

ST020 RISK MANAGEMENT



SAFETY COMPLIANCE

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PREPARATION

Before commencing this talk it is recommended that you have the following items on hand:

- 10 Rapid Ranking Cards;
- a JHA form; and
- a sample of the Safe Work Procedure.

INTRODUCTION

An objective for all companies should be to provide a consistent mechanism for the risk management of all its activities, in order to reduce the likelihood and impact of mishaps of all kinds.

If you want to make a safe workplace, you need to know how to identify hazards and assess the risk associated with the tasks to be performed.

The identification of hazards fits into our overall safety management program as one method of reducing the risk of injury and equipment damage.

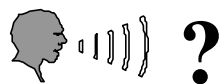
There are many types of hazards in and around the workplace. Some are fixed, others are obvious, and many are hidden and developing. We need to identify all types of hazards and take the appropriate steps to reduce the risk or, if possible, to eliminate the hazard.

LEARNING OUTCOMES

By the end of this talk you will understand:

- hazard and risk;
- types of hazards;
- categories of hazards;
- risk assessment; and
- the best way to deal with hazards.

HAZARD AND RISK



“How would you define the terms “hazard” and “risk”?”



Hand out sheet 1 – Defining a hazard and risk



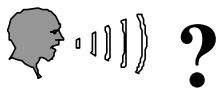
In simple terms:

- a **hazard** is a source of energy, or a condition, or a situation that exists in the work environment that has the potential to cause injury or illness.
- **risk** is a measure taking into account both the probability and potential consequences of a hazard resulting in injury or illness.

RISK ASSESSMENT REQUIREMENTS

One of the responsibilities of Management and Supervision is to conduct risk assessments.

We have four basic criteria for establishing when a risk assessment is required.



“Can you name two of the criteria for establishing if a risk assessment is required?”



Hand out sheet 2 – Criteria for establishing risk assessment



The basic criteria for establishing risk assessment is:

- when a project has not undertaken a formal risk management program to identify the principle risk management issues;
- when there are a number of risks present or introduced that make it necessary to apply risk priorities in an organised way;
- when there is a risk which could have serious consequences, and where control measures are unclear; and
- where there is a planned change to equipment, machinery or a particular process.

PROJECT RISK ASSESSMENT

Establishing the Team

After establishing the requirements, risk assessment team/s should be formed to segregate the tasks and perform the risk rating. The purpose of this phase is to identify the activities actually taking place, and their respective risk level.

When selecting the teams, a number of things should be taken into account.



“Can you give me some examples of the things to take into account when selecting the team?”



Hand out sheet 3 –Selecting the team



When selecting the team, take into account the following:

- anyone can identify hazards;
- no single person has complete knowledge;
- some people may have tunnel vision; and
- a team with a range of experiences and backgrounds will produce better results.

Segregation of Activities

To systematically identify the hazards that exist on a project, the activities must be subdivided. This means that the project is broken down into individual, specific activities.

There are a number of documents or processes that may prove helpful when segregating activities.



“Can you give me some examples of documents or process that may assist in segregating activities?”



Hand out sheet 4 – Segregating activities



The documents and processes for segregating activities include:

- the mining or construction program;
- a walk-through survey;
- job instructions;
- the contract document; and
- team brainstorming.

HAZARD IDENTIFICATION

Before we look at how to assess the risk associated with hazards, we need to look at the types of hazards that may exist.

Types Of Hazards

There are three types of hazards - visible, hidden and developing.



“Can you give me some examples of a visible hazard?”



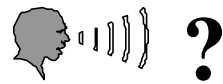
Hand out sheet 5 – Types of visible hazards



Visible hazards are the obvious defects that can be readily seen and identified by inspection.

Examples of visible hazards are:

- untidy housekeeping;
- missing machine guards;
- broken or damaged ladders;
- “blown” or missing lights; and
- missing or damaged fixtures.



“Can you give me some examples of a hidden hazard?”



Hand out sheet 6 – Types of hidden hazards



Hidden hazards are not readily seen without your attention being prompted. For example, inspecting a crane requires specialist knowledge to detect these hazards.

In many instances the use of a well-defined checklist can prompt you to inspect the not so obvious.

Examples of hidden hazards are:

- toxic/asphyxiating gases;
- vapours inside a confined space; and
- emissions from a radioactive source.



“Can you give some examples of a developing hazard?”



Hand out sheet 7 – Types of developing hazards

Developing hazards are the type of hazard which, if not fixed, could become worse. They may also represent a hidden hazard.

Some examples of developing hazards are:

- building and structural damage due to vibration or moisture;
- corrosion and weathering of metal components;
- exposure to constant noise which is above the recommended levels;

- abnormal wear and tear on critical parts of machinery, plant and equipment; and
- deterioration from ultra-violet radiation or chemical reaction.

You may think your inspection effective because you have made a list of obvious or visible hazards you can fix, but you could be missing the hidden or developing hazard.

We can demonstrate how this could happen by using a portable electric drill as an example.



“What are three visible hazards associated with a drill?”



Hand out sheet 8 – Visible hand drill hazards



We may see a:

- cracked outer casing;
- split or heat damaged power cord insulation; or
- bent plug pins.

There are other potential hazards that may go undetected if the drill is not inspected more closely.

Double-insulated tools are built so the inner electrical parts are isolated physically and electrically from the outer casing.

Particles of dirt and foreign matter generated from drilling can enter the outer casing through the cooling vents and become lodged between the two shells.

Once this happens the double insulation no longer exists. Close inspection of the casing and cooling vents could reveal accumulated material.

If you have any doubts **check when the drill was last serviced** or **have the drill serviced** so as to eliminate any hazard. This is an example of a **developing hazard**.

CATEGORIES OF HAZARDS

In mining and construction, experience shows that major incidents arise from a core group of hazards. It is the team's role to determine whether these core hazards exist within the defined activities.

To help you identify hazards, they are grouped into five (5) core categories.



“Does anyone know what these are?”



Hand out sheets 9 – Core hazard categories



Core hazards are:

- gravitational;
- electrical;
- chemical (e.g. exposure to cyanide, acids, caustic soda, lead);
- being struck by or against something; and
- work environment (noise, vibration, temperature).

This is the most critical step as we cannot determine the risk level, or manage the hazards, if they are not identified.

Within these core categories there will be visible, hidden and developing hazards. We should try to identify and correct all hazard types and categories.

DETERMINING THE RISK LEVEL

Assessing The Risk

Once we have identified a hazard, it needs to be assessed for the probability of causing injury, harm or loss.

Identification of the hazard is only part of the task. As each hazard is identified an assessment of the level of risk is critical.



“Does anyone remember the definition of risk?”

- **Risk** is a measure, taking into account both the probability and potential consequences of a hazard resulting in injury or illness.

The process to be applied in assessing the risk is known as the **Rapid Ranking Method**

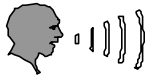
Using Rapid Ranking

We need to analyse the probability and possible consequence of a hazard and the likelihood of the hazard resulting in injury, harm or damage. By doing this we can identify the things we need to fix immediately and those we can schedule to fix later.

A risk rating can be given to each hazard based on the probability and possible consequence.

Risk can be grouped into four general **severity** categories:

- high risk hazards,
- significant risk hazards,
- moderate risk hazards; and
- lower risk hazards.



“What would be an example in each category?”



Hand out sheet 10 – Risk categories



Some **high risk** examples are:

- fatality;
- permanent disability;
- loss of body part; or
- more than \$500,000 damage and/or large reorganisation of the project, or major environmental damage.

Some **significant risk** examples would be:

- serious lost time due to injury or illness; or
- property damage between \$100,000 and \$500,000 and/or a project contingency plan required, or serious environmental damage.

Some **moderate risk** examples would be:

- disabling or short-term lost time injury; or
- property damage between \$50,000 and \$100,000 and/or production disruption, or reversible environmental damage.

Some **low risk** examples would be:

- minor medical treatment of first aid injury or illness; or
- non-disruptive property damage between \$5,000 and \$50,000.

Now we have an understanding of the risk categories, we can use the **Rapid Ranking Card** to determine the risk rating.

You need to use your judgement, together with accident/incident histories, as to the likelihood of something happening. You need to consider how often people are exposed to the hazard and the consequences of any loss or injury resulting from the hazard.

The assessment can be done individually or as a group. If individual assessments are used, the results are recorded. Then a group average, or a group consensus, is used to agree on the final risk category.

THE ASSESSMENT PROCESS

The assessment process is in three (3) steps.



Hand out sheet 11 – Probability and consequence chart



The first step in the process is to determine the **consequence**.

This is done by selecting the most likely consequence from the 1 to 5 ranking options on the card.

The second step is to determine the **probability**.

The probability is ranked from A to 5.



Hand out sheet 12 – Risk assessment calculator chart



The third step, after determining the probability and consequence, is to establish a matrix code (i.e. A3). The code is then applied to the **Risk Calculator** to determine the risk level.

The final result of the risk assessment is the **Severity Score** (High, Significant, Moderate, Lower) and a **Ranking Score** (1 –25).

Note: The presenter should, at this point, use a real, current Company case study example to reinforce the method of use.

USING THE RESULTS OF RISK ASSESSMENTS

It is important to recognise that it is not possible to remedy all problem areas at once. The ranking score is to be used to prioritise efforts, focussed on controlling hazards and reducing the risk.

Do not commence any task identified as having **High** or **Significant** risks unless:

- a JHA or Format Procedure has been developed;
- the employees involved in the activity have been trained in the specific JHA;
and
- the control measures listed in the JHA are in place.

DEALING WITH HAZARDS

After identifying a hazard, whether it is identified during a **Project** risk assessment or it is a **Specific** hazard assessment reported by an employee, we need to fix it or put in place controls that minimises the risk of exposure.

A method of control must be selected and applied to each hazard.

The important thing is to select the most practical and effective method.

There are five main methods of controlling hazards.



“Can anyone suggest what these are?”



Hand out sheet 13 – Dealing with hazards



The five methods of control are:

- substitution;
- separation;
- engineering;
- administrative; and
- Personal Protective Equipment

Substitution or separation means removing the hazard, or practice, altogether.

Engineering means to isolate, enclose and contain the hazard.

Administrative controls are things like Isolation and Lock Out.

Personal Protective Equipment should be seen as the “last line of defence” against hazardous situations. It should only be considered if all other methods are impractical.

It is common to use a number of methods together to control and eliminate hazards.

RISK ASSESSMENT SPECIFIC HAZARDS

It is possible that not all hazards will be identified during the project risk assessment. Also, the dynamic nature of our business results in frequent changes to the work environment.

Each time a hazard is identified, use the Risk Assessment Process. The process helps determine the elements for analysis



“Can you tell me what these elements are?”



Hand out sheet 14 – Elements of analysis



These elements of analysis include:

- who is exposed to the hazard;
- who is responsible for managing the hazard;
- who is best placed give technical advice;
- who is best placed to give procedural advice;
- who is best placed to give advice on the behavioural components; and
- who is involved in correcting and controlling the hazard.

SUMMARY

During this talk we have discussed:

- hazard and risk;
- types of hazards;
- categories of hazards;
- risk assessment; and
- the best way to deal with hazards.

Your employer is committed to managing and controlling risk. We rely on project risk assessment and on all employees reporting an ongoing basis hazard in the workplace.

There are three types of hazards - visible, hidden and developing. We must identify all types if we are going to control the hazards.

We have discussed the use of the Rapid Ranking Card. This is the principle tool in categorising the risk and prioritising the actions.

Remember, any task identified as a having **High** or **Significant** risks shall **not** commence unless:

- a JHA or Format Procedure has been developed;
- the employees involved in the activity have been trained in the specific JHA;
and
- the control measures listed in the JHA are in place.

FURTHER REFERENCES FOR THE SUPERVISOR/PRESENTER

Practical Loss Control Leadership – F.E.Bird, Jr & G.L.Germain

Accident Prevention Manual for Business and Industry
(National Safety Council USA)

Worksafe Guidelines - General Duty of Care

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