Words and their meaning

Hazard, Danger, Safe and Risk

Compare and contrast the meaning of each using a lay person's sensibility. Asbestos is a hazardous substance. People might say street racing is a dangerous activity and that we live in a safe city. What does this mean and how does it relate to risk???
In Canada environmental, health and safety regulations are promulgated Provincially.

Obligations of employers, workers, etc.

2(a) Every employer shall ensure, as far as is reasonably practicable for the employer to do so,

(a) the health and safety of

(ii) workers engaged in the work of that employer; and

(ii) those workers not engaged in the work of that employer but present at the work site at which that work is being carried out; and

(b) that the workers engaged in the work of that employer are aware of their responsibilities and duties under this Act, the regulations and the adopted code.

This is the written requirement of the Occupational Health and Safety Act in Alberta.

OH&S Management is a General Duty of Employers

This is the written requirement of the Occupational Health and Safety Act in PEI too!

Select Controls following the Hierarchy of Controls

If you have managed the hazards have we also managed the risk?
Question of the day?

If you have managed the hazards have we also managed the risk?

Hazards don’t kill employees at work. Risk does!!!

What is this asking us to do? Control Hazards or Manage Risk??

What is a Hazard?

A hazard is any source of potential damage, harm or adverse health effects on something or someone under certain conditions at work.

A hazard is a condition or physical situation with a potential for an undesirable consequence, such as harm to life, limb or the environment.

National Safety Council Definition

A hazard is an unsafe condition or activity that, if left uncontrolled, can contribute to an unintentional injury or illness.

Before hazards can be controlled, they must be identified. This identification of hazards can be accomplished through a systematic hazard analysis program that includes job safety analysis (or hazard assessment), inspection, measurement and testing, and incident investigation.

What Hazards are we Exposed to?

Examples of Hazards and Their Effects

<table>
<thead>
<tr>
<th>Workplace Hazard</th>
<th>Example of Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thing</td>
<td>Circular Saw</td>
</tr>
<tr>
<td>Substance</td>
<td>Carbon tetrachloride</td>
</tr>
<tr>
<td>Material</td>
<td>Crushed rock</td>
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<tr>
<td>Source of Energy</td>
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<tr>
<td>Condition</td>
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<td>Process</td>
<td>Welding</td>
</tr>
<tr>
<td>Practice</td>
<td>Asbestos mining</td>
</tr>
</tbody>
</table>
What is a Hazard Assessment?

List:
1. Occupations/Positions from Org Chart
2. Jobs of each occupation/position
3. Tasks of each job
4. Steps of each task
5. Hazards of each step
6. Controls for each hazard

Voila! The Hazard Assessment is complete!

Select Controls following the Hierarchy of Controls

- Elimination is the first order control required by the Code
- Engineering or Administration are the second and third order controls required by the Code
- PPE is recommended as the last resort

Example

Asbestos removal in the mechanical room of an operating hospital.

What are the hazards?
What controls do we employ?

What Risks are we Exposed to?

Example of Risks
- Cut
- Kidney disease
- Silicosis
- Burns
- Slips, trips and falls
- Metal fume fever
- Mesothelioma/Asbestosis

What is a Risk?

Risk is the chance or probability that a person will be harmed or experience an adverse health effect if exposed to a hazard. It may also apply to situations with property or equipment loss.

What is a Risk Assessment?

A risk assessment consists of identifying hazards and analyzing and otherwise evaluating the risks associated with exposure to those hazards after controls have been employed.

This risk assessment process begins with a well-defined description or definition of the risk.
Simplified Risk Assessment

**ASK THE SIMPLE RISK QUESTIONS!**

Why — am I doing it at all?
What — could it go wrong?
How — could it affect me or others?
How — likely is it to happen?
What — can I do about it?

Example

Asbestos removal in the mechanical room of an operating hospital

Asking these three fundamental questions:
What can go wrong?
What is the likelihood or probability that it will go wrong?
And what are the consequences (severity) if it does go wrong?

Operational Risk versus Occupational Health and Safety Risk

Operational Risk Management (ORM) is a decision-making tool to systematically identify operational risks and benefits and determine the best course of action for any given situation.

OHS Risk Management is an ORM specifically targeted towards OHS-type risks.

A Risk Assessment Matrix

<table>
<thead>
<tr>
<th>Impact</th>
<th>Risk Management Actions</th>
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<tr>
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Risk Posture

**Risk Averse**
Government, health & chemical industries

**Risk Seeking**
Most businesses
Leading edge companies
Venture capitalists, entrepreneurs

**Definitions**
1. A company’s ability to accept (or handle) exposure to defined levels of uncontrolled risk.
2. Is the relative ability to accept a specific level of uncertainty with respect to negative outcomes to its business associated with well defined work activities
What Jobs Result in Accidents?

"Jobs with high task demands and little control over how the tasks are to be completed are the most likely to result in employee disability."

Is it risk that causes these accidents or inadequate hazard control??

Put another way:
Workplace accidents and incidents occur where the work processes to follow to complete the work have been:

1. Poorly designed or communicated; or where
2. Supervision and employee motivation to follow the procedure is low.

OH&S Management

In the simplest form OH&S Management can be considered to made up of these four basic elements:
- Management leadership and employee involvement
- Hazard prevention and control
- Worksite analysis
- Training

Health and Safety Management Systems

Health and Safety Management Systems are directed at Loss Control

Loss control is about:

Recognition; Evaluation; Elimination; and Control of the destructive effects of workplace hazards.

OH&S Program Elements
**Principles of Loss Control**

The primary function of a loss control system is to:

- Locate;
- Assess; and
- Set effective preventative and corrective measures

for those elements detrimental to operational efficiency and effectiveness.

**Causes of Losses**

Occupational hazards are a result of:

- Human errors;
- Situational aspects; and
- Environmental aspects; of the work and workplace.

---

**Components of a Workplace Health and Safety Program**

- Company policy and management commitment
- Worker qualifications, orientation and training
- Hazard identification
- Hazard control
- Ongoing inspections
- Emergency response
- Incident investigation
- Program administration

**Elements of an OHS Program**

1. Leadership and Administration
2. Leadership Training
3. Performance Observation
4. Hazard Control
5. Injury and Illness Prevention
6. Equipment Maintenance
7. Emergency Procedures
8. Personal Protective Equipment
9. Critical Task Analysis
10. Hazard and Risk Control
11. Risk and Safety Communications
12. Leadership and Management
13. System Evaluation
14. Engineering and Design
15. Change Management
16. Training and Development
17. General Prevention
18. Ongoing Management
19. Occupational Health and Safety
20. Off-The-Job Safety
21. ________
22. ________
23. ________
24. ________

---

**What is the value of COR?**

In Canada environmental, health and safety regulations are promulgated Provincially.

**Does it mean we have met the Provincial Regulations?**

- Yes
- No

---

OCCUPATIONAL HEALTH AND SAFETY ACT, REGULATION AND CODE OF ALBERTA
Does it mean we have managed risk?

Hazard Versus Risk

Example

Asbestos removal in the mechanical room of an operating hospital

What are the risks?

Asking these three fundamental questions:

What can go wrong? What is the likelihood or probability that it will go wrong?
And what are the consequences (severity) if it does go wrong?

What are we going to do about it?

Hazard Versus Risk

Hazard versus Risk

Hazard Assessment and Hazard Management is low level and task related and asks: how are we going to get this job done?

Risk Assessment and Risk Management is higher level and operational and asks: how do we run our business?

We need a stronger focus RISK!!!

Hazard Control Strategies

Hazard Assessment and Hazard Management is:

1. Identification
2. Hazard Analysis
3. Risk Assessment
4. Risk Control
5. Record Keeping

Risk Management

Code Compliance and Hazard Control

Occupational Health and Safety Management Systems (OHSMS)

Hazard versus Risk

Hazard does not equal Risk

HAZARD

Anything that can cause harm (e.g., chemical, electricity, ladders, etc.)

RISK

How great the chance that someone will be harmed by the hazard

Elimination is the first order control required by the Code

Engineering or Administrative are the second and third order controls required by the Code

PPE is recommended as the last resort

No Codified requirements related to Risk! Huh? Why not???
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Hazard versus Risk

Examples of Hazards and Their Effects

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Integrated risk measurement and management can produce value, where the results are meaningful

- Risk assessment is feasible and practical, but must be implemented only after one fully understand the meaning of the word risk and the technical challenges.
- Control assessment is feasible and practical, but must only be implemented after one understands the how to make a subjective process more objective.
- Integrated risk and control assessment or measurement promotes educated decision making, which in turn facilitates prudent risk management and can contribute to the creation of a good risk culture.

Risk Control Strategies

See-Saw of Risk Communication
## Hazard Versus Risk

### Impact vs. Risk Management Actions

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### Risk Control Strategies

- **Transfer**
- **Treat**
- **Tolerate**
- **Terminate**

### Risk Control Strategies Chart

- Impact vs. Likelihood graph showing different risk control strategies:
  - Transfer (high impact, low likelihood)
  - Treat (medium impact, medium likelihood)
  - Tolerate (low impact, high likelihood)
  - Terminate (very low impact, very high likelihood)
Risk Posture Reappears

Question of the day?
If you have managed the hazards have we also managed the risk?

Hazard Versus Risk?
Why is this cartoon funny?

Questions??
Please feel free to contact me directly

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