

First aid in the workplace

Code of practice 2014

OIR Disclosure Log

This Queensland code of practice was made by the Attorney-General and Minister for Justice on 30 May 2014.

This code commences on 30 May 2014.

This code is based on a national model code of practice developed by Safe Work Australia and approved by the Select Council on Workplace Relations in July 2012 as part of the harmonisation of work health and safety laws.

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Contents

Foreword	3
Scope and application	4
1. Introduction	5
1.1 The meaning of key terms	5
1.2 Who has health and safety duties in relation to first aid?	5
1.3 What is required in providing first aid?	6
2. How to determine first aid requirements for your workplace	8
2.1 The nature of the work and workplace hazards.....	8
2.2 Size and location of the workplace.....	9
2.3 The number and composition of workers and other people.....	9
3. First aid equipment, facilities and training	10
3.1 First aid kits	10
3.2 First aid signs.....	11
3.3 Other first aid equipment.....	11
3.4 First aid facilities	12
3.5 First aiders.....	13
3.6 First aid procedures	15
3.7 Providing first aid information.....	16
4. Reviewing your first aid requirements	16
Appendix A – First aid and the risk management process	17
Appendix B – Example of a first aid assessment	18
Appendix C – Example of contents for a first aid kit	20
Appendix D – Standard precautions for infection control	22

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Foreword

This code of practice on first aid in the workplace is an approved code of practice under section 274 of the *Work Health and Safety Act 2011* (the Act).

An approved code of practice is a practical guide to achieving the standards of health, safety and welfare required under the Act and the Work Health and Safety Regulation 2011 (the Regulation).

A code of practice applies to anyone who has a duty of care in the circumstances described in the code. In most cases, following an approved code of practice would achieve compliance with the health and safety duties in the Act, in relation to the subject matter of the code. Like Regulations, codes of practice deal with particular issues and do not cover all hazards or risks that may arise. The health and safety duties require duty holders to consider all risks associated with work, not only those for which Regulations and codes of practice exist.

Codes of practice are admissible in court proceedings under the Act and Regulations. Courts may regard a code of practice as evidence of what is known about a hazard, risk or control and may rely on the code in determining what is reasonably practicable in the circumstances to which the code relates.

Compliance with the Act and Regulations may be achieved by following another method, such as a technical or an industry standard, if it provides an equivalent or higher standard of work health and safety than the code.

An inspector may refer to an approved code of practice when issuing an improvement or prohibition notice.

This code of practice has been developed by Safe Work Australia as a model code of practice under the Council of Australian Governments' *Inter-Governmental Agreement for Regulatory and Operational Reform in Occupational Health and Safety* for adoption by the Commonwealth, state and territory governments.

Scope and application

This code provides practical guidance for persons conducting a business or undertaking on how to comply with duties under the Act and Regulations to provide adequate first aid facilities in the workplace. It includes information on first aid kits, procedures, facilities and training for first aiders.

This code applies to all types of work and all workplaces covered by the Act, including workplaces that are outdoors, mobile or remote.

How to use this code of practice

In providing guidance, the word 'should' is used in this code to indicate a recommended course of action, while 'may' is used to indicate an optional course of action.

This code also includes various references to provisions of the Act and Regulations which set out the legal requirements. These references are not exhaustive. The words 'must', 'requires' or 'mandatory' indicate that a legal requirement exists and must be complied with.

1. Introduction

Providing immediate and effective first aid to workers or others who have been injured or become ill at the workplace may reduce the severity of the injury or illness and promote recovery. In some cases it could mean the difference between life and death.

1.1 The meaning of key terms

First aid is the immediate treatment or care given to a person suffering from an injury or illness until more advanced care is provided or the person recovers.

First aider is a person who has successfully completed a nationally accredited training course or an equivalent level of training that has given them the competencies required to administer first aid.

First aid equipment includes first aid kits and other equipment used to treat injuries and illnesses.

First aid facilities include first aid rooms, health centres, clean water supplies and other facilities needed for administering first aid.

High risk workplace means a workplace where workers are exposed to hazards that could result in serious injury or illness and would require first aid. Examples of workplaces that may be considered high risk are ones in which workers:

- use hazardous machinery (e.g. mobile plant, chainsaws, power presses and lathes)
- use hazardous substances (e.g. chemical manufacture, laboratories, horticulture, petrol stations and food manufacturing)
- are at risk of falls that could result in serious injury (e.g. construction and stevedoring)
- carry out hazardous forms of work (e.g. working in confined spaces, welding, demolition, electrical work and abrasive blasting)
- are exposed to the risk of physical violence (e.g. working alone at night, cash handling or having customers who are frequently physically aggressive)
- work in or around extreme heat or cold (e.g. foundries and prolonged outdoor work in extreme temperatures).

Low risk workplace means a workplace where workers are not exposed to hazards that could result in serious injury or illness such as offices, shops or libraries. Potential work-related injuries and illnesses requiring first aid would be minor in nature.

1.2 Who has health and safety duties in relation to first aid?

A **person conducting a business or undertaking** has the primary duty under the Act to ensure, so far as is reasonably practicable, that workers and other persons are not exposed to health and safety risks arising from the business or undertaking.

The Regulations place specific obligations on a person conducting a business or undertaking in relation to first aid, including requirements to:

- provide first aid equipment and ensure each worker at the workplace has access to the equipment
- ensure access to facilities for the administration of first aid
- ensure that an adequate number of workers are trained to administer first aid at the workplace or that workers have access to an adequate number of other people who have been trained to administer first aid.

A person conducting a business or undertaking may not need to provide first aid equipment or facilities if these are already provided by another duty holder at the workplace and they are adequate and easily accessible at the times that the workers carry out work.

Officers, such as company directors, have a duty to exercise due diligence to ensure that the business or undertaking complies with the Act and Regulations. This includes taking reasonable steps to ensure that the business or undertaking has and uses appropriate resources and processes to eliminate or minimise risks to health and safety.

Workers have a duty to take reasonable care for their own health and safety and must not adversely affect the health and safety of other persons. Workers must comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to health and safety at the workplace, such as procedures for first aid and for reporting injuries and illnesses.

1.3 What is required in providing first aid?

First aid requirements will vary from one workplace to the next, depending on the nature of the work, the type of hazards, the workplace size and location, as well as the number of people at the workplace. These factors must be taken into account when deciding what first aid arrangements need to be provided.

This code provides information on using a risk management approach to tailor first aid that suits the circumstances of your workplace, while also providing guidance on the number of first aid kits, their contents and the number of trained first aiders that are appropriate for some types of workplaces.

The risk management approach involves the following four steps (summarised in Appendix A):

- identifying hazards that could result in work-related injury or illness
- assessing the type, severity and likelihood of injuries and illness
- providing the appropriate first aid equipment, facilities and training
- reviewing your first aid requirements on a regular basis or as circumstances change.

Guidance on the general risk management process is available in the *How to manage work health and safety risks code of practice*.

Consulting your workers

Consultation involves sharing of information, giving workers a reasonable opportunity to express views and taking those views into account before making decisions on health and safety matters.

The Act section. 47: A person conducting a business or undertaking must consult, so far as is reasonably practicable, with workers who carry out work for the business or undertaking who are (or likely to be) directly affected by a work health and safety matter.

The Act section. 48: If the workers are represented by a health and safety representative, the consultation must involve that representative.

You must consult your workers when making decisions about what facilities are needed, including those required for administering first aid. Consultation should include:

- the number, location and contents of first aid kits and other equipment
- the type of first aid facilities that may be needed
- first aid procedures
- the number of first aiders.

Consulting, co-operating and co-ordinating activities with other duty holders

The Act section. 46: A person conducting a business or undertaking must consult, co-operate and co-ordinate activities with all other persons who have a work health or safety duty in relation to the same matter, so far as is reasonably practicable.

Sometimes you may have responsibility for health and safety together with other business operators who are involved in the same activities or who share the same workplace. In these situations, you should communicate with each other to find out who is doing what and work

together in a co-operative and co-ordinated way so that all risks are eliminated or minimised so far as is reasonably practicable.

For example, if you provide labour hire workers as part of your business you have a duty of care as well as the host business. In these situations, you must discuss the hazards and risks associated with the work and ensure the host business has appropriate first aid arrangements that your workers can access.

If you share your workplace with other businesses that have workers trained in administering first aid, you may be able to ensure that your workers have access to them instead of training your own workers. In these circumstances, it will be necessary to:

- consult the other business operators to work out what first aid arrangements are needed
- co-operate with each other in sharing first aid equipment and facilities
- co-ordinate access to the first aiders.

Further guidance on consultation is available in the *Work health and safety consultation, co-operation and co-ordination code of practice*.

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2. How to determine first aid requirement first aid requirements for your workplace

Regulation section 42: When considering how to provide first aid, a person conducting a business or undertaking must consider all relevant matters including:

- the nature of the work being carried out at the workplace
- the nature of the hazards at the workplace
- the size, location and nature of the workplace
- the number and composition of the workers at the workplace.

2.1 The nature of the work and workplace hazards

Certain work environments have greater risks of injury and illness due to the nature of work being carried out and the nature of the hazards at the workplace. For example, factories, motor vehicle workshops and forestry operations have a greater risk of injury that would require immediate medical treatment than offices or libraries. These workplaces will therefore require different first aid arrangements.

Table 1: Injuries associated with common workplace hazards that may require first aid

Hazard	Potential harm
Manual tasks	Overexertion can cause muscular strain.
Working at height	Slips, trips and falls can cause fractures, bruises, lacerations, dislocations, concussion.
Electricity	Potential ignition source could cause injuries from fire. Exposure to live electrical wires can cause shock, burns and cardiac arrest.
Machinery and equipment	Being hit by moving vehicles, or being caught by moving parts of machinery can cause fractures, amputation, bruises, lacerations, dislocations.
Hazardous chemicals	Toxic or corrosive chemicals may be inhaled, contact skin or eyes causing poisoning, chemical burns, irritation. Flammable chemicals could result in injuries from fire or explosion.
Extreme temperatures	Hot surfaces and materials can cause burns. Exposure to heat can cause heat stress and fatigue. Exposure to extreme cold can cause hypothermia and frost bite.
Radiation	Welding arc flashes, ionizing radiation and lasers can cause burns
Violence	Behaviours including intimidation and physical assault can cause nausea, shock and physical injuries
Biological	Infection, allergic reactions
Animals	Bites, stings, kicks, scratches

Records of injuries, illnesses, 'near miss' incidents and other information that has already been obtained to assist in controlling risks at the workplace will be useful to make appropriate decisions about first aid.

You should check the safety data sheets (SDS) for any hazardous chemicals that are handled, used or stored at your workplace. The SDS provides information about the chemical, possible health effects, controls that may be used to reduce exposure and first aid requirements.

Manufacturers, importers and suppliers of hazardous chemicals have a duty under the Regulations to ensure that the current SDS is provided to a person at the workplace if the person asks for it.

2.2 Size and location of the workplace

In relation to the size and location of the workplace, you should take into account:

- the distance between different work areas
- the response times for emergency services.

First aid equipment and facilities should be located at convenient points and in areas where there is a higher risk of an injury or illness occurring.

A large workplace may require first aid to be available in more than one location if:

- work is being carried out a long distance from emergency services
- small numbers of workers are dispersed over a wide area
- access to a part of the workplace is difficult
- the workplace has more than one floor level.

Where there are separate work areas (e.g. a number of buildings on a site or multiple floors in an office building), it may be appropriate to locate first aid facilities centrally and provide first aid kits in each work area. This may include portable first aid kits in motor vehicles and other separate work areas.

The distance of the workplace from ambulance services, hospital and medical centres should be taken into account when determining your first aid requirements. For example, if life-threatening injuries or illnesses could occur and timely access to emergency services cannot be assured, a person trained in more advanced first aid techniques (such as the provision of oxygen) will be needed.

Additional first aid considerations may be necessary for workers in remote or isolated areas. For example, where access is difficult due to poor roads or weather conditions, arrangements may need to include aerial evacuation.

In minimising the risks to health and safety associated with remote or isolated work, you must provide a system of work that includes effective communication with the worker. This will assist in enabling an immediate response in an emergency. Further guidance about working in remote or isolated areas is available in the *Managing the work environment and facilities code of practice*.

2.3 The number and composition of workers and other people

When considering the size of your workforce, you should include any contractors, subcontractors, and volunteers you engage. This may mean the size of your workforce may vary over time. For the purposes of deciding who requires access to first aid, you should consider the maximum number of workers that you may engage at any one time. Generally, a larger workforce requires more first aid resources.

You should also consider:

- the particular needs of workers who have a disability or a known health concern
- others at your workplace who are not your workers (e.g. students in workplaces such as schools, members of the public in places of entertainment, fairgrounds and shopping centres).

Appendix B provides an example of how to determine first aid requirements.

3. First aid equipment, facilities and training

The information provided in this chapter may be used as a guide to determine the appropriate first aid equipment, facilities, first aiders and procedures needed in various workplaces.

First aid equipment, facilities and first aiders must be accessible to workers whenever they work, including those working night shifts or overtime.

3.1 First aid kits

All workers must be able to access a first aid kit. This will require at least one first aid kit to be provided at their workplace.

Contents

The first aid kit should provide basic equipment for administering first aid for injuries including:

- cuts, scratches, punctures, grazes and splinters
- muscular sprains and strains
- minor burns
- amputations and/or major bleeding wounds
- broken bones
- eye injuries
- shock.

The contents of first aid kits should be based on a risk assessment. For example, there may be higher risk of eye injuries and a need for additional eye pads in a workplace where:

- chemical liquids or powders are handled in open containers
- spraying, hosing or abrasive blasting operations are carried out
- there is any possibility of flying particles causing eye injuries
- there is a risk of splashing or spraying of infectious materials
- welding, cutting or machining operations are carried out.

Additional equipment may be needed for serious burns and remote workplaces.

The recommended content of a typical first aid kit and information on additional equipment is provided in Appendix C.

Design of kits

First aid kits can be any size, shape or type to suit your workplace, but each kit should:

- be large enough to contain all the necessary items
- be immediately identifiable with a white cross on green background that is prominently displayed on the outside
- contain a list of the contents for that kit
- be made of material that will protect the contents from dust, moisture and contamination.

Location

In the event of a serious injury or illness, quick access to the kit is vital. First aid kits should be kept in a prominent, accessible location and able to be retrieved promptly. Access should also be ensured in security-controlled workplaces. First aid kits should be located close to areas where there is a higher risk of injury or illness. For example, a school with a science laboratory or carpentry workshop should have first aid kits located in these areas. If the workplace occupies several floors in a multi-storey building, at least one kit should be located on every second floor. Emergency floor plans displayed in the workplace should include the location of first aid kits.

A portable first aid kit should be provided in the vehicles of mobile workers if that is their workplace (e.g. couriers, taxi drivers, sales representatives, bus drivers and inspectors). These kits should be safely located so as not to become a projectile in the event of an accident.

Restocking and maintaining kits

A person in the workplace should be nominated to maintain the first aid kit (usually a first aid officer) and should:

- monitor access to the first aid kit and ensure any items used are replaced as soon as practicable after use
- undertake regular checks (after each use or, if the kit is not used, at least once every 12 months) to ensure the kit contains a complete set of the required items (an inventory list in the kit should be signed and dated after each check)
- ensure that items are in good working order, have not deteriorated and are within their expiry dates and that sterile products are sealed and have not been tampered with.

3.2 First aid signs

Displaying well-recognised, standardised first aid signs will assist in easily locating first aid equipment and facilities. First aid signs may be constructed to suit individual requirements but should comply with AS 1319: 1994 - *Safety Signs for the Occupational Environment*.

3.3 Other first aid equipment

In addition to first aid kits, you should consider whether any other first aid equipment is necessary to treat the injuries or illnesses that could occur as a result of a hazard at your workplace.

Automatic defibrillators

Providing an automatic defibrillator can reduce the risk of fatality from cardiac arrest and is a useful addition for workplaces where there is a risk of electrocution or where there are large numbers of members of the public.

Automatic defibrillators are designed to be used by trained or untrained persons. They should be located in an area that is clearly visible, accessible and not exposed to extreme temperatures. They should be clearly signed and maintained according to the manufacturer's specifications.

Eye wash and shower equipment

Eye wash and shower equipment may be permanently fixed or portable, depending on the workplace. Eye wash equipment should be provided where there is a risk of hazardous chemicals or infectious substances causing eye injuries.

Immediate access should be provided to shower equipment in workplaces where there is a risk of:

- exposure to hazardous chemicals resulting in skin absorption or contamination from infectious substances
- serious burns to a large area of the face or body (including chemical or electrical burns or burns that are deep, in sensitive areas or greater than a 20 cent piece).

Shower facilities can consist of:

- an appropriate deluge facility
- a permanently rigged hand-held shower hose
- a portable plastic or rubber shower hose that is designed to be easily attached to a tap spout—for small, relatively low risk workplaces where a fixed deluge facility would not be reasonably practicable but the risk of serious burns is still foreseeable (e.g. a fish and chip shop).



Portable, self-contained eye wash or shower units have their own flushing fluid which needs to be refilled or replaced after use. Further guidance is available in AS 4775 – *Emergency eyewash and shower equipment*.

3.4 First aid facilities

A risk assessment will help determine the type of first aid facilities needed. For example, a clean, quiet area within the workplace that affords privacy to an injured or ill person may be suitable and practicable for some workplaces.

Access to a telephone for contacting emergency services or an emergency call system should be provided as part of all first aid facilities.

First aid rooms

A first aid room should be established at the workplace if a risk assessment indicates that it would be difficult to administer appropriate first aid unless a first aid room is provided.

For example, workers who carry out work at workplaces where there is a higher risk of serious injury or illness occurring that would not only require immediate first aid, but also further treatment by an emergency service, may benefit from having access to a dedicated first aid room.

A first aid room is recommended for:

- low risk workplaces with 200 workers or more
- high risk workplaces with 100 workers or more.

The contents of a first aid room should suit the hazards that are specific to the workplace. The location and size of the room should allow easy access and movement of injured people who may need to be supported or moved by stretcher or wheelchair.

The following items should be provided in the room:

- a first aid kit appropriate for the workplace
- hygienic hand cleanser and disposable paper towels
- an examination couch with waterproof surface and disposable sheets
- a cupboard for storage
- a container with disposable lining for soiled waste
- a container for the safe disposal of sharps
- a bowl or bucket (minimum two litres capacity)
- electric power points
- a chair and a table or desk
- a telephone and/or emergency call system
- the names and contact details of first aiders and emergency organisations.

A first aid room should:

- be located within easy access to a sink with hot and cold water (where this is not provided in the room) and toilet facilities
- offer privacy via screening or a door
- have entrances and corridors leading to and from the first aid room that are wide enough to permit transport of injured or ill persons supported by a stretcher, wheelchair and carrying chair, and other people
- be well lit and ventilated
- have an appropriate floor area (refer the Building Code of Australia)
- have an entrance that is clearly marked with first aid signage.

Maintaining a first aid room should be allocated to a trained occupational first aider, except where this room is part of a health centre or hospital.

Health centres

Health centres staffed by a registered health practitioner (a doctor or nurse) or paramedic can provide emergency medical treatment and cater to the types of hazards in high risk workplaces. A health centre may be established in the workplace (e.g. at a large mine site) or, if readily available, external emergency services may be used.

If a health centre is located at the workplace, the facility should:

- be self-contained
- be located at ground level where possible in a quiet, clean area that is a safe distance from hazardous operations and clear of any general thoroughfare
- be convenient and accessible to workers at the times that they work and have an entrance clearly marked with health centre signage
- have walls, floors and ceilings that are made of impervious materials and are easy to clean
- have enough space to accommodate first aid equipment.

3.5 First aiders

Regulation section 42: A person conducting a business or undertaking must ensure that an adequate number of workers are trained to administer first aid at the workplace or that workers have access to an adequate number of other people who have been trained to administer first aid.

First aid in the workplace can be provided in a number of ways:

- training one or more of your own workers to administer first aid
- arranging for a person who does not work for you to administer first aid to your workers provided they have been trained to do so. These may be first aiders of other businesses who share your workplace or other persons who are qualified to administer first aid. This will involve consulting, co-operating and co-ordinating the access arrangements with the other persons and ensuring that access is available at the times when your workers carry out work (e.g. taking into account any shift work).

Types of first aid training

First aiders should hold nationally recognised statement/s of attainment issued by a registered training organisation (RTO) for the nationally endorsed first aid unit/s of competency.

Apply first aid provides competencies required to recognise and respond to common life-threatening injuries or illnesses, including life-support using cardiopulmonary resuscitation (CPR), and to manage the casualty and incident until the arrival of medical or other assistance.

In low risk workplaces, first aiders are sufficiently trained if they can perform CPR and treat minor illnesses and injuries.

Apply advanced first aid – provides additional competencies required to apply advanced first aid procedures. This type of training is suitable for some high risk workplaces.

Manage first aid in the workplace (occupational first aid) – provides competencies required to apply advanced first aid procedures and to manage a first aid room.

Provide first aid in remote situations – provides the competencies required to administer first aid in a remote and/or isolated situation, including preparing for aero-medical evacuation. This type of training is suitable for high risk workplaces that are likely to have a major delay in accessing emergency services.

Additional training for first aiders

First aiders should attend training on a regular basis to refresh their first aid knowledge and skills and to confirm their competence to provide first aid. Refresher training in CPR should be undertaken annually and first aid qualifications should be renewed every three years.

First aiders may also need to undertake additional first aid training to respond to specific situations at their workplace. For example, where workers have severe allergies, first aiders should be trained to respond to anaphylaxis if this topic has not been covered in previous first aid training.

Number of trained first aiders

The following ratios are recommended:

- low risk workplaces – one first aider for every 50 workers
- high risk workplaces – one first aider for every 25 workers.

The number and type of trained first aiders can be further refined by following the five-step guide below:

Step 1:

Identify the maximum number of workers at the workplace at any one time.

Step 2:

Consider the nature of the work being carried out at the workplace and determine if your workers are at a high risk of being exposed to hazards that could require immediate first aid treatment.

Step 3:

Determine if the workplace is remote or if access to emergency services is difficult. High risk workplaces that do not have timely access to medical and ambulance services should have at least one first aider for every 10 workers.

Step 4:

Consider the variety of ways that your workers carry out work, for example:

- if a worker spends most, if not all, of their time working alone and in transit i.e. their workplace is their vehicle and the places they visit in the course of their work (e.g. couriers, taxi drivers, sales representatives, door-to-door charity collectors and inspectors)
- if a worker's location varies on a regular basis and they often work without supervision (e.g. tradespeople, construction workers in the housing industry, farm hands and cleaners)
- if a worker sometimes works alone for relatively short periods of time (e.g. when opening or closing a business for trade or working back late to meet a deadline).

In these situations, it may not be practicable to have a first aider available at all times at the workplace. However, these workers must be able to access first aid assistance, for example by ensuring they are provided with:

- an effective means of contacting emergency services or first aiders
- information, instruction and training on how to respond if a serious injury or illness occurs.

Step 5:

Before finalising the number of first aiders your workers require access to, consider if there are any other factors that indicate that your workplace needs additional first aiders, for example:

- the arrangement of work (multiple shifts or overtime)
- seasonal work, where there may be a sudden and significant increase or decrease in the number of workers
- where there are large numbers of other persons present on a regular basis (e.g. schools, shopping centres, hotels and function centres)
- workplaces that have unique hazards such as fitness centres, amusement rides and dive schools
- access during times when a first aider is absent (e.g. annual leave).

3.6 First aid procedures

You should develop and implement first aid procedures to ensure that workers have a clear understanding of first aid in their workplace. The procedure should cover:

- the type of first aid kits and where they are located
- the location of first aid facilities such as first aid rooms
- who is responsible for the first aid kits and facilities and how frequently they should be checked and maintained
- how to establish and maintain appropriate communication systems (including equipment and procedures) to ensure rapid emergency communication with first aiders
- the communication equipment and systems to be used when first aid is required (especially for remote and isolated workers). These procedures should contain information about how to locate the communication equipment, who is responsible for the equipment and how it should be maintained
- the work areas and shifts that have been allocated to each first aider. These procedures should contain the names and contact details of each first aider
- arrangements to ensure first aiders receive appropriate training
- arrangements for ensuring that workers receive appropriate information, instruction and training in relation to first aid
- seeking information when a worker commences work about any first aid needs that may require specific treatment in a medical emergency, such as severe allergies. Information about a worker's health must be kept confidential and only provided to first aiders with the worker's consent
- how to report injuries and illnesses that may occur in the workplace
- practices to avoid exposure to blood and body substances – refer to Appendix D
- what to do when a worker or other person is too injured or ill to stay at work (e.g. if they require assistance with transport to a medical service, home or somewhere else where they can rest and recover)
- access to debriefing or counselling services to support first aiders and workers after a serious workplace incident.

Record-keeping

A record of any first aid treatment given should be kept by the first aider and reported to managers on a regular basis to assist reviewing first aid arrangements. First aid treatment records are subject to requirements under Health Records legislation.

Procedures and plans for managing an emergency

Regulation section 43: A person conducting a business or undertaking must ensure that an emergency plan is prepared for the workplace that provides procedures to respond effectively in an emergency.

The emergency procedures must include:

- an effective response to an emergency situation
- procedures for evacuating the workplace
- notification of emergency services at the earliest opportunity
- medical treatment and assistance, and
- effective communication between the person authorised by the person conducting the business or undertaking to co-ordinate the emergency response and all persons at the workplace.

You may incorporate your first aid procedures into your emergency planning procedures.

Emergency procedures should specify the role of first aiders according to their level of qualification and competence. In particular, first aiders should be instructed not to exceed their training and expertise in first aid. Other staff, including supervisors, should be instructed not to direct first aiders to exceed their first aid training and expertise.

Further guidance on emergency plans and preparing emergency procedures is available in the *Managing the work environment and facilities code of practice*.

3.7 Providing first aid information

You must provide information about first aid to your workers so that they know what to do and who to contact if they are sick or injured.

Information should be easy to understand, accessible and should take into account the language and literacy levels of your workers. Information may be given using verbal methods (e.g. explanations and demonstrations) or visual methods (e.g. videos and posters).

The information and instruction on first aid should include:

- the location of first aid equipment and facilities
- the names and location of persons trained to administer first aid
- the procedures to be followed when first aid is required.

The information and instruction should be provided as part of workers' induction training and when there are any changes, for example in the location of first aid facilities or in the names, locations or contact details of first aiders.

4. Reviewing your first aid requirements

You should regularly review your first aid arrangements in consultation with your workers to ensure they remain adequate and effective.

- Check that the people who have responsibilities under your first aid procedures are familiar with them.
- If the way work is performed is changed, or new work practices introduced, review first aid against a risk assessment to ensure the arrangements are still adequate.
- Organise a mock first aid emergency to check that first aid is effective. Check that kits and first aid rooms are accessible and suit the hazards that are unique to your workplace.
- If an incident has occurred that required first aid, evaluate the effectiveness of the first aid that was provided and make changes if necessary.
- If new information is obtained about a previously unidentified hazard, review the first aid measures you have put in place.

The following questions can assist you to review first aid and assess whether improvement is needed:

- Do the first aid kits and modules suit the hazards at your workplace?
- Are more first aid kits required?
- Are first aid kits accessible to workers?
- Are first aid kits well maintained and identifiable to workers?
- Is a first aid room or health centre required?
- Are first aid facilities well maintained?
- Do first aiders have the skills and competencies required of them and are their skills up-to-date?
- Do workers know how to access first aiders?
- Are more first aiders needed?
- Do workers have access to first aiders at all times?
- Do workers and other people know what to do in an emergency situation?
- Is there easy access for emergency services, such as parking for an ambulance?

Appendix A – First aid and the risk management process

Step 1 – Identify potential causes of workplace injury and illness

- Does the nature of the work being carried out pose a hazard to people's health and safety?
- Have these hazards been identified in work that is being carried out?
- Has incident and injury data been reviewed?
- Has consultation with workers and their health and safety representatives occurred?
- Is specialist or external assistance required?

Step 2 – Assess the risk of workplace injury and illness

- How often does a hazard have the potential to cause harm?
- What type of injuries would the hazards cause?
- How serious are the injuries?
- Does the number and composition of workers and other people affect how first aid should be provided?
- Could the size and location of the workplace affect how first aid is provided?

Step 3 – What first aid is required?

First aiders

- How many first aiders are needed?
- What competencies do they require?
- What training do they need?

First aid kits and procedures

- What kits/modules are needed and where should they be located?
- Is other first aid equipment needed?
- Who is responsible for maintaining the kits?
- What procedures are needed for my workplace?

First aid facilities

- Is a first aid room or health centre required?

Step 4

Review first aid to ensure effectiveness

Appendix B – Example of a first aid assessment

This assessment of first aid requirements is included as an example only. It does not reflect the consultative processes that must occur or detail the assessment of each identified hazard.

ABC Company - Office and manufacturing operation		
The size and location of the workplace		
Number of floors	2	
Access between floors	Lifts and stairs	
Nearest hospital	6 kilometres	
Nearest medical or occupational health service	2 kilometres	
Maximum time to medical service	15 minutes	
The number and composition of the workers and other persons at the workplace		
Number of workers	80 (15 office / 65 factory)	
Number of other persons	2 to 5 visitors per day	
Shifts	3	
Overtime worked	Yes – regularly	
Remote or isolated workers	None	
Injuries, illnesses and incidents		
Last 12 months' claims data	5 × abrasions 3 × falls	
Incidents not resulting in injury	Incident where a trolley carrying disinfectants overturned	
Other	Worker handling a solvent reported symptoms of eye irritation and dizziness	
Nature of the work being carried out and the nature of the hazards at the workplace		
Hazards	How the hazard could cause harm	Likelihood of occurrence and degree of harm
<ul style="list-style-type: none"> • Hazardous chemicals: <ul style="list-style-type: none"> - Solvents - Disinfectants 	<ul style="list-style-type: none"> • Respiratory illnesses, cancers and dermatitis 	<ul style="list-style-type: none"> • Possible risk of daily exposure to hazardous chemicals for two cleaners. Good ventilation is provided. Protective equipment such as gloves and aprons are used by workers.

<ul style="list-style-type: none"> Noise Manual handling 	<ul style="list-style-type: none"> Hearing damage Muscular strain 	<ul style="list-style-type: none"> Possible risk of daily exposure to noise for 65 factory workers. Low noise emitting machines have been purchased. Protective equipment such as ear plugs is used by workers. Low risk of daily exposure to manual handling risks. Mechanical aids, work station alterations and systems of work significantly eliminate and reduce risk.
Do safety data sheets and labels specify a first aid response?		Yes – seek medical assistance if chemicals are inhaled or ingested
Required first aid		
Number of first aiders needed		Nine – minimum three per shift (one for office and two for the plant)
Training and competencies for first aiders		<i>Applied first aid</i> : providing competencies to recognise and respond to common life-threatening injuries or illnesses using cardiopulmonary resuscitation (CPR) and other first aid procedures, and provide appropriate first aid for a range of injuries and illnesses.
Number and location of kits		Five kits: one on the office floor and four on the factory floor
Contents of first aid kits and modules		Standard workplace kit, with burns module and eye module
Kit maintenance		Tasked to six first aiders

Appendix C – Example of contents for a first aid kit

For most workplaces, a first aid kit should include the following items:

A first aid kit for a workplace where the risk of injury or illness is low should include at least the following:

- **instructions for providing first aid** – including cardio-pulmonary resuscitation (CPR) flow chart
- **adhesive strips** (assorted sizes) for minor wound dressing
- **splinter probes** (single use, disposable)
- **non-allergenic adhesive tape** for securing dressings and strapping
- **eye pads** for emergency eye cover
- **triangular bandage** for slings, support and/or padding
- **hospital crepe or conforming bandage** to hold dressings in place
- **wound/combine dressings** to control bleeding and for covering wounds
- **non-adhesive dressings** for wound dressing
- **safety pins** to secure bandages and slings
- **scissors** for cutting dressings or clothing
- **kidney dish** for holding dressings and instruments
- **small dressings bowl** for holding liquids
- **gauze squares** for cleaning wounds
- **forceps/tweezers** for removing foreign bodies
- **disposable nitrile, latex or vinyl gloves** for infection control
- **sharps disposal container** for infection control and disposal purposes
- **sterile saline solution or sterile water** for emergency eye wash or for irrigating eye wounds. This saline solution must be discarded after opening
- **resuscitation mask** to be used by qualified personnel for resuscitation purposes
- **antiseptic solution** for cleaning wounds and skin
- **plastic bags** for waste disposal
- **note pad and pen/pencil** for recording the injured or ill person's condition and treatment given
- **re-usable ice-pack** for the management of strains, sprains and bruises.

Medication, including analgesics such as paracetamol and aspirin, should not be included in first aid kits because of their potential to cause adverse health effects in some people including asthmatics, pregnant women and people with medical conditions. The supply of these medications may also be controlled by drugs and poisons laws. Workers requiring prescribed and over-the-counter medications should carry their own medication for their personal use as necessary.

Some types of workplaces may require additional items to treat specific types of injuries or illnesses.

Outdoor work

If work is performed outside and there is a risk of insect or plant stings or snake bites, assess whether the following items should also be included in the first aid kit:

- a heavy duty crepe bandage
- sting relief cream, gel or spray.

Remote work

Where people work in remote locations, a first aid kit should include:

- heavy smooth crepe roller bandages, 10cm wide and sufficient quantity to bandage lower limbs to immobilise limb after a snakebite
- splint to immobilise limb after a snake bite or fractures
- hydrogel burn dressings if there is no cool water supply

- large clean sheeting (for covering burns)
- thermal/emergency blanket for the management of shock and to assist portability of a patient
- first aid manual or book
- whistle (for attracting attention)
- torch and/or flashlight for use at night and for attracting attention.
- note pad and pen/pencil for recording the injured or ill person's condition, and treatment given.

The appropriate contents will vary according to the nature of the work and its associated risks.

Burn injuries

If your workers are at risk of receiving burns, you should include the following items:

- burn treatment instructions on two water-proof instruction cards: one for the first aid kit and the other to be located on the wall next to the emergency shower or water supply
- hydro gel (8 × 3.5 gram sachets)
- hydro gel dressings
- clean polythene sheets (small, medium and large)
- 7.5cm cotton conforming bandage.

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Appendix D – Standard precautions for infection control

First aiders should take standard precautions to avoid becoming ill and exposing others to illness when handling blood or body substances. Standard precautions are work practices that are applied to all patients and their blood and body substances, regardless of their infectious status, to ensure a basic level of infection prevention and control. Standard precautions include hand hygiene, use of personal protective equipment, appropriate handling and disposal of sharps and waste, cleaning techniques and managing spills of blood and body substances.

Providing first aid safely

Before providing first aid to an injured or ill person, first aiders should assume they could be exposed to infection. First aiders should wash their hands with soap and water or apply alcohol-based hand rub before and after administering first aid. First aiders should also wear personal protective equipment to prevent contact with blood and body substances, including disposable gloves. Eye protection, a mask and protective clothing may also be necessary if splashes of blood or body substances are likely to occur.

You should establish procedures to avoid workers becoming ill and exposing others to illness when handling blood or body substances. Procedures could include:

- proper hand hygiene practices
- how to handle and dispose of sharps
- how to clean surfaces and reusable equipment
- how to manage spills and handle and clean soiled laundry
- how to handle and dispose of waste
- when to use personal protective equipment (e.g. using resuscitation masks for cardiopulmonary resuscitation).

First aiders should be aware of what to do if they have accidental contact with blood or body substances, a sharps injury or contact with a person known to have a contagious illness. Any part of the body that comes in contact with blood or body substances should be washed with soap and water immediately. Prompt medical advice should be obtained.

All first aiders should be offered hepatitis B virus vaccination.

Contaminated items

All items that are soiled with blood or body substances should be placed in plastic bags and tied securely. Waste disposal should comply with any state or local government requirements.

Sharps, including scissors and tweezers, that have become contaminated with blood or body substances should be disposed of in a rigid-walled, puncture-resistant sharps container by the person that used them. The materials, design, construction, colour and markings of sharps containers should comply with:

- AS 4031-1992 – *Non-reusable containers for the collection of sharp medical items used in health care areas*
- AS/NZS 4261-1994 – *Reusable containers for the collection of sharp items used in human and animal medical applications.*

If a first aider sustains a sharps injury or thinks they are at risk of infection from blood or bodily fluid contamination, they should seek prompt medical advice.

Cleaning spills

Cleaning should commence as soon as possible after an incident involving blood or body substances has occurred. First aiders should wear disposable gloves when cleaning spills and if splashes of blood or body substances may occur, additional protective equipment such as eye protection, plastic aprons and masks should be worn. Surfaces that have been contaminated with blood or body substances should be wiped with paper towelling and cleaned with warm soapy water. It is generally unnecessary to use sodium hypochlorite (chlorine bleach) for managing spills but it may be used in specific circumstances, for example if the surface is hard to clean.

<input type="checkbox"/> HAZARD	<input type="checkbox"/> INCIDENT	<input type="checkbox"/> INJURY	<input type="checkbox"/> NEAR MISS	<input type="checkbox"/> REPORT ONLY
---------------------------------	-----------------------------------	---------------------------------	------------------------------------	--------------------------------------

1. DESCRIPTION

NAME OF PERSON MAKING REPORT: _____

DATE OF INCIDENT: _____ TIME _____ am/pm DATE REPORTED: _____ TIME _____ am/pm

INCIDENT LOCATION: _____

NAME OF PERSON/S INVOLVED: _____

WITNESSES: _____

SUPERVISOR: _____ HAS SUPERVISOR BEEN NOTIFIED: Yes No

PCBU NOTIFIED : _____ TIME: _____ am/pm

DESCRIPTION / DIAGRAM: _____

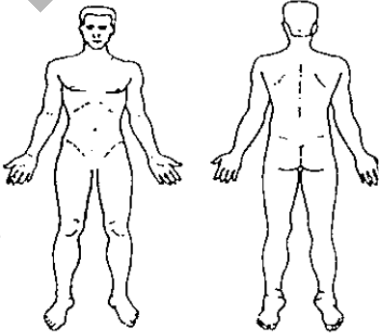
2. INJURY DETAILS (if applicable)

INJURED PERSON: _____

INDICATE INJURY TYPE AND BODY PART ON THE DIAGRAM:

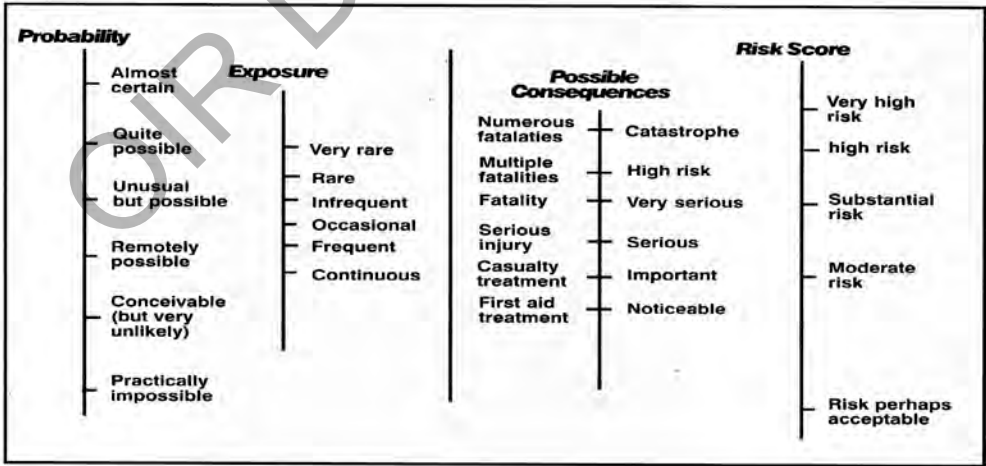
Abrasion Cut Bruise Sprain/Strain Fracture Burn Foreign body
 Other (specify) _____

DESCRIPTION OF FIRST AID TREATMENT GIVEN:



TREATED BY: _____ DATE: _____ TIME: _____ am/pm

3. RISK RANKING



4. IMMEDIATE ACTIONS TAKEN BY PERSON REPORTING

***SIGN OFF** PERSON REPORTING: _____ SIGNATURE: _____ DATE: _____

5. ACTIONS TAKEN BY MANAGER/SUPERVISOR

6. INVESTIGATION - Root Cause & Contributing Factors

People – PPE; position,	
Equipment	
Procedures - work practice, instructions, communication	
Environment	

CORRECTIVE ACTION TO BE TAKEN TO PREVENT RECURRENCE:

INVESTIGATION TEAM:

***SIGN OFF** SUPERVISOR'S NAME: _____ SIGNATURE: _____ DATE: _____

7. DEPARTMENT MANAGERS REVIEW

IS FURTHER INVESTIGATION OR ACTIONS REQUIRED

YES <input type="checkbox"/>	COMPLETE REPORT FORM NO.	NO <input type="checkbox"/>	SIGN OFF
------------------------------	--------------------------	-----------------------------	----------

COMMENTS:

***SIGN OFF** MANAGERS NAME: _____ SIGNATURE: _____ DATE: _____

8. REVIEW

Injury Classification: Report only First Aid Medical Treatment Restricted Work Lost Time Occ. Illness

Injury Outcome: WorkCover Q Super Report Only Non-Work Related

COMMENTS:

***SIGN OFF** SAFETY OFFICER NAME: _____ SIGNATURE: _____ DATE: _____

How to manage work health and safety risks

Code of practice 2011

OIR Disclosure Log



This Queensland code of practice was made by the Minister for Education and Industrial Relations on 27 November 2011 and published in the Queensland Government Gazette on 2 December 2011.

This code commences on 1 January 2012.

This code is based on a national model code of practice developed by Safe Work Australia and approved by the Workplace Relations Ministers' Council on 10 August 2011 as part of the harmonisation of work health and safety laws.

PN11157

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Contents

Foreword	4
Scope and application	4
1. Introduction	5
1.1 Who has responsibility for managing work health and safety risks?	5
1.2 The meaning of key terms	5
1.3 What is involved in managing risks?.....	6
1.4 When should a risk management approach be used?	8
2. Step 1 – How to identify hazards	9
2.1 How to find hazards.....	9
3. Step 2 – How to assess risks	11
3.1 When should a risk assessment be carried out?	11
3.2 How to do a risk assessment.....	11
4. Step 3 – How to control risks	14
4.1 The hierarchy of risk control	14
4.2 How to develop and implement control options	16
4.3 How to ensure that controls remain effective	17
5. Step 4 – How to review controls	19
6. Keeping records	20
Appendix A – Assessing how things go wrong	21
Appendix B – Risk register	22
Appendix C – Case studies	23
Case Study 1:.....	23
Case Study 2:.....	25

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Foreword

This code of practice on how to manage work health and safety risks is an approved code of practice under section 274 of the *Work Health and Safety Act 2011* (the Act).

An approved code of practice is a practical guide to achieving the standards of health, safety and welfare required under the Act and the Work Health and Safety Regulations (the Regulations).

A code of practice applies to anyone who has a duty of care in the circumstances described in the code. In most cases, following an approved code of practice would achieve compliance with the health and safety duties in the Act, in relation to the subject matter of the code. Like Regulations, codes of practice deal with particular issues and do not cover all hazards or risks that may arise. The health and safety duties require duty holders to consider all risks associated with work, not only those for which Regulations and codes of practice exist.

Codes of practice are admissible in court proceedings under the Act and Regulations. Courts may regard a code of practice as evidence of what is known about a hazard, risk or control and may rely on the code in determining what is reasonably practicable in the circumstances to which the code relates.

Compliance with the Act and Regulations may be achieved by following another method, such as a technical or an industry standard, if it provides an equivalent or higher standard of work health and safety than the code.

An inspector may refer to an approved code of practice when issuing an improvement or prohibition notice.

This code of practice has been developed by Safe Work Australia as a model code of practice under the Council of Australian Governments' *Inter-Governmental Agreement for Regulatory and Operational Reform in Occupational Health and Safety* for adoption by the Commonwealth, state and territory governments.

A draft of this code of practice was released for public consultation on 7 December 2010 and was endorsed by the Workplace Relations Ministers' Council on 10 August 2011.

Scope and application

This code provides practical guidance for persons who have duties under the Act and Regulations to manage risks to health and safety. The duty is placed on persons conducting a business or undertaking, including employers, self-employed, principal contractors, persons with management or control of a workplace, designers, manufacturers, importers and suppliers of plant, substances or structures that are used for work.

This code applies to all types of work and all workplaces covered by the Act. Other approved codes of practice should be referenced for guidance on managing the risk of specific hazards.

How to use this code of practice

In providing guidance, the word 'should' is used in this code to indicate a recommended course of action, while 'may' is used to indicate an optional course of action.

This code also includes various references to sections of the Act and to Regulations which set out the legal requirements. These references are not exhaustive. The words 'must', 'requires' or 'mandatory' indicate that a legal requirement exists and must be complied with.

1. Introduction

1.1 Who has responsibility for managing work health and safety risks?

The Act and Regulations require persons who have a duty to ensure health and safety to 'manage risks' by eliminating health and safety risks so far as is reasonably practicable, and if it is not reasonably practicable to do so, to minimise those risks so far as is reasonably practicable.

Persons conducting a business or undertaking will have health and safety duties to manage risks if they:

- engage workers to undertake work for them, or if they direct or influence work carried out by workers
- may put other people at risk from the conduct of their business or undertaking
- manage or control the workplace or fixtures, fittings or plant at the workplace
- design, manufacture, import or supply plant, substances or structures for use at a workplace
- install, construct or commission plant or structures at a workplace.

Deciding what is 'reasonably practicable' to protect people from harm requires taking into account and weighing up all relevant matters, including:

- the likelihood of the hazard or risk concerned occurring
- the degree of harm that might result from the hazard or risk
- knowledge about the hazard or risk, and ways of eliminating or minimising the risk
- the availability and suitability of ways to eliminate or minimise the risk, and
- after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.

The process of managing risk described in this code will help you decide what is reasonably practicable in particular situations so that you can meet your duty of care under the WHS laws.

Officers (for example company directors) must exercise due diligence to ensure that the business or undertaking complies with the Act and Regulations. This includes taking reasonable steps to:

- gain an understanding of the hazards and risks associated with the operations of the business or undertaking
- ensure that the business or undertaking has and uses appropriate resources and processes to eliminate or minimise risks to health and safety.

A person can have more than one duty and more than one person can have the same duty at the same time.

1.2 The meaning of key terms

Hazard means a situation or thing that has the potential to harm a person. Hazards at work may include: noisy machinery, a moving forklift, chemicals, electricity, working at heights, a repetitive job, bullying and violence at the workplace.

Risk is the possibility that harm (death, injury or illness) might occur when exposed to a hazard.

Risk control means taking action to eliminate health and safety risks so far as is reasonably practicable, and if that is not possible, minimising the risks so far as is reasonably practicable. Eliminating a hazard will also eliminate any risks associated with that hazard.

1.3 What is involved in managing risks?

Management commitment

Effective risk management starts with a commitment to health and safety from those who operate and manage the business or undertaking. You also need the involvement and cooperation of your workers, and if you show your workers that you are serious about health and safety they are more likely to follow your lead.

To demonstrate your commitment, you should:

- get involved in health and safety issues
- invest time and money in health and safety
- ensure health and safety responsibilities are clearly understood.

A step-by-step process

A safe and healthy workplace does not happen by chance or guesswork. You have to think about what could go wrong at your workplace and what the consequences could be. Then you must do whatever you can (in other words, whatever is 'reasonably practicable') to eliminate or minimise health and safety risks arising from your business or undertaking.

This process is known as *risk management* and involves the four steps set out in this Code (see Figure 1 below):

- **identify hazards** – find out what could cause harm
- **assess risks** if necessary – understand the nature of the harm that could be caused by the hazard, how serious the harm could be and the likelihood of it happening
- **control risks** – implement the most effective control measure that is reasonably practicable in the circumstances
- **review control measures** to ensure they are working as planned.

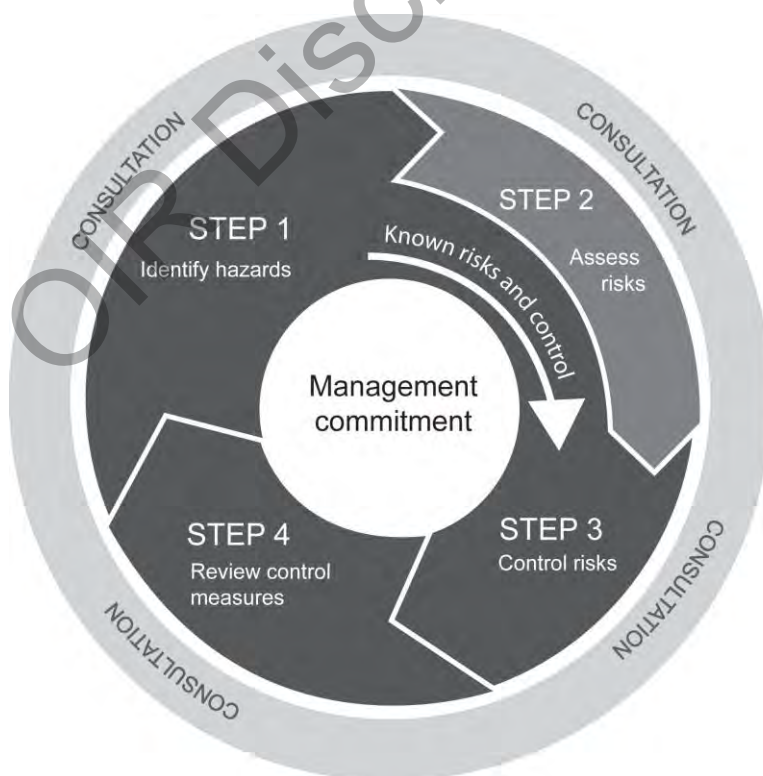


Figure 1: The risk management process

Many hazards and their associated risks are well known and have well established and accepted control measures. In these situations, the second step to formally assess the risk is unnecessary. If, after identifying a hazard, you already know the risk and how to control it effectively, you may simply implement the controls.

Risk management is a proactive process that helps you respond to change and facilitate continuous improvement in your business. It should be planned, systematic and cover all reasonably foreseeable hazards and associated risks.

Consulting your workers

Section 47: The Act requires that you consult, so far as is reasonably practicable, with workers who carry out work for you who are (or are likely to be) directly affected by a work health and safety matter.

Section 48: If the workers are represented by a health and safety representative, the consultation must involve that representative.

Consultation involves sharing of information, giving workers a reasonable opportunity to express views and taking those views into account before making decisions on health and safety matters.

Consultation with workers and their health and safety representatives is required at each step of the risk management process. By drawing on the experience, knowledge and ideas of your workers you are more likely to identify all hazards and choose effective control measures.

You should encourage your workers to report any hazards and health and safety problems immediately so that risks can be managed before an incident occurs.

If you have a health and safety committee, you should engage the committee in the risk management process as well.

Consulting, co-operating and co-ordinating activities with other duty holders

Section 46: The Act requires that you consult, co-operate and co-ordinate activities with all other persons who have a work health or safety duty in relation to the same matter, so far as is reasonably practicable.

Sometimes you may share responsibility for a health and safety matter with other business operators who are involved in the same activities or who share the same workplace. For example, if you engage on-hire workers as part of your workforce you share a duty of care to these workers with the business that provides them. In these situations, you must discuss the hazards and risks associated with the work and what precautions will be taken with the on-hire firm.

Never assume that someone else is taking care of a health and safety matter. Find out who is doing what and work together with other duty holders in a co-operative and co-ordinated way so that all risks are eliminated or minimised as far as reasonably practicable.

When entering into contracts you should communicate your safety requirements and policies, review the job to be undertaken, discuss any safety issues that may arise and how they will be dealt with. Remember that you cannot transfer your responsibilities to another person.

Further guidance on consultation is available in the *Code of practice: Work health and safety consultation, co-operation and co-ordination*.

1.4 When should a risk management approach be used?

Managing work health and safety risks is an ongoing process that is triggered when any changes affect your work activities. You should work through the steps in this code when:

- starting a new business or purchasing a business
- changing work practices, procedures or the work environment
- purchasing new or used equipment or using new substances
- planning to improve productivity or reduce costs
- new information about workplace risks becomes available
- responding to workplace incidents (even if they have caused no injury)
- responding to concerns raised by workers, health and safety representatives or others at the workplace
- required by the Regulations for specific hazards.

It is also important to use the risk management approach when designing and planning products, processes or places used for work, because it is often easier and more effective to eliminate hazards before they are introduced into a workplace by incorporating safety features at the design stage.

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2. Step 1 – How to identify hazards

Identifying hazards in the workplace involves finding things and situations that could potentially cause harm to people. Hazards generally arise from the following aspects of work and their interaction:

- physical work environment
- equipment, materials and substances used
- work tasks and how they are performed
- work design and management.

Table 1 below lists some common types of workplace hazards. Some hazards are part of the work process, such as mechanical hazards, noise or toxic properties of substances. Other hazards result from equipment or machine failures and misuse, chemical spills and structural failures.

A piece of plant, substance or a work process may have many different hazards. Each of these hazards needs to be identified. For example, a production line may have dangerous moving parts, noise, hazards associated with manual tasks and psychological hazards due to the pace of work.

Table 1: Examples of common hazards

Hazard	Potential harm
Manual tasks	Overexertion or repetitive movement can cause muscular strain
Gravity	Falling objects, falls, slips and trips of people can cause fractures, bruises, lacerations, dislocations, concussion, permanent injuries or death
Electricity	Potential ignition source. Exposure to live electrical wires can cause shock, burns or death from electrocution
Machinery and equipment	Being hit by moving vehicles, or being caught by moving parts of machinery can cause fractures, bruises, lacerations, dislocations, permanent injuries or death
Hazardous chemicals	Chemicals (such as acids, hydrocarbons, heavy metals) and dusts (such as asbestos and silica) can cause respiratory illnesses, cancers or dermatitis
Extreme temperatures	Heat can cause burns, heat stroke or fatigue Cold can cause hypothermia or frost bite
Noise	Exposure to loud noise can cause permanent hearing damage
Radiation	Ultra violet, welding arc flashes, micro waves and lasers can cause burns, cancer or blindness
Biological	Micro-organisms can cause hepatitis, legionnaires' disease, Q fever, HIV/AIDS or allergies
Psychosocial hazards	Effects of work-related stress, bullying, violence and work-related fatigue

2.1 How to find hazards

Inspect the workplace

Regularly walking around the workplace and observing how things are done can help you predict what could or might go wrong. Look at how people actually work, how plant and equipment is used, what chemicals are around and what they are used for, what safe or unsafe work practices exist as well as the general state of housekeeping.

Things to look out for include the following:

- Does the work environment enable workers to carry out work without risks to health and safety (for example, space for unobstructed movement, adequate ventilation, lighting)?
- How suitable are the tools and equipment for the task and how well are they maintained?
- Have any changes occurred in the workplace which may affect health and safety?

Hazards are not always obvious. Some hazards can affect health over a long period of time or may result in stress (such as bullying) or fatigue (such as shiftwork). Also think about hazards that you may bring into your workplace as new, used or hired goods (for example, worn insulation on a hired welding set).

As you walk around, you may spot straightforward problems and action should be taken on these immediately, for example cleaning up a spill. If you find a situation where there is immediate or significant danger to people, move those persons to a safer location first and attend to the hazard urgently.

Make a list of all the hazards you can find, including the ones you know are already being dealt with, to ensure that nothing is missed. You may use a checklist designed to suit your workplace to help you find and make a note of hazards.

Consult your workers

Ask your workers about any health and safety problems they have encountered in doing their work and any near misses or incidents that have not been reported.

Worker surveys may also be undertaken to obtain information about matters such as workplace bullying, as well as muscular aches and pains that can signal potential hazards.

Review available information

Information and advice about hazards and risks relevant to particular industries and types of work is available from regulators, industry associations, unions, technical specialists and safety consultants.

Manufacturers and suppliers can also provide information about hazards and safety precautions for specific substances (safety data sheets), plant or processes (instruction manuals).

Analyse your records of health monitoring, workplace incidents, near misses, worker complaints, sick leave and the results of any inspections and investigations to identify hazards. If someone has been hurt doing a particular task, then a hazard exists that could hurt someone else. These incidents need to be investigated to find the hazard that caused the injury or illness.

3. Step 2 – How to assess risks

A risk assessment involves considering what could happen if someone is exposed to a hazard and the likelihood of it happening. A risk assessment can help you determine:

- how severe a risk is
- whether any existing control measures are effective
- what action you should take to control the risk
- how urgently the action needs to be taken.

A risk assessment can be undertaken with varying degrees of detail depending on the type of hazards and the information, data and resources that you have available. It can be as simple as a discussion with your workers or involve specific risk analysis tools and techniques recommended by safety professionals.

3.1 When should a risk assessment be carried out?

A risk assessment should be done when:

- there is uncertainty about how a hazard may result in injury or illness
- the work activity involves a number of different hazards and there is a lack of understanding about how the hazards may interact with each other to produce new or greater risks
- changes at the workplace occur that may impact on the effectiveness of control measures.

A risk assessment is mandatory under the Regulations for high risk activities such as entry into confined spaces, diving work and live electrical work.

Some hazards that have exposure standards, such as noise and airborne contaminants, may require scientific testing or measurement by a competent person to accurately assess the risk and to check that the relevant exposure standard is not being exceeded (for example, by using noise meters to measure noise levels and using gas detectors to analyse oxygen levels in confined spaces).

A risk assessment is not necessary in the following situations:

- Legislation requires some hazards or risks to be controlled in a specific way – these requirements must be complied with.
- A code of practice or other guidance sets out a way of controlling a hazard or risk that is applicable to your situation and you choose to use the recommended controls. In these instances, the guidance can be followed.
- There are well-known and effective controls that are in use in the particular industry, that are suited to the circumstances in your workplace. These controls can simply be implemented.

3.2 How to do a risk assessment

All hazards have the potential to cause different types and severities of harm, ranging from minor discomfort to a serious injury or death.

For example, heavy liquefied petroleum gas (LPG) cylinders can cause muscular strain when they are handled manually. However, if the cylinder is damaged causing gas to leak which is then ignited, a fire could result in serious burns. If that leak occurs in a store room or similar enclosed space, it could result in an explosion that could destroy the building and kill or injure anyone nearby. Each of the outcomes involves a different type of harm with a range of severities, and each has a different likelihood of occurrence.

Work out how severe the harm could be

To estimate the severity of harm that could result from each hazard you should consider the following questions:

- What type of harm could occur (e.g. muscular strain, fatigue, burns, laceration)? How severe is the harm? Could the hazard cause death, serious injuries, illness or only minor injuries requiring first aid?
- What factors could influence the severity of harm that occurs? For example, the distance someone might fall or the concentration of a particular substance will determine the level of harm that is possible. The harm may occur immediately something goes wrong (e.g. injury from a fall) or it may take time for it to become apparent (e.g. illness from long-term exposure to a substance).
- How many people are exposed to the hazard and how many could be harmed in and outside your workplace? For example, a mobile crane collapse on a busy construction site has the potential to kill or injure a large number of people.
- Could one failure lead to other failures? For example, could the failure of your electrical supply make any control measures that rely on electricity ineffective?
- Could a small event escalate to a much larger event with more serious consequences? For example, a minor fire can get out of control quickly in the presence of large amounts of combustible materials.

Work out how hazards may cause harm

In most cases, incidents occur as a result of a chain of events and a failure of one or more links in that chain. If one or more of the events can be stopped or changed, the risk may be eliminated or reduced.

One way of working out the chain of events is to determine the starting point where things begin to go wrong and then consider: 'If this happens, what may happen next?' This will provide a list of events that sooner or later cause harm. See the case study in Appendix A.

In thinking about how each hazard may cause harm, you should consider:

- the effectiveness of existing control measures and whether they control all types of harm
- how work is actually done, rather than relying on written manuals and procedures
- infrequent or abnormal situations, as well as how things are normally meant to occur.

Consider maintenance and cleaning, as well as breakdowns of equipment and failures of health and safety controls.

Work out the likelihood of harm occurring

The likelihood that someone will be harmed can be estimated by considering the following:

- How often is the task done? Does this make the harm more or less likely?
- How often are people near the hazard? How close do people get to it?
- Has it ever happened before, either in your workplace or somewhere else? How often?

Table 2 contains further questions that can help you estimate likelihood.

You can rate the likelihood as one of the following:

- Certain to occur - expected to occur in most circumstances
- Very likely - will probably occur in most circumstances
- Possible – might occur occasionally
- Unlikely – could happen at some time
- Rare – may happen only in exceptional circumstances.

The level of risk will increase as the likelihood of harm and its severity increases.

Table 2	
Questions to ask in determining likelihood	Explanation and examples
How often are people exposed to the hazard?	<p>A hazard may exist all of the time or it may only exist occasionally. The more often a hazard is present, the greater the likelihood it will result in harm.</p> <p><i>For example:</i></p> <ul style="list-style-type: none"> • Meshing gears in an enclosed gearbox can cause crushing only if the gearbox is open during maintenance, and therefore the potential for harm will not occur very often. • Continuously lifting heavy boxes has the potential to cause harm whenever the work is done.
How long might people be exposed to the hazard?	<p>The longer that someone is exposed to a hazard, the greater the likelihood that harm may result.</p> <p><i>For example:</i></p> <p>The longer a person is exposed to noisy work, the more likely it is that they will suffer hearing loss.</p>
How effective are current controls in reducing risk?	<p>In most cases the risks being assessed will already be subject to some control measures. The likelihood of harm resulting from the risk will depend upon how adequate and effective the current measures are.</p> <p><i>For example:</i></p> <p>Traffic management controls have been implemented in a warehouse to separate moving forklifts from pedestrians by using signs and painted lines on the floor. These controls may need to be upgraded to include physical barriers.</p>
Could any changes in your organisation increase the likelihood?	<p>The demand for goods or services in many organisations varies throughout the year. Changes in demand may be seasonal, depend on environmental conditions or be affected by market fluctuations that are driven by a range of events. Meeting increased demand may cause unusual loads on people, plant and equipment and systems of work. Failures may be more likely.</p> <p><i>For example:</i></p> <p>Inner city restaurants and bistros are very busy in the period prior to Christmas, placing extra demands on kitchen and serving staff. The increase in volume of food to be prepared and serving a larger number of patrons increases the potential for human error and the likelihood of harm.</p>
Are hazards more likely to cause harm because of the working environment?	<p>Examples of situations where the risk of injury or illness may become more likely:</p> <ul style="list-style-type: none"> • Environmental conditions change. For example, work performed in high temperatures in a confined space increases the potential for mistakes because workers become fatigued more quickly; wet conditions make walkways and other things slippery. • People are required to work quickly. The rate at which work is done (e.g. number of repetitions) can over-stress a person's body or make it more likely that mistakes will be made. • There is insufficient light or poor ventilation.
Could the way people act and behave affect the likelihood of a hazard causing harm?	<p>The possibility that people may make mistakes, misuse items, become distracted or panic in particular situations needs to be taken into account. The effects of fatigue or stress may make it more likely that harm will occur.</p>
Do the differences between individuals in the workplace make it more likely for harm to occur?	<p>People with disabilities may be more likely to suffer harm if the workplace or process is not designed for their needs.</p> <p>New or young workers may be more likely to suffer harm because of inexperience.</p> <p>People who do not normally work at the workplace will have less knowledge than employees who normally work there, and may be more likely to suffer harm. These people include contractors, visitors or members of the public.</p>

4. Step 3 – How to control risks

The most important step in managing risks involves eliminating them so far as is reasonably practicable, or if that is not possible, minimising the risks so far as is reasonably practicable.

In deciding how to control risks you must consult your workers and their representatives who will be directly affected by this decision. Their experience will help you choose appropriate control measures and their involvement will increase the level of acceptance of any changes that may be needed to the way they do their job.

There are many ways to control risks. Some control measures are more effective than others.

You must consider various control options and choose the control that most effectively eliminates the hazard or minimises the risk in the circumstances. This may involve a single control measure or a combination of different controls that together provide the highest level of protection that is reasonably practicable.

Some problems can be fixed easily and should be done straight away, while others will need more effort and planning to resolve. Of those requiring more effort, you should prioritise areas for action, focusing first on those hazards with the highest level of risk.

4.1 The hierarchy of risk control

The ways of controlling risks are ranked from the highest level of protection and reliability to the lowest as shown in Figure 2. This ranking is known as the hierarchy of risk control. The Regulations require duty holders to work through this hierarchy when managing risk under the Regulations.

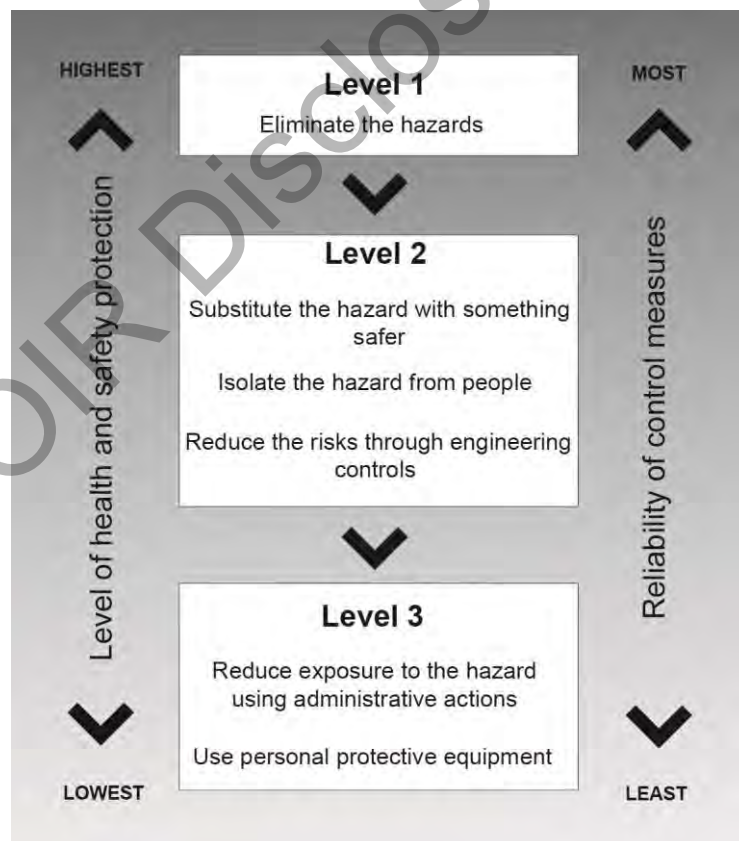


Figure 2: The hierarchy of risk control

You must always aim to eliminate a hazard, which is the most effective control. If this is not reasonably practicable, you must minimise the risk by working through the other alternatives in the hierarchy.

Level 1 control measures

The most effective control measure involves eliminating the hazard and associated risk. The best way to do this is by, firstly, not introducing the hazard into the workplace. For example, you can eliminate the risk of a fall from height by doing the work at ground level.

Eliminating hazards is often cheaper and more practical to achieve at the design or planning stage of a product, process or place used for work. In these early phases, there is greater scope to design out hazards or incorporate risk control measures that are compatible with the original design and functional requirements. For example, a noisy machine could be designed and built to produce as little noise as possible, which is more effective than providing workers with personal hearing protectors.

You can also eliminate risks by removing the hazard completely, for example, by removing trip hazards on the floor or disposing of unwanted chemicals.

It may not be possible to eliminate a hazard if doing so means that you cannot make the end product or deliver the service. If you cannot eliminate the hazard, then eliminate as many of the risks associated with the hazard as possible.

Level 2 control measures

If it is not reasonably practicable to eliminate the hazards and associated risks, you should minimise the risks using one or more of the following approaches:

- *Substitute the hazard with something safer*

For instance, replace solvent-based paints with water-based ones.

- *Isolate the hazard from people*

This involves physically separating the source of harm from people by distance or using barriers. For instance, install guard rails around exposed edges and holes in floors; use remote control systems to operate machinery; store chemicals in a fume cabinet.

- *Use engineering controls*

An engineering control is a control measure that is physical in nature, including a mechanical device or process. For instance, use mechanical devices such as trolleys or hoists to move heavy loads; place guards around moving parts of machinery; install residual current devices (electrical safety switches); set work rates on a production line to reduce fatigue.

Level 3 control measures

These control measures do not control the hazard at the source. They rely on human behaviour and supervision, and used on their own, tend to be least effective in minimising risks. Two approaches to reduce risk in this way are:

- *Use administrative controls*

Administrative controls are work methods or procedures that are designed to minimise exposure to a hazard. For instance, develop procedures on how to operate machinery safely, limit exposure time to a hazardous task, use signs to warn people of a hazard.

- *Use personal protective equipment (PPE)*

Examples of PPE include ear muffs, respirators, face masks, hard hats, gloves, aprons and protective eyewear. PPE limits exposure to the harmful effects of a hazard but only if workers wear and use the PPE correctly.

Administrative controls and PPE should only be used:

- when there are no other practical control measures available (as a last resort)
- as an interim measure until a more effective way of controlling the risk can be used
- to supplement higher level control measures (as a back-up).

Regulation 44-47: The Regulations include specific requirements if PPE is to be used at the workplace, including that the equipment is:

- selected to minimise risk to health and safety
- suitable for the nature of the work and any hazard associated with the work
- a suitable size and fit and reasonably comfortable for the person wearing it
- maintained, repaired or replaced so it continues to minimise the risk
- used or worn by the worker, so far as is reasonably practicable.

A worker must, so far as reasonably able, wear the PPE in accordance with any information, training or reasonable instruction.

4.2 How to develop and implement control options

Information about suitable controls for many common hazards and risks can be obtained from:

- codes of practice and guidance material
- manufacturers and suppliers of plant, substances and equipment used in your workplace
- industry associations and unions.

In some cases, published information will provide guidance on the whole work process. In other cases, the guidance may relate to individual items of plant or how to safely use specific substances. You may use the recommended control options if they suit your situation and eliminate or minimise the risk.

Developing specific control measures

You may need to develop specific control measures if the available information is not relevant to the hazards and risks or circumstances at your workplace. This can be done by referring to the chain of events that were recorded during the risk assessment.

For each of the events in the sequence, ask: “What can be done to stop or change the event occurring?” An example of this approach is shown in Appendix A.

Working through the events in the sequence will give you ideas about all possible ways to eliminate or minimise the risk. There may be more than one solution for each of the events. The control option you choose should be:

- one that provides the highest level of protection for people and is the most reliable – that is, controls located towards the top of the hierarchy in Figure 2.
- available – that is, it can be purchased, made to suit or be put in place.
- suitable for the circumstance in your workplace – that is, it will work properly given the workplace conditions, work process and your workers.

Where the hazard or risk has the potential to cause death, serious injury or illness, more emphasis should be given to those controls that eliminate or reduce the level of harm, than those that reduce the likelihood of harm occurring.

Make sure that your chosen solution does not introduce new hazards.

Cost of control measures

All risks can be controlled and it is always possible to do something, such as stopping the activity or providing instructions to those exposed to the risk. There will normally be a number of different options between these two extremes. Cost (in terms of time and effort as well as money) is just one factor to consider when determining the best control option.

The cost of controlling a risk may be taken into account in determining what is reasonably practicable, but cannot be used as a reason for doing nothing.

The greater the likelihood of a hazard occurring and/or the greater the harm that would result if the hazard or risk did occur, the less weight should be given to the cost of controlling the hazard or risk.

If two control measures provide the same levels of protection and are equally reliable, you can adopt the least expensive option.

Cost cannot be used as a reason for adopting controls that rely exclusively on changing people's behaviour or actions when there are more effective controls available that can change the risk through substitution, engineering or isolation.

Implementing controls

The control measures that you put into operation will usually require changes to the way work is carried out due to new or modified equipment or processes, new or different chemicals or new personal protective equipment. In these situations, it is usually necessary to support the control measures with:

- *Work procedures*

Develop a safe work procedure that describes the task, identifies the hazards and documents how the task is to be performed to minimise the risks.

- *Training, instruction and information*

Train your workers in the work procedure to ensure that they are able to perform the task safely. Training should require workers to demonstrate that they are competent in performing the task according to the procedure. It is insufficient to simply give a worker the procedure and ask them to acknowledge that they understand and are able to perform it. Training, instruction and information must be provided in a form that can be understood by all workers.

Information and instruction may also need to be provided to others who enter the workplace, such as customers or visitors.

- *Supervision*

The level of supervision required will depend on the level of risk and the experience of the workers involved. High levels of supervision are necessary where inexperienced workers are expected to follow new procedures or carry out difficult and critical tasks.

You may prepare a risk register that identifies the hazards, what action needs to be taken, who will be responsible for taking the action and by when. An example is provided at Appendix B.

4.3 How to ensure that controls remain effective

The following actions may help you monitor the control measures you have implemented and ensure that they remain effective:

- *Accountability for health and safety* – Accountability should be clearly allocated to ensure procedures are followed and maintained. Managers and supervisors should be provided with the authority and resources to implement and maintain control measures effectively.

- *Maintenance of plant and equipment* – This will involve regular inspection and testing, repair or replacement of damaged or worn plant and equipment. It includes checking that any control measures are suitable for the nature and duration of work, are set up and used correctly.
- *Up-to-date training and competency* – Control measures, particularly lower level controls, depend on all workers and supervisors having the appropriate competencies to do the job safely. Training should be provided to maintain competencies and to ensure new workers are capable of working safely.
- *Up-to-date hazard information* – Information about hazards, such as plant and substances, may be updated by manufacturers and suppliers and should be checked to make sure controls are still relevant. New technology may provide more effective solutions than were previously available. Changes to operating conditions or the way activities are carried out may also mean that control measures need to be updated.
- *Regular review and consultation* – Control measures are more effective where there is regular review of work procedures and consultation with your workers and their representatives.

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5. Step 4 – How to review controls

The control measures that you put in place should be reviewed regularly to make sure they work as planned. Don't wait until something goes wrong.

There are certain situations where you must review your control measures under the Regulations and, if necessary, revise them. A review is required:

- when the control measure is not effective in controlling the risk
- before a change at the workplace that is likely to give rise to a new or different health and safety risk that the control measure may not effectively control
- if a new hazard or risk is identified
- if the results of consultation indicate that a review is necessary
- if a health and safety representative requests a review.

You may use the same methods as in the initial hazard identification step to check controls. Consult your workers and their health and safety representatives and consider the following questions:

- Are the control measures working effectively in both their design and operation?
- Have the control measures introduced new problems?
- Have all hazards been identified?
- Have new work methods, new equipment or chemicals made the job safer?
- Are safety procedures being followed?
- Has instruction and training provided to workers on how to work safely been successful?
- Are workers actively involved in identifying hazards and possible control measures? Are they openly raising health and safety concerns and reporting problems promptly?
- Is the frequency and severity of health and safety incidents reducing over time?
- If new legislation or new information becomes available, does it indicate current controls may no longer be the most effective?

If problems are found, go back through the risk management steps, review your information and make further decisions about risk control. Priority for review should be based on the seriousness of the risk. Control measures for serious risks should be reviewed more frequently.

Quality assurance processes may be used if you design, manufacture or supply products used for work to check that the product effectively minimises health and safety risks. Obtain feedback from users of the product to determine whether any improvements can be made to make it safer.

Case studies demonstrating how to manage work health and safety risks in consultation with workers are at Appendix C.

6. Keeping records

Keeping records of the risk management process demonstrates potential compliance with the Act and Regulations. It also helps when undertaking subsequent risk assessments.

Keeping records of the risk management process has the following benefits. It:

- allows you to demonstrate how decisions about controlling risks were made
- assists in targeting training at key hazards
- provides a basis for preparing safe work procedures
- allows you to more easily review risks following any changes to legislation or business activities
- demonstrates to others (regulators, investors, shareholders, customers) that work health and safety risks are being managed.

The detail and extent of recording will depend on the size of your workplace and the potential for major work health and safety issues. It is useful to keep information on:

- the identified hazards, assessed risks and chosen control measures (including any hazard checklists, worksheets and assessment tools used in working through the risk management process)
- how and when the control measures were implemented, monitored and reviewed
- who you consulted with
- relevant training records
- any plans for changes.

There are specific record-keeping requirements in the Regulations for some hazards, such as hazardous chemicals. If such hazards have been identified at your workplace, you must keep the relevant records for the time specified.

You should ensure that everyone in your workplace is aware of record-keeping requirements, including which records are accessible and where they are kept.

Appendix A – Assessing how things go wrong

TIME	A customer comes into the service area with an issue about service	WHAT CAN STOP OR CHANGE THIS?	Service needs to be provided to customers who come into the service area. A telephone complaints service may remove some potential for customers to go to the service area.
	WHAT MAY HAPPEN NEXT?		
	The customer service officer is unable to satisfy the customer's concerns or issues.	WHAT CAN STOP OR CHANGE THIS?	Providing customers with information about the extent of services and policies, and providing training to the customer service officer, may reduce the chance of dissatisfaction.
	WHAT MAY HAPPEN NEXT?		
	During the service discussion with the customer service officer, the customer becomes upset.	WHAT CAN STOP OR CHANGE THIS?	Providing customer service officers with training on conflict resolution and dealing with difficult situations may prevent customers becoming upset. Ensuring other staff are available to assist.
	WHAT MAY HAPPEN NEXT?		
	The customer service officer's unable to calm the customer and the customer becomes aggressive.	WHAT CAN STOP OR CHANGE THIS?	Implementing procedures for customer service officers to disengage with the customers safely is one way of managing the escalating situation.
	WHAT MAY HAPPEN NEXT?		
	The situation escalates. There is no protection offered by the counter.	WHAT CAN STOP OR CHANGE THIS?	Change the service counter or area so that customer service officers are separated from customers or provide an escape route to a safe place.
	WHAT MAY HAPPEN NEXT?		
The customer service officer is assaulted and suffers injury, shock and related problems.	WHAT CAN STOP OR CHANGE THIS?	Ensure that there are emergency procedures in place to stop assault. Ensure that there is first aid available to deal with the outcomes of an assault. Ensure that counselling is available to support the victim.	

Appendix C – Case studies

Case Study 1:

Two years ago, the Burbs Municipal Council implemented a number of written health and safety procedures used to train workers how to carry out particular tasks safely. As these procedures had not been reviewed since their implementation, the Safety Manager (SM) implemented a new approach to not only review these procedures but also promote health and safety more widely across the organisation by encouraging staff involvement and co-operation.

To do this, the SM established and facilitated safety workshops each Friday for an hour where a team would review a particular task and its procedures to identify hazards, assess risks and options to control these. The team included management, council workers, the respective health and safety representative and any contractors engaged to carry out the work.

The SM's approach was to facilitate the workshops but then hand this role over to the relevant team supervisor, who would then facilitate future meetings to review other tasks conducted by the workers. The written health and safety procedures were not used in the workshops as the SM wanted to learn more about the hazards, risks and controls from the workers without prompting. However, any changes discussed and agreed during the meeting would be included in the revised written safety procedures.

The first safety workshop was conducted in the Parks and Gardens Branch and involved management, workers, their health and safety representatives and a representative from the maintenance shop that supplied the Parks and Gardens Branch with a variety of vehicles and equipment.

Safety workshop – 20 August 2010	
Team	Parks and Gardens Branch
Task being reviewed	Cleaning of the toilets in the council's parks
Description of task	Undertaken by two workers each Monday morning in a Council truck who would clean the eight toilet blocks across the municipality
What does the task involve?	<p>At the depot:</p> <ul style="list-style-type: none"> • Load the truck with the compressor and pressure hose along with cleaning chemicals and materials <p>At the park:</p> <ul style="list-style-type: none"> • Open toilet block • Clean toilets • Unload compressor and pressure hose, place them in toilet block and attach to tap, turn on compressor and hose walls and floors • Put compressor and pressure hose along with cleaning gear back on truck • Dry out toilet block floor by sweeping • Leave park and go to next one

In order to gather advice and information from the team, the SM asked the following questions and shared the responses by writing them on a whiteboard or butchers paper:

	<i>What hazards are encountered when doing the task?</i>	<i>What risks do these pose to the health and safety?</i>	<i>How are these hazards and risks controlled?</i>
Plant	<ul style="list-style-type: none"> Truck Compressor and pressure hose 	<ul style="list-style-type: none"> Truck - faulty truck could cause accident and cause injuries to workers and others Compressor and pressure hose - faulty fuel line in compressor could cause burns and injuries through fire or explosion 	<ul style="list-style-type: none"> Truck and compressor have maintenance schedule Checklist for visual inspection for all plant before it leaves depot Reporting and tagging system for all defective plant
Manual Handling	<ul style="list-style-type: none"> Loading and unloading the compressor Carrying the compressor to and from the toilet block 	<ul style="list-style-type: none"> Heavy load can cause sprains, strains, back injuries or fractures and cuts if dropped on foot 	<ul style="list-style-type: none"> Compressor has handles fitted to assist in lifting and carrying Two persons required to lift and carry compressor Only workers who have been trained able to lift and carry compressor
Chemical	<ul style="list-style-type: none"> Cleaning agents used to clean toilets and basins 	<ul style="list-style-type: none"> Skin irritation, rashes and illness caused by exposure to chemicals and their vapours in confined space 	<ul style="list-style-type: none"> Only non-toxic cleaning agents used Gloves provided to avoid skin contact
Noise	<ul style="list-style-type: none"> Operating the compressor in a closed space with hard surfaces 	<ul style="list-style-type: none"> Hearing loss from prolonged exposure to the noise levels generated by the compressor 	<ul style="list-style-type: none"> Hearing protection provided for wearing when hosing out the toilet block
Slips, trips and falls	<ul style="list-style-type: none"> Wet floor when hosing out the toilet block. 	<ul style="list-style-type: none"> Cuts and bruises caused by slipping on wet surface 	<ul style="list-style-type: none"> Safety boots were provided that had slip-resistant soles

Many staff present at the workshop indicated it was a waste of time as everything discussed was covered by the health and safety procedure, which they knew backwards. The SM acknowledged this concern but then asked the team whether the way the task was being conducted could be changed to improve health and safety.

One staff member raised concerns about lugging the compressor around 16 times every Monday morning and that doing this tempted them to call in sick. The SM was curious about this and asked why it was necessary to take the compressor off the truck and place it in the toilet. The

workers explained that the length of the hose on the pressure spray was short and could only be operated with the compressor in the toilet block.

After hearing this, the representative from the maintenance shop who supplied the compressor mentioned that he could attach a 10-metre hose to the compressor, which would mean the compressor would not have to be taken off the truck. The team agreed this was a good idea and would eliminate the manual handling risks associated with lifting and carrying the compressor. The SM asked what other impacts this would have. The team agreed this would also reduce the noise as the compressor would now be outside the toilet block, but that there could be new risks associated with handling and storing a 10 metre long hose. The team agreed to trial the new hose. It was then installed with a hose handling system.

Following the workshop, the SM asked the supervisor to ensure the modifications were made within two weeks and to revise the procedures and have them checked by the health and safety representative and workers.

Case Study 2:

Jane Smith has been working at the local grocery store for the last 12 months. She had recently taken on a new role as the bakery supervisor and was eager to review the work activities and safety procedures. In preparing for the review, Jane considered how she would conduct the review and who she should speak with.

As a first step, Jane identified the different activities and tasks that were carried out by the workers. These included:

- preparing a number of different products such as bread, cakes, slices and doughnuts
- cleaning items used in product preparation
- general housekeeping.

The next step was to analyse what was involved with each activity. Jane spent three mornings that week with the four bakers who worked in the bakery department. She talked to them about the work activities and what they thought could be changed to improve the safety of the workplace. One of the bakers had been working in the store for over 10 years, whilst another had been working for over 25 years. The other two bakers were apprentices and had only been working with the store for around six months.

From these discussions, Jane identified a number of key tasks the bakers carried out every day when preparing the baked products:

- moving the ingredients from their storage locations to the area of use
- mixing the ingredients together using specialised mixers
- transferring the mixture to the container for baking
- putting them in the oven and removing them from the oven
- slicing and decorating
- packaging the products.

During an inspection of the bakery, Jane and the bakers identified a number of hazards, including the following:

- the doughnut mixer was not guarded and the mixing bowl could be accessed when the machine was operating
- the concrete floors were slippery in the mixing room and flour was spilt where the bakers walked
- low lighting in the food preparation area

- there was narrow access and restricted movement in the storage area where the flour bags were kept.

Jane and the bakers discussed the risks associated with each of the hazards and what could be done to control these risks. In relation to the unguarded mixer, one of the bakers suggested purchasing or hiring a new model with an interlocking guard. After considering the ideas of the bakers, Jane completed the following risk register:

XYZ Grocery Store Pty Ltd Work area: Bakery department Form completed by: Jane Smith (Bakery supervisor) Date form completed: 05/11/2010			
Hazard identification <i>Hazard:</i> Doughnut mixer not guarded and mixing bowl can be accessed when machine is operating.			
Risk Assessment <i>What is the harm the hazard could cause:</i> The person operating the mixer could be injured by the moving parts if their hand slipped in while the machine was operating. Hand could be cut or could even lose a finger. <i>What is the likelihood of this happening:</i> This machine is used several times a day. Two of the workers have not been working in the bakery for a long time and are not very experienced in using the equipment. <i>Persons at risk:</i> All four bakers who operate the machine. <i>Existing control measure:</i> Staff follow policy and operating instructions to use the mixer safely – not very effective because it relies on staff keeping hands away from the dangerous parts. <i>Consequence:</i> Serious injuries <i>Likelihood:</i> Very likely <i>Outcome:</i> High risk - the mixer must not be used again until the risk has been controlled.			
Control measures <i>Possible control options:</i> <ul style="list-style-type: none"> • <i>Elimination</i> – Eliminating the use of the mixer completely will mean the business cannot continue to sell baked products as the dough cannot be mixed. Business revenue will suffer. • <i>Substitution</i> – Use of the mixer could be substituted by hand mixing the dough. One day's production will be lost in the change over. This method can only be considered an interim option as it is not sustainable for more than a day or two with present staff. However, part time staff could be hired to mix the dough. Business income would be reduced and impact on revenue. Alternatively, the mixer could be replaced by purchasing a new, safer machine with a built-in guard. • <i>Engineering</i> – The mixer could be modified by adding an interlocking guard. A mixer could be hired for the period the old mixer is in for repairs. One day's production will be lost in this option. The modifications are estimated to cost \$1600. Other costs included are: one day lost in production plus hire of substitute machine for approximately 10 days and transport. Estimated cost is less than \$6000. • <i>Administrative or PPE</i> – All staff told to keep hands away from the mixing bowl while it is in use. Only the more experienced bakers are to operate the mixer. <i>Preferred control option:</i> Purchase a new mixer, which would not cost much more than having the old one modified. Mixing to be done by hand while waiting for replacement mixer to arrive. The costs involved are outweighed by worker safety and this option eliminates the risk of injury.			
Implementation			
Associated activities	Resources required	Person(s) responsible	Sign off and date
New mixer to be purchased. Mixing to be done by hand while waiting for new mixer. May require staff working more hours	Less than \$6000	Jane Smith – Bakery supervisor	J Smith 9/11/10
Develop new work procedures Provide training to bakers on using the new machine	3 hours	Jane Smith – Bakery supervisor	J Smith 20/12/10

Review
Scheduled review date: 31 January 2011
Are the control measures in place? <ul style="list-style-type: none"> • Yes – the new machine has an interlocking guard and bakers have been provided with training on how to use the machine in accordance with the manufacturer's instructions.
Are the controls eliminating or minimising the risk? <ul style="list-style-type: none"> • Yes – the interlocking guard prevents people from putting their hand in the mixing bowl.
Are there any new problems with the risk? <ul style="list-style-type: none"> • No.

Jane repeated these steps for each hazard that she identified. The review of the work activities and the implemented control measures improved the safety in the bakery department at the grocery store.

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Your Workplace Name Here

PPE TRAINING REGISTER

(one per page per employee)

EMPLOYEE DETAILS

Employee Name:

Date of Birth:

Address:

Phone:

Mobile:

Date commenced:

Date employment ceased:

PPE TRAINING

1.

2.

3.

4.

5.

6.

SUBJECT OF TRAINING: PPE TRAINING REGISTER

Date of Training:

Resources Provided: YES NO

Competent training provided by trainee: YES NO

Trainee Signature:

Training of each employee will be documented using the PPE Training Form and kept on file. The document certifies that the employee has received the training on the specific PPE he/she will be using

Sample Competency Register

		Competency			
Name of worker					

Notes:

1. Write the names of the workers in the 'name of worker' area.
2. Write the name of the skill required in the 'competencies columns' — for example, manual handling, cash handling, chemicals.
3. Tick the square that corresponds to the worker and the competency for an easy reference to which worker holds which competency (see example below). Initial and date the appropriate column.

		Competency			
		Manual handling	First aid	Security procedures	Chemical handling
Name of worker	Mike D	3.5.13 MD/RP			27.10.13 MD/RP
	Sue M		17.8.13 SM/BG		27.10.13 SM/BG

Rural plant

Code of Practice 2004

OIR Disclosure Log



This Queensland code of practice was preserved as a code of practice under section 284 of the *Work Health and Safety Act 2011*.

This code was varied by the Minister for Education and Industrial Relations on 27 November 2011 and published in the Queensland Government Gazette on 2 December 2011.

This preserved code commences on 1 January 2012.

OIR Disclosure Log

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Contents

Introduction	4
1. Managing the risks from rural plant	5
2. Identification of the risks from rural plant	6
3. Risk controls for rural plant	6
3.1 Purpose of control	6
3.2 The control hierarchy	7
3.3 Selecting a control measure.....	9
3.4 Recording control measures	9
3.5 Monitor and review of control measures	9
4. Producers'/Growers' rights to information	10
5. Consultation	11
5.1 Principles of consultation	11
5.2 Issues for consideration	11
6. Preventative measures	11
6.1 Inspection	11
6.2 Servicing and maintenance.....	12
6.3 Repair	12
6.4 Cleaning	13
6.5 Disengaged/stored rural plant.....	13
6.6 Transporting rural plant.....	13
6.7 Wear, corrosion and damage.....	13
6.8 Modification of plant	13
7. Guarding	14
8. Management of other specific plant risks.....	15
8.1 Tractors	15
8.2 Front end loader attachments	15
8.3 ROPS and FOPS for rural mobile plant	17
8.4 All terrain vehicles	18
8.5 Managing risks from plant with hot or cold parts or material	20
8.6 Managing electrical risks associated with plant	20
8.7 Managing risks from plant designed to lift or move persons, equipment or material.....	21
8.8 Managing risks of confined spaces	22
8.9 Managing risks from working at heights.....	25
9. Training	26
9.1 Provision of training.....	26
9.2 Training methods	26
9.3 Elements of a training program	26
9.4 Assessment of competency	27
9.5 Review of training.....	27
9.6 Training records	28
Appendix: Dictionary	29

Introduction

The *Rural Plant Code of Practice 2004* is an approved code of practice under section 274 of the *Work Health and Safety Act 2011* (the Act).

An approved code of practice is a practical guide to achieving the standards of health, safety and welfare required under the Act and the *Work Health and Safety Regulation 2011* (the Regulation).

A code of practice applies to anyone who has a duty of care in the circumstances described in the code. In most cases, following an approved code of practice would achieve compliance with the health and safety duties in the Act, in relation to the subject matter of the code. Like regulations, codes of practice deal with particular issues and do not cover all hazards or risks which may arise. The health and safety duties require duty holders to consider all risks associated with work, not only those for which regulations and codes of practice exist.

Codes of practice are admissible in court proceedings under the Act and Regulation. Courts may regard a code of practice as evidence of what is known about a hazard, risk or control and may rely on the code in determining what is reasonably practicable in the circumstances to which the code relates.

Compliance with the Act and Regulation may be achieved by following another method, such as a technical or an industry standard, if it provides an equivalent or higher standard of work health and safety than the code.

An inspector may refer to an approved code of practice when issuing an improvement or prohibition notice.

How is the code organised

In providing guidance, the word 'should' is used in this Code to indicate a recommended course of action, while 'may' is used to indicate an optional course of action.

This Code also includes various references to provisions of the Act and Regulation which set out the legal requirements. These references are not exhaustive. The words 'must', 'requires' or 'mandatory' indicate that a legal requirement exists and must be complied with.

Who has duties?

A **person conducting a business or undertaking** has the primary duty under the Act to ensure, as far as reasonably practicable, that workers and other persons are not exposed to health and safety risks arising from the business or undertaking.

Officers, such as company directors, have a duty to exercise due diligence to ensure that the business or undertaking complies with the Act and Regulation. This includes taking reasonable steps to ensure that the business or undertaking has and uses appropriate resources and processes to provide and maintain a safe work environment.

Workers have a duty to take reasonable care for their own health and safety and that they do not adversely affect the health and safety of other persons. Workers must comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to health and safety at the workplace.

Consulting workers

Consultation involves sharing of information, giving workers a reasonable opportunity to express views and taking those views into account before making decisions on health and safety matters.

The Act requires that you consult, so far as is reasonably practicable, with workers who carry out work for you who are (or are likely to be) directly affected by a work health and safety matter.

If the workers are represented by a health and safety representative, the consultation must involve that representative.

You must consult your workers when proposing any changes to the work that may affect their health and safety.

Consulting, cooperating and coordinating activities with other duty holders

The Act requires that you consult, cooperate and coordinate activities with all other persons who have a work health or safety duty in relation to the same matter, so far as is reasonably practicable.

Sometimes you may share responsibility for a health and safety matter with other business operators who are involved in the same activities or who share the same workplace. In these situations, you should exchange information to find out who is doing what and work together in a cooperative and coordinated way so that all risks are eliminated or minimised as far as reasonably practicable.

Further guidance on consultation is available in the *Work Health and Safety Consultation, Coordination and Cooperation Code of Practice*.

1. Managing the risks from rural plant

Farm machinery has the potential to kill and maim. Unfortunately, these injuries are often to somebody's spouse, parent or child. Tragically, the outcome of any on-farm accident has at least two ramifications for families – emotional and financial.

The risks from rural plant, like any other risk, are best controlled using a risk management approach. The object of risk management is to enable you to assess systematically all the factors about an activity involving rural plant. This approach will help you make a judgement about the associated risks and to put in place appropriate controls. The risk management approach involves:

- (a) **identifying** plant hazards that pose a risk
- (b) **assessing** the degree of risk created by the plant, environment and work processes
- (c) **determining** and **implementing** appropriate control measures
- (d) **recording** the assessment and any action or work procedure established for the workplace
- (e) **monitor** and **review** control measures.

It is recommended that the *How to Manage Work Health and Safety Risks Code of Practice* be consulted for further information about the risk management process.

Specific information on some of the more common items of rural plant is given in Section 8 Management of other specific plant risks.

2. Identification of the risks from rural plant

Rural plant can come in many different shapes and sizes of machinery, equipment, vehicles and tools. The first step to identifying the risks associated with the rural plant at your workplace or farm is to make a list of all plant. Rural plant includes, but is not limited to:

- planters
- harvesters
- hoppers
- silos
- farm vehicles, e.g. tractors and all terrain vehicles (ATVs)
- electric tools such as saws, drills, grinders
- irrigation equipment
- workshop tools and equipment
- implements.

Once a complete list of plant has been made, all hazards associated with the plant should be noted. A hazard is something with the potential to cause harm, for example the hazards of an electric saw are the saw blade and the electricity itself. Once all hazards at the workplace have been identified the risks associated with the hazards must be determined. Risk is the likelihood that death, injury or illness might result because of the hazard, for example if the blade of the saw is unguarded the likelihood of coming into contact with the blade is high.

Consultation with workers is an effective method of identifying plant and hazards. Often workers have the best idea about where hazards exist because they are the people using the plant on a daily basis.

3. Risk controls for rural plant

3.1 Purpose of control

Controls are those measures that eliminate or reduce the potential for events such as tractor rollovers that can result in injury. When appropriate, the choice of control measures should be made by the producer/grower with the worker or operator.

Controls should be part of any consideration to introduce rural plant into the workplace. You can apply control measures:

- before use, for example when purchasing new rural plant, or
- during use, for example the fitting of a guard to a PTO on an existing tractor.



Figure 1. Tractor being fitted with PTO guard.

3.2 The control hierarchy

The preferred methods of risk control ranked in the order that they should be considered and adopted are:

- (a) elimination – disposing of dangerous, unsuitable or obsolete equipment
- (b) design – allows hazards to be eliminated in the design phase by incorporating control measures in the design of the plant
- (c) substitution – replacing the material or process associated with plant with a less hazardous one
- (d) redesign – redesigning plant or work processes involving plant to reduce or eliminate risk
- (e) separation – isolating the hazard from people
- (f) administration – adjusting the time or conditions of risk exposure
- (g) personal protective equipment – using appropriately designed and properly fitted equipment where other control measures are not appropriate.

Risks to workplace health and safety should preferably be controlled in order, by design, substitution, redesign or separation measures. These control measures reduce or minimise risk in a more reliable manner than administration or personal protective equipment.

Design

The use of design as a control by the designer allows hazards to be designed out and control measures to be designed in before manufacture.

Examples of design include:

- a stationary hopper that has been designed with access openings so any necessary cleaning or inspection can be carried out from outside the hopper
- a PTO shaft guard that has been designed to minimise the risk of entanglement
- the design of a guard that has a limit switch positioned so once the guard is lifted or moved slightly, the limit switch is activated and the rural plant stops.

Substitution

Replacing a material or process associated with plant with a less hazardous one should not result in a less efficient method of performing a task or an inferior piece of plant.

Examples of substitution include:

- the replacement of an old tractor without rollover protection with a model that has a factory fitted roll over protective structure
- changing the method of attachment of an implement to the factory fitted drawbar, three-point linkage or other specific hitch points from dangerous points higher than and forward of the drawbar.

Redesign

Redesigning equipment or work processes can be used to reduce or eliminate risk.

Examples of redesign include:

- redesigning the electrical system to allow for the installation of emergency stop buttons within easy reach of operators of rural plant where entanglement may occur
- installing a blower/filler pipe to a feed silo to remove the risk of falling from height or entanglement in overhead powerlines if present.

Separation

Separation of the process can be by distance from the rest of the workplace or by a physical barrier between the process and any person.

Examples of separation include:

- the use of a tractor cabin designed to isolate the driver from tractor noise
- the use of safeguards that include a guardrail or fence, to isolate other persons such as children or bystanders, from rural plant hazards such as a barrier to a fixed auger intake point
- the use of machine guards on mobile plant e.g. the guards covering rotating parts of a harvesting machine.



Figure 2. Demonstration of guarding as an appropriate method of separating workers from risk.

Administration

Administrative controls are 'policy' or behavioural type controls you can put in place as a producer. These controls can include the time of work, hours of work, who does the work and who has access to a work area or plant. For example, changing a work practice for entry into a confined space, where there is a requirement for an extra person to be present outside the confined space. Administrative controls also include the 'safe systems of work' and documented policies and procedures that a business may implement in a workplace.

Examples of administrative controls include:

- training workers in the proper procedures and processes for operating plant
- excluding non-essential personnel from access to plant
- limiting the number of hours in a work period a worker is using rural plant
- ensuring that outdoor tasks are done at the most appropriate time of day to overcome problems associated with ultraviolet exposure, for example skin cancer.

Personal protective equipment (PPE)

Personal protective equipment means clothing, equipment and/or substances which, when worn correctly, protect part or all of the body from risks of injury or disease at work or in the workplace.



Figure 3. Chainsaw operator wearing appropriate PPE.

The control of exposure to plant risks should be secured by one or more measures other than provision of personal protective equipment. Use of **PPE is the least effective method of controlling risk**. However, a long-term strategy using other measures may require the short-term use of personal protective equipment to attain this aim. For example, you may decide to replace noisy rural plant with a quiet version. In the meantime, hearing protection is provided to workers exposed to the noisy rural plant.

3.3 Selecting a control measure

The control of rural plant risks should preferably be dealt with by design, substitution, redesign and separation (for example, by a fixed and physical barrier). These controls reduce or minimise risk in a reliable manner. However, the use of PPE, administration and separation by distance do nothing about the removal of the actual risk.

These controls rely on human behaviour to follow set methods to control the risks. Control measures may be divided into short-term/ immediate control measures and long-term control measures. The overall aim should always be to eliminate the hazard at the source. While trying to achieve this aim other short-term actions should be used.

Some of the methods you can use to select a control measure include:

- consulting with your workers
- referring to suggestions for appropriate control measures in the manufacturer's instructions, where available
- referring to specialist practitioners and representatives of rural industry associations, unions and government bodies.

3.4 Recording control measures

As part of your risk assessment you should record information about implemented control measures. This information should be readily available at the workplace.

3.5 Monitor and review of control measures

You should monitor and review control measures to determine:

- the potential effectiveness of the control measures (i.e. is the risk still reduced by the control measure)

- whether the implementation of a chosen control measure introduced a new hazard
- whether an upgrade to designs of equipment or guards can be purchased to replace old equipment.

One of the ways to undertake this review is to re-do the first two steps of the risk management procedure. This involves identifying the hazards and assessing the risk. Methods that can be used to review control measures to be applied, also include:

- consulting with your workers
- referring to specialist practitioners and representatives of rural industry associations, unions and government bodies.

All control measures should be maintained and monitored. A record of when to conduct a review of implemented control measures should be kept.

4. Producers'/Growers' rights to information

Designers, manufacturers, owners and suppliers of rural plant have duties to ensure rural plant is safe and without risk to health when used properly. These duties relate to the design, construction and testing of plant. In addition designers, manufacturers, and suppliers have duties to make appropriate information about the safe use of the plant available to others.

This means that when you purchase or hire rural plant for use at a rural workplace, you should receive information about the rural plant from its supplier or manufacturer. The supplier or manufacturer has a legal duty to provide information on the safe use of plant.

This information should include the use for which it has been designed and tested. As well, the information should include any conditions necessary to ensure that, when the rural plant is used properly, it will be without risk to the health and safety of any person. The information should be provided when, for example, a safeguard is purchased separately from rural plant. In this instance, information should include the correct method of attachment or installation of the safeguard.

Also, you have a right to know that:

- the rural plant has been designed, manufactured and constructed to be safe and without risks to health and safety when used properly
- testing and examination has been carried out or arranged to be carried out to ensure that the plant is without risk to health and safety
- the plant, when supplied, is accompanied by information about the way the plant must be used to ensure health and safety.

Further information on the duties of designers, manufacturers, owners and suppliers of plant is available in the *Plant Code of Practice*.

5. Consultation

5.1 Principles of consultation

Workers and other persons should be consulted on rural plant issues that may affect their health or safety. These workers can assist in the identification of the risks involved in operating rural plant at the workplace.

In a small workplace, consultation can take the form of an informal discussion or during the inspection of the workplace. For example, consultation could occur between you and your workers over the content of a manufacturer's instructions. In a large workplace with many workers, you may set up a formal process with a health and safety committee.

Consultation involves the sharing of information and the exchange of views between PCBUs, workers and their representatives. It provides the opportunity to add to the decision making process in a timely fashion. This may pre-empt or resolve any problems. As well, consultation fosters co-operation in the workplace.

You should ensure consultation with workers occurs during the identification and assessment of risks associated with rural plant for rural workplaces. You should also consult on the selection and implementation of control measures.

5.2 Issues for consideration

The consultative process should regularly address the following issues:

- planning for the introduction of new plant or a new operation method
- identifying risks associated with the operation of plant
- assessing risks associated with the operation of plant
- deciding what control measures can be taken
- determining training requirements
- developing documented 'safe systems of work'
- developing advice to any workers and other persons who are likely to operate plant.

6. Preventative measures

There is a range of preventative measures that can assist you to manage the risks associated with rural plant. These are outlined below.

6.1 Inspection

It will be necessary to carry out inspections of rural plant and associated processes as part of risk management and as an ongoing activity. Someone who is competent should undertake inspection of rural plant.

Inspection is one of the best tools available to identify hazards and assess any associated risks before accidents occur. Inspection can accomplish the following:

- (a) identify potential problems of operation not referred to in the manufacturer's instructions
- (b) identify deficiencies in the rural plant or the equipment associated with the use of the plant. Among the basic causes of problems are normal wear and tear, corrosion, and damaged rural plant parts

- (c) identify worker actions associated with the use of rural plant. This will identify where further training is required
- (d) identify effects of changes in processes or materials associated with rural plant. Changes may gradually occur that produce a different outcome than that originally assessed
- (e) identify inadequacies in implemented control measures.

You should consistently identify issues such as:

- (a) the operational standards against which rural plant should be inspected
- (b) the frequency of inspections
- (c) critical safety instructions, such as the isolation procedure, to be applied during inspection
- (d) the procedures to be followed when:
 - i. carrying out periodic inspections
 - ii. carrying out specific tests
 - iii. inspecting repaired rural plant
 - iv. inspecting modified rural plant
 - v. inspecting re-rated rural plant, and
- (e) the procedures to be followed when investigating and reporting to PCBU any variations from normal operation or dangerous occurrences.

Regular periodic inspections of rural plant should be made.

6.2 Servicing and maintenance

Rural plant should be serviced and maintained in accordance with the manufacturer's specifications or, without such specifications, according to other accepted practice. A record of all servicing and/or maintenance should be kept.

The servicing of rural plant while in use should only be carried out if this can be done without risk to health and safety. Adequate safeguards should be provided to ensure health and safety where servicing is carried out during use.

Through maintenance you can prevent rural plant from deviating from the design intention. This will help prevent rural plant becoming a risk to health and safety. Rural plant should be isolated or de-energised before maintenance starts. When rural plant is isolated and a plant shutdown will result, any total or partial shutdown should not create additional risk.

Where rural plant cannot be isolated, alternate means of preventing accidental operation should be implemented. In these situations work should be conducted under controlled procedures to allow for maintenance. Examples are:

- a system to control access into maintenance areas
- another person should be stationed at the controls of the rural plant and an effective means of direct communication should exist between the person carrying out maintenance and the person stationed at the controls. Other precautions should be adopted where direct communication is not possible.

All forms of safeguarding should be replaced before start-up of plant. Taking short cuts can lead to exposure to risks.

6.3 Repair

Where possible, rural plant should be isolated before repair begins. Rural plant should be repaired as recommended by the manufacturer or documented procedures.

6.4 Cleaning

Rural plant should be isolated before cleaning starts, and where appropriate, physically made immobile. As well, rural plant should be safeguarded while cleaning, especially where it is necessary to clean rural plant while it is being used. If during cleaning, safeguards have to be removed, then the rural plant should be in a non-operational state or means of preventing accidental operation should be implemented.

6.5 Disengaged/stored rural plant

Rural plant should be disengaged/stored:

- so as not to hinder or interfere with the operation of any other plant
- with safeguards in place if operational, as a precaution against unintentional activation – for example, by a person leaning on the controls
- so access is not obstructed
- to prevent deterioration to the extent that rural plant becomes unsafe.

6.6 Transporting rural plant

When you are transporting rural plant on road/track, you should ensure that rural plant is secured and there is no risk to health and safety. Queensland Transport may have specific requirements which need to be met.

The risk of plant contacting overhead electrical lines should also be considered. The [*Electrical Safety Code of Practice 2010 - Working Near Exposed Live Parts*](#) provides practical advice in regards to controlling the risk of electrocution due to contact with overhead powerlines.

A safe system of work for operating rural plant near live electrical lines has been developed by Farmsafe Queensland and is available through your industry organisation.

6.7 Wear, corrosion and damage

You should consider the risks associated with plant as a result of:

- wear
- corrosion
- loose or worn rural plant parts that overload the design specifications or are not effective
- rural plant parts damaged because of break down, rollover or misuse.

6.8 Modification of plant

Modification to rural plant may include a variety of changes from minor to substantial. A simple modification may not alter the design of rural plant or the way it operates. However a substantial modification can alter the design characteristics of the original rural plant. This may cause a change in the operation of the plant. For example, a substantial modification may alter the stability of the rural plant or the strength of its supporting parts.

Substantial modifications to rural plant can create risks to health and safety. These risks could affect the operator or any person at risk from the use of the plant. Therefore any modification to rural plant needs careful consideration. A producer who modifies rural plant has the same duty as a manufacturer under the *Work Health and Safety Act 2011*.

Under the legislation:

- 1) *A manufacturer of plant for use at a relevant place for the plant has a duty to ensure that:*
 - a) *The plant is manufactured to be safe and without risk to health when used properly*
 - b) *The plant, when manufactured, is tested and examined to ensure it has been manufactured to be safe and without risk when used properly, and*
 - c) *The plant, when supplied to another person, is accompanied by information about the way the plant must be used to ensure health and safety.*
- 2) *Also, a manufacturer of plant for use at a relevant place for the plant has a duty to take the action the chief executive reasonably requires to prevent the use of unsafe plant anywhere.*

If you need to modify rural plant, you have several options including:

- sending rural plant to the manufacturer/supplier for modification
- sending the rural plant to a local engineering workshop
- undertaking the work yourself.

When you undertake substantial modifications, you should take the following action:

- Gather sufficient information, preferably from the manufacturer or a relevant Australian Standard, about the rural plant. This will enable you to include appropriate safety controls when undertaking a modification.
- Undertake an assessment of the modification to ensure the safety control measures mitigate risk. The assessment should use all the information gathered. You should implement further control measures for any risks highlighted in the assessment. The risk assessment should confirm the control of all risks resulting from the modification.

If you are unsure of your assessment, get independent advice. You should only modify rural plant as recommended by the manufacturer or other documented procedures.

Modification of safety equipment should not be undertaken. For example, the welding of brackets onto a rollover protective structure or the drilling of holes may affect structural integrity, which will dramatically reduce its protective ability.

You must include information on all rural plant modifications and the implemented control measures when training workers or other persons who will use the plant.

7. Guarding

One of the many problems of working with rural plant is the chance of coming into contact with moving parts or materials, getting trapped between moving parts or materials or by being hit by material thrown from the machine. These risks should be controlled by measures that your risk assessment has shown to be appropriate to the task being undertaken.

Generally, guards should be provided where any rural plant part is within reach of persons and could become hazardous during operation, routine maintenance or adjustment. This includes situations where it is necessary to carry out servicing, maintenance or adjustment while:

- the rural plant is operating
- power-driven parts are functioning
- the rural plant is mobile
- power-driven parts are in motion.

Guarding is an important and detailed issue. It is recommended that the [Guide to safeguarding common machinery and plant](#) be read to properly understand the risks involved and to decide on and implement adequate controls.

8. Management of other specific plant risks

There is a need to assess the operational risks from rural plant in conjunction with other rural plant and the activities undertaken at the workplace. The following subsections identify areas that should be considered in any risk assessment process.

8.1 Tractors

Tractors are an integral item of plant to rural industry. Many fatalities have occurred in recent years associated with the use of tractors, especially in roll over and run over incidents. Workplace Health and Safety Queensland has developed a separate code of practice for tractors titled [The Safe Design and Operation of Tractors Code of Practice](#). It is highly recommended that this code of practice be read if a tractor is operated at your workplace. The code of practice outlines information on rollover protective structures and other relevant risk controls.

8.2 Front end loader attachments

Front end loader attachments (FEL) mounted to tractors, are widely used in the rural industry and include:

- single or multi-purpose buckets
- pallet forks
- bale and silage spikes
- bale and silage clamps and grapples
- blades and scrapers
- lifting jibs.

A FEL is normally attached to a tractor via a sub-frame that is permanently bolted to the tractor. Positive engagement and secure retention of the FEL under different operating conditions is usually provided by a quick detach and locking system from the sub-frame.

FELs should be supplied with a support stand which places the arms at the correct height to allow the tractor to be driven in or out when connecting or disconnecting the arms. The support stand should be located on a firm level surface capable of supporting the weight of the unhitched FEL.

Figure 4. Tractor fitted with a FEL, specifically designed for loading/unloading hay bales.



Risk assessment

Before using a tractor and FEL, always do a risk assessment that considers the operator, machine and environment in which it will operate.

When assessing the risks involved with the use of a FEL consider:

- whether the operator has the appropriate level of skill and knowledge
- the potential for carried objects or loads to roll back or fall on the operator
- the capability of the front axel, wheels and tyres of the tractor to accommodate the weight imposed by the FEL when it is fully loaded
- lift capacity of the tractor's hydraulic system
- is there adequate clearance between tractor front tyres and FEL frame to eliminate contact during turns
- stability of the tractor operating a fully loaded FEL
- appropriateness of the selected FEL to lift the load
- operating conditions related to:
 - (a) density of material to be handled (e.g. nature of material and whether wet or dry)
 - (b) dimensions of the load to be lifted
 - (c) speed of travel which affects stability on bumps or turns
 - (d) load height during travel
 - (e) terrain surface (direction of slope, evenness and hardness of surface), and
- whether the Rated Operating Load (ROL) of the FEL will be exceeded.

The ROL is the load that can be safely lifted without reducing rear axel weight of the tractor by more than 50% through weight transfer. If exceeded the rear wheels will start to lift and lose traction increasing instability. Both lateral (sideways) and longitudinal (lengthwise) operating stability may be affected while lifting and moving a load in the raised position because of the equipment, terrain or nature of the operation undertaken.

Risk control

A FEL should not be installed on a tractor unless it is fitted with a Roll Over Protective Structure (ROPS) or a cabin incorporating ROPS which complies with *AS 1636 Tractors – Roll-over protective structures – Criteria and tests*. The ROPS should preferably be a four post ROPS or a ROPS forward of the operator to provide a level of protection in the event of an object rolling back from the bucket or lifting mechanism.

Rollback of loads may also be prevented by using:

- specialised lifting attachments (e.g. bale spike)
- a level lift system
- a rollback guard
- lift height limiting device.

Where there is a risk of objects or material falling onto the operator, the ROPS should be fitted with a falling object protective structure (FOPS) that complies with *AS 2294 – Earthmoving machinery – Protective structures – General*.

The FEL should be matched to the tractor. Each FEL should have a decal or plate specifying its ROL for the tractor model. Seek guidance from the tractor manufacturer that engine capacity and its hydraulic system can provide a satisfactory operating performance from the FEL. The hydraulic system must be able to provide the pressure and flow rate required to lift operating loads of the FEL.

Rear weights or ballast added to tractors fitted with FELs moves the centre of gravity rearwards reducing the load on the front axle and improving stability. Ballast may occur as either rear wheel weights, water added to rear tyres and counterweights or a weight box added to the three point linkage. The amount of ballast added will depend on the load capacity of the tractor axle and tyres. The recommendations in the Operator's Manual provided by the tractor manufacturer should be followed.

Rear ballast also improves lateral stability. By lowering the centre of gravity and moving its position rearward away from the tipping axis, a greater tilt angle (critical tilt angle) must be exceeded before lateral rollover will occur.

Extending rear wheel track also improves lateral stability by further increasing critical tilt angle. However traversing a slope or running with one wheel over an obstacle or in a depression will decrease critical tilt angle. It is important to scan the operating environment to identify visible hazards such as rocks, stumps, depressions or unstable ground.

Quick release hydraulic couplings enable easy attachment and detachment. These should be clearly marked to avoid incorrect connection. All hydraulic pressure should be released before disconnection.

8.3 ROPS and FOPS for rural mobile plant

The design of the roll over protective structure (ROPS) and/or falling object protective structure (FOPS) on rural mobile plant must be sufficient to provide protection for the operator against roll over and/or falling objects during the task being undertaken.

Roll over protective structure (ROPS)

A roll over protective structure (ROPS) is typically required for a rural mobile plant with a weight of 560kg or more. Where used, ROPS must be manufactured and maintained according to AS1636 (series) *Tractors – Roll-over protective structures – Criteria and tests*, or equivalent. A plate or decal confirming compliance should be attached to the ROPS' frame, or inside the rural mobile plant cabin.

There are numerous situations in which rural mobile plant poses a risk of injury to the operator in the event of a roll-over. All types of rural mobile plant are potentially at risk of roll over, including harvesters, spray rigs and earth moving equipment.

Where there is a risk of injury from a roll-over incident, there are duties under the *Work Health and Safety Act 2011* to develop and implement safe systems of work to prevent or minimise the risk of injury to the operator for:

- persons who conduct a business or undertaking
- persons in control of a workplace
- designers, manufacturers and suppliers of rural mobile plant.

A documented risk assessment has to be undertaken in the development and implementation of the safe systems of work. This risk assessment should include information provided from the manufacturer and supplier, but will also need to include aspects regarding the safe use with consideration to specific aspects such as:

1. Operation and environment:
 - (a) the terrain that item of plant may be operated over
 - (b) the speed at which the plant may be operated at

- (c) any other environmental and operational conditions that may affect the safe use of the plant
 - (d) what weight loading may affect the stability of the item of plant, for example:
 - i. ballast amount and its configuration
 - ii. movement of liquid e.g. high clearance spray rig
 - iii. commodity loading e.g. harvest equipment
 - (e) stability and operational dynamics e.g. width of track, operation or body height, centre of gravity, distribution of weight.
2. Design:
- (a) engineering principles and standards adopted to control the risks of injury from roll-over
 - (b) testing or analysis undertaken to determine if the engineering controls provide adequate protection to the operator in the event of a roll-over situation
 - (c) testing or analysis conducted by a suitably competent person or a qualified engineer
 - (d) assessment conducted for operating the item of plant outside design capabilities, if this is likely to occur.

Falling object protective structure (FOPS)

A falling object protective structure (FOPS) must be fitted to any rural mobile plant, if any activity is undertaken which involves a risk to the operator of being struck and injured by a falling object, such as using a dozer for tree clearing or operating rural mobile plant within a eucalypt forest.

8.4 All terrain vehicles

All terrain vehicles (ATVs) are three or four-wheeled agricultural bikes commonly used on farms. Three-wheeled ATVs are inherently unstable and are no longer manufactured. Four-wheeled ATVs are a popular 'workhorse' on the farm. These vehicles are the cause of a number of fatal and non-fatal incidences each year. A large proportion of ATV injuries result from sideways, backward and forward overturns.

Buying an ATV

Purchase an agricultural or 'workhorse' ATV, not a sports recreational model. The agricultural model is designed for power, traction and stability. There are numerous factors and features to consider when choosing an ATV for your property.

Major considerations include:

- intended use of ATV (e.g. size of property, age of operator)
- terrain and ground conditions
- power and speed
- gear ratio
- suspension
- centre of gravity
- drive mechanism
- available attachments and accessories
- brakes
- seat carrying capacity
- reverse gear.

Risk assessment

When assessing the risks involved with the use of ATVs you should consider the vehicles':

- centre of gravity (usually high)
- track width (usually narrow)
- wheelbase (usually short)
- length of travel suspension (usually long)
- tyre pressure(usually low)
- weight of attachments (e.g. spray tanks).

All these features can contribute to instability and should be considered in relation to the terrain to be driven on, speed of operation, mechanical condition of the ATV and operator skill.

ATVs also pose an increased risk to the user over and above conventional vehicles. The unique design characteristics of these machines preclude the fitment of protection such as a roll cage. Occupants are therefore exposed to direct contact with the ground in the event of the vehicle overturning.

Risk from the following situations should also be assessed.

- Rider struck by an object (e.g. overhanging branch).
- Rollover from striking an object or the terrain being too steep.
- Leg of rider caught in rear tyre, chain or foot rest.
- Loads too heavy, unequally distributed or not secured properly.
- Rider inexperience with the effects of slope, speed or weight distribution.
- Poor maintenance of brakes and suspension.

Risk control

Personal protection

Protective equipment such as helmets, face shields, goggles, boots or shoes, gloves and appropriate clothing should always be worn. In open terrain operation or in continuous low speed operation, less protective or alternate clothing may be chosen after a risk assessment has been conducted. Be aware of solar radiation and risk of dehydration.

To reduce the risk of ATV accidents, operators must be trained in safe operating practices.

Riders must read and implement the operating instructions of their ATV's manufacturer.

Other safe practices include:

- Never allow passengers on the ATV unless it has been specifically designed to carry two persons. Carrying passengers on ATVs which have been designed to carry one person only interferes with the normal dynamics of the vehicle. The added weight also will complicate handling the ATV up and down slopes, around curves and stopping distances. The rider must adopt a 'dynamic' riding style by transferring the rider's weight from side to side and forward and backwards to counter balance the ATVs directional mass.

- Never allow anybody to operate an ATV who has not had adequate training or may be under the influence of alcohol or drugs.
- Keep children away from the ATV and its attachments, and ensure all guards are in place, particularly foot plates.

8.5 Managing risks from plant with hot or cold parts or material

Hot or cold parts or material associated with rural plant for use at a rural workplace may create a hazard.

Risk assessment

The risk assessment should consider the following:

Hazard	Example
molten material	oxy torch and welding
hot metal shavings	drilling metal
hot gases	a radiator overheating
naked flames	a cane torch
plant parts at high temperature	the exhaust system of a tractor

Risk control

Hot or cold material risks from rural plant should be controlled by the elimination of the hazard. Where this is not possible, you should:

- substitute the rural plant with less hazardous plant
- modify the design of the rural plant
- isolate the rural plant, or
- introduce engineering controls such as guarding.

Where these methods are not practicable or do not adequately minimise the risk, then you should use administrative controls and/or personal protective equipment (see Section 3).

8.6 Managing electrical risks associated with plant

The *Electrical Safety Act 2002* places duties on the following persons for electrical safety:

- PCBUs
- persons in control of electrical equipment
- workers where electrical equipment is located.

The *Electrical Safety Regulation 2002* identifies specific precautions to take in relation to specified electrical equipment and working around electrical parts (e.g. overhead power lines) that are applicable to the operation and maintenance of rural plant.

A number of codes of practice also exist that cover electrical risks.

- The *Electrical Safety Code of Practice 2010 – Working Near Exposed Live Parts*, which provides practical advice on how to discharge duties.
- The *Works (Protective Earthing, Underground Cable Systems and Maintenance of Supporting Structures for Powerlines) Code of Practice 2002*, which gives benchmarks for performing electrical work in ways that are electrically safe.

These documents and other advice produced by the Electrical Safety Office should be consulted to ensure that legal duties in regards to electrical safety are discharged.

8.7 Managing risks from plant designed to lift or move persons, equipment or material

This type of operation usually involves a high level of risk.

Risk assessment

When you assess the risks associated with plant designed to lift or move people, equipment or materials, you should consider:

- the nature of the load and weight being lifted
- the frequency of use
- the systems of work
- movement of the lifting mechanism
- supporting areas and structures
- factors affecting stability e.g. terrain
- communication systems
- protective equipment and safety gear
- periodic structural checks.

Risk control

When controlling a risk from plant designed to lift or move people, you should ensure that:

- (a) an industrial lift truck (fork-lift) is operated and maintained in accordance with AS 2359 *Powered industrial trucks – General requirements*, and the manufacturer's instructions
- (b) a crane, hoist or building maintenance unit is operated and maintained in accordance with AS 2550 *Cranes, hoists and winches – Safe use*, and AS 1418 *Cranes, hoists and winches – General requirements* and the manufacturer's instructions
- (c) an elevating work platform (EWP) is operated and maintained in accordance with AS2550.10 *Cranes, hoists and winches – Safe use – Mobile elevating work platforms*, and the manufacturer's instructions
- (d) pre-operational and start up checks are performed when operating plant
- (e) a clearly legible notice is fixed in a conspicuous place on the plant or any lifting gear which specifies the appropriate safe working load, in metric units or maximum number of people
- (f) a person at work is not lifted or suspended by any plant or its attachment, other than plant specifically designed for lifting or suspending persons, unless:
 - i. the use of another method of access or movement to the place is impracticable
 - ii. a suitable and adequate personnel box or carrier, designed for that purpose, is used
 - iii. the plant is fitted with a means by which the personnel box or carrier may be safely lowered in the event of an emergency or the failure of the power supply (as approved by an Australian Standard), and
 - iv. the plant is suitably stabilised at all times while the personnel box or carrier is in use.

No plant other than a crane should be used to suspend a load at the workplace, unless:

- (a) the use of a crane is impracticable
- (b) the load is only travelled with the lifting arm of the plant fully retracted
- (c) stabilisers are provided wherever necessary in order to achieve stability of the plant
- (d) no person is allowed under the hook or suspended load or in the trench adjacent to the plant while it is in operation

- (e) in the case of earth moving machinery, hooks are not used in conjunction with the buckets operated by trip-type catches, unless the catch is positively bolted in the locked position and a warning notice advising of this is provided
- (f) an appropriate load chart is provided, and
- (g) loads are only lifted using a specifically provided lifting attachment.

Set up and safe use of elevating work platforms

To reduce the risk of injury to people who operate elevating work platforms (EWPs) ensure the following occur:

- (a) operators are fully trained in safe work procedures
- (b) EWPs are regularly inspected and maintained
- (c) EWPs purchased are designed and manufactured to AS1418 Parts 1 and 10, and
- (d) EWPs are used in accordance with AS2550 Parts 1 and 10.

The risk of injury to people can also be reduced through examining tasks and work locations. Identify and assess safety risks by:

- (a) ensuring operations are planned and safe e.g. check for soft or uneven ground
- (b) not using an EWP on sloping ground beyond its stated design capability
- (c) keeping safe clearances when working near powerlines, which includes handheld harvesting and pruning equipment
- (d) not exceeding the safe working load (SWL) of the EWP
- (e) ensuring a clean work area around the EWP
- (f) staying within the platform when the EWP is elevated
- (g) using a lookout when the view from the platform is obstructed, and
- (h) undertaking a risk assessment to determine whether the operator should wear a fall arrest system.

The risk assessment for the fall-arrest system should consider:

- (a) height of trees to be harvested or pruned
- (b) EWP stability including ground surface firmness and configuration that may arise from past agricultural practice e.g. tree stump removal, animal activity, melon holes and cultivated or natural slopes
- (c) presence of any ground obstacles that may contribute to injury if a person were to fall or jump from the platform
- (d) likelihood of the need for a rapid exit or descent because of swarming or biting insects, and
- (e) any other site specific risks identified.

8.8 Managing risks of confined spaces

A 'confined space' means an enclosed or partially enclosed space that:

- (a) is at atmospheric pressure when anyone is in the space
- (b) is not intended or designed primarily as a workplace
- (c) could have restricted entry to, or exit from, the place
- (d) is, or is likely to be entered by a person to work, and
- (e) at any time, contains, or is likely to contain, any of the following -
 - i. an atmosphere that has potentially harmful levels of a contaminant
 - ii. an atmosphere that does not have a safe oxygen level
 - iii. anything that could cause engulfment.

Examples of confined spaces include:

- (a) storage tanks, process vessels, pressure vessels, boilers, silos, field bins and other tank-like compartments
- (b) pits and degreasers
- (c) pipes, sewers, sewer pump stations including wet and dry wells, shafts and ducts
- (d) effluent pits and wells
- (e) silage pits.

However, many other types of structures may also meet the definition of a confined space. A person whose upper body or head is within a confined space is considered to have entered the confined space.

Risk assessment

Fatalities or severe injuries may occur as a result of the following:

- (a) oxygen deficiency in the confined space which may be caused by:
 - i. slow oxidation reactions of either organic or inorganic substances
 - ii. rapid oxidation (combustion)
 - iii. the dilution of air with an inert gas
 - iv. absorption by grains, chemicals or soils
 - v. physical activity, or
 - vi. chemicals, including fumigant residue such as phosphine.
- (b) oxygen excess in the confined space which may be caused by a leaking oxygen supply fitting such as in gas cutting or heating equipment
- (c) the presence of contaminants on surfaces or in the atmosphere. Contaminants may be in the form of solids, liquids, sludges, gases, vapours, fumes or particulates. The sources of atmospheric contaminants encountered may result from:
 - i. the manufacturing process
 - ii. the substance stored or its by-products – for example, disturbing decomposed organic material in a tank can liberate toxic substances such as hydrogen sulphide
 - iii. biological hazards such as bacteria, viruses or fungi may also be present, and
 - iv. the operation performed in the confined space – for example, painting with coatings containing toxic or flammable substances, and welding or brazing with metals capable of producing toxic fumes.
- (d) operation of moving equipment – for example, being trapped by augers, crushed by rotating parts such as conveyor belts or accidental operation of equipment such as sweep augers (thereby causing suffocation)
- (e) uncontrolled introduction of steam, water or other gas or liquid
- (f) suffocation by solids – for example, grain, sand, flour or fertiliser
- (g) electrocution
- (h) explosion or fire.

Undertaking work in confined spaces may greatly increase the risk of injury from hazards, such as:

- (a) noise which may be caused by hammering or the use of equipment within the confined space
- (b) temperature (either high or low) which can result from the work process or the weather conditions, or where appropriate ventilation or appropriate clothing is not supplied or worn
- (c) manual tasks
- (d) falls, trips and slips.

Confined spaces requirements exist under the *Work Health and Safety Regulation 2011*. For this reason when carrying out an assessment of the risks associated with a confined space you must consider:

- (a) all proposed operations and work procedures, particularly those that may cause a change in the conditions in the confined space
- (b) the soundness and security of the overall structure and the need for illumination and visibility
- (c) the identity and nature of the substances last contained in the confined space
- (d) the steps needed to bring the confined space to atmospheric pressure
- (e) all hazards which may be encountered – for example, entrapment
- (f) the status of fitness and training of persons involved in confined space work
- (g) adequate instruction of those persons in any work procedure required, particularly those which are unusual or non-typical, including the use and limitations of any personal protective equipment and mechanical or other equipment to be used
- (h) the availability and adequacy of appropriate personal protective equipment, protective clothing and rescue equipment for all persons likely to enter the confined space
- (i) whether signs comply with *AS 1319- Safety signs for the occupational environment*, and indicate that entry is permitted only after signing the entry permit in a manner appropriate to the persons at the workplace
- (j) the need for additional protective measures, for example:
 - i. prohibition of hot work in adjacent areas
 - ii. prohibition of smoking and naked flames within the confined space and, where appropriate, the adjacent areas
 - iii. avoidance of contamination of breathing atmosphere from operations or sources outside the confined space, such as from the exhaust of an internal combustion engine
 - iv. prohibition of movement of equipment such as fork-lifts in adjacent areas
 - v. prohibition of spark generating equipment, clothing and footwear
- (k) whether cleaning in the confined space is necessary
- (l) whether hot work, such as welding, heating or cutting is necessary.

Risk control

Confined spaces regulations require that when controlling the risks associated with confined spaces, you must ensure:

- (a) a stand-by person is present outside the confined space and is able to communicate with those inside the confined space
- (b) appropriate signs and protective barriers are erected to prevent entry of persons not involved in the work
- (c) the provision of suitable equipment for workers entering confined spaces should include, where necessary, the following:
 - i. personal protective equipment
 - ii. rescue equipment
 - iii. first-aid equipment, and
 - iv. fire suppression equipment.
- (d) suitable supplied-air respiratory protective device is worn where:
 - i. the results of the assessment or monitoring indicate that a safe atmosphere cannot be established or may not be maintained, or
 - ii. the nature of the work procedure within the confined space is likely to degrade or contaminate the atmosphere in the confined space, for example hot work, painting or removal of sludge.
- (e) suitable safety harnesses and safety lines or rescue lines are worn where:

- i. there is a hazard of falling during ascent or descent, or
 - ii. rescue by a direct route, either vertical or horizontal is practicable.
- (f) precautions are taken to eliminate all sources of ignition where a flammable atmosphere is likely to exist
- (g) no cylinder of compressed gas, other than those for self-contained breathing apparatus, is taken into the confined space
- (h) any portable ladder used is firmly secured to prevent movement.

8.9 Managing risks from working at heights

The *Work Health and Safety Regulation 2011* has provisions about managing the risks of a fall. These must be followed in relation to any work at height.

Risk assessment

Falls from height can occur when repairing, maintaining or just gaining access to plant and buildings at the workplace. Silos, windmills, towers, sheds/barns, mezzanine floors and other structures can all be a hazard to PCBUs, workers and others, if work is being performed at a height where a fall may result in injury or death.

Some of the hazards that should be assessed for risk are:

- height of work
- ground hazards, e.g. rocks
- lack of guard rails or other edge protection
- pitch of roof
- surface material and condition, e.g. brittle asbestos-cement sheeting
- weather conditions, e.g. high wind
- complexity of task, e.g. use of power tools.

Risk control

PCBUs and other duty holders should ensure that each hazard that may result in a fall or cause death or injury if the person were to fall, is identified, assessed and controlled.

To prevent the person falling, the following controls should be considered:

- edge protection
- a fall protection cover placed over an opening
- a travel restraint system.

If prevention is not practicable a worker's fall should be arrested by a method that does not pose any risk of injury or death when the fall is arrested. Examples of control measures to arrest a person's fall are:

- a fall-arrest harness system
- an industrial safety net.

Ladders

When using a ladder at a height where a fall may result in injury or death, the person using the ladder should have at least two hands and one foot, or two feet and one hand, on the ladder. The type of work that can be safely performed on a ladder is limited. Other methods of access such as scaffolding or an elevating work platform should be considered for involved tasks.

9. Training

The purpose of training is to ensure that people in rural workplaces have the appropriate skills and knowledge to operate and maintain plant in a manner that is safe and without risk to health. Provision of training to staff is an essential step towards meeting your duties under the *Work Health and Safety Act 2011*.

9.1 Provision of training

You must ensure that any person (including yourself) who operates and/or maintains rural plant in a rural workplace receives training that enables them to operate and maintain rural plant safely. This includes:

- any person who operates, inspects or maintains plant
- workers who train others to use, inspect, audit or maintain plant
- people required to work in and around, or in close proximity to, rural plant.

Training may be carried out by:

- you
- a person you may engage from outside the workplace, or
- a registered training provider e.g. Farmsafe Queensland, TAFE Queensland.

In addition, there are certificates of competency issued by Workplace Health and Safety Queensland for a number of items of load shifting equipment, such as dozers, front-end loaders, graders and skid steer loaders. You may wish to have workers who use these items of plant assessed for their competency. If they are competent, a certificate would be issued.

9.2 Training methods

Training should be appropriate to the plant to be operated and the type of work to be performed. In some cases, formal training will be appropriate, in others, on-the-job training may be more appropriate. For example, training for a worker on how to safely connect a slasher to the Power Take Off (PTO) on a tractor would be more appropriately performed through practical on-the-job training.

The special needs of workers should be taken into account in deciding on the structure, content and delivery of training. This should include literacy levels, work experience and specific skills required for the job.

If the literacy level is low, then spoken methods or highly graphic visual methods should be used. If a worker does not understand or speak English well enough to comprehend and gain competence through the proposed training method, training should be provided in a suitable language and method to suit the trainee.

Training should be practical and include a hands-on component where this is relevant. For example, training a worker on the use and fitting of personal hearing protectors where the employee's work involves the use of noisy rural plant.

9.3 Elements of a training program

The training program should cover:

- how to use and maintain rural plant

- any specific conditions and prohibitions on the use of plant
- any known residual risks, for example, those that cannot be eliminated or sufficiently reduced by design and against which guarding is not totally effective
- the control measures that should be used to reduce the risks associated with plant and the correct use of the controls, for example guards
- how to access the information on plant for a rural workplace, for example manufacturer's instructions
- instruction in the appropriate work method including the correct use of personal protective equipment (PPE)
- any inspection and maintenance program in place at the workplace
- any requirement for special tools that will be used in the use or maintenance of rural plant.

A training program should also cover legislative requirements, such as:

- duties under the *Work Health and Safety Act 2011*
- relevant codes of practice.

The amount of detail required and extent of a training program will depend on:

- the hazards associated with the rural plant
- the degree of risk
- the complexity of the work procedures
- any controls, work practices and PPE required to minimise risks.

The training program should be developed following an assessment of likely risks. The development of all training programs should be in consultation with your workers and their representatives.

9.4 Assessment of competency

PCBUs should determine a worker's competency to operate an item of plant. This can be achieved by having the worker operate the plant under supervision and assessing the operator for knowledge and skill. This can be accomplished by setting and observing a specific task which can be assessed in conjunction with the demonstration of knowledge through answering questions about the plant, e.g. safe working load.

9.5 Review of training

You should review the training program, including induction and refresher courses, at least once a year or:

- each time there is a change in:
 - (a) plant for rural workplaces
 - (b) any hazard information from the manufacturer
 - (c) a work practice
 - (d) a control measure.
- each time a worker is assigned to:
 - (a) a new task not previously carried out
 - (b) a work area for which the worker has not received training.

9.6 Training records

A training record is proof that you have satisfied your duties under the *Work Health and Safety Act 2011* to provide training. Training records provide an accurate statement of the training that each person has received at any particular time.

The training program record should include:

- the names of persons receiving training and date of attendance at any training program
- an outline of the course content
- the names of any person providing the training
- where applicable, a person's accreditation certificate number.

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Appendix: Dictionary

‘appropriate information’ – information which states:

- (a) the use for which the plant has been designed and tested
- (b) the conditions (if any) that must be followed if the plant is to be used safely and without risk to health.

‘grower’ – a person conducting a business or undertaking in the rural industry, whether as a PCBU or otherwise.

‘producer’ – a persons conducting a business or undertaking in the rural industry, whether as a PCBU or otherwise.

‘rural industry’ – an industry in which persons are engaged primarily in work:

- (a) in the cultivation of any agricultural crop or product whether grown for food or not
- (b) in the rearing and management of livestock
- (c) in the classing, scouring, sorting or pressing of wool
- (d) aquiculture
- (e) in flower or vegetable market gardens, or
- (f) at clearing, fencing, trenching, draining or otherwise preparing land for any purpose stated in paragraphs (a), (b) and (d) to (f).

‘rural plant’ – includes the following when used for the performance of work at a rural workplace:

- (a) a machine or on-farm vehicle. For example, a tractor
- (b) any tool, equipment or apparatus powered by an energy source or manually operated. For example, a manually or mechanically powered auger, or
- (c) any component and anything fitted or connected to the items of rural plant specified in (a) and (b). For example a guard on a bench saw.

The term rural plant includes, but is not restricted to: tractors, augers, harvesting machines, slashers, cultivators, balers, power tools, brush cutters, pickers, posthole diggers, plant fitted with power take offs or implement power input connections

‘rural workplace’ – a workplace in rural industry

Safe design and operation of tractors

Code of Practice 2005

OIR Disclosure Log

This Queensland code of practice was preserved as a code of practice under section 284 of the *Work Health and Safety Act 2011*.

This code was varied by the Minister for Education and Minister for Industrial Relations on 27 November 2011 and published in the Queensland Government Gazette on 2 December 2011.

This preserved code commenced on 1 January 2012.

This code was varied by the Minister for Education and Minister for Industrial Relations on 1 July 2018.

OIR Disclosure Log

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Contents

1. Introduction	4
2. Controlling risks from tractors	5
2.1 Tractor risk management	5
2.2 Provision of information	6
3. Safety features	6
3.1 Roll-over protective structures (ROPS)	7
3.1.1 A roll-over protective structure	7
3.1.2 Designers and manufacturers of tractors	8
3.2 Wheeled agricultural tractors	9
3.2.1 ROPS requirements	9
3.3 Falling object protective structure (FOPS)	9
3.4 Guards	9
3.5 Noise and ultraviolet radiation	10
4. Tractor operation	10
4.1 Before you buy a tractor	10
4.2 Before you start a tractor	11
4.3 Hitching implements	11
4.4 Starting a tractor	12
4.5 Operator health and safety	12
4.6 Stopping tractor operation	13
4.7 Passengers on tractors	14
5. Maintenance and modification	14
5.1 Maintenance	14
5.2 Modifications	15
6. Training	15
6.1 Operator training	15
Appendix 1: Technical standards	17
Appendix 2: ROPS testing centres	19
Appendix 3: Meaning of some terms used in the Work Health and Safety Regulation 2011	20
Appendix 4: Dictionary	21

1. Introduction

This Safe design and operation of tractors Code of Practice 2005 is an approved code of practice under section 274 of the *Work Health and Safety Act 2011* (the WHS Act).

An approved code of practice is a practical guide to achieving the standards of health, safety and welfare required under the WHS Act and the Work Health and Safety Regulation 2011 (the WHS Regulation).

From 1 July 2018 duty holders are required to comply either with an approved code of practice under the WHS Act or follow another method, such as a technical or an industry standard, if it provides an equivalent or higher standard of work health and safety to the standard required in the code.

A code of practice applies to anyone who has a duty of care in the circumstances described in the code. In most cases, following an approved code of practice would achieve compliance with the health and safety duties in the WHS Act, in relation to the subject matter of the code. Like regulations, codes of practice deal with particular issues and do not cover all hazards or risks which may arise. The health and safety duties require duty holders to consider all risks associated with work, not only those for which regulations and codes of practice exist.

Codes of practice are admissible in court proceedings under the WHS Act and WHS Regulation. Courts may regard a code of practice as evidence of what is known about a hazard, risk or control and may rely on the code in determining what is reasonably practicable in the circumstances to which the code relates.

An inspector may refer to an approved code of practice when issuing an improvement or prohibition notice. This may include issuing an improvement notice for failure to comply with a code of practice where equivalent or higher standards of work health and safety have not been demonstrated.

How is the code organised

In providing guidance, the word 'should' is used in this code to indicate a recommended course of action, while 'may' is used to indicate an optional course of action.

This code also includes various references to provisions of the WHS Act and WHS Regulation which set out the legal requirements. These references are not exhaustive. The words 'must', 'requires' or 'mandatory' indicate that a legal requirement exists and must be complied with.

Who has duties?

A **person conducting a business or undertaking** (PCBU) has the primary duty under the WHS Act to ensure, as far as reasonably practicable, that workers and other persons are not exposed to health and safety risks arising from the business or undertaking.

Officers, such as company directors, have a duty to exercise due diligence to ensure that the business or undertaking complies with the WHS Act and WHS Regulation. This includes taking reasonable steps to ensure that the business or undertaking has and uses appropriate resources and processes to provide and maintain a safe work environment.

Workers have a duty to take reasonable care for their own health and safety and that they do not adversely affect the health and safety of other persons. Workers must comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to health and safety at the workplace.

Consulting workers

Consultation involves sharing of information, giving workers a reasonable opportunity to express views and taking those views into account before making decisions on health and safety matters.

The WHS Act requires that you consult, so far as is reasonably practicable, with workers who carry out work for you who are (or are likely to be) directly affected by a work health and safety matter.

If the workers are represented by a health and safety representative, the consultation must involve that representative.

You must consult your workers when proposing any changes to the work that may affect their health and safety.

Consulting, cooperating and coordinating activities with other duty holders

The WHS Act requires that you consult, cooperate and coordinate activities with all other persons who have a work health or safety duty in relation to the same matter, so far as is reasonably practicable.

Sometimes you may share responsibility for a health and safety matter with other business operators who are involved in the same activities or who share the same workplace. In these situations, you should exchange information to find out who is doing what and work together in a cooperative and coordinated way so that all risks are eliminated or minimised as far as reasonably practicable.

Further guidance on consultation is available in the [Work health and safety consultation, co-ordination and co-operation Code of Practice](#).

2. Controlling risks from tractors

2.1 Tractor risk management

Note: The WHS Regulation imposes duties in relation to tractors (as powered mobile plant). These include:

1. Requiring the person with management or control of powered mobile plant at a workplace to manage risks to health and safety associated with:
 - (a) the plant overturning
 - (b) things falling on the operator of the plant
 - (c) the operator being ejected from the plant
 - (d) the plant colliding with any person or thing
 - (e) mechanical failure of pressurised elements of plant that may release fluids that pose a risk to health and safety.
2. Requiring the person with management or control of powered mobile plant at a workplace to ensure:
 - (a) a suitable combination of operator protective devices for the plant is provided, maintained and used
 - (b) no person other than the operator rides on the plant unless the person is provided with a level of protection that is equivalent to that provided to the operator
 - (c) that the plant does not collide with pedestrians or other powered mobile plant
 - (d) if there is a possibility of the plant colliding with pedestrians or other powered mobile plant, the person must ensure that the plant has a warning device that will warn persons who may be at risk from the movement of the plant.

Tractors are an integral item of plant for agricultural, green keeping, gardening, landscaping and other activities. Being versatile in nature, tractors can have numerous functions not only on the farm but throughout industry.

Tractors are usually quite safe when operated properly, however they become dangerous if incorrectly used. Tractors are heavy and powerful machines that can lead to a serious injury or

death through only a minor mistake. Tractors have been involved in more incidents which have resulted in death or injury than any other piece of rural machinery.

The number and type of potential tractor incidents are numerous. Incidents can be associated with:

- (a) rollovers
- (b) power take-offs
- (c) falls from tractors
- (d) hitching equipment
- (e) tractor operation
- (f) towing.

There are many parties with duties towards the control of tractor risks. Many tractor hazards can be eliminated or controlled at the design stage. Under the WHS Act designers have specific duties to ensure that tractors are designed to be safe when used properly.

Manufacturers of tractors should always manufacture to the designer's specifications. All tractors should be designed and manufactured to comply with the relevant Australian Standards (see Appendix 1) or equivalent design criteria.

PCBUs must consider each type of tractor hazard and associated risk. Control measures must be chosen, implemented and regularly reviewed to ensure the health and safety of all tractor operators. Adequate training must also be provided to all tractor operators. Information on managing risk is provided in the [How to manage work health and safety risks Code of Practice](#).

While few tractors are designed or manufactured in Australia, an importer or supplier of a new tractor should be able to recognise the basic safety features of a tractor. Safety features should be considered by all persons associated with tractors including designers, manufacturers, purchasers and operators of tractors.

The following sections of this code outline the safety features a tractor should have and the safe operation practices necessary to eliminate or reduce tractor injuries and deaths.

2.2 Provision of information

Information about the way a tractor is to be used, to ensure health and safety, must be provided by:

- (a) the designer of the tractor, when giving the design to another entity that is to give effect to the design
- (b) manufacturers of tractors, when supplying a tractor to another person
- (c) suppliers of new tractors
- (d) suppliers of used tractors, if the information is available
- (e) hirers of tractors, at the point of hire.

Information should be provided by the designer and/or manufacturer and distributed by the supplier on the recommended application for which the tractor has been designed. This should include any precautions necessary to ensure the safe operation of the tractor. Such information may be made available to PCBUs and operators in the operators' manuals, information guides and training programs and should cover:

- (a) tractor specifications: power, output, and load carrying capacity and ability to pull loads
- (b) tractor operational data: power take-off procedures, implement specifications, manufacturers' instructions for use
- (c) tractor servicing and maintenance: correct maintenance scheduling and maintenance of logbooks.

3. Safety features

Safety features which need to be addressed at the design, manufacture and operation stage include:

- (a) roll-over protective structures (ROPS)

- (b) falling object protective structures (FOPS)
- (c) guards
- (d) protection from noise and ultraviolet radiation exposure
- (e) other measures for operator health and safety (e.g. seat belts).

3.1 Roll-over protective structures (ROPS)

The WHS Regulation contains regulatory provisions regarding ROPS that must be complied with. These requirements are outlined under section 3.2.1 of this code.

3.1.1 A roll-over protective structure

A roll-over protective structure is a structure designed and constructed to prevent or minimise the risk of death or injury to the operator of a tractor as a result of the tractor rolling over in any direction.

Approved ROPS may be available for early model tractors, even as far back as 1945. If these are unavailable from the manufacturer, a ROPS testing centre (see Appendix 2) may supply an approved frame, or test a home designed frame.

An approved fold-down ROPS with a locking device may be more practical to use where a tractor is operating inside or close to buildings, or near trees.

Image 1: Tractor with a fold-down ROPS fitted, note the locking pins (see arrow)



Circumstances where tractors have overturned include:

- (a) level ground
- (b) uneven ground
- (c) slight and steep slopes
- (d) edges of depressions
- (e) contour banks or water courses
- (f) towing/pulling of light, heavy, stable and unstable loads.

ROPS fitted to tractors should comply with the standards outlined in:

- (a) **AS 1636** Tractors – Roll-over protective structures, criteria and tests, or
- (b) **AS 2294** Earth-moving machinery – Protective structures, or
- (c) Any of the following international standards:
 - **ISO 3463** Tractors for agriculture and forestry—Roll-over protective structures (ROPS)—Dynamic test method and acceptance conditions
 - **ISO 3471-1** Earth-moving machinery—Roll-over protective structures—Laboratory tests and performance requirements

- **ISO 5700** Tractors for agriculture and forestry—Roll-over protective structures (ROPS)—Static test method and acceptance conditions
 - **OECD Code 3** Standard code for the official testing of protective structures on agricultural and forestry tractors (dynamic test)
 - **OECD Code 4** Standard code for the official testing of protective structures on agricultural and forestry tractors (static test)
 - **OECD Code 6** Standard code for the official testing of front mounted roll-over protective structures on narrow-track wheeled agricultural and forestry tractors
 - **OECD Code 7** Standard code for the official testing of rear mounted roll-over protective structures on narrow-track wheeled agricultural and forestry tractors
 - **OECD Code 8** Standard code for the official testing of protective structures on agricultural and forestry tracklaying tractors
 - **SAE J 1040** Performance Criteria for Rollover Protective Structures (ROPS) for Construction, Earthmoving, Forestry, and Mining Machines
 - **SAE J 1194** Rollover Protective Structures (ROPS) for Wheeled Agricultural Tractors
 - **SAE J 2194** Roll-Over Protective Structures (ROPS) for Wheeled Agricultural Tractors
- (d) Other appropriate international standards.

An approved ROPS in service has an indefinite lifespan. Any sign of physical deterioration (e.g. dents, rust or cracks) may indicate problems. Cracks and fatigue often affect the mountings or brackets and these should be regularly inspected for any signs of deterioration. A damaged ROPS, whose structural integrity may have been adversely affected, indicated for example by deformation or cracking of the structure, should be replaced.

3.1.2 Designers and manufacturers of tractors

Designers and manufacturers of tractors should ensure that tractors capable of rollover are either designed for a ROPS to be fitted or are fitted with a ROPS.

The design and construction of a ROPS is a skilled operation. The safety of a ROPS is dependent upon the frame yielding and absorbing energy to reduce the load transmitted to the mounting bolts and tractor body.

This type of design reduces the likelihood of continuous rollover while at the same time protecting the operator. A rigid frame, while being strong enough to withstand the rollover, may break the mounting bolts on the tractor or may suddenly fracture rather than yield. The performance of a ROPS under stress can only be determined by conducting a test to the relevant Australian Standard or equivalent overseas standard.

A rollover protective structure is usually tested by a ROPS testing centre. To be approved, a structure should be tested according to the procedures outlined in those standards listed for fitment of ROPS in section 3.1.1 of this code.

Image 2: This ROPS is being tested by destructive methods at an approved testing centre



A manufacturer should ensure that every ROPS approved under AS 1636 or AS 2294 is legibly and permanently marked with the following information:

- (a) the name and address of the manufacturer of the ROPS
- (b) ROPS identification number
- (c) make, model or serial number of the tractor(s) the structure is designed to fit
- (d) the relevant Australian Standard or other acceptable standard with which the structure complies.

3.2 Wheeled agricultural tractors

Under the WHS Regulation wheeled agricultural tractors have specific requirements, regardless of the industry in which they are used. These requirements must be followed and it is recommended that PCBU's consult these regulations. The information below is a summary of these requirements.

A number of specific terms are defined and used in the WHS Regulation. These terms are listed in Appendix 3.

3.2.1 ROPS requirements

The WHS Regulation states:

1. The person with management or control of a tractor at a workplace must ensure that the tractor is not used unless it is securely fitted with a rollover protective structure.
2. If a tractor is used in a place that is too low for the tractor to work while it is fitted with a roll-over protective structure, the structure may be lowered or removed for the period during which the tractor is used in such a situation (but only if other measures to minimise the risk of roll-over are in place).
3. This regulation does not apply if the tractor is:
 - (a) installed in a fixed position, and in a manner which would no longer permit it to be used as powered mobile plant; or
 - (b) a tractor with a mass of less than 560 kilograms or a mass of 15,000 kilograms or more; or
 - (c) being used for a historical purpose or activity.

3.3 Falling object protective structure (FOPS)

If a tractor is capable of being used for tree felling or in other situations which create a risk to the operator of falling objects, then the tractor should be designed for a falling object protective structure (FOPS) to be fitted. FOPS is a system of structural members and mesh sheeting attached to a tractor to provide the operator with protection from falling objects (e.g. branches, rocks and bales).

An approved FOPS should have been tested according to the procedures outlined in AS 2294: *Earth-moving machinery, Protective structures*.

A manufacturer should mark every FOPS legibly and permanently with the following information:

- (a) the name and address of the manufacturer of the FOPS
- (b) FOPS identification number
- (c) make, model or serial number of the tractor(s) the structure is designed to fit
- (d) the relevant Australian Standard or other acceptable standard with which the structure complies
- (e) any other information deemed appropriate by the manufacturer (e.g. installation, repair or replacement information).

3.4 Guards

A designer should ensure that the need for guarding is minimised in the design of the tractor. A manufacturer should manufacture guards to the designer's specifications. A supplier should ensure that a tractor is sold fitted with the guards that were designed for it so that the designer's and manufacturer's requirements are met at the point of sale. The guarding design requirements of

AS/NZS 2153: Tractors and machinery for agriculture and forestry – Technical means for ensuring safety or other equivalent standard should be applied by a designer and manufacturer of the tractor.

Guards should protect the operator or any other person from parts of the tractor which are potentially hazardous either when the tractor is in normal operation or undergoing routine maintenance. An owner of a tractor who modifies or alters guards has the same duties as a designer and manufacturer.

3.5 Noise and ultraviolet radiation

A tractor should be designed to minimise noise from engines, exhausts and vibrating tractor parts. Sound should be deflected upwards and away from the operator. PCBUs must ensure that they, their workers and other persons at the workplace, are not exposed to noise that exceeds the exposure standard for noise. The WHS Regulation prescribes requirements for the control of excessive noise.

The use of canopies with ROPS and/or FOPS should be considered to minimise the operator's exposure to direct sunlight and ultraviolet radiation exposure.

Image 3: A well-designed ROPS will incorporate protection from ultraviolet radiation



4. Tractor operation

In rural industry, tractors are involved in injuring or killing more people than any other piece of farm equipment. Injuries involving tractors usually occur from rollover, various falling objects and people being pulled into unguarded power take-offs. Run-overs are primarily linked to these practices:

- (a) starting a tractor from the ground
- (b) carrying passengers (usually children) on tractors
- (c) attempting to get on or off a moving tractor.

To reduce some of the potential risks from tractor operation and maintenance, safety precautions are recommended.

If any of the information in this section is in conflict with the manufacturer's guidelines for a particular tractor in a particular use, the manufacturer's instructions should be followed.

4.1 Before you buy a tractor

When you are considering the purchase of a tractor, you should consider any risks the tractor may introduce at your workplace. After considering these risks you should ensure that the health and safety design features of the chosen tractor control these risks.

As a guide, buyers should seek a tractor incorporating the following health and safety features:

- (a) ROPS and/or FOPS factory fitted
- (b) factory designed and fitted safeguards
- (c) adequate ventilation if a cabin has been fitted

- (d) non-slip surfaces for access and exit
- (e) easy access to and exit from the tractor
- (f) the positioning of the exhaust outlet to direct gases away from the operator
- (g) adequate for task and terrain for which purchased
- (h) adequate noise control. Where noise cannot be reduced sufficiently at the source, hearing protection equipment should be supplied to the operator
- (i) the location of switches and levers within easy reach of the operator to avoid repetitive injury risks and to reduce the risk of the wrong lever or control being used
- (j) a well-sprung, adjustable seat and seat belt
- (k) control of ultraviolet radiation exposure (e.g. by provision of shade).

Image 4: A safe means for access and exit has been fitted to this tractor



4.2 Before you start a tractor

Read and follow the manufacturer's operating instructions. They contain a wealth of information and are specifically written about your tractor.

Familiarise yourself with the layout of the land before you start working and watch for ditches, embankments and depressions, especially when the ground is unstable or slippery conditions prevail.

Tractor owners should maintain tractors in a safe operating condition by making regular inspections and following the manufacturer's recommended servicing and maintenance procedures. Logbooks should be maintained and records made of scheduled maintenance and repairs performed.

4.3 Hitching implements

When hitching an implement you should:

- (a) Only attach implements to the drawbar, three-point linkage or other specified hitch points specifically designed for that purpose. Never hitch to points forward of, or higher than the drawbar as this could be extremely dangerous.
- (b) Ensure that the weight applied to the three-point linkage by lifting jibs or other attached equipment does not exceed the manufacturer's specifications or adversely affect stability or steering. In addition, seek expert technical advice before fixing counter weights or wheel weights (front or rear) to increase tractor stability.
- (c) Seek advice from the operating manual or supplier about the recommended weight of a trailer or implement that the tractor can safely tow before towing it.

4.4 Starting a tractor

When starting a tractor, the following precautions should be taken:

- (a) Only start and use the tractor according to the manufacturer's instructions.
- (b) Operate the self-starter only from the driving position and do not start the machine while standing on the ground.
- (c) Before starting a tractor engine, check that the handbrake is on and the vehicle is not in gear.
- (d) Engage the appropriate gear for the work being undertaken.

4.5 Operator health and safety

Switches and levers should be designed to be within easy reach of the majority of potential operators and placed to reduce the risk of the wrong switch or lever being used.

Switches should be easy to identify. The operator's seat should be fully adjustable and well sprung to reduce vibration. The backrest should support the lower part of the spine to minimise postural stress to the spine.

Exhaust pipes and cab ventilation systems should be designed and constructed to ensure the operator does not inhale exhaust fumes.

Operator access to and exit from a tractor should be designed to allow a person to get on and off the tractor without undue stretching. All access surfaces should be non-slip and designed to prevent the build-up of dirt and mud.

Where a cabin is fitted, adequate ventilation facilities should be provided for the operator. Windscreens and glass fitted should be safety glass complying with *AS/NZS 2080 – Safety glass for land vehicles*. Alternatively, where any glazing material other than glass is fitted, it should be a clear material of a kind that does not shatter.

A seat belt should be fitted to all seating positions on new tractors in accordance with *ISO 6683 – Earthmoving machinery – Seat belts and seat belt anchorages*. Seat belts should comply with *AS/NZS 2596 – Seat belt assemblies for motor vehicles* or with *SAE J 386*.

Where the tractor is fitted with a seatbelt and a ROPS is present, the seatbelt should be worn by the operator if the tractor is moving. This will provide additional protection in the event of a tractor rolling over by keeping the driver within the protective zone offered by the ROPS.

Tractor design should include features which improve operational safety, such as:

- (a) Warning signs attached to the tractor. Warning signs should include information about the normal operating speed of the power take-off. Where a conversion assembly is available for changing tractor or implement speeds, an instruction placard specifying power take-off speed and corresponding draw bar adjustments should also be provided. The warning signs should conform to *AS 1319 – Safety signs for the occupational environment*, be written in English and permanently attached to a conspicuous part of the tractor.
- (b) Providing the tractor with self-starting equipment. Starting the engine should be by operation of a rotary or pullout switch, which is preferably key-operated to lessen the risk of accidental starting.
- (c) Interlocking the tractor engine starting mechanism with the transmission or clutch to prevent the engine starting up when left in gear.
- (d) Providing efficient service brakes able to stop a fully laden tractor fitted with the heaviest recommended implement. The service brake efficiency should be not less than 40 per cent as measured on a 'Tapley' brake meter. The parking brake or the service brake should hold the tractor with the heaviest recommended implement on a slope of 15 degrees.

Points which should be considered in the operation of a tractor include:

- (a) Drive tractors at speeds slow enough to keep control over unexpected hazards; be cautious in wet conditions.
- (b) Reduce speed before turning or applying turning brakes. Where a differential lock and turning brakes are fitted, ensure that the differential lock is disengaged and the turning brakes are locked together before travelling from one work site to another.
- (c) Descend slopes cautiously with the tractor in low gear. For example, on downward slopes it is possible, in extreme circumstances, for one wheel to reverse, causing the tractor to roll over. Extra care needs to be taken if towing trailers or implements down slopes, as often the trailers will not have brakes. Ascending steep slopes can cause a tractor to back flip in extreme circumstances or the front wheels to lift thus reducing or losing control of steering.
- (d) To increase stability when working on hillsides, set tractor wheels to the widest possible setting.
- (e) When a tractor is bogged in mud or in a ditch, drive out in reverse gear. Logs and planks should only be used behind the rear wheels to increase traction, as using logs and planks in front of the rear wheels increases the chance of back flipping.
- (f) Only climb on or off a tractor that is stopped. Do not dismount from a tractor while the engine is running unless the transmission is in the neutral, or park position and the parking brake is effectively engaged.
- (g) When an attachment becomes blocked, the tractor should be stopped, the drive to the attachment disconnected and the moving parts of the implement stopped before the obstruction is cleared.
- (h) Seek expert technical advice before fixing counter weights or wheel weights (front or rear) to increase tractor stability.
- (i) When using the tractor as a source for stationary power take-off or belt work, apply and lock the parking brake and chock the wheels. Bond the tractor frame to earth according to manufacturer's instructions. This will remove the risk posed by static electricity when using belts.
- (j) If using a tractor in an enclosed area like a shed, make sure the area is well ventilated to avoid build-up of exhaust gases.
- (k) Exercise extreme caution when operating a tractor or any attached equipment when children or animals are in the area.
- (l) Use appropriate warning lights when operating on a declared road reserve on which the tractor may create a hazard.

If the tractor is to be operated on public roads it should be fitted with the following, so as to comply with the requirements of the traffic regulations:

- (a) horn
- (b) brake
- (c) head, tail, and turn signal lights
- (d) reflectors
- (e) rear view mirrors.

Where a tractor is operating in a confined area and other persons can not be excluded, it should be fitted with reversing beepers.

A seatbelt should be an essential design and manufacture feature for all new tractors. Seatbelts should be fitted to all seating positions on new tractors in accordance with *AS 2664 – Earthmoving machinery – Seat belts and seat belt anchorages*. Seatbelts should comply with *AS/NZS 2596 – Seat belt assemblies for motor vehicles* or with *SAE J 386 Operator restraint system for off- road work machines*.

4.6 Stopping tractor operation

When ending tractor operations, the following precautions should be taken:

- (a) park on even ground
- (b) shift the gear selector to neutral or park position
- (c) disconnect power sources and secure implements

- (d) lower blades, buckets or any other attachments to the ground and/or securely block these attachments
- (e) lock the parking brake
- (f) stop the engine and remove the keys.

4.7 Passengers on tractors

Generally, passengers **should not** be allowed to ride on tractors. Passengers can not be effectively protected by ROPS and safe, adequate passenger seating is generally not incorporated into the design of tractors. In only two situations might it be reasonable for passengers to be on a tractor.

The first is for reason of instruction and training, and the second is in situations of extreme emergency (e.g. transport to or from the scene of a serious accident). Where a tractor is routinely used for the purpose of instruction or training, a safe system of work should be maintained. This may involve instruction by:

- (a) two way radio, or
- (b) the provision of a seat or platform with handrail which prevents the instructor slipping, falling or being thrown from the tractor. Most passenger injuries occur because the passenger is thrown from the tractor.

Image 5: An extra seat has been fitted to assist in the safe provision of training



5. Maintenance and modification

5.1 Maintenance

Duty holders should maintain tractors in a safe operating condition by making regular inspections and following the manufacturer's recommended servicing and maintenance procedures. Logbooks should be maintained which record scheduled maintenance and repairs performed and any modifications which might affect the safe operation of the tractor.

When a worker or other person is undertaking servicing or maintenance, the following precautions should be taken. A PCBU should also ensure the precautions are incorporated in an operator's training program:

- (a) Before inspecting or working underneath a tractor, ensure that the operator has exited, the tractor cannot move and any movable attachments are lowered to the ground and/or safely blocked.
- (b) Stop all power sources to pulleys before removing or replacing belts.
- (c) If the wheel track is adjustable set the wheels as wide apart as practicable.
- (d) Stop all hazardous machinery and secure it before any work is undertaken.

- (e) Allow the engine to cool before removing the radiator cap, and be careful of escaping steam.
- (f) When jump-starting the tractor, connect the jumper leads as specified by the manufacturer, to avoid damage to the electrical system and the possibility of a battery explosion.
- (g) When removing and refitting tractor tyres, first remove the valve core to allow air to escape and make the tyres flexible. Maintain a good grip on the tyre lever and stand to the side of the tyre when removing the tube from the rim.
- (h) While inflating a tyre, continually check to ensure the locking ring is properly seated and locked. The tyre should be inflated to its correct pressure, according to the tyre manufacturer's load/inflation specifications. Always stand to the side when inflating a tyre. An inflation cage should be used when inflating large tyres.
- (i) The ballasting of tractor tyres should be done in accordance with manufacturer's recommendations.
- (j) Keep open flames, open lights, lighted cigarettes etc. away from the refuelling operation. During refuelling, maintain some form of contact between the metal outlet of the refuelling hose and the fuel tank opening to reduce the risk of an explosion or fire due to a discharge of static electricity. Always refuel in a well-ventilated area.

5.2 Modifications

Duty holders who modify tractors are considered manufacturers under the WHS Act. Any modifications undertaken need to comply with the specified design criteria for tractor construction or the end product should meet or exceed the design criteria.

Any modification to a ROPS or FOPS such as the welding of brackets to support a roof or the drilling of holes may affect its structural integrity and dramatically reduce its protective ability.

6. Training

6.1 Operator training

A duty holder should ensure the safe operation of the tractor through instruction, training and constant supervision while the operator is gaining experience in tractor operation.

Note: An owner or PCBU may be the operator and therefore should be trained and supervised.

The training received should ensure the operator is familiar with:

- (a) information contained in the manufacturer's operating instruction handbook
- (b) tractor controls and instruments, brakes, clutch and gears
- (c) tractor safety features (e.g. guards, seat belts)
- (d) comfort controls (e.g. adjusting the seat to be in reach of all controls)
- (e) operating instructions including starting, moving off and how to stop the tractor
- (f) regular service procedures required
- (g) proper attachment of implements.

As a guide, it may be useful to fix these instructions to the relevant parts of the tractor. Even when there is reason to believe that an operator is competent, based for example on stated work experience, it is wise to verify this by questioning or demonstration before allowing them to operate the tractor.

A duty holder should ensure that operators hold the appropriate licences and certificates if required. Duty holders should consult sections 3 and 4 of this code when preparing and conducting training for an operator.

Tractor operators should also be informed of possible hazards, and know how to reduce the risk of accidents. High-risk situations require that utmost caution should be taken where:

- (a) there is a risk of the tractor overturning and ROPS and seatbelts have not been fitted
- (b) it is necessary to carry passengers and protective frames and where seat belts are not provided

- (c) the tractor is to be operated in an area where it is not practicable to totally separate the tractor operation from other workers or non-workers (e.g. children).

A tractor operator who requires more information about how to operate the tractor in a competent and safe manner should seek instruction from their PCBU.

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Appendix 1: Technical standards

The following standards are relevant to the design and operation of tractors. Equivalent overseas standards have been included.

- **AS 1019** Internal combustion engines – Spark emission control devices
- **AS 1121.1** Agricultural tractor power take-offs - Rear-mounted power take-off types 1, 2 and 3 - General specifications, safety requirements, dimensions for master shield and clearance zone
- **AS 1121.2** Agricultural tractor power take-offs - Rear-mounted power take-off types 1, 2 and 3 - Narrow-track tractors, dimensions for master shield and clearance zone
- **AS 1121.3** Agricultural tractor power take-offs - Rear-mounted power take-off types 1, 2 and 3 - Main PTO dimensions and spline dimensions, location of PTO
- **AS 1121.4** Agricultural tractor power take-offs - Guards for power take-off (PTO) drive-shafts - Strength and wear tests and acceptance criteria
- **AS 1319** Safety signs for the occupational environment
- **AS 1636.1** Tractors – Rollover protective structures – Criteria and tests Conventional tractors
- **AS 1636.2** Tractors – Rollover protective structures – Criteria and tests Rear-mounted for narrow track tractors
- **AS 1636.3** Tractors – Rollover protective structures – Criteria and tests Mid-mounted for narrow track tractors
- **AS 1657** Fixed Platforms, walkways, stairways and ladders – Design, construction and installation
- **AS 2012.1** Acoustics - Measurement of airborne noise emitted by earth-moving machinery and agricultural tractors - Stationary test condition - Determination of compliance with limits for exterior noise
- **AS 2012.2** Acoustics - Measurement of airborne noise emitted by earth-moving machinery and agricultural tractors - Stationary test condition - Operator's position
- **AS/NZS 2080** Safety glazing for land vehicles
- **AS/NZS 2153.1** Tractors and machinery for agriculture and forestry - Technical means for ensuring safety - General
- **AS/NZS 2153.3** Tractors and machinery for agriculture and forestry - Technical means for ensuring safety - Tractors
- **AS/NZS 2153.4** Tractors and machinery for agriculture and forestry - Technical means for ensuring safety - Forestry winches
- **AS/NZS 2153.5** Tractors and machinery for agriculture and forestry - Technical means for ensuring safety - Power-driven soil-working equipment
- **AS/NZS 2153.6** Tractors and machinery for agriculture and forestry - Technical means for ensuring safety - Equipment for crop protection
- **AS/NZS 2153.7** Tractors and machinery for agriculture and forestry - Technical means for ensuring safety - Combine harvesters, forage and cotton harvesters
- **AS/NZS 2153.9** Tractors and machinery for agriculture and forestry - Technical means for ensuring safety - Equipment for sowing, planting and distributing fertilizers
- **AS/NZS 2596** Seat belt assemblies for motor vehicles
- **ISO 3463** (Tractors for agriculture and forestry—Roll-over protective structures (ROPS)—Dynamic test method and acceptance conditions)
- **ISO 3471-1** (Earth-moving machinery—Roll-over protective structures—Laboratory tests and performance requirements)
- **ISO 3767/1** Tractors, Machinery for Agriculture and Forestry, Powered Lawn and Garden Equipment—Symbols for Operator Controls and Other Displays, Part 1: Common Symbols
- **ISO 3767/2** Tractors, Machinery for Agriculture and Forestry, Powered Lawn and Garden Equipment—Symbols for Operator Controls and Other Displays, Part 2: Symbols for Agricultural Tractors and Machinery

- **ISO 5700** (Tractors for agriculture and forestry—Roll-over protective structures (ROPS)—Static test method and acceptance conditions)
- **ISO 6683** Earthmoving Machinery — Seat Belts and Seat Belt Anchorages
- **OECD Code 3** (Standard code for the official testing of protective structures on agricultural and forestry tractors (dynamic test))
- **OECD Code 4** (Standard code for the official testing of protective structures on agricultural and forestry tractors (static test))
- **OECD Code 6** (Standard code for the official testing of front mounted roll-over protective structures on narrow-track wheeled agricultural and forestry tractors)
- **OECD Code 7** (Standard code for the official testing of rear mounted roll-over protective structures on narrow-track wheeled agricultural and forestry tractors)
- **OECD Code 8** (Standard code for the official testing of protective structures on agricultural and forestry tracklaying tractors)
- **SAE J 1040** (Performance Criteria for Rollover Protective Structures (ROPS) for Construction, Earthmoving, Forestry, and Mining Machines)
- **SAE J 1194** (Rollover Protective Structures (ROPS) for Wheeled Agricultural Tractors)
- **SAE J 2194** (Roll-Over Protective Structures (ROPS) for Wheeled Agricultural Tractors)

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Appendix 2: ROPS testing centres

Sherwood Machinery Pty. Ltd.

Phone: 02 4883 6093

Fax: 02 4883 6576

Address: Ferndale Rd (PO Box 6)

Bundanoon NSW 2578

Information from www.sherwoodmachinery.com.au

Casey Cab and Frame

Phone/fax: 03 5995 1595

Address: 53 Cameron St

Cranbourne VIC 3977

Email: info@caseycab.com.au

Catalogue available on www.caseycab.com.au

QMW Industries Pty. Ltd.

Tel: 07 3275 2544

Fax: 07 3275 2524

Email: sales@qmw.com.au

Address: 53 Success St

Acacia Ridge QLD 4110

Information from www.qmw.com.au

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Appendix 3: Meaning of some terms used in the Work Health and Safety Regulation 2011

Historical purpose or activity, in relation to the use of a tractor, includes an activity ancillary to a historical activity.

Examples

1. *Historical activity*: a historical display, parade, demonstration or re-enactment.
2. *Activity ancillary to a historical activity*: restoring, maintaining, modifying or housing a tractor used, or to be used, for a historical activity.

Roll-over protective structure means a structure designed to protect a tractor operator from injury if the tractor rolls over in any direction.

Tractor means a motor vehicle, whether wheeled or track mounted, designed to provide power and movement to any attached machine or implement by a transmission shaft, belt or linkage system but does not include earthmoving machinery.

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Appendix 4: Dictionary

For the purpose of this code the following definitions apply.

Appropriate information means information which states the use for which the tractor has been designed and tested, and the conditions (if any) that must be observed if the tractor is to be used safely and without risk to health.

Historical purpose or activity - see Appendix 3.

Normal operation means operation of the machine within its recognisable limits, in accordance with the manufacturer's instructions by persons familiar with its operations and controls. This definition includes the acts of inspecting the machine and entering and leaving the operator's work area.

PCBU (person conducting a business or undertaking) means

1. For the WHS Act, a person conducts a business or undertaking:
 - (a) whether the person conducts the business or undertaking alone or with others; and
 - (b) whether or not the business or undertaking is conducted for profit or gain.
2. A business or undertaking conducted by a person includes a business or undertaking conducted by a partnership or an unincorporated association.
3. If a business or undertaking is conducted by a partnership (other than an incorporated partnership), a reference in this Act to a person conducting the business or undertaking is to be read as a reference to each partner in the partnership.
4. A person does not conduct a business or undertaking to the extent that the person is engaged solely as a worker in, or as an officer of, that business or undertaking.
5. An elected member of a local government does not in that capacity conduct a business or undertaking.
6. A regulation may specify the circumstances in which a person may be taken not to be a person who conducts a business or undertaking for the purposes of this Act or any provision of this Act.
7. A volunteer association does not conduct a business or undertaking for the purposes of this Act.
8. In this section, **volunteer association** means a group of volunteers working together for one or more community purposes where none of the volunteers, whether alone or jointly with any other volunteers, employs any person to carry out work for the volunteer association.

Roll-over protective structure - see Appendix 3.

Routine maintenance includes adjustment of functional settings, routine lubrication, machine cleaning, performance of minor repairs in the field and renewing consumable items.

Supply

1. A **supply** of a thing includes a supply and a resupply of the thing by way of sale, exchange, lease, hire or hire-purchase, whether as principal or agent.
2. A supply of a thing occurs on the passing of possession of the thing to the person or an agent of the person to be supplied.
3. A supply of a thing does not include:
 - (a) the return of possession of a thing to the owner of the thing at the end of a lease or other agreement; or
 - (b) a prescribed supply.
4. A financier is taken not to supply plant, a substance or a structure for the purposes of this Act if:
 - (a) the financier has, in the course of the financier's business as a financier, acquired ownership of, or another right in, the plant, substance or structure on behalf of a customer of the financier; and

- (b) the action by the financier, that would be a supply but for this subsection, is taken by the financier for, or on behalf of, that customer.
5. If subsection (4) applies, the person (other than the financier) who had possession of the plant, substance or structure immediately before the financier's customer obtained possession of the plant, substance or structure is taken for the purposes of this Act to have supplied the plant, substance or structure to the financier's customer.

Tractor - see Appendix 3.

Worker

1. A person is a worker if the person carries out work in any capacity for a person conducting a business or undertaking, including work as:
- (a) an employee; or
 - (b) a contractor or subcontractor; or
 - (c) an employee of a contractor or subcontractor; or
 - (d) an employee of a labour hire company who has been assigned to work in the person's business or undertaking; or
 - (e) an outworker; or
 - (f) an apprentice or trainee; or
 - (g) a student gaining work experience; or
 - (h) a volunteer; or
 - (i) a person of a prescribed class.
2. For this Act, a police officer is:
- (a) a worker; and
 - (b) at work throughout the time when the officer is on duty or lawfully performing the functions of a police officer, but not otherwise.
3. The person conducting the business or undertaking is also a worker if the person is an individual who carries out work in that business or undertaking.

Workplace

1. A workplace is a place where work is carried out for a business or undertaking and includes any place where a worker goes, or is likely to be, while at work.
2. In this section, place includes:
- (a) a vehicle, vessel, aircraft or other mobile structure; and
 - (b) any waters and any installation on land, on the bed of any waters or floating on any waters.

Sample health and safety policy

<Insert Company Name> is committed to providing and maintaining a safe and healthy working environment for all workers, contractors, volunteers, visitors and members of the public.

Hazards or risks to health and safety will be eliminated or minimised, as far as is reasonably practicable, so as to prevent injury, illnesses and dangerous incidents.

<Insert Company Name> considers safety, health, wellbeing and incident prevention to be vital to the ultimate success of the organisation's operations and is an integral part of management's responsibilities.

Management will meet these requirements by:

- complying with legal requirements for all matters relating to work health and safety
- providing a safe and healthy working environment
- providing safe working conditions and safe operating procedures for all company activities
- eliminating workplace hazards
- providing a work environment that enables workers to make healthier lifestyle choices
- developing a consultation process that involves all workers in identifying opportunities and resolving issues in relation to safety, health and wellbeing
- providing workers with information, instruction, training and supervision in relation to safety, health and wellbeing
- providing contractors and visitors with information, instruction, training and supervision in relation to safety, health and wellbeing
- making safety equipment and personal protective equipment (PPE) available whenever required
- providing an injury management and rehabilitation system which encourages workers and contractors to stay at work and/or safely return to work minimising the impact of injury on them and their families.

Each worker has the duty to:

- follow all safe work practices, procedures, instructions and rules
- work in a manner which ensures the safety, health and wellbeing of him or herself and others
- encourage other workers to work in a healthy and safe manner
- participate in training
- participate in safety, health and wellbeing programs
- report or rectify any unsafe conditions that come to their attention

(Your Business Name Here) – Safe Work Procedure POWER TAKE OFF (PTO)

**DO NOT use this machine unless you have been instructed
in its safe use and operation and have been given permission**

PERSONAL PROTECTIVE EQUIPMENT



PRE-OPERATIONAL SAFETY CHECKS

- ✓ Locate and ensure you are familiar with all machine operations and controls.
- ✓ Ensure all guards are fitted, secure and functional. Do not operate if guards are missing or faulty.
- ✓ Before installing or using PTO-powered equipment, read the operator's manual and review the safety labels attached to the equipment.
- ✓ Use only implements that meet the specifications listed in the vehicle operator's manual.
- ✓ Before attaching PTO-powered equipment, confirm that the tractor drawbar is adjusted to the length specified in the driven machines manual.

OPERATIONAL SAFETY CHECKS

- ✓ Start the engine only from the operator's seat. Never start engine while standing on the ground.
- ✓ Before starting the engine, ensure all levers are in their neutral positions, the parking brake is engaged, and the clutch and PTO are disengaged.
- ✓ Ensure the clutch pedal is fully depressed to stop the tractor movement and any PTO-driven equipment movement before shifting the PTO gearshift lever.
- ✓ Operate the PTO from the lower speed (540 rpm) unless the operator's manual specifically recommends the higher speed (1000 rpm) is safe.
- ✓ When operating stationary PTO-powered equipment always apply the tractor parking brake, place chocks behind and in front of rear wheels, and stay well clear of all rotating parts.
- ✓ Keep all bystanders away from PTO-powered equipment.
- ✓ Always walk around operating equipment.

ENDING OPERATIONS AND CLEANING UP

- ✓ When shutting down, disengage the PTO, shut off the tractor engine and remove the keys before leaving the tractor seat.
- ✓ Keep warning labels clean and free from obstructing material. Replace damaged or missing labels with new labels available from equipment supplier.

- ✓ Wait until all moving components have completely stopped before getting off the tractor, connecting, disconnecting, adjusting, cleaning or servicing any PTO equipment.
- ✓ Keep the work area in a safe, clean and tidy condition.

POTENTIAL HAZARDS

- ⓘ Hair/clothing getting caught in moving machine parts.
- ⓘ Noise.

DON'T

- ✗ Do not use faulty equipment. Immediately report suspect machinery.
- ✗ Do not wear loose or bulky clothing around the PTO or other moving parts.
- ✗ Never step onto or across a PTO shaft or driveline.

This SWP does not necessarily cover all possible hazards associated with this equipment and should be used in conjunction with other references. It is designed as a guide to be used to compliment training and as a reminder to users prior to equipment use.

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(Your Business Name Here) – Safe Work Procedure QUAD BIKE

DO NOT use this equipment unless you have been instructed in its safe use and operation and have been given permission

PERSONAL PROTECTIVE EQUIPMENT

- ✓ Wear an approved helmet.
- ✓ Wear suitable clothing, including long trousers and boots.
- ✓ Consider wearing high visibility clothing if working remotely, or near/on a road.
- ✓ Have appropriate communication (i.e. mobile phone or 2-way radio) available

PRE-OPERATIONAL SAFETY CHECKS

- ✓ Follow manufacturer's recommendations and warning labels.
- ✓ Locate and ensure you are familiar with all machine operations, controls and warnings.
- ✓ Check fuel, tyres, guards, drive line and brakes as recommended by the manufacturer.
- ✓ Always tell someone where you are going and estimated time of return

OPERATIONAL SAFETY

- ✓ Do not carry passengers or any load that is not suitable and secured.
- ✓ Observe speed limits and no-go areas.
- ✓ Drive at speed slow enough to keep control over unexpected hazards.
- ✓ Travel up/down slopes rather than across, taking extra care when ascending or descending slopes or riding over uneven ground.
- ✓ Take care when refuelling to avoid spilling fuel onto hot motor or exhaust.
- ✓ Ensure no person or animal is endangered when operating equipment.
- ✓ Advise your supervisor of any mechanical problems and do not ride a quad bike that is not in good repair

ENDING OPERATIONS

- ✓ Park on even ground.
- ✓ Lock the parking brake.
- ✓ Stop the engine and remove the keys.

AFTER USE

- ✓ Remove any foreign material from in and around engine parts.
- ✓ Check for damage and report if found.

POTENTIAL HAZARDS AND INJURIES

- ⓘ Rollover
- ⓘ Collision
- ⓘ Eye injuries
- ⓘ Crush injuries
- ⓘ Head injuries

DON'T

- ✗ Do not use faulty equipment. Report suspect machinery immediately.
- ✗ Do not drive in excessively poor conditions (weather, visibility or surface).
- ✗ Never carry passengers.

This SWP does not necessarily cover all possible hazards associated with this equipment and should be used in conjunction with other references. It is designed as a guide to be used to compliment training and as a reminder to users prior to equipment use.

(Your Business Name Here) – Safe Work Procedure TRACTOR

DO NOT use this machine unless you have been instructed in its safe use and operation and have been given permission

PERSONAL PROTECTIVE EQUIPMENT



PRE-OPERATIONAL SAFETY CHECKS

- ✓ Locate and ensure you are familiar with all machine operations and controls.
- ✓ Ensure all guards are fitted, secure and functional. Do not operate if guards are missing or faulty.
- ✓ Ensure the seatbelt, roll over protective structure (ROPS), falling objects protective structure (FOPS) (where fitted) and power take-off (PTO) guard are in sound condition.
- ✓ Ensure the 3 point linkage, pneumatic and hydraulic systems are functioning.
- ✓ Use only implements that meet the manufacturer's recommendations.
- ✓ Before starting the tractor, ensure all levers are in their neutral positions, the parking brake is engaged and the clutch and PTO are disengaged.
- ✓ Ensure you are trained and competent and if driving on public roads, appropriately licensed.
- ✓ If the tractor is used on public roads, ensure all lights and warning devices are functioning and the vehicle is registered.

OPERATIONAL SAFETY CHECKS

- ✓ Pull only from the drawbar or hitch.
- ✓ Drive at speed slow enough to keep control over unexpected hazards.
- ✓ Always reverse when going up a steep slope. Avoid slopes that are too steep for safe operation.
- ✓ Ensure no person or animal is endangered when operating equipment.
- ✓ Ensure bucket (if fitted) is raised above line of sight.

ENDING OPERATIONS AND CLEANING UP

- ✓ When stopping the tractor:
 - Park on even ground, disengage the PTO and lower all implements.
 - Place all control levers in their neutral positions, apply the parking brake, turn off the engine and remove the keys.

- Ensure the tractor has come to a complete stop before dismounting.
- ✓ Remove any foreign material from in and around engine and implement parts.
- ✓ Keep the work area or implement shed in a safe, clean and tidy condition.

POTENTIAL HAZARDS

- ⓘ Hair/clothing getting caught in moving machine parts.
- ⓘ Noise.
- ⓘ Rollover.

DON'T

- ✗ Do not use faulty equipment. Report suspect machinery immediately.
- ✗ Never start or operate levers from anywhere other than the seat.
- ✗ Do not operate or idle engine in a non-ventilated area.
- ✗ Do not operate near ditches, holes or embankments, which may collapse under the tractor's weight.
- ✗ Do not operate on excessively steep terrain.
- ✗ Do not allow any person other than the driver to ride on the tractor.
- ✗ Do not dismount while the engine is running unless the tractor has completely stopped, the transmission is in park position and the parking brake is fully engaged.

This SWP does not necessarily cover all possible hazards associated with this equipment and should be used in conjunction with other references. It is designed as a guide to be used to compliment training and as a reminder to users prior to equipment use.

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