MSMWHS201

Conduct Hazard Analysis

Learner Guide Instructions

Who is this document for?

The learner.

What is in this document?

- Course information that matches the PowerPoint presentation.
- Review questions.
- Practical assessment instructions for learners.

What do you need to do before you use it for the first time?

1. Rebrand the document.
2. Review the document as part of your validation process.
3. Set the reading and test time limits that are highlighted in pink at the end of the document.

See the 'Read Me First' document for a complete set of instructions on how to use these resources.

LEARNER GUIDE

MSMWHS201

Learner Name:	
Learner ID:	
Learner Contact Number:	
Learner Email Address:	
Date Training Commenced:	

This Book Contains:

- ☐ Course Information.
- ☐ Review Questions.
- ☐ Practical Assessment overview and instructions.

Table of Contents

1.1 Introduction

This course is based on the national unit of competency **MSMWHS201 Conduct Hazard Analysis**. You will learn how to conduct and record the details of a hazard analysis process.

This process typically forms part of:

- Job Safety Analysis (JSA).
- Job Hazard Analysis (JHA).
- Job Safety and Environmental Analysis (JSEA).
- Safe Work Method Statement (SWMS).

These materials do not cover simpler routine hazard checks, such as 'Take 5', 'Step Back 5x5', five step or similar.

1.1.1 What is a Hazard Analysis?

A Hazard Analysis is a process where all of the dangers associated with a specific job (and/or location) are identified and appropriate controls are selected to reduce the chance and degree of damage or harm.

1.1.2 Definition of Hazards and Risks

A **Hazard** is a thing, situation or event that has the potential to cause injury, harm or damage.

A **Risk** is the chance of a hazard causing damage, and how much damage will occur. When analysing risk we often talk about likelihood (what is the chance of an event) and consequence (how bad the outcome of the event will be).

If you can remove or manage a **Hazard** you can reduce the **Risk** involved in doing the job.

1.1.3 Why Conduct a Hazard Analysis?

This might be done as an independent activity in order to identify hazards and the appropriate hazard controls, or it might be done as part of a broader process, such as identifying and applying for the permits required for a job.

The conducting of a hazard analysis may be required under a safety case, by organisation procedures or simply as being good practice.

1.2 Prepare for Hazard Analysis

There are a few different reasons that a hazard analysis might need to be done. These could include:

- A routine hazard analysis for a work area.
- A hazard analysis for a specified job.
- A hazard analysis to gather information for permits to be issued.
- Other purposes defined by organisation procedures including investigations, safety audits and procedure reviews.

Depending on the reason or purpose for the hazard analysis there will be a specific scope of investigation. This means you will be focussing on a particular location, job or piece of equipment and analysing the hazards relating to it.

It is important to remember that some jobs will have an impact on the surrounding area which you will need to consider during the analysis process.

1.2.1 Access Hazard Analysis Procedures

To make sure you check and record everything in the hazard analysis process you will need to access and follow the relevant procedures.

Procedures may be:

- Written instructions.
- Verbal instructions.
- Computer based systems.

Types of procedures that require hazard analysis include:

- Permit control systems.
- Emergency procedures.
- Work instructions.
- Standard operating procedures (SOPs).
- Safe work method statements (SWMS).
- Temporary instructions.
- Any similar instructions provided for the smooth running of the workplace.

Each of these procedures will outline the details and approach that needs to be taken (and information to be recorded) throughout the hazard analysis process.

The most common method is to use a form that steps you through each part of the process and prompts you to record the details of what you found, did or who you consulted with.

1.2.2 Identify Sources of Specialised Knowledge to Assist in Hazard Analysis

It is impossible to effectively conduct a hazard analysis without knowing everything about the job, equipment or location. In most cases you will need to identify sources of specialised knowledge and expertise relating to the scope of the analysis.

You can access this expertise from:

- The person doing the job.
- An internal or external technical specialist.
- A health and safety expert.
- Other operational personnel.
- Literature or internet information.
- Incident and other records.
- Risk register.
- Other knowledge resources of the organisation.

It is important to talk to other personnel about risk management because:

- Other personnel may be affected by the hazards or hazard controls.
- Other personnel may need to organise resources for you.
- Other personnel may know how the situation should be handled.
- Other personnel may need to sign-off on any action you want to take.

1.2.2.1 Regulatory Information

You may need to access official information to make sure you are identifying all of the hazards relating to the analysis. This information will also provide guidelines on how to respond to the presence of hazards once identified.

Some examples of regulatory information are:

- Legislative requirements, including work health and safety (WHS) regulations at both national and state levels.
- Industry codes of practice and guidelines.
- Environmental regulations and guidelines.
- Australian and other standards.
- Licence and certification requirements.
- Dangerous Goods regulations.
- Hazardous substances regulations.
- Hazardous Substances Information System.

- Major hazard facility requirements (if relevant).
- AS 2865-2009 Confined spaces.
- AS 1674 Set-2007 Safety in welding and allied processes (covers all hot work).
- AS 4024.1-2014 Series - Safety of machinery.
- AS/NZ 1715:2009 Selection, use and maintenance of respiratory protective equipment.
- National Standard for Plant [NOHSC:1010 (1994)].
- National exposure standards for atmospheric contaminants in the occupational environment [NOHSC:1003 (1995)].
- ISO 31000:2009, Risk management – Principles and guidelines (provides principles, framework and a process for managing risk).

Review Questions

1.	Why would you need to conduct a hazard analysis? Give 3 reasons	☐

1.

2.

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2.	What formats are hazard analysis procedures available in?	☐

3.	Where can you source specialised knowledge from?	☐

2.1 Identify Hazards Associated with the Job

To successfully identify all of the hazards associated with a particular job you will need to look at each part of the job in detail and gather information from reliable sources.

2.1.1 Break Down the Job

The job needs to be broken down into each individual step from start to end so that you can investigate each part in detail.

Below is an example of the steps to complete a job:

Safe Work Method Statement / Job Safety Analysis	
Job Title	**Inspect a confined space**
Scope and Purpose of JSA	☐ **Routine hazard analysis for a work area.** ☐ **Hazard analysis for a specified job.** ☑ **Hazard analysis for permit application.**
Brief Description of Job	**Gain entry to, and move inside a confined space to check for signs of damage, wear or other abnormal features that may need to be repaired.**

Step	Hazards	Risk Assessment			Controls	Residual Risk			Person Responsible
Describe what happens in each step of the job	Describe all hazards and how they could cause harm	Consequence	Likelihood	Risk level	List all hazard control details	Consequence	Likelihood	Risk Level	Record the name of the person responsible for implementing the hazard control
1. Open the hatch to the confined space.									
2. Enter the confined space.									
3. Inspect the confined space.									
4. Exit the confined space.									
5. Close the hatch to the confined space.									
6. Remove equipment from the area.									

Each step has the potential to create or uncover a hazard.

You may need to consult with personnel who conduct the work in order to identify every step in the process. You can also refer to existing work instructions (SOP, SWMS) for a detailed breakdown of the job.

2.1.2 Gather Relevant Information

Once you have identified each of the steps to complete the job you need to access the specialised knowledge relevant to the task so that you can make the most informed decisions, and identify all of the potential hazards.

When accessing information from literature or on the internet always make sure:

- The information is current (and reflects modern standards, outcomes and expectations).
- The information is relevant (appropriate to your state/territory/country).
- The information comes from a reputable and trustworthy source (government, health and safety authority, industry body).

You should always check any information that you find yourself with an expert or technical specialist to confirm it is reliable.

Records of previous investigations or incidents can also help you to focus on the relevant aspects of the job. If you can speak with people who were previously involved they can offer you some very useful insight into your analysis.

2.1.3 Identify Site Hazards

Site hazards are those hazards that come from the work environment itself, regardless of the specific job.

When you are looking for hazards in the workplace walk all around and check:

- **Up High** – Some hazards may be over your head and people could be using equipment that can reach up very high. Think about things like power lines and cranes.
- **At Eye Level** – Look all around you. See if anything stands out as being unsafe or dangerous. Is somebody doing something that they shouldn't? Has everyone got enough room to work safely? Is everyone wearing the right personal protective equipment (PPE)?
- **Down Low** – Look at the ground and think about what's under the ground. Are there underground services that you need to think about? Is the ground soft, rough or uneven? Will it create a hazard for workers, equipment and machinery? Can the ground support the weight of plant and equipment?

Site hazards include:

- Heat, smoke, dust or other atmospheric hazards.
- Structural hazards.
- Limited head spaces or overhangs.
- Hazardous products and materials on-site, or near the work area.
- Unauthorised personnel in the work area.
- Extreme weather, strong winds and storms.
- Traffic, vehicles and pedestrians.
- Workers, equipment and mobile plant.
- Poor lighting in the work area making it hard to see, or working at night.
- Rubbish, debris or other tripping hazards.

Sometimes site hazards are caused by the work that other people are doing around you. Make sure you think about other personnel in the area, and how their work will impact on your job.

2.1.4 Identify Job Hazards

Sometimes the work itself is what causes the hazard. You need to look at each step of the job to identify hazards relating to, or caused by, the task being done.

Job hazards include:

- Incomplete process isolations.
- Mechanical and electrical isolations not in place.
- Incomplete atmospheric testing.
- Unsafe atmospheres.
- Smoke, darkness or other conditions that limit visibility.
- Electricity, chance of electric shock.
- Gas being released in the atmosphere.
- Gases and liquids under pressure.
- Structural collapse.
- Equipment failures.
- Industrial hazards (machinery, equipment and product).
- Equipment or product mass, size and dimensions.
- Noise.
- Rotational equipment or vibration.
- Working at heights.
- Working in restricted or confined spaces.
- Working in environments subjected to heat, noise, dusts or vapours.
- Chance of fire and explosion.
- Flammability and explosivity of materials being used.
- Sharp edges, protrusions or obstructions in the work area, especially at entry/exit points.
- Slippery surfaces, spills or leaks.
- Damaged, faulty or defective equipment that is still in use.
- Equipment being used incorrectly, or for work it is not designed for.
- Manual handling or physical work hazards.
- Other hazards that might arise from the work being done.

You may need to consult with other experienced personnel to identify hazards that are caused by the job.

You can also determine hazards by asking questions about the job. Here are some examples:

2.1.5 Report Hazards

Once you have identified the hazards that exist, or will be caused by completing the job itself, you will need to report them using the relevant procedure. In most cases this would be a paper based, or electronic form or register designed specifically for the hazard analysis process.

Part of the hazard analysis process includes clear documentation of identified hazards. It is important that you give as much detail as possible so that the risks involved can be properly identified and appropriate action or controls can be planned.

Shown here is an example of hazards identified in a SWMS:

Step	Hazards
Describe what happens in each step of the job	Describe all hazards and how they could cause harm
1. Open the hatch to the confined space.	◆ **Manual handling injury.** ◆ **Sharp edges.**
2. Enter the confined space.	◆ **Unsafe atmosphere / oxygen level.** ◆ **Sharp edges.**
3. Inspect the confined space.	◆ **Unsafe atmosphere / oxygen level.** ◆ **Darkness / limited visibility.** ◆ **Tripping hazards.** ◆ **Sharp edges.**
4. Exit the confined space.	◆ **Tripping hazards.** ◆ **Sharp edges.**
5. Close the hatch to the confined space.	◆ **Manual handling injury.** ◆ **Sharp edges.**
6. Remove equipment from the area.	◆ **Manual handling injury.**

Hazards associated with any particular step in the job should be listed next to the details of the task. This helps with planning for safety as well as identifying appropriate alternatives or substitutes for the task.

Review Questions

1.	How can you make sure you have identified all hazards relating to the job?	☐

2.	How can you find out if the information you have sourced is accurate and reliable?	☐

3.	List 6 examples of site hazards.	☐

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