The Safety Communications Process

The primary communication goal of a recommendation is to _____ because it asks someone to do something.

Factors that influence the success of a recommendation

The problem statement

The steak is the content of the recommendation that describes the situation (condition, practice, etc.) that you're trying to change.



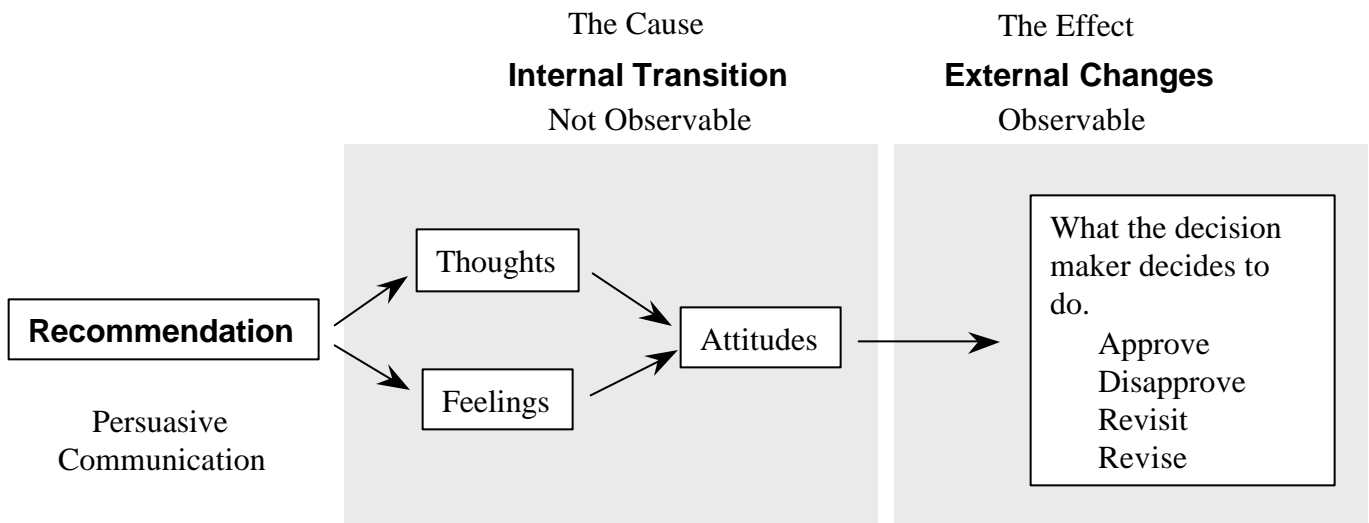
The relationship

The style refers to your ability to present the material in such a way that establishes a positive relationship that says you are confident, sincere, and know what you're talking about.

The benefits/consequences

The sizzle is that part of the information in a recommendation that appeals to the wants and needs that motivate the receiver to take action. It's the WIFM!

What kind of change does a recommendation promote?



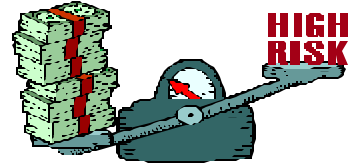
Section 2: Pushing the Right Buttons



Correcting a safety hazard is generally viewed by employees as an _____ need.



Correcting a safety hazard is generally viewed by management as a _____ event.



What motivates the employer to act?

Knowing what motivates lets you target and appeal to needs.

The Legal Imperative

- Obligation is to the law
- Stay out of trouble
- Do only what we have to



What benefits would you emphasize?

What's the message?

The Fiscal Imperative

- Obligation to stakeholders
- Save the company money
- Do it if we see a return



What benefits would you emphasize?

What's the message?

The Social Imperative

- Obligation to employees, community, society
- Save lives
- Do whatever it takes



What benefits would you emphasize?

What's the message?

The challenge is to transform the perceived planned activity into an immediate need!

Section 3: Steps in Preparing the Recommendation

All recommendation, verbal or written, must be designed with one purpose in mind: To provide information that will motivate a manager to support, sign, and implement the change that will improve the safety and health environment for the workers. The following seven steps for preparing a recommendation have been designed, tested, and used successfully.



Step 1. Identify the Problem

- Hazardous condition - tools, equipment, machinery, workstation, employee
 - Unsafe behavior - can occur at any level of the organization
 - Unsatisfactory performance - do the results meet objectives?
 - Inadequate implementation of a policy, program, plan, process, procedure, or practice
-
-

Write a descriptive problem statement.

- **Condition.** “Five ladders in the warehouse are defective.”
 - **Behavior.** “Most employees at the worksite are not reporting injuries to supervisors.”
 - **System.** “The safety training plan does not include lockout/tagout training.”
-
-

Obtain consensus agreement.

- If people don't agree on the problem, they will never agree on the solution.
 - Consensus - can everyone agree with, or live with the problem statement?
 - Is this really a problem?
 - Is the problem statement accurate?
 - If more than one problem exists, which one should we solve first?
-
-



Safety Costs at XYZ INC.

In this case study exercise each group will analyze a scenario and use techniques to develop a recommendation that will clearly communicate the costs and benefits of correction action to the employer. .

Instructions

Your safety committee has just completed it's quarterly walkaround inspection. During the inspection two hazardous conditions were discovered by the committee.

- 1. Read and discuss background information on XYZ, Inc. and your group's assigned scenario.**
- 2. Draft a recommendation that includes adequate "bottom line" justification for corrective action.**

Company background

- XYZ Manufacturing has been in business for about 15 years building components for and assembling high-end quality constant temperature humidifiers for sale to research and medical laboratories. It produces and ships approximately **20 humidifiers** daily which represents an average of **\$120,000 in sales**. **Annual business volume** is \$24 million
- The company employs 173 personnel with the following breakdown by **position and hourly wages**.
 - 15 management (\$70)
 - 6 warehouse workers (\$30)
 - 20 fabricators (\$40)
 - 3 maintenance workers (\$50)
 - 122 production workers (\$30)
 - 7 administrative/accounting employees (\$30)
- **Annual Costs.** Payroll \$4.7 million; Benefits \$2.3 million; Capital investment and facilities \$2.2 million; materials/supplies \$3.7 million; other \$2.7 million.
- **Net annual profit** \$1.2 million (5%)
- The **Experience Modification Rate (MOD)** is 1.05 and its SIC code is 3539.
- **Premium rates** are \$3.15 per \$100 payroll.
- **Annual workers compensation premium:** XYZ's standard plan premium would be approximately \$200,000/year. However they have elected to participate in the Retrospective Rating Plan with the hope of saving substantial costs. Under this plan they pay only \$40,000 (28%) at the beginning of the year. They will also pay all claim costs (medical, lost time, partial permanent disability) plus 20% to the insurance carrier for actual losses accrued during the year.



Scenario #1: Worried in the warehouse

Bob Smith, a forklift driver in the shipping department reported to you that early this morning he was loading 24 temperature control units on to a pallet in the upper storage area of the warehouse when he leaned up against the guardrail and almost fell to the floor 12 feet below.

The guardrail is a homemade type constructed with 2x4s. It's been in a weakened condition for about three months. Due to a lack of space in the warehouse, the platform is the only area currently available for storing control units.

Employees ride the forks of the lift truck to access the platform. Bob, along with three other warehouse workers must work in the upper storage area loading/unloading parts on a continually during the shift.

In the last five years the company has suffered three lost-time injuries due to falls. One of those injuries was due to a fall from this platform three years ago that resulted in multiple serious injuries. Oregon OSHA investigated the injury and cited the company for lack of proper fall protection (e.g., no guard rail). They also cited XYZ for no ladder to the platform.

Notes:



Scenario #2: Faint in fabrication

Fox Scully, a fabrication worker in the manufacturing facility reported feeling dizzy while working with Chemical-X, a highly toxic chemical when in concentrate. Several times each shift, Fox empties five gallons of the concentrate into an open top 55-gallon drum containing water to dilute the chemical before use. The 55-gallon drum is located in the fabrication area and is used to clean metal surfaces prior to final fabrication of the humidifiers.

Fox is unfamiliar with this new chemical and as he was mixing it he suddenly became quite dizzy and nearly fell over and spilled the container of concentrate. The other seven workers in the fabrication department have also felt dizzy at times, but did not associate the condition to the chemical as they did not smell anything funny. They don't even think about it now.

Chemical spills in the last five years have resulted in three lost-time burn injuries and two lost-time eye injuries. The OSHA log indicates 17 recordable injuries due to exposure to hazardous chemicals. Three years ago, Oregon OSHA cited the company for failure to properly label containers of hazardous chemicals and failure to maintain required MSDSs.

Notes:



Checklist for determining the nature of hazards

Use this worksheet to analyze the scenario. Determine the nature of the hazardous conditions, unsafe behaviors, and possible system weaknesses that contribute to them.

Hazardous Conditions - tools, equipment, materials, machines, environment

- Moving parts: rotating cutting reciprocating transverse other
- pinching punching shearing bending other
- Chemicals toxic flammable explosive other
- Atmospheres toxic flammable explosive oxygen deficient other
- Electrical cords grounding exposed circuits other _____
- Temperature cold hot variation other _____
- Lighting too little too much glare other _____
- Noise nuisance excessive continuous intermittent other
- Location at elevation confined space vehicle water other
- Design workstation equipment machinery materials guards

Describe "other" _____

Exposure to the danger zone

- Number of employees exposed (may contact) to hazards _____
- Frequency of exposure continual ___/min ___/hr ___/shift ___/week ___/month ___/year
- Duration of exposure continual ___ mins ___ hrs ___ days ___ weeks
- Work under stress mental physical Describe _____
- Nature of work: piecework prolonged standing/sitting posture extremes at elevation
- confined space other: Describe _____

Safety Management System Weaknesses

	Non-existent/poorly written policies, plans procedures, rules	Inconsistently carried out
Enforcement	_____	_____
Supervision	_____	_____
Training	_____	_____
Compliance	_____	_____
Resources	_____	_____
Other:	_____	



Group Exercise: Develop a statement of the problem from your group's assigned scenario.

Use the first section of the checklist on the next page to help determine the nature of the hazards in your team's scenario. Write a problem statement for one hazardous condition or unsafe behavior.

Problem Statement (Hazardous condition or unsafe behavior):

Step 2. Gather information about the problem

Once a problem statement is developed, it's important to gather and examine information about the problem to:



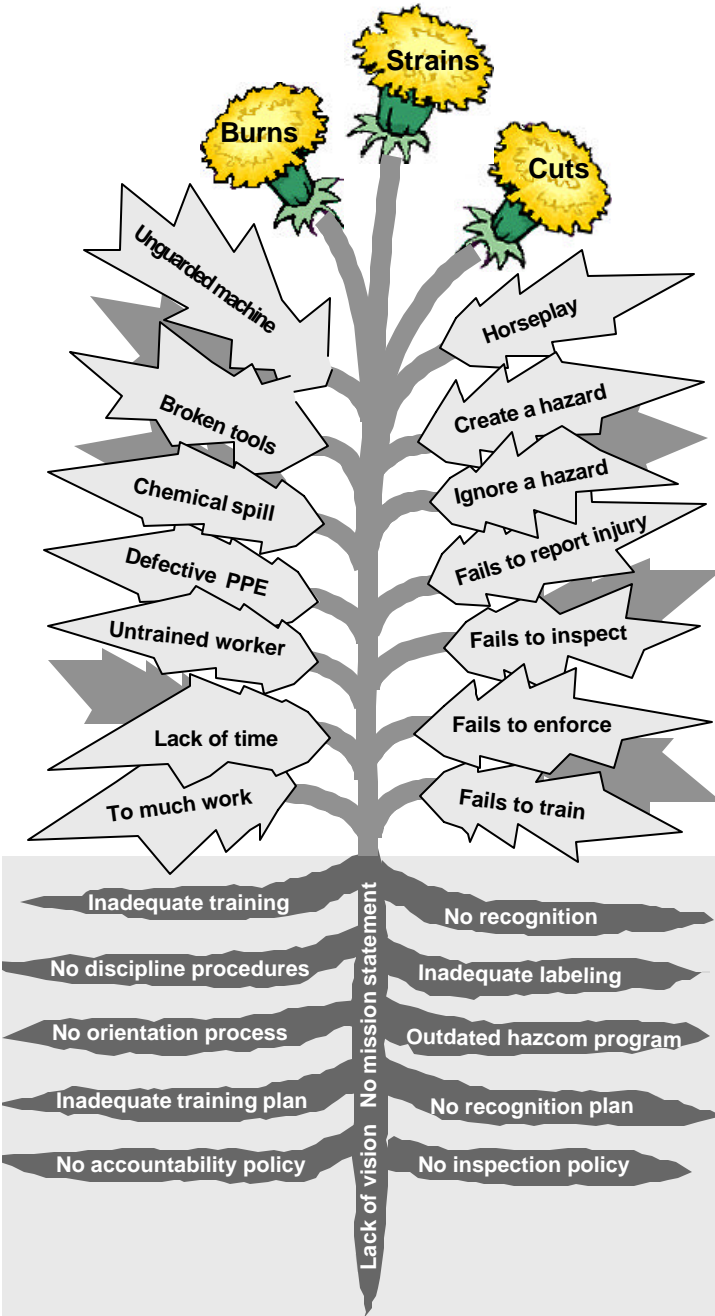
- develop the findings that justify your problem statement,
- ensure the best solutions are proposed, and
- effectively sell your suggestions by identifying the benefits.

Use the following documents to help you gather background information:

- | | |
|--------------------------------|---------------------------------|
| 1. Injury/Illness records | 10. Labor reports/budgets |
| 2. OSHA 300 logs | 11. Maintenance schedules/logs |
| 3. Insurance carrier | 12. Production schedules |
| 4. Lost time reports | 13. Vendor lists |
| 5. Downtime reports | 14. First Aid Logs |
| 6. Production waste reports | 15. Safety Policies/Procedures |
| 7. Production flow rates | 16. Job Hazard Analysis Program |
| 8. Production budget | 17. Operation Manual |
| 9. Customer complaints/rejects | 18. Interviews |

Step 3. Cause Analysis - Find out why the problem exists

Your problem statement makes a claim. Problems have causes...you've got to find the causes. Now you need to organize and analyze the information to identify causes that justify the claim. For most safety problems we can identify related surface and root Causes.



1. Direct Cause of Injury

- Always the harmful transfer of energy.
- Kinetic, thermal, chemical, etc.
- Contact with, exposure too, etc.

2. Surface Causes of the Accident

- Specific/unique hazardous conditions and/or unsafe actions
- Produce or contribute to the accident
- May exist/occur anytime, anyplace
- Involve the victim and others

3. Root Causes of the Accident

- Failure to design and/or carry out safety policies, programs, plans, processes, procedures, practices
- Pre-exist surface causes
- Result in common or repeated hazards
- Under control of management
- Failure can occur anytime, anywhere

Any way you look at it, design is the key to an effective safety management system.

If design is flawed, yet perfectly implemented, the system fails. If design is perfect, yet implementation is flawed, the system fails as a result of design flaws in other related processes.



Step 4. Justify corrective actions by determining the risk a hazard presents to employees.

Determine the risk to the employer if the problem is not solved.

Risk is a function of exposure, probability, and severity

$$R=f (eps)$$

- What is the **exposure** - frequency and duration of physical/environmental exposure?
- What is the **probability** of an accident occurring if exposed?
- How **severe** will the injury or illness be when exposed?

Factors that increase risk

- The number of employees exposed;
- The frequency and duration of exposure;
- The proximity of employees to the point of danger;
- Potential severity of the injury or illness;
- Factors that require work under stress;
- Factors that increase severity;
- Lack of proper training and supervision or improper workplace design; or
- Other factors which may significantly affect the degree of probability of an accident occurring.

What factors might increase stress?



Group Exercise: Determine the risk

1. Determine the number of employees exposed in your scenario.
2. Use each table to determine risk.

Risk is a function of Exposure x Probability X Severity

Exposure	
How frequently is an employee placed in the physical or environmental danger zone. Double scores if the duration of exposure in any category is greater than 1 hour.	
The hazard-event occurs:	Rating
Continuously (or many times daily)	100 200
Frequently (approximately once daily)	50 100
Occasionally (from once per week to once per month)	10 20
Usually (from once per month to once per year)	5 10
Rarely (it has been known to occur)	2 4
Very rarely (not known of have occurred, but remotely possible)	1 2

Number of employees exposed _____ x rating _____ = score _____

Probability	
The likelihood of injury or illness.	Rating
Is the most likely and expected result if employee enters danger zone.	100
Is quite possible, would not be unusual, has an even 50/50 chance.	10
Would be unusual sequence or coincidence	5
Would be remotely possible coincidence.	
It has been known to have happened	3
Extremely remote but conceivably possible.	
Has never happened after many years of exposure.	2
Practically impossible sequence or coincidence.	
A "one in a million" possibility.	
Has never happened in spite of exposure over many years.	1

Number of employees exposed _____ x rating _____ = score _____

Severity	
The most likely result - degree of Severity of Consequences	Rating
Major Catastrophe: Numerous fatalities; extensive damage (over \$1M); major disruption	1000
Several fatalities; damage \$500K to \$1M	600
Fatality; damage \$100K to \$500K	200
Extremely serious injury; (amputation, permanent disability); damage \$1,000 to \$100,000	40
Disabling injuries; damage up to \$1,000	20
Minor cuts, bruises, bumps; minor damage	1

Number of employees exposed _____ x rating _____ = score _____

Using the information from the three charts above and the risk score equation, determine the risk associated with your scenario.

Risk Score = E _____ x P _____ x S _____ = _____

Risk Scores for scenarios

Scenario #1 = _____

Scenario #2 = _____

So, what do these scores mean?

Tip! When determining risk you can use the definitions in the tables to develop a justification for the risk estimate.

What do accidents cost your company?



Unseen costs can sink the ship!

Direct - Insured Costs

“Just the tip of the iceberg”

Oregon average to close a claim = \$10,000

1. Workers' compensation premiums
2. Misc. medical expenses. Medical expenses include doctor fees, hospital charges, the cost of medicines, future medical costs, and ambulance, helicopter, and other emergency medical services.

Indirect - Uninsured, hidden Costs - Out of pocket

Oregon estimated average = \$18,000

The NSC defines "employer costs" as the uninsured costs incurred by employers and represents the money value of time lost by uninjured workers. It includes time spent investigating and reporting injuries, giving first aid, production slowdowns, training of replacement workers, and extra cost of overtime for uninjured workers.

Examples:

1. Time lost from work by injured employee.
2. Lost time by fellow employees.
3. Loss of efficiency due to break-up of crew.
4. Lost time by supervisor.
5. Training costs for new/replacement workers.
6. Damage to tools and equipment.
7. Time damaged equipment is out of service.
8. Loss of production for remainder of the day.
9. Damage from accident: fire, water, chemical, explosives, etc.
10. Failure to fill orders/meet deadlines.
11. Overhead costs while work was disrupted.
12. Other miscellaneous costs (over 100 other items may impact the employer).
13. Others? _____

Average direct and indirect accident costs

Non-Lost-time injury:	\$7,000
Lost- time injury:	\$28,000
Fatality:	\$980,000

Using **National Safety Council** average costs for 2000, includes both direct and indirect costs, excludes property damage.

Direct to Indirect Accident Cost Ratios

Direct cost of claim	Ratio of indirect to direct costs
\$0 - \$5,000	4:1
\$5,000 - \$10,000	2:1
\$10,000 or more	1.1

Studies show that the ratio of indirect to direct costs can vary widely, from a high of 20:1 to a low of 1:1. Source: Business Roundtable, 1982.

Labor intense industry	2:1 - 10:1
Capital intense industry	5:1 - 50:1

Unknown Costs - ○○

1. Human Tragedy
2. Morale
3. Reputation

Total Claims: 23,975
Average Cost: \$12,611

2002 Average Cost For Disabling Claims By Event or Exposure

Event or Exposure Leading to Injury (Partial list)	CLAIMS CLOSED	AVERAGE COST(\$)
Non-classifiable	914	14,854
Struck against stationary object	571	9,408
Struck against moving object	129	13,165
Struck by, other	579	12,516
Struck by falling object	865	12,150
Contact with electrical current	32	54,122
Contact with hot objects	298	4,480
Caught in equipment or objects	1,028	14,603
Caught in collapsing material	8	61,002
Fall to lower level, all other	355	20,510
Fall down stair or step	306	9,993
Fall from floor, dock, ground level	85	16,791
Fall from ladder	384	20,510
Fall from stacked material	22	9,896
Fall from roof	75	32,067
Fall from scaffold	51	31,505
Fall from non-moving vehicle	358	14,617
Fall to floor, walkway	1,993	12,131
Fall onto against objects	415	10,704
Jump to lower level	150	18,091
Bodily reaction, exertion, other	27	23,712
Bodily reaction, other	2,530	11,610
Overexertion, all other	1,105	12,969
Lifting objects	2,942	10,018
Pulling, pushing objects	1,191	12,860
Holding, carrying, wielding objects	1,193	12,963
Repetitive motion	2,277	12,714
Exposure to noise	184	10,938
Exposure to traumatic event	20	19,050
Exposure to harmful environment	10	25,229
Highway accident, collisions, other	669	12,935
Struck by Vehicle	159	25,841
Explosion	27	27,570
Assault or Violent Act by person	250	9,327

Notes: Table reflects estimated medical, timeloss, and partial permanent disability cost data for disabling claim closure activity. Costs exclude partial total disability and fatal indemnity, vocational assistance, medical-only claim costs, settlements, timeloss paid prior to claim denial and prior to settlement where claim was never closed, and compensation modified on appeal. Source: Research and Analysis Section, Information Management Division, Department of Consumer and Business Services



Group Exercise: Determine the costs

1. Estimate (believable - best guess) direct and indirect costs for the resulting injury/illness if corrective actions are not taken.
2. Briefly list what factors you considered in arriving at your estimate in each area.

Determine Direct Costs - Budgeted Losses

- Additional workers compensation premium. They will also pay all claim costs (medical, lost time, partial permanent disability) plus 20% for actual losses accrued during the year.

Estimated claim costs \$ _____ x 1.2 Total \$ _____

What are the total estimated direct costs?

Total Estimated Direct Accident Costs \$ _____
--

Determine Indirect Costs - Unbudgeted Losses

- Damage to equipment, machinery, materials, facility etc. Total \$ _____
- Production downtime. Downtime ____ hrs. x Cost/hr \$ _____ Total \$ _____
(Due to emergency actions, damage, etc. Assume that if any part of the production process fails, the entire production process is halted.)
- Losses or costs from other sources Total \$ _____
(Fire, explosion, chemical, emergency response, disposal, weather, etc.)
- Loss of product/services (Spoilage, defects, damage etc.) Total \$ _____
- Demurrage. (Delays in shipment, filling orders). Total \$ _____
- Additional overtime # Empl's ____ x Avg. OT wages \$ _____ x # Hrs. _____ = Total \$ _____
- Supervisor lost time resulting from accident (inspections, accident investigation, meetings, admin, reports, etc.)
Salary \$ _____ x # Hrs. \$ _____ = Total \$ _____
- Other managers' lost time resulting from accident. (Inspections, meetings, admin, reports, etc.)
Mgrs. ____ x Avg Salary \$ _____ x # hrs. _____ = Total \$ _____

- Employees assisting with accident. (first aid, accident inv., clean-up, repairs)

Empls ____ x Avg. Wage \$ _____ x # hrs. ____ = Total \$ _____

- Hiring and training replacement workers

Total \$ _____

- Wages of replacement workers

Empls. _____ x Avg. Wage \$ _____ x # Hrs. _____ = Total \$ _____

- Other non-productive time incurred by victim(s) # Hrs. ____ x Avg. Wage \$ _____ = Total \$ _____
(Medical follow-up appointments etc.)

- Potential OR-OSHA penalties
(Reference penalty schedule in appendix) Total \$ _____

- Attorney fees # Hrs ____ x \$200.00/hr Total \$ _____

- Other _____ Total \$ _____

What are the total estimated indirect costs?

Total Estimated Indirect Accident Costs: \$ _____

What is the ratio of indirect to direct costs in your scenario?

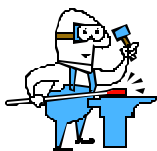
Indirect Costs = _____ to 1
Direct Costs

What are the total direct and indirect accident costs?

Direct Costs\$ _____ + Indirect Costs \$ _____ = \$ _____

Step 5. Recommended Corrective Actions and System Improvements

- **Provide options** - Ideal state, nice state, quick fix
- **Corrective actions include:** engineering controls, management controls, personal protective equipment, interim measures
- **System improvements include:** revised policies, programs, plans, processes, procedures, and practices

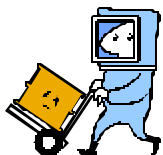


1. Engineering Controls

These controls focus on the source of the hazard, unlike other types of controls that generally focus on the employee exposed to the hazard. The basic concept behind engineering controls is that, to the extent feasible, the work environment and the job itself should be designed to eliminate hazards or reduce exposure to hazards. While this approach is called engineering control, it does not necessarily mean that an engineer is required to design the control.

Engineering controls are based on the following broad principles:

1. If feasible, **design the facility, equipment, or process to remove the hazard** and/or substitute something that is not hazardous or is less hazardous.
2. If removal is not feasible, **enclose the hazard to prevent exposure** in normal operations.
3. Where complete enclosure is not feasible, **establish barriers or local ventilation to reduce exposure** to the hazard in normal operations.



2. Management Controls

Managing work practices and procedures

By following established safe work practices and procedures for accomplishing a task safely (and using PPE in many cases), your employees can further reduce their exposure to hazard.

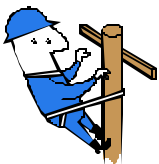
1. Some of these **general practices** are very general in their applicability. They include effective housekeeping and using personal protective equipment when required.
2. Other management controls apply to specific jobs in the workplace and the design and use of **specific procedures** for accomplishing a job. To develop these procedures, you should conduct a thorough job hazard analysis.

Managing work schedules

While managing work practices and procedures may be successful in eliminating or reducing exposure to a hazard, they may not be adequate in certain situations. It may also be necessary to control exposure through **managing work schedules**. Examples include:

- Lengthened rest breaks,
- Additional relief workers,
- Exercise breaks to vary body motions, and
- Rotation of workers through different jobs

Using Personal Protective Equipment (PPE)



When exposure to hazards cannot be engineered completely out of normal operations or maintenance work, and when safe work practices, procedures and scheduling controls cannot provide sufficient additional protection from exposure, personal protective clothing and/or equipment may be required. PPE places a barrier between the employee and the hazard. The effective use of PPE may or may not be required by Oregon OSHA rules for a particular task. Required or not, if PPE is the only answer, be sure you use it.

Interim Protection



When a hazard is recognized, the preferred correction or control cannot always be accomplished immediately. However, **in virtually all situations, interim measures can be taken** to eliminate or reduce worker risk.

Interim measures can range from taping down wires that pose a tripping hazard to actually shutting down an operation temporarily. The importance of taking these interim protective actions cannot be overemphasized. There is no way to predict when a hazard will cause serious harm, and no justification to continue exposing workers unnecessarily to risk.



Group Exercise: Develop Solutions

Corrective Action

Corrective actions include engineering controls, management controls, and the introduction of personal protective equipment and/or interim measures

Recommendation: _____

Estimated Investment: Down Time _____ Materials _____ Labor _____

Management controls

What improvements can be made to safety policies, programs, plans, processes, procedures, and practices.

Recommendation: _____

Estimated Investment: Time _____ Materials _____ Labor _____

Step 6. Determine the benefits of solving the problem

The only way management is going to act on your recommendation is if they clearly understand the positive consequences from doing so. You're going to have to ask the questions, "What are the benefits that result from ...

- **fulfilling social obligations** - higher morale, reputation, long-term success
- **fulfilling fiscal obligations** - lower premiums, higher productivity, profits, efficiency, quality
- **fulfilling legal obligations** - no/low OR-OSHA penalties, no litigation.



Group Exercise: Determine the bottom-line benefits

What is the total investment? Add cost of corrective actions and system improvements.

Total Investment \$ _____

What's XYZ's return on our investment going to be?

Return on Investment

Percent ROI = $\frac{\text{Total Estimated Direct/Indirect Accident Costs}}{\text{Total Investment}}$

ROI = $\frac{\$ \underline{\hspace{2cm}}}{\$ \underline{\hspace{2cm}}} \times 100 = \underline{\hspace{2cm}} \%$

How long will it take to get our money back from the investment?

Payback Period

$$\text{Payback Period} = \frac{\text{Total Investment}}{\text{Total Estimated Accident Costs}}$$

$$\text{Payback Period} = \frac{\$ \text{_____}}{\$ \text{_____}} = \text{_____ Years}$$

or _____ Months (x 12) or _____ Weeks (x 52) or _____ Days (x 365)

How much product or service will XYZ have to sell to pay for the accident costs?

Business volume required to cover cost

$$\text{Volume} = \frac{\text{Total Estimated Direct/Indirect Accident Costs}}{\text{Profit Margin}}$$

$$\text{Business Volume} = \$ \frac{\text{_____}}{.05^*} = \$ \text{_____}$$

*XYZ's profit margin is 5% or .05

Step 7. Write a recommendation with "style."

The only step left is to write an effective recommendation. Remember, the safety committee is required to submit a written recommendation. However, the employer may require an oral presentation in addition to the written recommendation. Let's take a look at one effective written format.

Sample Written Recommendation

I. Description of the problem

All "homemade" guardrails on in Warehouse #2 are defective.

II. History of the problem

- a. Three years ago an employee fell through one of the homemade guardrails. The employee suffered a broken right leg. Annual workers' compensation premiums increased \$_____, and unbudgeted indirect costs were \$_____ as a result of the previous disabling claim.
- b. The safety committee identified this hazard shortly after the accident and submitted a recommendation to repair the section of guardrail that broke through at a cost of \$_____. There is no record of a response to this recommendation in subsequent safety committee minutes.

III. Causes analysis

- a. **Surface cause(s).** Although the guardrails were identified three years ago by the safety committee for repair, the action was not funded. Subsequent quarterly safety inspections failed to uncover the uncorrected hazard.
- b. **Root cause(s).** Corrective action has not been funded due to inadequate budgetary policy regarding safety related items. Inadequate hazard monitoring/tracking procedures.

V. Recommendations and estimated investment

- a. **Engineering controls.** Install a new guardrail system in compliance with OR-OSHA safety and health rules. Estimated cost: \$_____. \$_____ in wages. Time required for replacement: 8 hours. Maintenance supervisor has necessary resources to commit to installation within one day of notification that the new guardrail system has arrived. Purchasing has order for guardrail ready for signature (see attach) Recommended correction date: Immediately.
- b. **Management controls.**
 - Develop and carry out new policy that instructs employees not to work on platforms unless absolutely necessary until guardrails are installed. Document management review of inspection reports. Estimated cost: \$_____ for time required to review documents.

- Develop and carry out policy that establishes reasonable response times to recommendations. Cost: \$_____/year for training and monitoring/review of procedures. Recommended action date: Immediately.
 - Scheduling. Develop and carry out policy that requires workers to take required 15 minute breaks at the required times. Estimated cost: \$_____. Recommended action date: Immediately.
- c. **Personal Protective Equipment.** Fall restraint system should be used by workers on platform until guardrails are installed. Cost: \$_____ for equipment, \$_____/year for training and monitoring use of equipment. Recommended action date: Immediately.
- d. **Interim measures.** Improve the stability of current guardrails.

IV. Costs associated with failure to implement recommendation(s)

- a. **Fiscal.** Elimination of possible accident(s). Corrective action will result in elimination of the risk of the following potential accidents in the foreseeable future.
- Struck by falling object. Average direct accident cost for this accident is \$9,851. Estimated indirect cost \$_____. Total estimated accident costs resulting from corrective actions = \$_____
 - Fall from elevated platform. Average direct accident cost for this accident is \$15,668. Estimated indirect cost \$_____. Total estimated accident costs resulting from corrective action is \$_____.
 - Fatality. If either potential accident results in a fatality, estimated direct costs will approach \$_____. Estimated indirect costs may be as high as \$ _____. Total estimated accident costs resulting from a fatality is \$_____.
- b. **Legal** - The homemade guardrails do not meet OR-OSHA rule requirements (see appendix). Since management has prior knowledge of this hazard, failure to take action at this time may result in a willful violation Cost: (Serious violation \$300-\$5,000 Willful = \$5,000 - \$70,000).
- c. **Risk.** Exposure - Twelve employees work in the area throughout an 8-hour shift. Five employees routinely work on the platform. Approximately 30 employees walk through the hazard area each day. Probability - It is likely that one of the above accidents will occur within the next year. There was a near miss six months ago when an employee was nearly hit by a falling container. Severity - Serious physical harm or death.

Section V. Summary of Benefits

- a. **Total potential direct and indirect accident costs.** Serious Injury \$_____ (Does not include possible OSHA penalties) Fatality \$ _____
- b. **Total investment.** Option 1 \$_____ Option 2 \$_____ Option 3 \$_____ All Options \$ _____

c. **Returns, Payback Period, Replacement Business Volume**

Option 1: ROI = _____% Payback Period = _____ Replacement BV \$ _____

Option 2: ROI = _____% Payback Period = _____ Replacement BV \$ _____

Option 3: ROI = _____% Payback Period = _____ Replacement BV \$ _____

d. **System improvement.** Revising purchasing policy for personal protective equipment will ensure that only quality ppe is purchased in the future. Assigning ppe purchasing authority to line supervisors appropriately places accountability for this responsibility on line managers. Improving the fall protection training plan so that it includes information on fall protection systems will increase general knowledge and skills in using fall protection. Strengthening training documentation by including statements of understanding and compliance will improve accountability and auditing.

e. **OSHA compliance.** In compliance with Oregon OSHA standards thereby avoiding potential penalties.

f. **Morale/Welfare.** Implementing these recommendations will improve morale and increase the overall welfare of our employees.

Prepared by _____ Date _____
U.R. Swift 2-19-2003

Section VI. Action Items:

Actions taken:

_____	Responsible Person _____	Correction Date _____
_____	Responsible Person _____	Correction Date _____
_____	Responsible Person _____	Correction Date _____

Approved by _____ Date _____
Joe B. Safe 2-19-2003

cc: President Safety Director Safety Committee Chair Safety Bulletin Board

Appendices:

Attachments:



Let's review!

1. The purpose of an effective recommendation is to primarily...
 - a. inform the employer about options
 - b. persuade the employer to take action your suggestions
 - c. hold the employer accountable for compliance with Oregon OSHA
 - d. respond to employee complaints

2. Match the term on the left with the statement.

___ Steak	a. The recommendation is included in our safety committee minutes.
___ Style	b. You'll realize a 5000% return on the investment!
___ Sizzle	c. The safety committee requires more time to conduct inspections.

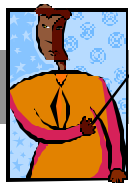
4. All of the following will help develop an effective recommendation except?
 - a. Emphasizing the ROI and Payback Period.
 - b. Emphasizing personal weaknesses.
 - c. Including system fixes as well as corrective actions.
 - d. Writing a clear problem statement with justification.

5. The employee perceives correcting a hazard as an _____ while management may see it as a _____.

6. Risk is a function of _____, _____, and _____. Hint:
R=f(eps)

7. True/False Safety committee recommendations may be submitted in writing or presented orally.

8. True/False I'm going to use this information to develop great recommendations!



Presenting the Recommendation (8-hour Class)

❑ Preparing for presentations

1. Develop an outline created from the recommendation that has the priority items highlighted.
2. Plan on one hour of development time for each minute of presentation time. The total time should be broken down into two segments. The first should take up to 2/3 of the time and is for the formal presentation of information. The remaining time should be a question and answer period.
3. Develop the visual aids needed to support the proposal.
4. Draft a rehearsal script of the presentation.
5. Practice giving the presentation. First, practice alone to get familiar with the content and make necessary revisions. Next, practice with an observer who can provide constructive feedback.
6. Make an appointment with the “signing authority” or manager. Ask for a specific amount of time, explain the purpose, and emphasize the importance.
7. Plan equipment set-up, visual aids, etc. and coordinate access to the presentation location prior to the appointment time.
8. Arrive early and make sure the equipment is ready. Make sure that the formal presentation starts and ends on time. Allot time after the presentation to answer any remaining questions.

❑ After the presentation

1. Once the presentation is over and the questions have been answered, ask if the manager can commit to a change order right away. If a commitment is not achieved, ask if there is any other information that you can get to help in the process.
2. If the manager indicates that it will take some time to review the recommendation, request a follow up meeting and try to get it scheduled prior to leaving.
3. Thank the manager for his/her time and consideration.
4. Report back to the safety committee.

Exercise: Write and present your recommendation

Instructions:

1. With the information developed in the previous scenarios, develop a written recommendation.
2. Present your recommendation to the class.

I. Description of hazard and/or behavior:

Condition _____

Behavior _____

II. Analysis of the problem

Conditions/behaviors/actions producing the problem:

System weaknesses that produced or allowed the problem:

Inadequate Implementation _____

Design Defects _____

III. History of the problem

IV. Impact of the problem:

Injury/Illness _____

Accident costs _____

Exposure _____

Probability _____

Severity _____

V. Recommended corrective actions and/or system improvements:

Engineering controls

Option 1 _____

Option 2 _____

Work practice/Administrative Controls

Option 1 _____

Option 2 _____

Personal Protective Equipment

Option 1 _____

Option 2 _____

System Improvements

Implementation:

1. _____

2. _____

3. _____

Implementation:

1. _____

2. _____

3. _____

VI. Benefits:

Derived from corrective actions: _____

Derived from system improvements: _____

VII. Conclusion:

ROI: _____

Prepared by: _____ Date: _____

Actions taken:

Approved by: _____ Date _____

- cc: President
- Safety Director
- Safety Committee Chair
- Safety Bulletin Board

Appendix



<http://www.osha.gov/dts/osta/oshasoft/index.html#eTools>

\$ A F E T Y P A Y S ! OSHA Advisor

Estimated Costs of Occupational Injuries and Illnesses and Estimated Impact on a Company's Profitability

Report for Year: 1999
 Employer: XYZ Inc
 Prepared by: I. B. Safe, Safety Coordinator, on January 28, 2000

The injury or illness selected: Strain

Average Direct Cost:	\$5,945
Average Indirect Cost:	\$7,134
Estimated Total Cost:	\$13,079
The net profit margin for this company is	4 %
The ADDITIONAL sales necessary	
- to cover Indirect Costs are:	\$178,350
- to cover Total Costs are:	<u>\$326,975</u>

SAFETY PAYS is a tool developed by OSHA to assist employers in assessing the impact of occupational injuries and illnesses on their profitability. It uses a company's profit margin, the AVERAGE costs of an injury or illness, and an indirect cost multiplier to project the amount of sales a company would need to generate in order to cover those costs. Since AVERAGES are used, the actual costs may be higher or lower. Costs used here do not reflect the pain and suffering of injuries and illnesses.

The cost of injury and illness data were provided to OSHA by Argonaut Insurance Company and based on 53,000 claims for 1992-94.

The TOTAL ADDITIONAL SALES required by these 3 incidents is estimated to be between:
\$326,975

**OSHA Hazard Awareness Advisor, Version 1.0
 September, 1999**

OSHA's Hazard Awareness Advisor is powerful, interactive, expert software. It will help you (especially, small businesses) identify and understand common occupational safety and health hazards in your work place. It will ask you about activities, practices, materials, equipment, and policies at your work place. Then, it prepares a **unique, customized** report that briefly describes the likely hazards and the OSHA standards which address those hazards. The Hazard Awareness Advisor:

- asks questions about workplace activities, equipment, materials, etc.,
- analyzes your answers with expert decision-logic,
- alerts people in General Industry to common occupational hazards,
- explains briefly the nature of those hazards,
- points out applicable OSHA standards,
- identifies Consultation Offices for the user's state, and
- provides definitions of keywords and phrases via a "keyword" button.

Recommendation Worksheet

Problem:

Condition - (Hazardous, other) _____

Behavior/activity - (Unsafe, inappropriate, other) _____

Negative Impact of the problem (possible accident, other) _____

Cost Estimates: (Direct, Indirect, other) \$ _____

Risk: Exposure _____ Probability _____ Severity _____

Recommended Corrective Action(s):

Engineering controls - _____
_____ Investment - \$ _____

Work Practice controls - _____
_____ Investment - \$ _____

Administrative controls - _____
_____ Investment - \$ _____

Personal Protective Equipment - _____
_____ Investment - \$ _____

Recommended System Improvement(s):

Implementation (corrects failure to carry out policies, plans, etc): _____
_____ Investment - \$ _____

Design (improves written policies, plans, etc): _____
_____ Investment - \$ _____

Benefits: Return on the investment (ROI = $\frac{\text{Total Accident Costs}}{\text{Investment}} \times 100 =$ _____ %)

Here's a shorter example of an excellent recommendation submitted by a an Oregon OSHA Internet Course 100 graduate, Dianna G.

1) Problem: The guard rail in the warehouse has deteriorated to a point that it is unable to support any weight on it.

2) History: We had an incident on 6/13/99 where Joe Blow almost fell down the 10 steps because the guard rail did not support his weight. He fortunately caught himself before falling. We had a second near miss incident on 9/18/99 when Jane Doe tripped going up the stairs and grabbed for the rail which did not support her. Again, fortunately she caught herself before falling.

3) Options to correct problem: We have attempted to tighten and brace the rail but it continues to work itself loose. We took bids to replace the rail and the bids ranged from a high of \$3,200 to a low bid of \$1,500. We believe the xyz brand for \$2,000 will prove to be the best material for our facility. The disadvantage to the lowest bid of \$1,500 was it would not be guaranteed for outside weather conditions.

4) We budgeted "x" for off-site training classes and have secured a source for on-line no-cost training through OSHA which could save "X" dollar that could be applied toward part of the cost of the guard rail.

5) Cost/Benefit:

ROI. Average cost of a severe injury in Oregon is \$9,700 which is very possible if one of our employees should fall from the second story of the warehouse to the concrete pad below. The estimated indirect cost is \$17,500. Total accident cost is estimated to be \$27,200. ROI will be approximately 1,360 percent!

Payback Period. I estimate that the probability of an accident occurring within the next two years as a result of this hazard is very high. Therefore, the payback period is based on 24 months. Our cost for corrective action is \$2,000 and the pay back period would, therefore, be less than 2 months (\$1,133/month.) .



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