

Introduction

This workbook and accompanying CD has been developed to assist people in the agricultural sector to reduce the likelihood of injuries and detrimental affects to health occurring where they work.

The resource is comprehensive and user friendly, to ensure that the time you spend in making your workplace safe and healthy is well spent.

Further information on occupational safety and health issues can be found by accessing the WorkSafe website on www.worksafe.wa.gov.au

How to use this resource

Keep the workbook where you store other important information relating to your property, like manuals and business information. That way you will remember to use it regularly.

Step One The checklist is provided in the workbook but also as a separate sheet to make it practical for you to take with you on the property and use it to identify hazards and assess how safe your property is.

Photocopy extra copies from the workbook when you need to do another inspection.

Step Two Where you may identify hazards on your property, use the workbook to obtain additional information on each of the items on the checklist and useful tips for you to improve safety management, along with further information sources.

Step Three If you want more information on an issue than you can find in the workbook, or you want to access one of the other sources of information mentioned - go to the CD. The CD contains further sources of information from WorkSafe publications and our website.

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1 Agricultural mobile plant safety

Facts

Mobile plant is the number one cause of occupational deaths on rural properties. One in every five deaths is due to the operator falling or climbing off a moving item of mobile plant and being run over by the plant or attached machinery.

There is no strict definition of mobile plant in occupational safety and health legislation. However, mobile plant can be described as any machine that is self propelled and controlled by an operator.

In a rural situation it includes:

- tractors;
- earthmoving machinery, dozers, graders and similar;
- headers;
- self propelled spray units;
- forklifts and multi-tool carriers; and
- mobile cranes.

Reducing the risk

Regularly check for hazards related to mobile plant, attached implements and field conditions. Hazard areas include mechanical parts, untrained or poorly trained operators, by-standers, work procedures, unsafe jacking, climatic conditions, chemicals used and uneven terrain.

Keep a record of hazards identified and make sure they are assessed and controlled. Once a potential hazard has been identified, assess the likelihood and severity of an injury or hazardous incident occurring and take steps to minimise or control the risk.

General safety tips

- Read the safety manual and follow procedures especially safe maintenance and jacking procedures.
- Make sure the operator is properly trained and competent for each task.
- Ensure a roll-over protective structure or ROPS cab is fitted to mobile plant that could over-turn.
- Fit and use a seat belt on mobile plant with ROPS.
- Never carry passengers unless the mobile plant is fitted with ROPS and has a separate passenger seat and seatbelt inside the protective zone of the ROPS.
- Where a front end loader attachment is fitted to an agricultural tractor, ensure a falling objects protective structure (FOPS) is fitted.
- If there is a risk from falling objects, fit a FOPS.
- Have an up-to-date maintenance schedule.
- Never work under any raised item of plant unless adequate stands or supports are in place.
- Keep all guards in place, including master guards, the power take off (PTO) shaft and the power input coupling (PIC).
- Wear hearing protection if machinery is noisy as not all cabs are sound reduced.
- Keep children and bystanders away from the plant and ensure clear all round visibility.

This section will help you to identify and manage the risks associated with the use of mobile plant

BOOK JOURNAL

1 Agricultural mobile plant safety

Operating mobile plant

- Always mount and dismount mobile plant from the left side to avoid accidental activation of controls.
- Adjust the seating so all controls are safely and comfortably reached.
- Only ever attempt to start mobile plant from the operators position. Many incidents occur because the person has attempted to start the plant while standing on the ground.
- Operate at speeds to retain control over unexpected events.
- Reduce speeds before turning or applying brakes.
- Watch out for ditches and other ground conditions that may result in loss of control.
- Where possible reverse up steep slopes for greater safety.
- Engage the clutch gently at all times, especially when going uphill or towing.
- Use as wide wheel track as possible on hillsides and sloping ground.
- Descend hillsides and slopes cautiously, in low gear, using the engine as a brake.
- Never leave the engine running unattended.
- Ensure the park brake is effective and applied before dismounting.
- Always remove the ignition key when the plant is not in use.
- Never leave mobile plant in a position where it could roll.
- Never mount or dismount moving plant.
- Take breaks regularly when working long hours.
- Ensure people operating a forklift have a forklift licence.
- When parking always lower hydraulic equipment.

Towing implements

- Fit attachments according to the manufacturer's instructions. Consult the safety manual.
- Always attach implements to the draw bar or the mounting points provided.
- Never alter, modify or raise the height of the draw bar unless provided for in the safety manual.
- Regularly check safety pins on implements to ensure they are not worn.
- Never hitch above the centre line of the rear axle, (high hitch).
- Never adjust or perform work on implements while they are in motion.
- Never attach PTO implements unless guarded.
- When parking always lower the three-point linkage.
- Always ensure that the mobile plant is suitable for the task.

Avoiding strain injury

When first operating mobile plant, make sure the seating is safe and comfortable. Check the seat height, depth, back rest height and angle, forward and backward movement, seat tilt, vibration absorbing suspension and that the padding is firm and partial pivoting if you have to spend long periods looking behind.

Assess the mobile plant to ensure that it has no slip, trip and fall hazards ie. low steps, secure handgrips, adequate access, sufficient cab space and a safe mounting platform.

Safe movement of mobile plant

Vehicle hazards may occur during:

- pedestrian movement;
- vehicles and mobile plant reversing and manoeuvring;
- loading and unloading operations;
- hitching and unhitching of attachments;
- mounting and dismounting;
- securing of loads; and
- maintenance work.

The law requires the movement and speed of vehicles and mobile plant to be managed in a way that minimises the risk of injury to operators and pedestrians. Vehicle access around the property should be:

- wide enough for the largest vehicle;
- one way if possible, with adequate passing space around slow or stationary vehicles;
- clearly sign-posted to indicate hazards or restrictions;
- well surfaced and drained; and
- free from excessive gradients.

ROPS and FOPS

Occupational safety and health law contains requirements that make ROPS or FOPS compulsory for nearly all tractors and mobile plant. Regulations require that ROPS or FOPS (as appropriate) and seat belts are fitted to:

- All tractors between 800 and 1500 kilograms and manufactured after 1980; and,
- All earthmoving machinery manufactured after 1989.

ROPS and FOPS made especially for older tractors and earthmoving equipment are available through farm machinery dealers and can be fitted easily.

Requirements for PTO guarding

Power out put coupling (POC) guard – is generally known as the master guard. The guard must be permanently attached to the tractor. It may be movable, but capable of being returned to and held securely in position when the tractor is in use.

Implement power input coupling (PIC) guard – the guard must be permanently attached to the implement. It may be movable, but capable of being returned to and held securely in position when in use. There must be no ‘nipping point’ where body parts or clothing can be caught.

Power take off (PTO) shaft guard – the guard must extend into the tractor POC guard area and the implement PIC area the maximum practical distance. The guard may be of a rotating or non-rotating type. For non-rotating type guards a means of restraining the guard must be provided.

Licensing requirements for industrial lift truck, forklift truck and multi purpose tool carriers

Under the National Licensing Standard, since 1 October 2007, licences are required for the operation of forklifts equipped with a mast, and when a multi purpose tool carrier is configured as described below.

- Non-slewing mobile crane (greater than three tonne) with a boom and/or jib.
- Elevating work platform with operating controls in the basket and the boom length has a capacity of 11 metres or more.

Duty of care

The person who employs operators of multipurpose machines, or has control of the workplace where multipurpose machines are operated, has duties under the *Occupational Safety and Health Act 1984*.

These duties include providing information, instruction training and supervision necessary to ensure operators can perform their work in such a manner that they are not exposed to hazards. To fulfil this obligation an appropriate risk assessment must be done to determine the additional information, instruction, training and supervision on the various attachment(s) fitted to any multipurpose machines which must be provided to the operator. This must occur even though the operator may be the holder of a relevant class of licence for high risk work.

Further information

Further information about how forklift operators are affected by the National Licensing Standard can be found at: www.worksafe.wa.gov.au

Guidance notes available are:

Safe movement of vehicles at workplaces

Powered mobile plant

Working safely with forklifts

Safe movement of vehicles at workplaces

Prevention of carbon monoxide poisoning from petrol and equipment gas powered equipment

Plant design - A guide for designers, manufacturers, importers, suppliers and installers of plant

Plant in the Workplace - A guide for employers, self-employed persons and employees

Powered mobile plant

2 Agricultural chemical safety

This section will help you to identify and manage the risks associated with chemicals on rural properties

Facts

Most agricultural chemicals are hazardous and can cause injury or harm to health if not handled and used correctly and stored and disposed of safely. The effects of chronic exposure to chemicals, such as pesticides, are not always immediately obvious and sometimes do not appear for many years. Sometimes the effects of exposure are subtle, such as personality changes or memory loss.

Reducing the risks

Chemicals commonly used on rural properties include fertilisers, pesticides, herbicides, animal medications, acids, cleaning agents and solvents.

Suppliers of hazardous substances are required to make available safety information in the form of a material safety data sheet (MSDS) for each product. A register containing a list of all hazardous substances and their MSDS must be maintained at the property.

For each chemical hazard identified, assess the likelihood and severity of an injury, harmful reaction or a hazardous incident occurring. This might include assessing procedures for decanting and using the chemicals and the effectiveness of protective equipment and checking how toxic the chemical is.

Consider the best way to minimise or control these hazards, put control strategies in place and review the effectiveness of these strategies regularly.

General safety tips

- Ensure the register of hazardous substances is maintained and up to date.
- Read and follow the labels and MSDS for information on hazards, personal protective equipment, safe handling, transport, storage and disposal for each hazardous chemical.
- Wear appropriate personal protective clothing and equipment when handling and using chemicals.
- Use the least hazardous chemical available and use it at the recommended rate.
- Prepare enough of the chemical for immediate use only.
- Make sure equipment for applying chemicals works properly and does not leak. Don't eat, drink or smoke while pouring, mixing or spraying chemicals.
- Avoid working alone if you are using highly toxic chemicals, or have some form of mobile communication close by.
- Advise someone where you will be working and how long you intend to be gone.
- Clean all equipment thoroughly in an area where run-off will not create a hazard or contaminate the environment.
- Wash work clothing separately from domestic clothing or use disposable clothing.
- After handling hazardous chemicals wash your hands thoroughly with soap and water before eating, drinking, smoking or going to the toilet.

Take precautions

- Provide a first aid kit.
- Provide an eye wash station or disposable eye wash bottle.
- Keep fresh water close by for washing.
- Have a family member or another person at the property attend a first aid course.
- Check the labels, MSDS and other safe-handling guides for hazardous chemicals to make sure you have the correct antidotes, emergency equipment and facilities available.
- Stop work immediately and seek medical attention if there is any sign of muscular spasm, blurred vision, excessive saliva or difficulty breathing during or after using hazardous farm chemicals.

Storage of chemicals

In order to protect people, the environment and property, the following principles are provided for guidance in determining where to store chemicals where this is not specifically covered by local government zoning or building by-laws.

- Avoid proximity to watercourses, dams and storm water channels.
- Ensure the area selected is above the highest recorded flood level.

Consideration must be given to the distances hazardous substance stores are located from the boundary of the premises and from any other building on the site. This information varies depending on the class and quantities of substances stored and can be found in the relevant Australian Standards.

i. Type of installation

The type of installation is dependent on the type and quantity of hazardous substances to be stored, and may be one of the following:

Type A	An indoor storage cabinet, which is securely locked and located within a building. The building may be used for some other purpose.
Type B	An enclosed area separated by a wall, located within or attached to a building. The building may be used for some other purpose.
Type C	An isolated building not within or attached or abutting to any other building.
Type D	An outside storage installation enclosed by a fence with security protection on top. Where a gate is required this shall be lockable for security. As a general principle, hazardous substances should be stored under cover. Outside storage, although sometimes unavoidable, should be only short term and confined to materials that are known to be stable in these conditions.

A procedure for regular inspection and maintenance of all storage and handling facilities should be established and implemented.

Note: Tanks for flammable liquids and gases should not be located within buildings.

2 Agricultural chemical safety

ii. Segregation of chemicals

Segregation is the isolation of incompatible hazardous substances from each other. Incompatible hazardous substances must be segregated from each other by a distance of at least five metres. Provision should be made so that any spillage of one product can not flow and come into contact with another incompatible product.

Hazardous substances should only be kept in their original containers or in containers that have been specifically designed for the particular hazardous substance.

Packages may be stacked provided that the packages are not likely to fall and that such stacking is not likely to damage other packages in the stack.

Reference needs to be made to the MSDS for each hazardous substance to determine its compatibility with other hazardous substances.

iii. Construction of storage facility

Materials. Each storage facility should have wall, roof and main structural members constructed from materials that are non-combustible and impervious to the hazardous substances stored.

Flooring. Goods should be stored on or above a concrete floor or other impervious surface. Containment should be provided for at least 25 percent of any liquid stored therein in drums and / or 100 percent of any liquid stored in bulk tanks. Ideally the floor should be graded to an area (or preferably a sump) to facilitate collection and subsequent disposal of any spills and washing water.

Racking and Shelving. Adequate provision should be made in the form of racks / shelves made of non-combustible and impervious materials.

Ventilation. Adequate ventilation is required to ensure the safe dispersal of vapours especially during decanting and product transfers. Any buildings used for the storage of hazardous substances must be provided with upper and lower level vents in at least two opposite walls to aid cross ventilation.

Security. All storage installations must be secured from access by unauthorised persons by the use of locks.

Signage. Sign(s) delineating the storage installation must be displayed.

Cleaning. Provision must be made for washing down the store floor with water.

iv. Washing facilities

There must be an adequate water supply for emergencies, and washing personal protective equipment.

v. Heat and ignition sources

All storages should be kept away from sources of heat such as heating appliances and direct exposure to the sun.

Flammable gases, flammable liquids, flammable solids and oxidising agents should be kept away from sources of ignition such as light switches, refrigerators, welders and exposed flames. Particular care should be taken to avoid ignition sources and static electricity when flammable gases and liquids are transferred.

Do not smoke or use any other source of ignition eg oxy torch, unprotected electrical equipment, in any area used for the storage of hazardous substances.

vi. Storage of personal protective equipment

An adequate area, separate from the hazardous substance storage area is required for all personal protective equipment.

vii. Fire protection and emergency planning

At least one of the following fire protection measures must be provided in a readily accessible location to areas used for the storage and handling of hazardous substances:

- One dry powder fire extinguisher having a rating of at least 40B(E).
- A hose connected to a reliable water supply.
- Bucket(s) of clean dry sand with shovels for spreading.

It is also required that the types of emergencies that may arise be identified eg fire, spill, poisoning, explosion and actions for dealing with these events be implemented. Examples include;

- Provision of suitable fire extinguishing agents.
- Provision any neutralising agents.
- Training workers how to raise an alarm.
- Training workers on who to contact for assistance in case of emergencies.

The area within three metres of any storage area shall be kept clear of any combustible materials or vegetation.

2 Agricultural chemical safety

Transport of chemicals

- Avoid transporting chemicals with food, water, animal feed or other reactive hazardous substances.
- Secure hazardous substances on the vehicle so they can't move or fall.
- Keep a record of the chemicals you are carrying.
- Carry suitable personal protective equipment, including respiratory equipment if necessary, in case of emergency.

Disposal of chemicals

- Take notice of any warnings on the label regarding toxicity to non-target areas eg animals or plants.
- Check the label and MSDS for advice on disposal of chemicals and containers.
- Triple rinse empty containers to remove all traces of the chemical.
- Uncap, puncture and crush all rinsed containers.
- Where possible return containers to the manufacturer or supplier, or contact Drum Muster or your local government authority for information on the procedures for safe disposal of containers or remaining chemicals.

Further information

Australian Standards

- AS/NZS 1596-2002 Storage and handling of LP Gas
- AS 1940-1993 The storage and handling of flammable and combustible liquids
- AS 2507-1998 The storage and handling of agricultural and veterinary chemicals
- AS 3780-1994 The storage and handling of corrosive substances
- AS 4332-1995 The storage and handling of gases in cylinders
- AS/NZS 4452-1997 The storage and handling of toxic substances

Codes of Practice

- Western Australian Commission for Occupational Safety and Health Code of Practice: First Aid, workplace amenities and personal protective equipment
- National Code of Practice for the Control of scheduled carcinogenic substances [NOHSC:2014(1995)]
- National Code of Practice for the Control of workplace hazardous substances [NOHSC:2007(1994)]
- National Code of Practice for the Labelling of workplace substances [NOHSC:2012(1994)]
- National code of practice for the Preparation of material safety data sheets [NOHSC:2011(2003)]

Guidance Notes

- Western Australian Commission for Occupational Safety and Health Guidance Note: Provision of information on hazardous substances at workplaces - Material Safety Data Sheets (MSDS)
- National Guidance Note for the Assessment of Health Risks Arising from Hazardous Substances in the Workplace [NOHSC:3017(1994)]

This section will help you to identify and manage the risks associated with pesticides on rural properties

2a Agricultural chemical safety - Pesticides

Facts

Many materials used in agriculture are classified as hazardous substances such as insecticides, herbicides and fungicides, collectively known as pesticides. Safety and health laws require that safety and health information must be provided in the form of Material Safety Data Sheets and labels so that the hazardous substances can be used safely.

A Material Safety Data Sheet is a document that provides information about a hazardous substance, how it should be used and how to avoid harm when using them. Manufacturers, importers or suppliers of any hazardous substance must provide sufficient information so the substance can be used safely.

The supplier of a hazardous substance must ensure that a current MSDS is provided when a person:

- purchases the hazardous substance from the supplier for the first time
- purchases the hazardous substance from the supplier at a later time and requests a MSDS, or
- purchases the hazardous substance from a retailer who originally obtained it from a supplier and requests a MSDS.

The person in control of the of the workplace must,

- set up and maintain a register that contains, as a minimum, a list of all the hazardous substances used and the MSDS for each substance, and
- ensure the register is readily available to all people who might be exposed to a hazardous substance.

Control the risk

The hierarchy below ranks control measures from the most effective to the least preferable. However, not all types of strategies will be practical and more than one type of strategy may be needed for best exposure protection.

i Elimination and reduction

Use of a pesticide can be eliminated by removing the pest through manipulating the environment. At the same time there will be a benefit to production and the environment, including the elimination of wastes.

Consider practices that involve:

- better hygiene;
- removing pest breeding areas;
- biological control and beneficial insects;
- rotating crops or alternative crop varieties;
- physical barriers;
- biotechnology and integrated pest management (IPM); and
- eradication.

Use these along with pest monitoring to reduce the frequency of chemical application. This is called integrated pest management, or IPM.

2a Agricultural chemical safety - Pesticides

ii. Substitution

It may be possible to substitute a chemical with a less hazardous one.

Examples of substitution include:

- using a less toxic chemical;
- using a less volatile chemical; and
- altering the physical form such as replacing an emulsifiable concentrate formulation with a granular formulation or encapsulated product, which will reduce the handling risks.

iii. Isolation

Examples of isolation include:

- Using an air-conditioned truck or tractor cabins with properly functioning and maintained activated carbon filters designed to remove pesticide vapours. Check door seals for wear. Keep windows, doors and hatches or vents closed and air-conditioning on recycle during operations. Carbon filters must be maintained properly;
- Wearing a respirator if a carbon filter is not available. The use of air-conditioning on “recycle” without carbon filters could contaminate the cabin over a period of time;
- Fencing off a contaminated dip site; and
- Closed chemical transfer systems which reduce the risk of contact with concentrate eg. induction hoppers, direct injection.

iv. Engineering control

Consider engineering controls for indoor work if air contamination is likely, for example in a green house or packing shed. Examples of engineering controls include:

- using an extraction ventilation equipment (ventilator) to remove vapours after treatment;
- using pumps to transfer (liquid) chemicals instead of pouring;
- changing nozzles to control droplet size or spray pattern; and
- using a purpose designed workplace with good natural or mechanical ventilation (adequate air movement).

v. Administrative controls and work practices

Administrative controls are implemented to ensure safe work practices are adopted in the workplace and that environmental impact is minimised. Examples of administrative controls include:

- Reducing the number of people exposed and excluding non-essential personnel from the area. For example, treating a building after normal working hours; minimising the number of workers during dipping;
- Limiting the time period of exposure for a worker;
- Prohibiting eating, drinking and smoking when handling chemicals;
- Providing and ensuring the use of adequate facilities for effective decontamination such as washing facilities;
- Ensuring that outdoor tasks are done at the most appropriate time of day to minimise heat stress or spray drift;
- Correctly calculating crop volume, area to be treated and amount of spray required;

- Correctly calibrating equipment;
- Restricting crop re-entry after spraying;
- Signs indicating hazards;
- Notifying of neighbours; and
- Establishing procedures for disposal of waste and containers.

vi. Personal protective equipment (PPE)

PPE should only be relied upon where it is not possible to control exposure by one or more of the above measures. PPE should be used:

- according to instructions on the label and the MSDS;
- in an open field situation where engineering controls are not available;
- when mixing, decanting or spraying; and
- in some circumstances, as a back up for other control measures

Employers must provide PPE to workers where other control measures are not practicable. Ensure that:

- all PPE is appropriate for the task;
- all PPE is suitable for the wearer;
- PPE is readily available, clean and in fully operational condition;
- employees are trained in the use of the PPE, including the selection, fitting and maintenance and where appropriate when to discard disposable PPE;
- employees wear the PPE as intended;
- any maintenance, such as cleaning, is carried out; and
- the likelihood of a secondary injury due to wearing PPE, such as skin rash or heat stress or dehydration caused by unsuitable clothing in hot conditions, has been assessed.

Protective equipment in use should have the appropriate Australian Standard number on the label. Various standards not only provide specifications but also indicate the type to be selected.

Use labels and MSDS as a guide. If in doubt as to suitability ask the supplier for a recommendation for the intended purpose. Also check the supplier's specifications.

2a Agricultural chemical safety - Pesticides

Clothing

Cotton or cotton/polyester blend full-length overalls, buttoned to the neck and wrists, should be worn during all operations. Although disposable overalls are light, comfortable and effective, they tend to easily tear under heavy use thus breaking the protection barrier. PVC pants and jackets are recommended where there is a risk of contact with spray, dust or spillage of pesticides. To minimise exposure when wearing overalls or PVC suits, care should be taken to make sure trouser legs are kept outside of boots and sleeves kept outside of gloves. This will reduce the likelihood of chemical leaking into boots or gloves.

Gloves

Nitrile or PVC, unlined flexible gauntlet gloves are considered excellent protection, as they are impervious to most solvents used in pesticide formulations. Leather or canvas gloves are unacceptable because their capacity to absorb the pesticide. Disposable gloves are only suitable for minor delicate tasks, such as cleaning spray nozzles and should only be used once and discarded. Never tuck sleeves into gloves.

Footwear

PVC calf length boots provide the best protection and are available as safety (steel cap) footwear. Never tuck trousers into socks or boots.

Headwear

Where necessary, a wide brimmed washable hat that protects the scalp should be worn. A hood fitted with respirator filters can also be worn.

Eye / face protection

When handling pesticides, especially concentrates, eye and face protection is essential. Safety glasses and goggles, although protecting the eyes, offer only minimal face protection. A full face shield and appropriate eye protection is recommended for total protection.

Apron

When mixing chemicals, it is essential to wear a PVC apron that covers the body from shoulder to below the tops of boots. Spillages can be quickly washed off without affecting the under clothing

Respirators

Particular attention needs to be paid to the selection of an appropriate respirator. The recommendations of the pesticide manufacturer, as stated in the MSDS must be strictly adhered to.

Recording control measures

Measures taken to control chemical exposure should be recorded.

Content of the record

The record should show the degree of the risk and how decisions were made concerning:

- the selection, design, construction or adoption of any control measure used;
- the selection and use of any PPE;
- the arrangements for training to ensure an appropriate application procedure is followed and the equipment is correctly used (unless the operator is licensed or appropriately certificated); and
- suitable weather conditions and restrictions on the chemical use if the weather is unfavourable.

For most users a simple record attached to the original MSDS or written on the MSDS and dated would be sufficient. This must be kept for at least five years.

Spraying pesticides

Spray drift controls

One of the major problems encountered during the use of pesticides is the potential for spray drift to expose other workers, neighbours, members of the public.

Identify sensitive areas where spray drift is likely to have the greatest impact, such as water sources, occupied buildings, public roads, schools and other public amenities, livestock, crops and pasture.

Separate the application site and the area of potential risk with a barrier, such as vegetation, or distance. For example, encourage vegetation growth to act as a barrier. Wherever possible, a buffer zone should be left between a sprayed and unsprayed area.

Prepare property plans as a means of communicating to others all the factors which need to be considered when applying chemicals on a property. The plan should identify houses and buildings, neighbouring properties, sensitive areas, roads and access points, public roads and public places, watercourses and storages, paddock boundaries, and powerlines and aerial hazards such as transmitter towers. The property plan is both a tool for communicating with neighbours and a management tool when spraying contractors are used or workers are given directions.

2a Agricultural chemical safety - Pesticides

Communicate with neighbours to minimise drift problems and avoid conflict. Communication could include: pre-season discussion to identify activities involving chemical application, chemicals used and potential interactions with neighbours, when to notify neighbours prior to application and agreement on conditions under which application will not proceed or be abandoned.

Check wind speed and direction. Spraying should only take place when the breeze is blowing away from an area that may be at risk from drift.

Choose equipment that is designed to reduce or eliminate drift (if permitted by the label instructions). Equipment should be used according to the manufacturer's instructions and be the most appropriate for the task in hand, for the particular pesticide and target requirements.

For each type of application equipment, variables such as nozzle type, hydraulic pressure, height of delivery and the presence or absence of a directed airstream will affect the size and movement of droplets produced, and the efficiency with which they impact on the target. Application equipment needs to be set up to maximise pest control efficiency and to minimise spray drift.

Weather conditions for spraying

To minimise spray drift it is necessary to monitor weather conditions during and immediately after application.

Temperature affects the rate of evaporation, particularly water based sprays. Evaporation can reduce the size of droplets making them more drift prone. Formulations, which rely on light oil as a carrier, are less prone to evaporation.

High relative humidity is preferable to minimise drift that can occur through evaporation. Applications at temperatures above 30 degrees Celsius and at relative humidity's below 45 per cent increase the risk of drift.

Ensure that spraying is done in cross-wind conditions rather than directly into or with the breeze. Application should be avoided in calm, stable conditions which may occur early in the morning, late in the afternoon or during a temperature inversion.

Rain may cause run-off of the pesticide with a risk of environmental contamination. This should be taken into account when assessing the risk to the environment. Check the rain-fast period. Pesticides must not be applied if rain is likely to wash the pesticides from the site of application.

Inversion: Do not spray under conditions of atmospheric temperature inversion, where air closer to the ground cools faster than the air above it, and forms a layer where air temperature increases with altitude instead of decreasing. Small spray droplets released into an inversion layer can remain suspended and drift long distances. Inversion conditions are most likely in the early morning and late afternoon in the absence of wind, and are often marked by fog, smog or smoke drifting at a constant height instead of rising.

Aerial application: Aerial application and droplet capture by the target crop, are improved where cross winds create turbulence in the crop. Cross winds of between three to ten kilometres per hour are preferable for aerial application to broad acre crops. In the case of bare earth or fallow, lower cross wind speeds are preferable. No application should occur at speeds above 15 kilometres per hour unless specific drift minimisation strategies are in place. Variable low speed winds should also be avoided.

If conditions are not suitable to minimise potential risks from drift, the spray operation should be delayed until conditions are suitable.

2a Agricultural chemical safety - Pesticides

Re-entry periods

The re-entry period is the period in which a treated field must not be re-entered by unprotected people after the application of a chemical on a crop. Look to see if the re-entry period is on the label. Workers and others must be advised of the correct time lapse. It is important to observe the re-entry period to avoid skin contact with sprayed foliage.

Where no re-entry period is stated, a minimum of 24 hours should be observed or until the chemical has dried upon the crop, whichever is the later, or unless appropriate PPE is worn. Caution should be exercised entering wet crops where chemicals have previously been applied, irrespective of the time lapse between application and re-entry.

Even after the re-entry period has been observed, some PPE may still be necessary.

Further information

WorkSafe web based information on hazardous substances www.worksafe.wa.gov.au
Commission for Occupational Safety and Health *Guidance note: Provision of information on hazardous substances at workplaces: Material Safety Data Sheets (MSDS)*

3 Electrical safety

Reducing the risks

Hazards associated with all electrical power cords, fittings, machinery, tools and equipment need to be identified. Assess each hazard for the likelihood and severity of possible injury or harm, and develop safe work procedures. If there is any risk of electric shock or electrocution, make sure the item is put out of use and either isolated, or kept in a safe place until repaired or discarded.

This section will help you to identify and manage the risks associated with electricity on rural properties

General safety tips

- Regularly inspect wiring, cords, plugs, tools and equipment for obvious external damage and look out for shorting or sparking fittings.
- Always get an electrical contractor to install, alter or repair electrical wires, plugs, switches, fuses or electrical machinery and equipment.
- Weatherproof outlets and fittings should be used in areas exposed to wind and rain.
- Avoid using electrical equipment outdoors in wet conditions.
- Do not overload circuits by plugging in too many electrical appliances at once.
- Do not remove guards or covers from electrical switch gear.
- Lights that may be broken by moving equipment should be fitted with wire guards.
- Ensure extension cords are positioned in work areas so they do not create a slip or trip hazard and are not exposed to physical damage.
- Wear suitable footwear and clothing when using electrical equipment.

Residual current device (RCD)

- An RCD is an electrical safety device specially designed to switch off immediately when electricity 'leaks' to earth at a level harmful to a human. These devices offer a high level of personal protection from electric shock.
- Only licensed electrical contractors can install a RCD.
- A fixed RCD can be installed in the switchboard in the house, shed or workshop, or portable RCDs can be used with individual power tools.
- If an RCD operates (trips), check the electrical equipment for obvious faults. If it keeps tripping out, call an electrical contractor.

Fuses

Australian Standard AS/NZS3000:2000 prohibits the installation of semi-enclosed rewirable fuses.

If a fuse operates (blows), switch off and check the electrical equipment being used before replacing the fuse wire. If the fuse operates again, call an electrical contractor, as there is a fault with the wiring or the appliance or tool. When replacing fuse wire, make sure its rating is correct for the circuit. An oversized fuse wire could cause damage to the electrical installation wiring or a fire.

3 Electrical safety

Earth wires

Earth wires should never be removed or disconnected. They are an essential safety feature. The purpose of earth wires is to divert any current leakage to the ground and cause a fuse to blow or a RCD to trip should a fault develop. The earth wire is usually a bare or green and yellow insulated copper wire connected to a water pipe or stake driven into the ground.

Overhead power lines

- Always check the location of power lines before you start work.
- Power line heights are deceptive. Know the operation and maximum height of your machine.
- Have an observer check your position when working close to overhead power lines.
- Make sure tall items like balers and headers are kept well clear of overhead wires.
- Never stack irrigation pipes or park machinery under power lines.
- Never up-end a pipe before looking up. Carry pipes horizontally.
- Never ride on top of loads.
- If aerial crop-dusting is to be performed, inform the pilot beforehand of the location and height of the power lines in the area.
- Plan farm roads to avoid passing under power lines and have new power lines installed so they do not cross over roads.
- Always check plans and records of underground powerlines before any digging or earthworks.
- Ensure that power lines on your property are secure after storms, wind or heavy rain.
- If a power line has been damaged or has fallen down, keep clear and notify the power supply authority.

Power tools

- Make sure all hand-held power tools and appliances are protected by an RCD.
- When buying a portable power tool, look for double insulated tools – they are safer.
- Regularly check power tools, leads and plugs for external damage or makeshift repairs.
- Ensure an electrical contractor, electrician or licensed appliance repairer inspects and tests power tools, leads and plugs on a regular basis.
- Do not use tools if the casing, cords or plugs are broken or damaged.
- Do not adjust tools without first switching off and removing the plug from the outlet.

Further information

Western Australia Occupational Safety and Health Commission *Guidance Note Electricity: Residual Current Devices*
WorkSafe Guidelines for work in the vicinity of overhead power lines

4 Agricultural bikes

Facts

Agricultural bikes are any motorbikes with two, three and four wheels used for work on rural properties. Three and four wheelers are also known as 'all terrain vehicles' or ATVs.

Most agricultural bike injuries result from a lack of training and experience, speed, steep, uneven or unfamiliar ground, carrying a passenger or an unbalanced load, attachments, unsuitable protective clothing and unsafe driving. Young people aged between 10 and 24 have a much higher risk of injury.

Control the risk

Owners must understand the risks associated with agricultural bikes and know what safety precautions to take. Employers have a duty of care under the *Occupational Safety and Health Act 1984* to make sure that agricultural bikes are safely maintained and people riding them are adequately trained and are wearing protective gear.

This section will help you to identify and manage the risks associated with bikes on rural properties.

General safety tips

- Agricultural bikes should be operated in accordance with the manufacturer's instructions.
- Agricultural bikes are not designed to carry passengers.
- Never allow children to operate an agricultural bike.
- Always have a system for restraining items being carried on ATVs.
- Never attempt jumps, wheelies or other stunts on an agricultural bike.
- Ride at an appropriate speed for the terrain, experience and the visibility conditions.

Bike manual and maintenance

- Read and understand the operator's manual, particularly safety information.
- Heed all warning labels on the bike.
- Pay attention to maintenance advice in the manual.
- Be familiar with the capabilities of the bike.
- Check the bike before riding it.
- Check brakes and tyres regularly.
- Make sure all parts used to repair the bike are designed for use on the particular brand of bike.

4 Agricultural bikes

Personal protective equipment

- Always wear an approved helmet when riding an agricultural bike.
- Wear clothing with long sleeves and pants, sturdy boots and gloves to provide protection if you come off your bike.
- Wear eye protection to reduce the risk of serious eye injuries from bugs, branches or stones.

Attachments

- Take extra care when using attachments such as spray tanks and other equipment on an agricultural bike as they can change the centre of gravity and affect the stability of the bike.
- Make sure attachments are designed for use on the agricultural bike.

Terrain

- Be on the lookout for potential hazards when riding. Rocks, bumps, irrigation pipes, fences and wildlife all have the potential to cause an accident, and should be approached with caution.
- Take extra care when operating agricultural bikes on unfamiliar or rough terrain.
- Where possible, use familiar tracks.
- Be particularly careful when turning, approaching a rise or navigating an obstacle. Find another route or go back if not sure of your ability to clear an obstacle.
- Make sure hazard areas are out of bounds.

Paved surfaces and public roads

- Don't drive an ATV on paved or bitumen surfaces. It is not intended for use on smooth surfaces and could be difficult to control.
- Never ride an agricultural bike on public roads.

Drugs, alcohol and fatigue

- Never ride under the influence of alcohol or drugs, including prescription drugs. They may affect balance, vision, judgement and concentration.
- Fatigue can also limit the ability to control an agricultural bike safely.
- When travelling long distances take frequent rest breaks.

5 Grain movement and storage

This section will help you to identify and manage the risks associated with grain movement and storage.

Control the risks

Whenever anyone installs, climbs, enters, fumigates, fills or empties a silo, significant risks may be involved. Hazards can include insufficient oxygen, toxic gas, explosive atmospheres, unguarded machinery, electricity, grain trapping, silos collapsing, and falls from heights. There are also significant risks for unsupervised children.

Check whether identified hazards present a risk of serious injury, and consider ways risks can be minimised.

General safety tips

- Don't smoke near silos, and avoid causing sparks from metal friction or electric switches as
- grain dust in silos can become explosive, particularly if humidity is low.
- Work outside the silo if possible.
- Carbon dioxide in a silo can displace oxygen and cause suffocation.
- High temperatures can cause heat stress for people inside a silo.
- Wear respiratory equipment when appropriate.
- When moving grain augers, avoid overhead powerlines.
- Ensure all moving belts are guarded.
- Guard intake points for grain augers.

Safe fumigation

- Ventilate fumigated silos before entering.
- Always follow the manufacturer's recommended safe ventilation period.
- Open phosphine containers in the open air, not in the shed or silo.
- Hold the container away from your face, and position yourself upwind.
- Wear protective clothing and equipment.
- Have someone standing by when fumigating.
- Place phosphine tablets into the silo from the roof using a tube.
- Clearly mark all areas under fumigation with 'DANGER UNDER FUMIGATION' signs.
- Fumigate only in a tested sealed silo.
- Read the phosphine Label before opening the container and follow the manufacturers' instructions on dose rate, fumigation period, ventilation period and withholding period.
- Wear appropriate PPE before commencing the fumigation according to the label instructions. The Label requires the operator wear overalls, elbow length PVC gloves and full face respirator fitted with particulate (P1) and phosphine gas filter.
- Open the container in the open air and hold it away from your face, position yourself upwind.
- Have someone standing by when fumigating.
- Place the phosphine formulation in the headspace of the silo. Wear correct safety harness. Some silos have a fall arrest system which requires the correct brake fitting for the tethered cable. To climb older silos use a safety harness fitted with a hook system.
- Place the phosphine on a tray so that the tablets are in a single layer or the bagchain formulation is laid across the grain. The tray or the bagchain should be tethered so that phosphine residue does not fall into the grain. It is illegal to apply phosphine to a grain stream (auger) or probe the tablets into the grain.
- Some silos are fitted with a ground level application chamber. Place the phosphine formulation into the chamber wearing the appropriate PPE.
- Clearly mark all grain storage under fumigation with a sign 'DANGER POISON GAS KEEP AWAY'.

5 Grain movement and storage

Safe use of augers

- Guard auger drive trains (belts, pulleys, drive shafts) and the rotating screw fitting.
- Locate mobile augers on firm, preferably flat ground, and operate at a shallow angle (less than 45 degrees) to prevent overbalancing.
- Lower mobile augers when transporting.
- Never start augers hidden from your view before checking the area is clear of people.

Avoid grain suffocation

- Do not enter a silo unless necessary. Silos are confined spaces. Entry can only be made after strict compliance with the Occupational Safety and Health Regulations 1996.
- If you enter a silo, have someone standing by in case of difficulties.
- Never enter a silo without turning off the auger and ensuring no-one can start filling or emptying the silo while you are inside.
- Stay on the ladder above the level of compacted or bridged grain while dislodging it.
- Ensure external ladders start at a height inaccessible to children.

Avoid structural failures

- Every stored material has different structural characteristics – a silo designed to store one product may not be suitable for another. Care must be exercised whenever a new product is stored in a silo. Check with the manufacturer/supplier.
- Grain adhering to the inside walls of the silo may cause the silo to collapse.
- Follow manufacturer's instructions exactly in preparing the concrete pad.
- Use a 'bedding-in' procedure when filling a silo, by drawing off a rubbish bin full of grain.
- Keep people, especially children, well clear when filling or emptying a silo.
- Consult an engineer before any alterations are made to a silo. Seemingly simple changes can drastically alter a silo's structural stability.
- Conduct regular inspections of silos.
- Equipment attached to silos can impose dangerous loads.

Avoid falls

- Install an approved fall restraint system and harness when climbing external ladders on silos or accessing top hatch.
- Provide a permanently hinged wire mesh guard on all external openings above the maximum level of grain.

Emergency procedures

- If trapped by grain don't panic – the grain will pack tighter.
- Shield your face and chest with arms and clothing to create space for breathing.
- Plan your escape. Always have a person watch from the outside. The watcher should have clear instructions on what to do in an emergency.
- The first instruction is: 'Don't follow me in.'
- If only one person is on standby and cannot pull you out without entering, they must call for help. Only then can someone enter, wearing a breathing apparatus and a life-line. One or more people outside can help to pull you out.
- If someone else is trapped in a grain silo, empty the bin by opening any side outlet, then cut flaps in the cone or walls all around the base using power tools.

Further information

WorkSafe web based information on working in confined spaces www.worksafe.wa.gov.au
Commission for Occupational Safety and Health Code of practice: *The Prevention of Falls at Workplaces*

For more information of fumigation of grain stocks refer to the Department of Agriculture and Food website.

This section will help you to identify and manage the risks associated with machinery guarding.

6 Machinery guarding

Facts

Manufacturers, designers and suppliers of machinery and equipment are legally required to make sure dangerous parts are safely guarded so that operators and others are protected from injury.

A guard may be any shield, cover, casing, physical or electronic barrier intended to prevent contact between a hazardous machine part and any part of a person or a person's clothing.

Control the risk

Old machinery is sometimes poorly guarded. Hazard areas may include extra moving parts like shafts, sprockets and pulleys that may have been added for various other uses. Original guarding may have also been removed for maintenance and not put back. There may be times when an operator may need to reach over, under, around or into a machine while it is running. If so, any moving parts or other hazards must be appropriately guarded from human contact.

Some of the hazards associated with machinery and likely to cause injury include:

- Rotating PTO and other shafts, for example joints, couplings, shaft ends and crank shafts.
- Gearing, including friction roller mechanisms, cables, sprockets, chains, clutches, cams or fan blades.
- Keyways, keys, grease nipples, set-screws, bolts or any other projections on rotating parts.
- Any pulley or flywheel that incorporates openings, spokes, protrusions, etc, that renders it anything except totally smooth.
- Any crushing or shearing points, such as augers, roller feeds, and conveyor belts.
- Rotating knives, blades, tines or similar parts of power driven machines that operate in or near the ground or engage crops.
- Any machine component that cuts, grinds, pulps, crushes, breaks or pulverises farm produce.
- Hot parts of any machine.

General safety tips

Make sure machinery guards:

- are designed to protect the user but allow ready access for operation and maintenance;
- are always in place on hazardous parts of machinery;
- are conveniently placed so that users, operators and service and maintenance people are less likely to remove them permanently;
- are strong and durable enough for the machine part they cover;
- protect users, operators and bystanders against burns caused by hot parts;
- are ventilated where applicable to avoid the machine over-heating; and
- are not removed until the machine is stopped, isolated from the power source, "locked-out", de-energised and "tagged out" using a danger tag.

6 Machinery guarding

Safe procedures for machinery guarding

- For maintenance jobs, have a checklist procedure ensuring guarding is safely replaced.
- Use lock-out and tag devices to prevent machinery being accidentally started during maintenance.
- Redesign work processes to minimise risk from moving parts.
- Replace unguarded machinery with safer machinery.
- Have guards designed and fitted for improvised machinery.
- Ensure workers are fully instructed about safe procedures for guarding, isolation devices, locks, and danger tags.

Children and machinery

Children on or visiting the property are often at risk of being injured by machinery. Minimise the risks by teaching children about safety.

Remember:

- Agricultural machinery is not a playground.
- Make sure guards are on machines.
- Be aware that children's fingers can sometimes reach into guarding designed to protect adult hands.

Further information

Additional information on machinery guarding can be found on the WorkSafe website www.worksafe.wa.gov.au

Commission for Occupational Safety and Health *Guidance Note: Isolation of plant*
AS 4024.1-2006 Safety of Machinery

Safe use of woodworking machinery (guarding)

Code of practice: Safeguarding of machinery and plant

7 Noise

Facts

Noise from agricultural tools and machinery can cause permanent hearing loss and tinnitus. Repeated exposure to noise will lead to permanent damage. The damage can occur gradually over a number of years and remain unnoticed until it is too late. Hearing loss can lead to a loss in quality of life. Some early warning signs of hearing loss include:

- ringing in the ears after work;
- difficulty understanding a normal conversation;
- turning up the volume on radio or television when others appear to be able to hear adequately; or
- failing to hear background noises, such as a ringing telephone or doorbell.

The noise exposure standard for an eight hour day in Western Australian workplaces is 85 dB(A). Typical noises in agriculture that can damage hearing include:

- tractor 95-100dB(A);
- header 88-90dB(A);
- orchard sprayer 85-100dB(A);
- angle grinder 95-105dB(A);
- bench grinder 90-95dB(A);
- chainsaw 105-120dB(A);
- pig shed at feed time 95-105dB(A); and
- shotgun over 140dB(C).

Controlling the risk

If noise cannot be reduced or removed at its source, and there is no way to separate people from damaging noise exposure, personal hearing protectors must be worn.

Reduce noise at its source by:

- purchasing quieter machinery and equipment;
- modifying equipment to reduce noise;
- keeping machinery well maintained; and
- running machinery at lower revolutions.

Protect people from loud noise exposure by:

- limiting the time workers spend in a noisy environment;
- isolating work areas from noisy machinery using distance or insulation;
- scheduling noisy work when fewer workers are around; and
- using job rotation to alternate noisy jobs with quiet ones.

Protective equipment

- Try on ear muffs before buying, to ensure comfort and a close fit.
- The higher the SLC 80 (sound level conversion) or Class figure for hearing protection, the higher the protection.
- Use lower SLC 80 or Class muffs for moderately noisy jobs - a high rating might mask out important danger warning sounds.
- Ear plugs may be more comfortable for some people, but must be inserted with clean hands. Re-usable plugs must be cleaned regularly.
- Clean and maintain hearing protectors. Replace worn or damaged parts. Keep protectors near the area of noisy activity, for example in the tractor cab.
- Wear a combination of ear muffs and ear plugs when shooting.

This section will help you to identify and manage the risks associated with noise.

Remember: Once hearing is gone, it is gone forever. Hearing aids can help, but they can't return your hearing to normal.

Further information

Information on noise can be found in documents on the WorkSafe website www.worksafe.wa.gov.au Commission for Occupational Safety and Health *Code of Practice: Managing Noise at Workplaces*

8 Manual handling

This section will help you to identify and manage the risks associated with manual handling.

Facts

The most common cause of lost time in agriculture due to injury is through manual handling. Bad backs are not only painful, but keep you from working easily.

Manual handling injuries result from activities that involve pushing, pulling, bending, twisting and lifting. They can include handling livestock, jumping down from machinery and repetitive movements like loading hay bales onto a trailer.

Most manual handling injuries are cumulative. It is the gradual wear and tear from manual handling that takes its toll on your body. Therefore, the way you handle things on a day to day basis will make a difference. That means trying to maintain a good posture whatever you are doing and not continually lifting and handling heavy, awkward items.

Control the risk

Ergonomics

These days, more equipment is ergonomically designed. This means it is designed with the user's needs in mind. Take advantage of these features to make the job easier. For example, take a few minutes to learn what your tractor seat can do – you might be surprised how comfortable and adjustable it can be. Use the steps to climb down from a broad acre tractor or header instead of jumping down.

General safety tips

- Avoid heavy lifting where possible. Take advantage of various lifting devices that you have on your property. Think about ways you can use trolleys, front-end loaders, ute-back cranes and hydraulic tailgates to reduce the risk of injury.
- Lifting heavy items on and off the back of utes and trucks is a major problem area, because of the weight of the objects and the height of the lift. The use of simple handling equipment can eliminate the risk. For example, when you buy a new ute, consider having a 'back saver' or 'utility' crane or hydraulic tailgate loader fitted.
- When you are on a tractor or other equipment, use mirrors and swivel seats to eliminate the need to twist and turn to see.
- Avoid twisting and bending when standing or sitting at a job. For instance, complete jobs at a waist height workbench rather than on the ground.
- Avoid double handling. For example, look for ways to reduce the number of times you repeatedly handle objects such as bags of fertiliser, hay bales, livestock, etc. The less work you do, the less chance you'll suffer a manual handling injury.
- When you do have to carry and lift numerous items, where possible choose light-weight materials, divide the load up into smaller units, or think about buying in smaller bags. You could also half-fill containers.
- If manual lifting is the only option, seek assistance when you lift heavy objects. The help of a few mates could save your back.

Further information

Information on manual handling can be found on the WorkSafe website www.worksafe.wa.gov.au
Commission for Occupational Safety and Health *Code of practice: Manual handling*

9 Fuel storage on rural properties

Facts

The most significant safety problem with above ground fuel tanks on agricultural properties is the risk of falling. People most at risk are fuel delivery drivers and farm workers whilst engaged in filling and checking fuel levels in the tanks and in some instances the risk is also present during the dispensing of fuel.

Other issues related to above ground fuel tanks include, inadequate footings for the structure, eg. wooden blocks, plough discs, the tank stand legs rusting and bent, broken and damaged structural members.

Control the risk

The most effective solution to reduce the risk of falling is to have the tasks of filling, checking and dispensing conducted from ground level. This can be achieved by:

- Relocating or installing the fuel tank to ground level and dispensing the fuel with the aid of a pump.
- Installing an external sight gauge to avoid the need to climb the ladder to determine the level of fuel.
- Fitting a bottom load facility and sight gauge. These can be fitted following simple instructions and can be generally purchased through a farm fuel supplier or rural agent.

These solutions reduce the need to work at height during the filling, checking levels and dispensing tasks.

Ladders

Where a fixed ladder is used to access any above ground fuel tank, the risks can be reduced by adopting a risk management approach ensuring:

- The ladder meets the requirements of *Australian Standard 1657*; and
- A platform and adequate handrails are provided at the top of the ladder.

Further information

The Department of Consumer and Employment Protection: Resources Safety Division; Dangerous Goods Branch have jurisdiction over the storage of fuel on farms.

Guidance Note S319 Rev 3 Storage of Dangerous Goods on Farming Premises Conditions for Exemption from Licensing should be consulted to determine further farm fuel storage requirements. A copy of the guidance note is available on www.docep.wa.gov.au/resourcessafety

This section will help you to identify and manage the risks associated with fuel storage.

10 Workshop safety

This section will help you identify and manage the risks associated with workshops on rural properties

Facts

Agricultural workers routinely perform workshop tasks that in other industries would be undertaken by a variety of skilled trades people.

Injuries associated with slips trips and falls, repairs and maintenance of machinery and associated workshop tasks are among the most frequent causes of injury.

Reducing the risk

Regularly check the workshop for potential hazards in the structure of the building, electrical installations and fittings, power tools and equipment, ladders and trestles, electric and gas welding equipment, safe storage of hazardous materials accessibility to children and the carrying of heavy and awkward weights.

Once a potential hazard has been identified, assess the likelihood and possible severity of an injury occurring and take steps to minimise or control the risk.

Consider the following control measures, listed in order of importance:

- remove the hazard eg dispose of the old grinder;
- substitute with a less hazardous one eg clean hands with hand cleaner and not petrol or thinners;
- isolate the hazardous process eg erect welding screens;
- adopt safe working practices eg only one person in the area when grinding; and
- provide personal protective equipment eg safety glasses or face shield.

General safety tips

Maintain good house keeping standards to control slip, trip and fall hazards.

Ensure there is adequate working space for each job.

Keep walkways and exits clear.

Tools and equipment

- Use angle grinders only for grinding and not for cutting. Safer power cutting tools are available.
- Ensure all guards and shields are kept in place.
- Use clamps and vices to hold job items where possible.
- Ensure that bench grinders, pedestal drills and similar equipment is adequately secured.
- Always wear safety glasses or a face shield when eyes are at risk.
- Never cut or grind containers that have previously contained flammable or toxic substances.

Ladders and trestles

- Before climbing, place the ladder feet about a quarter of the ladder's length from the wall or top support.
- Before working high on a ladder, secure it to prevent it from slipping.
- Never stand ladders on drums or boxes to gain additional height.
- Ensure that all ladders comply with the Australian Standard.

Gas and electric welding

Hazards associated with welding include:

- **Arc** The arc reaches extreme temperatures and produces intense ultraviolet and infrared rays that can be harmful to both the welder and bystanders. Damage to unprotected skin and the eyes can occur.
- **Fumes** Welding in confined spaces and unventilated areas should be avoided. Welding fumes can be fatal.
- **Explosions** Never weld or heat empty containers.
- **Heat** Hot surfaces, metal fragments and sparks can cause severe burns to unprotected skin
- **Electric shock** The risk of electric shock in welding is high. All electrical hazards should be identified and addressed.
- **Welding gasses** Leaking gasses can cause fires and explosions. Ensure the supply is turned off on the completion of welding activities.

Electric welding safety tips

- Ensure personal protective equipment and clothing is provided and used eg helmet with suitable grade of lens, gloves, apron and fire resistant clothing.
- Install welding screens around the work area.
- Never attempt to connect or change welding cables before switching of mains power.
- Always install the welding unit as close as possible to the power point.
- Only use cables that are insulated throughout their entire length.
- Keep terminals clean and tight.
- Work on a well-insulated floor where possible and wear rubber-soled boots.

Gas welding safety tips

- Flash back arrestors **MUST** be fitted at each cylinder and at the hand piece.
- All gas cylinders **MUST** be restrained from falling.
- Do not allow any fitting of gas welding equipment to be contaminated by oil or grease.
- Do not light up using lighters or matches, use a flint lighter or piezo electric lighters.

Further information

Additional information on workshop safety can be found on the WorkSafe website

www.worksafe.wa.gov.au

Commission for Occupational Safety and Health *Guidance note: Gas welding safety flashback arrestors*

Guidance note: Prevention of carbon monoxide poisoning

11 Emergency procedures & first aid

The objective of an emergency plan is to ensure that everyone knows what to do in event of an emergency

The law

Under the *Occupational Safety and Health Act 1984* and Regulations, the person who has responsibility for the workplace has:

- specific obligations for emergency evacuations – including having an evacuation procedure in place to protect anyone at the workplace in the event of an emergency; and
- a general ‘duty of care’ obligation to prepare for potential emergencies that might occur – including identifying potential hazards that could arise in case of an emergency and ensuring that workers will not be exposed to them.

Procedures need to be developed for emergencies such as:

- accidents;
- medical emergencies;
- fire, both structural and bush fires;
- cyclones / destructive winds; and
- floods.

It is best practice to have emergency telephone numbers and call signs readily available as part of the emergency procedures. In addition, the address of the property and easy directions on how to get there are vital for emergency procedures. A list of emergency telephone numbers should include:

- hospital
- doctor
- ambulance
- fire brigade
- police station
- shire office
- Poisons Information Centre 13 1126.

First aid

The initial treatment a person receives directly after an injury, accident or when they become ill at work is extremely important.

First aid kit

A first aid kit may be of any size, shape, or type providing it is large enough to contain all the supplies required to suit the property and the types of injuries that may occur. First aid kits need to be provided and located to ensure they are immediately accessible. Access for people working in isolated or remote locations must be taken into account. Additional information on or near the top of a first aid kit should include:

- the name, address and telephone number of the nearest medical or emergency service; and
- instructions for emergency treatment of injuries that may be specific to the workplace.

First aid training

The level of training for first aid needs to be determined when first aid facilities and services are being planned. As a general rule, the more remote the property is from professional medical help, the higher the standard of first aid training is required. As an absolute minimum one person who is at the property all the time must hold current first aid qualifications.

Further information

The Commission for Occupational Safety and Health has published the following publications:

Code of practice First aid and first aid facilities

Guidance note Preparing for emergency evacuations at the workplace

12 Safety induction

Facts

Injuries to inexperienced workers account for a substantial amount of workplace injuries. When a new worker is engaged for full time, casual or for seasonal work, they need to be provided with the information, instruction, training and supervision necessary for them to carry out their job safely. It cannot be assumed that they have sufficient prior knowledge, training or experience.

An induction needs to be carried out for each new worker. Induction for new workers will help make the property a safer and more productive workplace. The induction, information, instruction and training you must provide includes;

- the occupational safety and health responsibilities of both the employer and the employee (sections 19 and 20 of the OSH Act);
- arrangements for the reporting of safety hazards and injuries;
- safety and health procedures relevant to the workers job; and
- how safety and health information can be accessed.

Training

To be both productive and safe on the farm, workers need to be competent to be able to confidently and safely carry out their work. A competent person is one who has acquired through training, qualification or experience, or a combination of them, the knowledge and skills to carry out a specific task.

Younger workers need to be given extra safety consideration as they generally have little or no experience in a working environment. The type of training required will vary depending on the tasks to be performed.

Supervision

As rural properties can be hazardous, it is important that as an employer, you ensure workers are following the established safe work procedures. To determine the extent of supervision necessary the competence, experience and age of each worker must be taken into consideration.

Emergency procedures and first aid

Procedures must be established to deal with emergencies and for the prompt reporting of injuries should they occur. All people must be familiar with the procedures to ensure action is taken with out undue delay.

Hazard and injury reporting

A system must be in place to enable hazards to be reported to a responsible person so that a record can be made and action taken to rectify the hazard. Similarly any injury that occurs to any person on the property needs to be reported to the employer.

The employer has a lawful responsibility to notify WorkSafe of deaths and certain injuries that occur on the property.

Every new worker employed, including casual and seasonal workers, should be provided with safety induction training

The types of injuries that must be notified are:

- a fracture of the skull, spine or pelvis,
- a fracture of any bone in the arm, other than in the wrists or hand, or in the leg, other than in the ankle or foot,
- an amputation of an arm, a hand, finger joint, leg, foot, toe or toe joint,
- the loss of sight of an eye,
- Any injury which in the opinion of a medical practitioner, is likely to prevent the worker from being able to work within 10 days of the day on which the injury occurred.

Notification can be made by either in person, in writing, by fax, by phone or email. Forms are available from WorkSafe on 1800 678 198 or from www.worksafe.wa.gov.au

The following induction checklist is a good starting point and can be used to ensure all new workers are familiar with safety procedures.

Name

Position

Date of commencement

Location

Person conducting induction

		Yes	No	Comments and notes
1	Occupational safety and health policy			
2	Duty of care employer / employee			
3	Raising safety and health issues			
4	Safe work procedures and instructions			
5	Hazard reporting procedure			
6	Injury / incident reporting procedure			
7	Emergency procedures			
8	Manual handling procedures			
9	Chemical handling procedures			
10	Machinery safety procedures			
11	Working from height procedures			
12	Eye protection			
13	Hand protection			
14	Foot protection			
15	Hearing protection			
16	Vehicle safety			
17	Procedures for good housekeeping			
18	Safety signage			
19	Sun protection requirements			
20	Smoking, alcohol and drugs			
21	Working alone procedures			
22	Personal protective equipment provided			
23	Schedule of follow up training			

Manager/Supervisor.....Signed.....Date.....

New worker.....Signed.....Date.....