FUTURE FARMERS

A RURAL HEALTH AND SAFETY RESOURCE FOR HIGH SCHOOL STUDENTS
REVISED EDITION APRIL 2008

Farmsafe AUSTRALIA

WorkCover NEW SOUTH WALES

AUSTRALIAN CENTRE FOR AGRICULTURAL HEALTH AND SAFETY

Tractor & Machinery Association of Australia

Australian Government
Department of Health and Ageing

Contents:

Foreword:

This package has been developed as a joint project between Farmsafe NSW and WorkCover NSW, to provide the resources to Farm Safety Action Groups and others to host farm safety field days for high school students.

Agriculture as an occupation has been recognised as one of the most dangerous among Australian industries, a fact that may be attested to by the high incidences of workplace fatality, injury and compensation claims that are borne by the industry. Moreover a large proportion of deaths and injury on Australian farms happen to children and young adults. The modules included in this resource seek to introduce students to the principles of on-farm risk management to provide them with an awareness of the hazards of the farm workplace, what risks may be associated with these hazards and what methods may be used to control these risks.

The use of farm safety field days as an intervention to improve health and safety on farm workplaces was initially developed by Farm Safety Action Groups in Tamworth, the North West, Mid North and North Coast. WorkCover NSW Rural Industries Team agreed to support the strategy after meeting with key stakeholder groups including Farmsafe NSW, Farm Safety Action Group representatives and NSW Health - Health Promotion and Injury Prevention staff.

WorkCover NSW Rural Industry Reference Group through the Targeted Workplace Education Initiative Program provided funding for the development of this document.

The Australian Centre of Agricultural Health and Safety on behalf of Farmsafe NSW and the Rural Industry Team on behalf of WorkCover NSW have developed this resource.

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Clerical and administrative staff of contributing organisations

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Administration Guidelines

The Future Farmers Resource package contains a series of specific farm safety education modules to form the workstations of a farm safety field day for high school students. The modules have been developed to introduce students to dangers present in the farm workplace using the SAF principle of See the Hazard, Assess the level of risk, and Fix the problem. The use of the resource is to facilitate consistent and accurate farm safety information to educate year 9 & 10 Agriculture students.

The information included in this resource provides guidelines to assist Farm Safety Action Groups and others to organise and host farm safety field days for high school students. These guidelines should be seen as flexible and the resources included should be used in a manner that suits the needs of the host organisation and the target schools and students.

Organising Committee

The administration of a farm safety field day for high school students may be facilitated through setting up a committee containing members of your Farm Safety Action Group and teachers from participating high schools. The organising committee will be required to make decisions as to:

1. The schools to participate in the field day
2. Field day date
3. Field day venue
4. The modules of the Future Farmers resource to be presented at the field day
5. Identification of suitable individuals to present the modules
6. Organisation of sponsorship
7. Appropriate media strategies
8. Preparation of field day site and materials
9. Evaluation

It is suggested that the organising committee be set up prior to the proposed date of the field day. One way of approaching schools about the organisation of a Future Farmers Farm Safety Field Day might be to customise the school invite in Appendix 1 – School Invitation.

Field Day Venue

When selecting a venue for the field day it is important to assess whether the venue is suitable for the delivery of the modules selected. Section 1 of the modules offers important information as to what the requirements of the venue may be. For example if presenting the Workshop module it is highly desired that the venue has an operational, accessible and safe workshop area to demonstrate in.

In addition to these requirements it is important that venues are covered by public liability insurance, and that Occupational Health and Safety risk management principles are actively used by management as set out in Farmsafe Australia's Managing Farm Safety course, the Occupational Health and Safety Regulation 2001 and elsewhere.

Other considerations include:

- Toilet facilities (if unavailable a portable toilet may be considered)
- Facilities for catering if lunch is to be provided

Suitable venues for hosting a farm safety field day for high school students include:

- Rural TAFE campuses
- School Farms
- Agriculture Colleges
- Department of Agriculture Farms
- Private farms

Modules to be presented

The modules A-D should be seen as the core modules of a Future Farmers field day and be always presented if possible. To decide which others (usually another four), one method that may be used is through the involvement of the teachers of the target students. This may be achieved through their participation in the organising committee or by their responses to the "questionnaire" included with the initial invitation to participate (Appendix 1).

Identifying Suitable Presenters

It is important that presenters have some experience not only in the content area, but also in giving presentations.

Organisations that may be suitable to approach to provide presenters for a Future Farmers field day include:

- WorkCover NSW
- Local Area Health Service
- Department of Agriculture
- Local agricultural machinery firms
- TAFE Institutes

After finalising who the presenters will be ensure that they receive a copy of the Module Outline, the Presenter's Guidelines and the Resource Package. Ask the presenters what resources they will be able to provide and what they will require the organising committee to provide.

It may also be appropriate to organise "back-up" presenters incase one of the presenters has to withdraw at late notice.

Organise Appropriate Sponsorship

Depending on the individual arrangements of the field day, sponsorship may be required to cover the costs associated with, the provision of meals, amenities, photocopying and other costs.

Suitable sponsors include:

- Local agribusinesses e.g. Wesfarmers Landmark or CRT. Wesfarmers Landmark has been a strong sponsor of high school farm safety initiatives in the New England North West area in the past.
- Local supermarkets e.g. Woolworths or Coles.
- Local bakery
- Local photocopying and stationary businesses.

Write to businesses several months in advance outlining the nature of the field day, who is organising the field day, who will be attending the field day and the nature of the requested sponsorship.

Sponsors should be acknowledged on student material, in media releases and signage around the field day.

Appropriate Media Strategies

See Appendix 2 Working with the Media

Preparation of field day venue and materials

Workbooks

Workbooks need to be made for each student and teacher participating at the field day. Workbooks should contain the fact sheets and the assessment tasks for each of the modules that the students will participate in. The workbooks should also contain the modules to be completed, a timetable of the day's proceedings, sponsors details and acknowledgements.

Teacher's workbooks need to contain the student's fact sheets, and the worked answers for the student assessment for each module to be undertaken during the day.

Work Stations

When deciding on the location of workstations the resources required for the presentation and the noise generated by the presentation should be taken into account.

Attempt to locate the stations so that the noise levels do not disturb other presentations. The Noise Injury Prevention workstation in particular is may be disruptive to other presentations due to the noise created when measuring the noise of several pieces of farm equipment.

The work stations should also be arranged in a sequence so as to vary presenter styles and module content.

Wherever possible the modules should be presented using the demonstration material listed in the resource package to provide a more interactive learning experience.

Appropriate signage should indicate the location of each workstation; it may also be useful to include a map of the field day site in the student's workbooks.

Workgroups

The students should be broken into workgroups prior to the field day. The optimal size for a group is 15-20. The best way of grouping the students is to maintain them in their school/class groups if of appropriate size

Timetable

When planning the timetable of the field day allocate 25 minutes for each session. This will enable adequate time for the completion of the 20-minute presentation as well as time for students to move between workstations and presenters. Sessions should be sequenced on the timetable to allow students to rotate through the workstations in the one direction.

Allocate time prior to the start of the day for an opening session. This session should include the details of the layout and timetable of the field day, the presenters and a general introduction to farm safety for the students.

Allocate a person from the organising committee to monitor time and to indicate to the groups and the presenters when sessions begin and end eg via whistle or car horn.

Depending on the amount of students attending the field day and the availability of presenters the timetable may be structured so that the field day is broken up into different sessions over the morning and afternoon. This would see the students rotate through one set of workstations during the morning and then through a different set of workstations in the afternoon.

Evaluation

To enable the improvement of your Future Farmer's Farm Safety Field Day and the Future Farmers resource the organising committee is encouraged to distribute the evaluation forms (Appendices 3-5) to the appropriate target audience (Students, Presenters, Organisers).

The student evaluation forms should be modified so that they only contain the modules that were presented at the field day.

The completed evaluation forms should be kept by the organising committee to assist in planning future farm safety field days, and copies of the evaluation forms should be sent to Farmsafe NSW at:

PO Box 256
Moree NSW 2400

Appendix 1 School Invitation

(Organisation) is planning to host a farm safety field day for students studying agriculture in year 9 and 10 in (your town) during (month). Your school is invited to attend this field day and provide a representative on the organising committee for this day.

Topics that may be presented at the field day include:

Responsibilities Of People In Farm Workplaces, Tractor Safety, Farm Motorcycle Safety, Noise Injury Prevention, Manual Handling on Farms, Firearms Safety on Farms, Electrical Safety on Farms, Chemical Safety on Farms, Workshop Safety on Farms, Safe Handling of Cattle, Horse Safety on Farms, On Farm Emergency Response, Safe Handling of Sheep.

Separate and return section below to (Organisation) by (Date). Further enquiries to (Organiser), (Phone).

✂ ----------

School: _____

Interest in attending farm safety field day? (circle) YES NO

Prefered Topics (circle)

Responsibilities Of People In Farm Workplaces	**Tractor Safety**	**Farm Motorcycle Safety**
Noise Injury Prevention	**Manual Handling on Farms**	**Firearms Safety on Farms**
Electrical Safety on Farms	**Chemical Safety on Farms**	**Workshop Safety on Farms**
Safe Handling of Cattle	**Horse Safety on Farms**	**On Farm Emergency Response**
Safe Handling of Sheep		

School Contact Person details:

Name: _____

Phone: _____ **Fax:** _____

Email: _____

Appendix 2 Working with the Media

1. HINTS ON USING THE MEDIA **

This section may be of use for those who have little or no experience in dealing with the media.

When you telephone a newsroom or send a news release to the media, you are competing with hundreds of other groups and businesses trying to get their messages across to the public.

So how do you get through to the media about your projects? The first step is to have a news angle, an interesting idea to base the story on - it might be the first time something has happened or involve a project which may not be major but which has an offbeat quality to it. Most of all, the media love human interest stories.

Remember, what may be very important to your group may not be of interest to the media, whereas something you may consider as nothing out of the ordinary can, if presented in the right way, appeal to the media.

Once you have your story idea, it must be presented to the media in the right. A story that the local TV news is not interested in may be really suitable to your community newspaper or a local radio chat show.

Try other avenues if your first choice fails. If all media outlets reject your story, think about the manner in which you have presented it to them and whether the story would be of more interest if you had taken a different angle, provided a more visual side to the story etc. If your story is rejected as a news story, keep other options in mind, such as community billboard listings and community service announcements.

For a *newspaper,* the person to target is the Chief of Staff (or if it is a very small paper, the Editor), who decides which stories will be covered each day.

For *radio* and *television*, approach either the news director or chief of staff. It may be appropriate to contact a specific reporter, for example the health or rural reporter. Or you may wish to approach a journalist with whom you already have personal contact.

If you are submitting a news release rather than just suggesting a story idea, the best way is to mail or fax it (depending on urgency) to the target person. Make sure you put a contact name and phone number (including an after hours number) on the bottom so they can get in touch with you if necessary.

If possible, have suggestions ready for interesting photographs or footage that the media could take to illustrate the story. Without interesting footage, your story has very little chance of getting a run on television. Don't call the television stations to cover every project you do - save it for a project that really warrants wide publicity.

** Our thanks to Angela Hinchley for approval to use this information on media

2. WRITING A NEWS RELEASE

Keep it short and to the point. **WHO, WHAT, WHEN, WHERE, WHY.**

Put the most important paragraph first, and continue with paragraphs in order of importance. The media works on an "inverted pyramid" system and often cut a story from the bottom if it won't fit into the space or time allotted.

Stick to one sentence per paragraph, use double spacing and don't write more than two pages unless it is very important news.

Put a date on the news release.

Try not to quote too many people. Stick to one spokesperson if possible. If you are directly quoting someone make sure it's an interesting quote.

Use simple expressions, not convoluted speech. Don't say "contusions" when you can say "bruises".

Take advantage of all opportunities. Getting the media along to your event, or an event in which you are taking part, doesn't necessarily mean the end result will be a story which mentions your project. You still have to come up with the goods (such as making sure you give them interesting quotes and information, and good visuals if TV or a newspaper photographer is involved).

Don't assume a news release will run word for word - in community newspapers you have a better change of this happening. For most other journalists a news release is a reference article of the message you want to put across, plus background details, from which the journalist takes his or her own angle.

3. DEADLINES

All media organisations work to specific deadlines. Try to contact them during the day - they will usually only accept earth-shattering stories after hours. You should also be aware that radio newsrooms operate to hourly deadlines for their bulletins - don't phone to give them information at two minutes before the hour!

Television newsrooms operate to deadlines which impact on their 6pm or 7pm broadcasts, and most need to be editing their stories by 4pm, so if you want television coverage you are better off planning your event in the morning. News crews as a rule don't come out at night unless it is a major story.

4. INTERVIEWS

Speak clearly and concisely, use simple language. Think of no more than three main points you would like to get across and work them into your answers, no matter what the journalist

asks you. Remember, if you are interviewed you are likely to be a 30 second sound grab as part of a 2 minute news item, so there's no time to waffle. The most successful politicians are those who speak in nice, tidy sound bites for the media!

It is important not to alienate the media, so it is recommended you do not ask for the right to check the whole story before it is published. Show confidence in the journalist but stress that, as it is quite easy to unnecessarily scare the public when it comes to injury, you would appreciate it if the journalist could check back with you regarding specific figures and quotes you have supplied them. Whatever your personal feelings, treat the media with respect.

While it is important to correct any inaccuracies in media reports, always be courteous you don't win any publicity points by getting the media off side. And while much of what they write or produce can be considered a "public service", it is worthwhile remembering that the media generally operate as would any business - to make a profit.

5. EVALUATION

Following are some suggestions on how you may evaluate your activities at a local level.

- Monitor the number of calls from the media and the community.
- Gather informal feedback from selected individuals and organisations involved in your activities.
- Conduct pre and post monitoring to measure any changes in the media coverage of farm safety issues.
- Monitor the impact on participation in your local Farm Safety Group.

Appendix 3 Student Evaluation Form

Year at school : _____ Are you studying agriculture: YES NO Do you live/work on a farm: YES NO

Evaluation of farm safety modules – place a tick in the relevant boxes.	How did you rate the content of the presentation?				How well did you understand the content?				How well did you rate the presenter?				How did you rate the length of the presentation?		
	Very good	good	satisfa-ctory	poor	Very good	good	satisfa-ctory	poor	Very good	good	satisfa-ctory	poor	too long	right amount	too short
Responsibilities of people on the farm workplace															
Tractor safety															
Farm motorcycle safety															
Noise injury prevention															
Manual handling on farms															
Firearms safety on farms															
Electrical safety on farms															
Chemical safety on farms															
Workshop safety on farms															
Safe handling of cattle															
Horse safety on farms															
On-Farm emergency response															

Do you believe that you will use the information from the field day ? YES NO

If no why not? _____

_____

Would you recommend a farm safety field day to other students? YES NO

If no why not? _____

_____

What other farm safety aspects could have been covered? _____

_____

Appendix 4 Presenter's Evaluation Form

To assist the improvement of this field day and the Future Farmers resources please take the time to fill in a response or circle the response most applicable to the questions below.

Module presented: _____ Your Occupation: _____

1. Were the presenter materials in the Future Farmers resource appropriate? YES NO

If no, why? _____

_____

2. What changes would you make to improve the presenter materials for your module?

_____

_____

3. Did you have sufficient space for your workstation? YES NO

Comments: _____

4. Were your specific requirements for the workstation met? (E.g. equipment, chairs, machinery) YES NO

Comments: _____

5. Was the time allocated to each workstation session sufficient? YES NO

Comments: _____

6. Was the size of the groups? Too big Just right Too small

Comment: _____

7. How did you find the organisation of the field day?

Excellent Average Needs improving

Comment: _____

8. How could these field days be improved?

_____

_____

9. Any other comments that you would like to make will be welcome.

Comments: _____

Appendix 5 Organisers' Evaluation Form

To assist in the evaluation and improvement of the Future Farmers resources please take the time to fill in a response or circle the response most applicable to the questions below.

1. Host organisation: _____
2. How many schools attended the farm safety field day? _____
3. How many students attended the farm safety field day? _____
4. Circle the modules used at your farm safety field day:

Responsibilities of people on the farm workplace	Tractor safety	Farm motorcycle safety	Noise injury prevention
Manual handling on farms	Firearms safety on farms	Electrical safety on farms	Chemical safety on farms
Workshop safety on farms	Safe handling of cattle	Horse safety on farms	On-Farm emergency response
Safe handling of sheep			

5. Did you run any other modules? YES NO

If yes what modules were run? _____

6. What other areas do you think should be covered in the Future Farmers resource?

_____

7. Where did you host your field day? _____
8. If you had any problems with your field day site, what were they? _____

_____

9. Did you have any sponsorship for the field day? YES NO

If yes, who? _____

10. Did you feel that the administration guidelines were?

very good good satisfactory poor

11. What additions would you make to the administration guidelines? _____

_____

_____

12. How did you contact the schools that attended the field day? _____

13. Did you have any presenters from:

WorkCover NSW | Department of Agriculture | NSW Health | Local Farmers | CRS Australia

NSW State Forestry | Other _____

14. Did you require any back up presenters? YES NO

15. How long did the organisation of the field day take? _____

16. How many times did the organising committee meet? _____

17. Where the schools involved in the organisation of the field day? YES NO

If yes how were they involved? _____

18. How do you feel the field day went?

very well well satisfactory poor

19. Did you have any problems during the preparation for the field day? If yes what were they? _____

_____

_____

20. Would you be willing to be involved in the organisation of a farm safety field day in the future? YES NO

If no why? _____

_____

MODULE A. RESPONSIBILITIES OF PEOPLE ON FARM WORKPLACES

SECTION 1: MODULE OUTLINE

Aim:

To raise the awareness of the health and safety responsibilities held by people in the farm workplace.

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Describe the broad features of OHS legislation.
- Explain the health and safety responsibilities of people in farm workplaces.
- Describe the practical arrangements of risk management on farms.

Suggested Time:

- 20 minutes minimum presentation

Method of Delivery:

- Practical demonstration risk management principles
- Interactive guided discussion

Resources Required:

- Slides
- Risk Management Scenario

Assessment of Achievement of Learning Outcomes:

- Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

SECTION 2: PRESENTER GUIDELINES

DISCUSSION

Discussion should include the following topics

- Statistics — OH 1
- OHS legislation
  - General responsibilities — OH 2
  - Responsibilities of people in farm workplaces — OH 3
- RISK MANAGEMENT — OH 4
  - HAZARD IDENTIFICATION – How might someone be hurt when working on the farm?
  - RISK ASSESSMENT – Who is most commonly hurt and in what way? — OH 5
    - Risk matrix
  - RISK CONTROLS – What can we do to minimise the chance that someone may be hurt when working on the farm? — OH 6
    - Hierarchy of control

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

SECTION 3: Resource Package

Attached Resources:

- Risk Management Scenario Assessment
- Risk Management Scenario Model Answer
- Overheads

ASSESSMENT TASK

Name: _____ Class: _____

Using the picture underneath, attempt to identify any health and safety hazards, assess the risks, and suggest some control options with the below scenario.

Senario – Silage making

Ron and Milt are brothers who make lucerne silage for 4 months a year. The tractor that they use for all operations is uncabined and is not fitted with a ROPS. All tractor attachments are hitched at the towbar, but none of the PTO shafts on these attachments are guarded and the tractor does not have a master guard. In summer when it is hot Ron often works with his shirt off.

1. Name any hazards that you identify from the above scenario.

2.Using the risk priority matrix below assess the risks to the hazards identified.

What is the likely outcome	**How often am I or others exposed to the hazard**			
	Daily	**Weekly**	**Monthly**	**Rarely**
Kill or disable	High	High	High	High
Several days off work	High	High	Medium	Medium
First aid treatment	High	Medium	Low	Low

High	The danger is too great to ignore. Take action as soon as possible.
Medium	Risks may be serious. Plan to take action.
Low	Minor to negligible danger. Always look for ways to increase safety.

3. Select a hazard that you assessed as having high risk. Choose a control from each category in the hierarchy of controls. Some categories will not have a workable control please note this.

Hazard:

Eliminate:

Substitute:

Engineer / design:

Work practices:

PPE:

ASSESSMENT TASK

ANSWERS

Using the picture, attempt to identify any health and safety hazards, assess the risks, and suggest some control options with the below scenario.

Senario – Silage making

Ron and Milt are brothers who make lucerne silage for 4 months a year. The tractor that they use for all operations is uncabined and is not fitted with a ROPS. All tractor attachments are hitched at the towbar, but none of the PTO shafts on these attachments are guarded and the tractor does not have a master guard. In summer when it is hot Ron often works with his shirt off.

1. Name any hazards that you identify from the above scenario.

Any of the following: Tractor rollover; PTO entanglement; Noise; Sun

2. Using the risk priority matrix below assess the risks to the hazards identified.

- *Tractor rollover: **high** – can cause death or serious injury, has a high incidence across agriculture industry, and the exposure is high as they make silage 4 months of the year.*
- *PTO entanglement: **high** – can cause death or serious injury, high exposure as they make silage 4 months a year*
- *Noise: **high** – can seriously affect lifestyle with noise induced injury, high exposure due to making silage 4 months a year.*
- *Sun: **high** – can cause skin cancer which is a cause of death, exposure varies with Ron use of shirt.*

3. Select a hazard that you assessed as having high risk. Choose a control from each category in the hierarchy of controls. Some categories will not have a workable control please note this.

Eliminate: *Don't make silage*

Substitute: *Tractor rollover – use a tractor with a ROPS; PTO entanglement – use a tractor with a master guard; Noise – use a cabined tractor; Sun*

Engineer / design: *Tractor rollover – fit a ROPS to the tractor; PTO entanglement – fit a PTO master guard to the tractor and a guard on the PTO shaft; Noise – fit a cab to the tractor; Sun – fit a cab to the tractor*

Work practices: *Tractor rollover - ;* PTO entanglement – do not go near the PTO when it is in operation, eg always disengage the PTO and shut down the tractor before going near the PTO; *Noise – only work on the tractor for several hours a day; Sun – do not make silage in the hot periods of the day*

PPE: *Tractor rollover;* PTO entanglement – wear neat fitting clothes that are tucked in, but only in conjunction with other control measures; Noise – wear AS 1270 hearing protection for the short term, but seek to reduce noise exposure through fitting of a cab; *Sun – wear a shirt, sunscreen and a hat when working.*

Agriculture is the third most dangerous industry in Australia behind mining and transport

Each year on farms:

- 150 people die
- 6500 people are admitted to hospital
- 6000 people claim for workers' compensation

Farm injuries include:

- tractor accidents – rollover, run over and PTO entanglement
- motorcycle injury
- back injury

Farm injury costs agriculture between $500 million and $1.2 billion a year

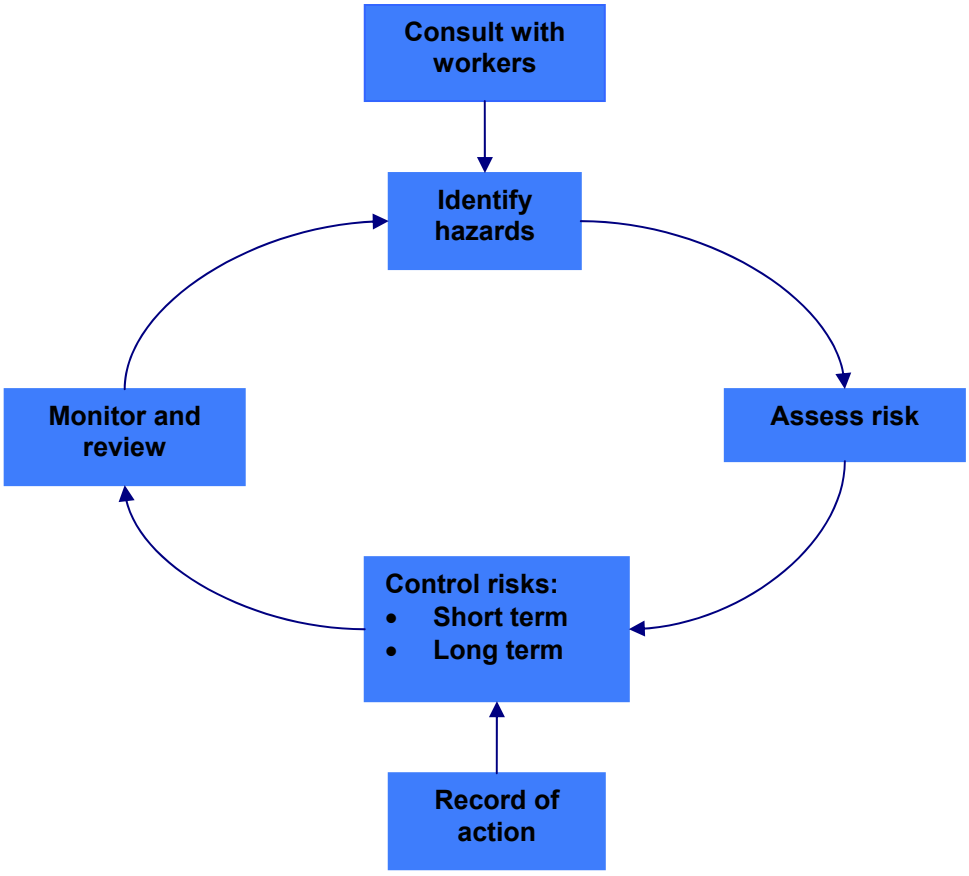
OCCUPATIONAL HEALTH AND SAFETY LEGISLATION

- Each State has its own OHS legislation
- In each state the OHS law gives people duties to ensure the health and safety of people in workplaces and these duties are enforceable
- In NSW the legislation is the OHS Act and it outlines duties of care that include:
    - Employers are to ensure the health and safety of employees and visitors. This includes a duty of care to contractors and their workers. Employers also have a duty to consult with employees about matters of health and safety.
    - Employees have a duty to take **reasonable** care for the health and safety of people who are at their workplace. They also must comply with health and safety directions from their employer.
    - In order for an employee to fulfil this duty of reasonable care they must not take any deliberate actions or make any deliberate omissions in their work that they know may lead to a workplace accident or illness.
    - Suppliers and manufacturers of plant and substances have a duty to provide safe goods and to provide information on how to safely use their goods.
    - Self employed persons have a duty to ensure that they don't affect their own health and safety or that of other people when they work.

For farmers the OHS legislation means:

- Farmers are responsible for ensuring the health and safety of anyone who works for them, anyone who visits the farm, contractors that may be doing work on the farm. Members of farm families including children are seen to be either employees or visitors to the worksite. Farmers must also consult with employees about issues affecting health and safety.
- Employees have a duty to take reasonable care for the health and safety of people on the farm. They also must co-operate with their employer on issues of health and safety.

Risk Management



Hazard Identification

Hazard = anything that has the potential to harm life, health or property

Hazards arise from the machinery, chemicals, work practices, and the environment

Eg. Driving tractors, working with cattle, working around overhead powerlines

Risk Assessment

Risk = the chance or potential that a hazard will injure someone who is exposed to it

Risk Assessment = The assessment of risks is done by looking at the ability of the hazard to maim or injure against the amount of exposure that people have to the hazard.

The questions to be examined when assessing the risk of a hazard are:-

- How commonly does the injury occur?
- What is the severity of the likely injury?
- How often and how long are workers exposed to the hazard?

What is the likely outcome	**How often am I or others exposed to the hazard**			
	Daily	**Weekly**	**Monthly**	**Rarely**
Kill or disable	High	High	High	High
Several days off work	High	High	Medium	Medium
First aid treatment	High	Medium	Low	Low

High	The danger is too great to ignore. Take action as soon as possible.
Medium	Risks may be serious. Plan to take action.
Low	Minor to negligible danger. Always look for ways to increase safety.

Risk Control

Eliminate the hazard: most effective control, removing the hazard from the workplace. Often is not a suitable option unless purchasing new equipment.

Substitute for a lesser risk: use a different machine, material or work process to do the same task with less risk.

Engineer / design: redesign machinery or work processes to eliminate the risk, eg guarding, isolation

These three controls are known as the passive controls as the worker is not required to be active in the reduction of risk.

Work practice: the setting of rules about work practices for all workers.

Personal protective equipment - wearing equipment that lessens the effect of the hazard on the human body, eg personal hearing protection

The last two controls are called active controls as they require the active participation of the worker for them to effectively lessen the risks - so are more prone to human error or inaction eg having to wear ear muffs whenever it is noisy.

RISK MANAGEMENT SCENARIO

Silage Making

Ron and Milt are brothers who make lucerne silage for 4 months a year. The tractor that they use for all operations is uncabined and is not fitted with a ROPS. All tractor attachments are hitched at the tow bar, but none of the PTO shafts on these attachments are guarded and the tractor does not have a master guard. In summer when it is hot Ron often works with his shirt off.

Hazards:	Risks	Controls
Tractor rollover		
PTO entanglement		
Noise		
Sun		

SECTION 4: FURTHER INFORMATION

Acknowledgment:

Justin Crosby - Farm Safety Education Officer Australian Centre of Agricultural Health and Safety

References:

Occupational Health and Safety Act 1983 (NSW)

Occupational Health and Safety Act 2000 (NSW)

Australian Centre of Agricultural Health and Safety (1997) Agricultural Health and Safety Guidance Notes ACAHS Moree

Further Information:

WorkCover NSW, *Due diligence at* work, [126]

URL ~ http://www.workcover.nsw.gov.au - contains links to online WorkCover publications and to Occupational Health and Safety legislation and regulations.

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400
Phone: 02 6752 8210, Facsimile: 02 6752 6639,
Email: aghealth@health.usyd.edu.au, Web: http://www.aghealth.org.au

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246,
Email: contact@workcover.nsw.gov.au Web: http://www.workcover.nsw.gov.au

MODULE B. TRACTOR SAFETY

SECTION 1: MODULE OUTLINE

Aim:

To increase the awareness of the health and safety risks associated with the operation of wheeled tractors in the farming environment.

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Identify unsafe practices of young rural workers.
- To be able to identify the tractor safety features.
- Outline strategies for the use of basic risk assessment principles.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Resources Required:

Essential

- Working wheeled tractor above 540 kilograms in weight.
- Farm implement attached to the tractor, eg slasher
- All guards in place and in good condition.
- Roll Over Protection Structure with Australian Standard plaque attached.
- Pamphlet “Guide to the safe use of tractors”. Available from WorkCover NSW (may be photocopied).
- (It is envisaged a tractor will be available, however overheads are supplied if not)

Desirable

- Tractor access platform attached to tractor.

Assessment of Achievement of Learning Outcomes:

Assessment task attached

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

MODULE B. TRACTOR SAFETY

SECTION 2: PRESENTER GUIDELINES

If a tractor is not available for demonstration purposes, overheads have been provided to assist with this presentation

STATISTICS

Discuss any available tractor accident statistics e.g.

- 90% of Tractor Accidents occur at speeds less than 8km/h^2
- 60% of all accidents occur on slopes of less than 5 degrees (mostly runovers)
- There are currently 3 people being killed every week from tractor related incidents across Australia.

DISCUSSION

Discussion should include the following topics

- HAZARDS – How might someone be hurt when working with and around tractors?
  - Rollover
  - Runover
  - PTO entanglement
- RISKS – Who is most commonly hurt and in what way?
- CONTROLS – What can we do to minimise the chance that someone may be hurt when working with or around tractors?
  - Tractor safety features - ensure the *main* features are identified eg,
    - ROPS, OH 1
    - PTO guarding. OH 2
  - Safe mounting and dismounting – Safe Tractor Access Platform OH 3
  - General safety precautions, including; OH 4
    - Start up checks
    - Passengers
    - Hearing protection
    - Pesticide use
    - Powerlines
  - Safe work in hazardous situations including hitching, towing and pulling (*if time permits*) OH 5

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE B. TRACTOR SAFETY

SECTION 3: RESOURCE PACKAGE

Attached Resources:

Student Assessment Task

Assessment Answer Sheet

Overheads

Guide to the Safe Use of Tractors - WorkCover NSW August 1999

MODULE B. TRACTOR SAFETY

ASSESSMENT TASK

Name: _____ Class: _____

1. List two major hazards occurring to operators of tractors in NSW ?
   a) _____
   b) _____
2. What is a R.O.P.S.?

   _____
3. List five (5) safety features of a tractor?
   a) _____
   b) _____
   c) _____
   d) _____
   e) _____
4. What can happen to you if your tractor comes into contact with 'live' power lines?

   _____
5. To prevent clothing being caught in the PTO shaft, what must you have?

   _____
6. When you are driving a tractor and you approach a closed gate that you want to go through you should (Circle one):
   a) Just keep driving who cares about the closed gate.
   b) Slow the tractor down, jump off and try to open the gate before the tractor runs you over.
   c) Stop the tractor, engage neutral gear, put the park brake on and turn it off, before you open the gate.
   d) Tell your passenger to jump off and open the gate before you run them over.

MODULE B. TRACTOR SAFETY

ASSESSMENT TASK

ANSWERS

1. List two major hazards occurring to operators of tractors in NSW?

   a) *(Tractor roll-overs)*
   b) *(Being run over by the tractor)*

2. What is a R.O.P.S. ?

   Roll Over Protection Structure

3. List five (5) safety features of a tractor? (out of 23 in booklet)

   ROPS, Seatbelt, protective PTO shaft cover, Sunshield, Non slip steps

4. What can happen to you if your tractor comes into contact with 'live' power lines?

   Electrocution

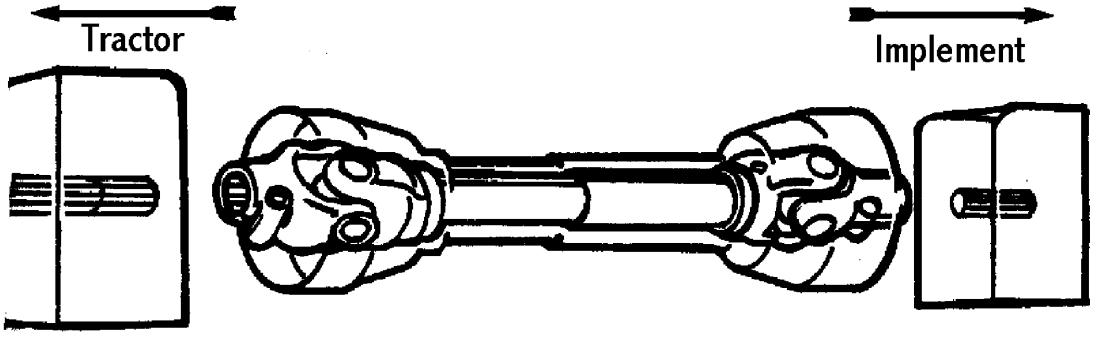
5. To prevent clothing being caught in the PTO shaft, what must you have?

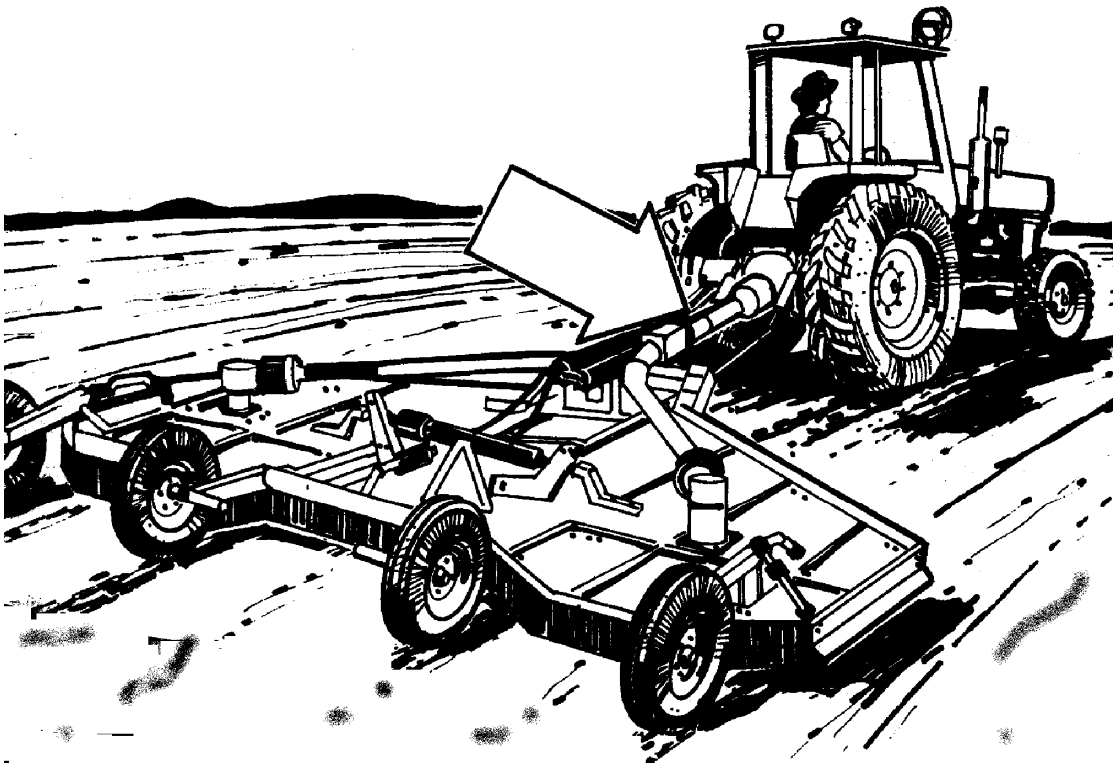
   Correctly fitting PTO guard, no loose clothing, care in operation

6. When driving the tractor and you approach a closed gate which you want to go through should you:

   c) Stop the tractor, engage neutral gear, put the park brake on and turn it off, before you open the gate.

MODULE B. TRACTOR SAFETY

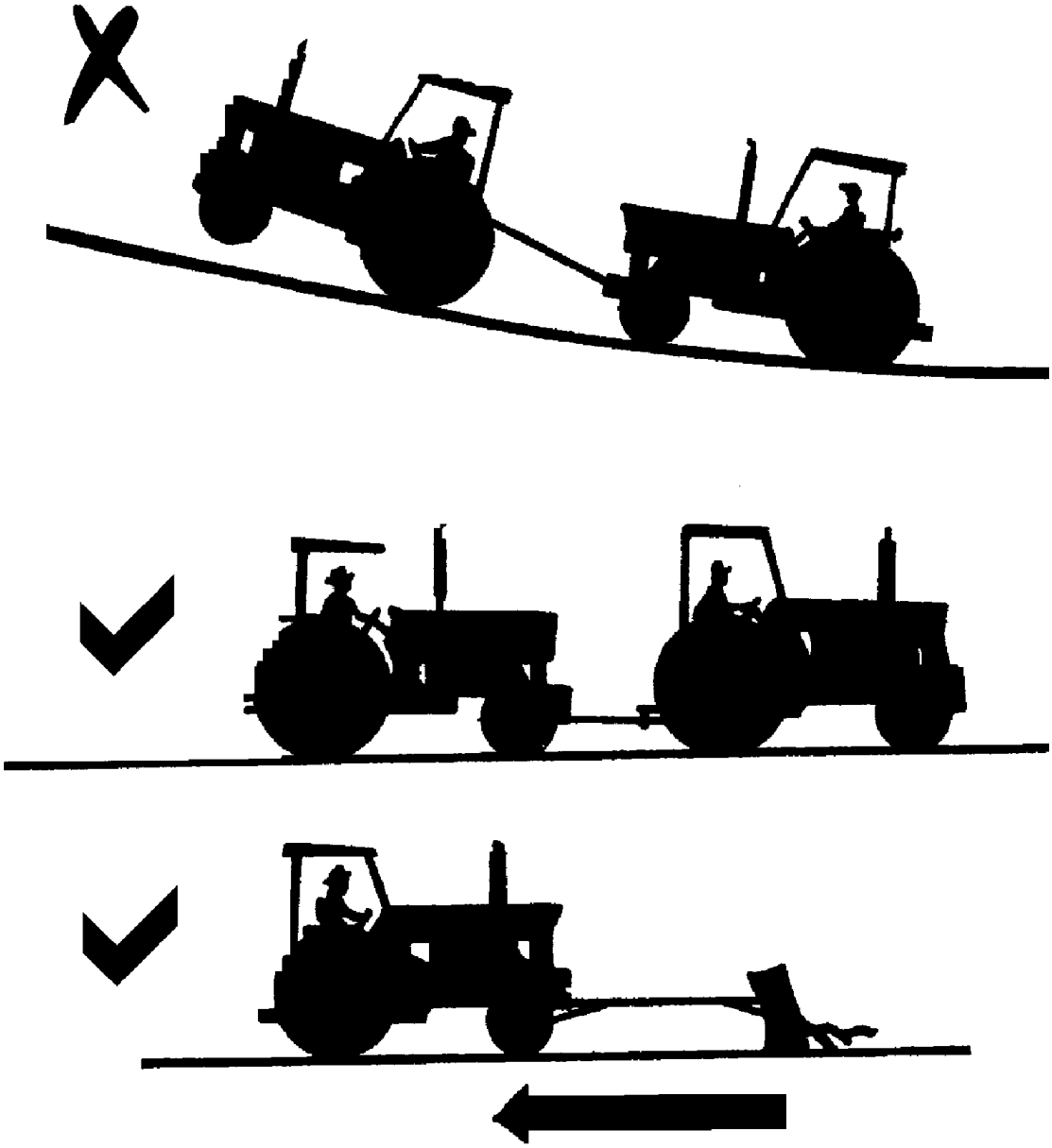

Tractor
Implement



MODULE B. TRACTOR SAFETY

General Safety Precautions

- Always perform a pre start check including
  - Familiarity with brakes, clutch, gears, stop mechanism and any other controls and instruments
  - Seat position
  - Check tractor is in neutral and handbrake is on
  - Check PTO is disengaged as properly guarded
  - Presence of children and other bystanders
- Always sit on the seat while riding on the tractor
- Do not run the tractor's engine in a confined space
- Rest when you are tired
- Stop the engine before any maintenance is carried out
- Never work under a tractor when the engine is running
- Never carry passengers unless there is an approved seat with seatbelt, handholds and foot rests
- Always wear the correct PPE when working in hazardous situations eg. High noise level or pesticide use



MODULE B. TRACTOR SAFETY

SECTION 4: FURTHER INFORMATION

Acknowledgments:

Bill Brooks – Principal Inspector Rural Industry Team – WorkCover NSW

Robert Dunn, Farm Mechanisation Lecturer, NSW DPI, Tocal College, Paterson 2421

Further Information:

Australian Centre of Agricultural Health and Safety (1997) *Tractor Rollover* Guidance Note no.1, ACAHS Moree

Australian Centre of Agricultural Health and Safety (1997) *Tractor Runovers* Guidance Note no.2, ACAHS Moree

Australian Centre of Agricultural Health and Safety (1997) *Tractor Power Take-Offs* Guidance Note no.3, ACAHS Moree

Australian Centre of Agricultural Health and Safety (1997) Safe Tractor Access Platform Guidance Note, ACAHS Moree

WorkCover NSW (1999) *Guide to the Safe Use of Tractors*

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400,
Phone: 02 6752 8210, Facsimile: 02 6752 6639
Email: aghealth@health.usyd.edu.au, Web: http://www.aghealth.org.au

Tractor and Machinery Dealers Association
3/21 Vale Street, North Melbourne VIC 3051,
Phone: 03 9329 9661, Facsimile: 03 9329 9662
http://www.tractormachinery.com.au

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246
Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

MODULE C. FARM MOTORCYCLE SAFETY

SECTION 1: MODULE OUTLINE

Aim:

To increase students knowledge of the risks associated with the operation of farm motorcycles, and the safe operation and maintenance of farm motorcycles.

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Identify hazards involved with the operation of farm motorcycles
- Describe safe operating techniques for farm motorcycles, including correct selection of personal protective equipment.

Suggested Time:

- 20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Resources Required:

- A farm motorcycle 2-wheeled or ATV
- The required personal protective equipment for riding farm motorcycles including, helmet meeting AS 1698 standard, gloves, goggles, appropriate boots, shirts and trousers.
- Saddle pack or other ATV attachments *(optional)*.
- Overheads provided

Assessment of Achievement of Learning Outcomes:

- Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

MODULE C. FARM MOTORCYCLE SAFETY

SECTION 2: PRESENTER GUIDELINES

If a motorcycle is not available for demonstration purposes, overheads have been provided to assist with this presentation

STATISTICS

Discuss any available motorcycle accident statistics e.g.

- Approximately half of farm motorcycle riders indicated that they had suffered some form of injury as a result of riding.

DISCUSSION

Discussion should include the following topics

- Types of farm motorcycles and their uses OH 1
- HAZARDS – How might someone be hurt when riding farm motorcycles? OH 2
    - Operator hazards
    - Machine hazards
    - Environmental hazards
- RISKS – Who is most commonly hurt and in what way? OH 3
- CONTROLS – What can we do to minimise the chance that someone may be hurt when riding a motorcycle?
    - Safe operation of farm motorcycles, including
        - Pre-op check OH 4
        - Passenger rules OH 5
        - Riding across steep terrain OH 6
        - Riding up and down hills OH 7

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE C. FARM MOTORCYCLE SAFETY

SECTION 3: RESOURCE PACKAGE

Attached Resources:

Student Assessment Task

Assessment Answer Sheet

Overheads

MODULE C. FARM MOTORCYCLE SAFETY

ASSESSMENT TASK

Name:_____ Class:_____

1. What are the main three categories of farm motorcycle hazards? Give an example of each.

   _____

   _____

   _____

2. What areas of the motorcycle should be inspected during pre-operational safety checks?

   _____

   _____

   _____

3. Describe a way to identify dangerous terrain for riders of farm motorcycles.

   _____

   _____

4. What is the correct range of pressure for ATV tyres? _____ psi

5. What Personal Protective Equipment (including clothes) should be worn when riding a farm motorcycle?

   _____

   _____

   _____

MODULE C. FARM MOTORCYCLE SAFETY

ASSESSMENT TASK

ANSWERS

1. What are the main three categories of farm motorcycle hazards? Give an example of each.

   OPERATOR – skills, physical limitations, PPE, fatigue, speed, visibility, alcohol and drugs

   MECHANICAL – motorcycle instability, load shift, hitching

   ENVIRONMENTAL – change in terrain, livestock / wildlife, isolation / communication

2. What areas of the motorcycle should be inspected during pre-operational safety checks?

   Tyres and wheels – correct pressure, no cracks or cuts, fastened correctly

   Controls and cables – brakes are correctly adjusted, throttle moves smoothly

   Lights and electrics, fuel and oil, chain drive-shaft, suspension

3. Describe a way to identify dangerous terrain for riders of farm motorcycles.

   A verbal induction to where dangerous terrain is.

   Having a farm map that outlines where environmental hazards may exist

4. What is the correct range of pressure for ATV tyres? *3-4* psi

5. What Personal Protective Equipment (including clothes) should be worn when riding a farm motorcycle?
   Helmet, gloves, sturdy boots, long pants, long sleeved shirt, eye protection

FARM MOTORCYCLES AND THEIR USES

Used for

- Personal transport
- Mustering
- Inspection of crops, pastures, fences and livestock
- Timber marking
- Inspection of irrigation fields, pipes, channels (often in wet conditions)
- Recreation

HAZARDS INVOLVED IN RIDING FARM MOTORCYCLES

OPERATOR HAZARDS

- Skills and training
- Age and physical limitations
- Fatigue
- Visibility
- Alcohol and drugs
- Misuse or non use of personal protective equipment

MACHINE HAZARDS

- Instability
- Load shift
- Hitching
- Poorly maintained equipment

ENVIRONMENTAL HAZARDS

- Change in terrain
- Livestock / wildlife
- Isolation / communication

FARM MOTORCYCLE RISKS

	2 wheeled motorcycle	ATV
Most common injuries	Cuts and lacerations	Fractures and sprains
Most common area of injury	Lower leg	Upper body
Most common cause of accidents	Hitting stationary object Riding across paddock	Riding across paddock Hitting stationary object Rolling
Major cause of death	Head injury	Multiple crush injury (from rollover)

SAFE OPERATION OF FARM MOTORCYCLES

- **Choose the correct motorcycle for the job**
- **Rider training**
- **Pre op safety check**
- **Motorcycle maintenance**
- **Safe operation including following manufacturers recommendations as to weight limits, rider characteristics, and passengers**
- **Caution around environmental hazards such as animals and rough terrain**
- **Use of correct PPE**

NO PASSENGERS

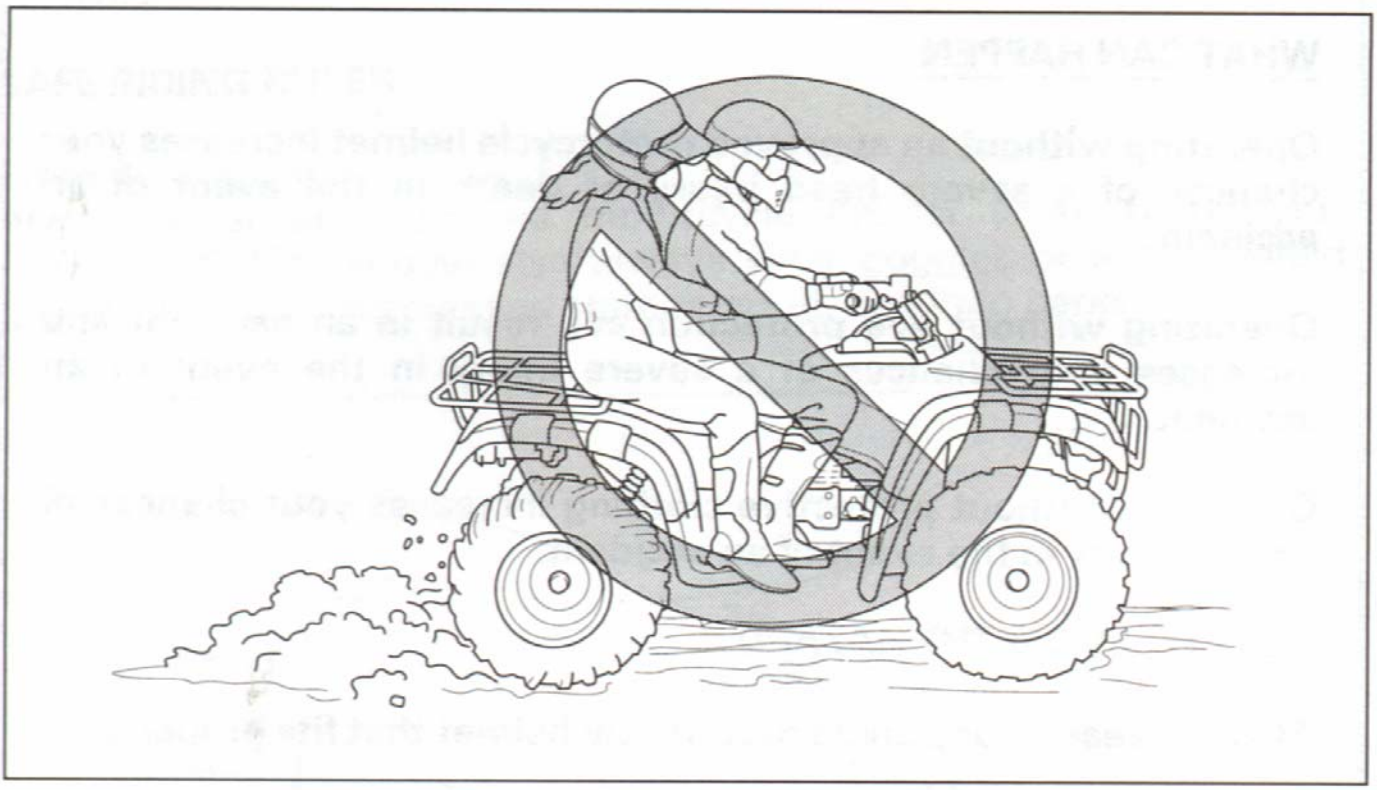


Fig. 3-2 Never carry a passenger on your FOURTRAX.

Honda *Owner's Manual*

CHANGES IN TERRAIN

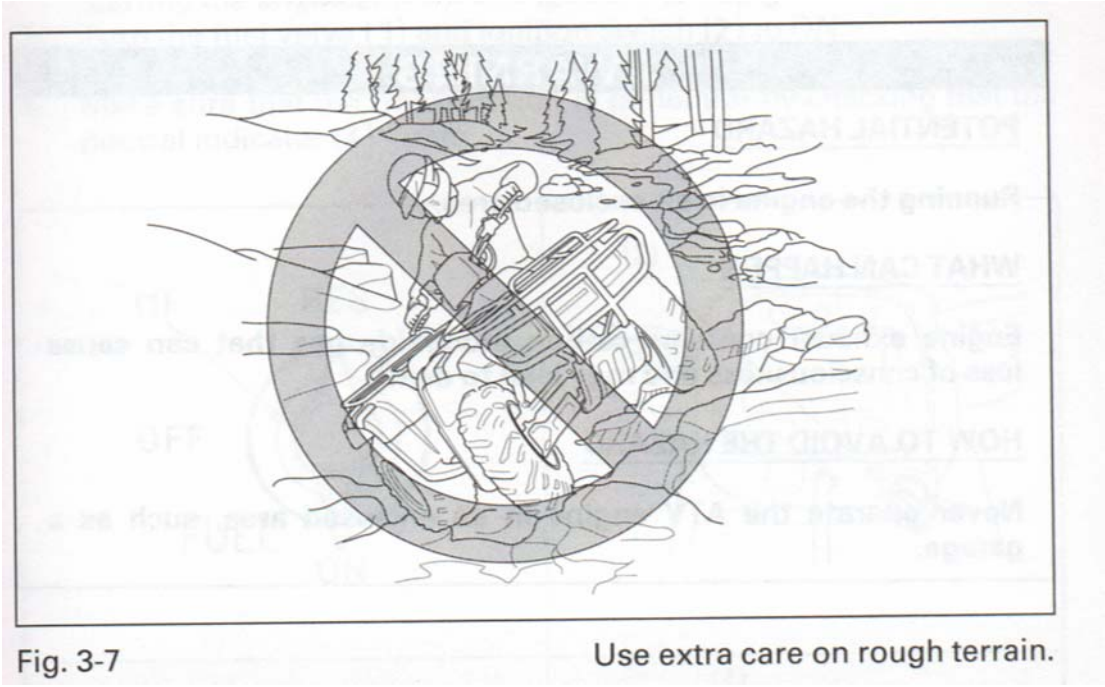


Fig. 3-7 Use extra care on rough terrain.

Honda, Owner's Manual

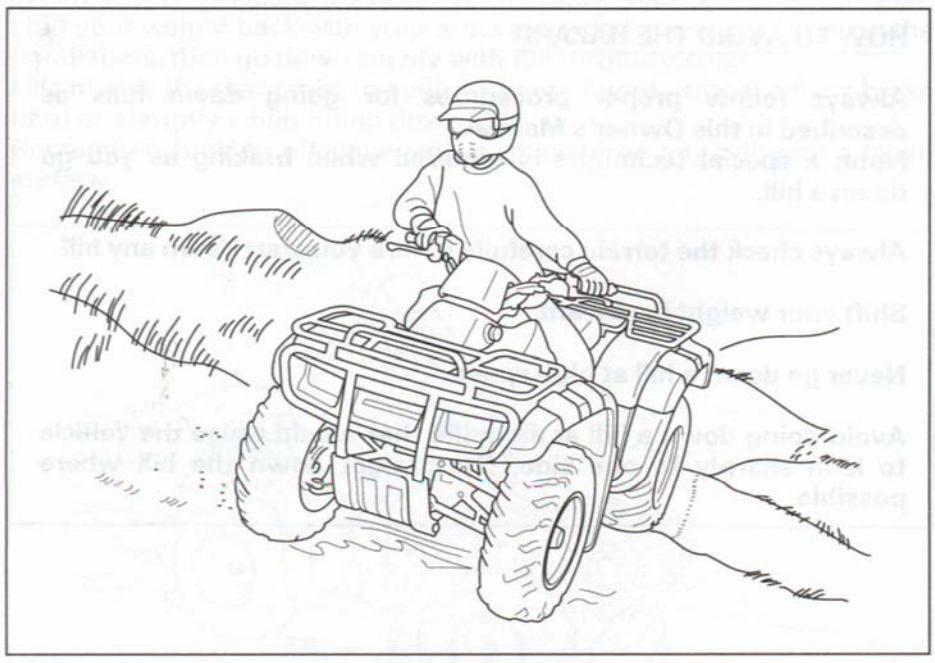


Fig. 3-16 Shift weight uphill when crossing slopes.

Honda *Owner's Manual*

RIDING UP AND DOWN HILLS

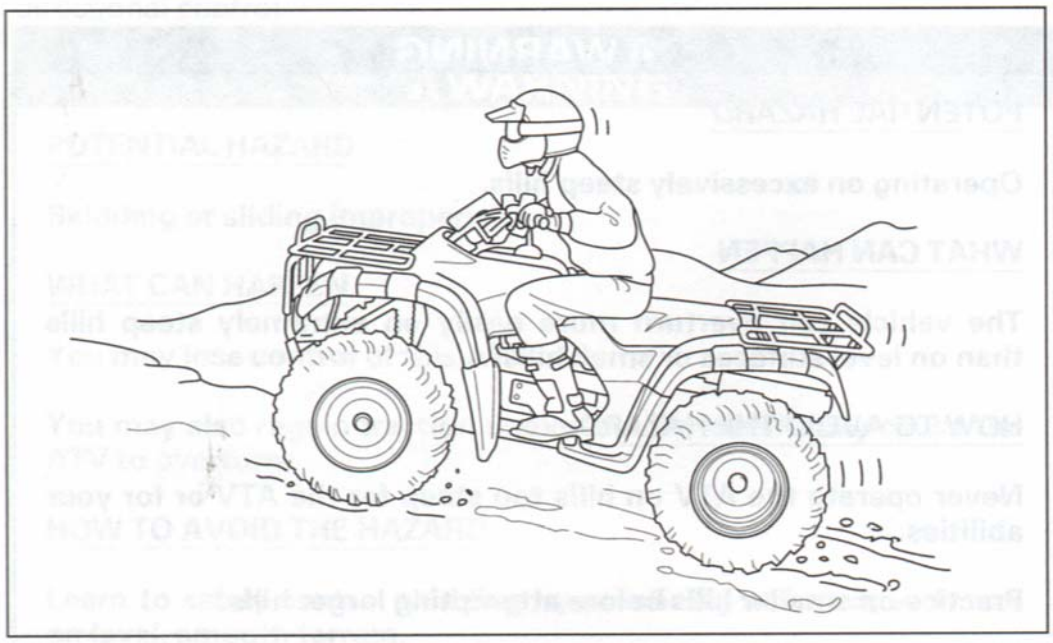


Fig. 3-12 Shift weight forward when climbing hills.

Honda *Owner's Manual*

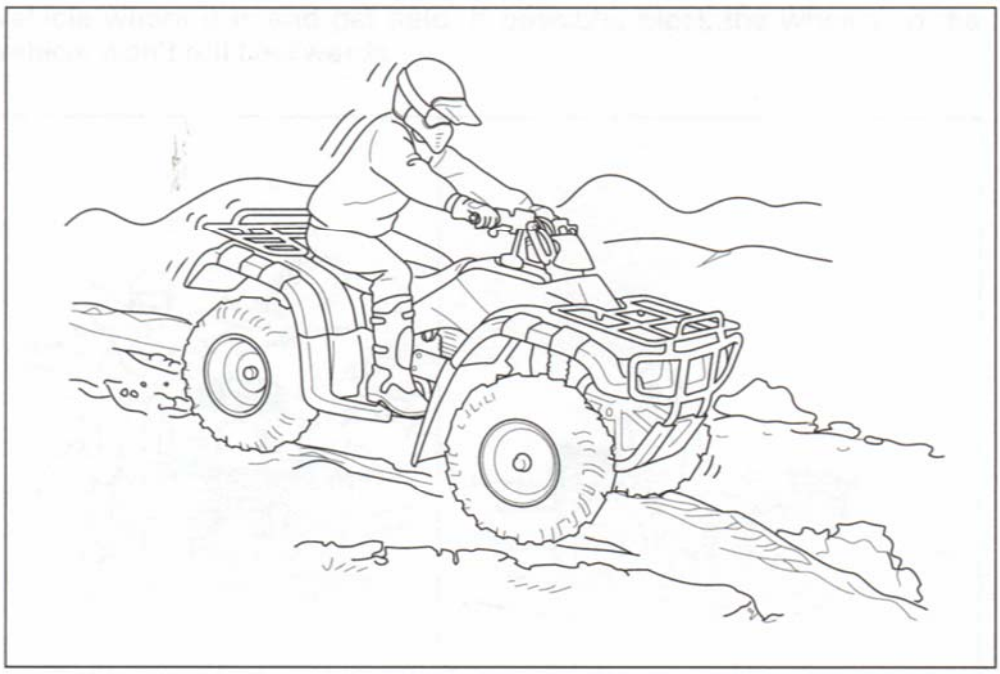


Fig. 3-15 On downhills, shift your weight back.

MODULE C. FARM MOTORCYCLE SAFETY

SECTION 4: FURTHER INFORMATION

Acknowledgements:

Justin Crosby – Farm Safety Education Officer Australian Centre of Agricultural Health and Safety

References:

Shalk T and Fragar L (2000) *Injury Associated with Farm Motorcycles on Farms in Australia*. ACAHS: Moree

Australian Centre of Agricultural Health and Safety (2000) *Farm Ride-On Vehicle Training: 2 and 4 Wheel Motorcycles*. Moree

Australian Centre of Agricultural Health and Safety (1997) *Farm Motorcycles*. Guidance Note no. 9

Training and other resources:

URL ~ http://www.workcover.nsw.gov.au - contains links to online WorkCover publications and to Occupational Health and Safety legislation and regulations.

Motorcycle rider training is available in NSW through:

Honda Australia Rider Training

Stay Upright Motorcycle Techniques,
PO Box 515, Round Corner NSW 2158
Phone: 02 9679 1578, Facsimile: 02 9679 1898
Web: http://www.stayupright.com.au

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400
Phone: 02 6752 8210, Fax: 02 6752 6639
Email: aghealth@usyd.edu.au, Web: http://www.aghealth.org.au

Honda Australia Rider Training
PO Box 766, Tullamarine VIC 3043
Phone: 03 9335 4808, Fax: 03 9335 2766

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246
Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

MODULE D. NOISE INJURY PREVENTION

SECTION 1: MODULE OUTLINE

Aim:

To increase the awareness of rural noise hazards, and reduce the incidence of noise induced hearing loss (NIHL) in farmers of the future.

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Identify noise injury hazards on the farm.
- Describe strategies for noise injury risk control.
- Understand when it is appropriate to use hearing protection and correctly select it.

Suggested Time:

- 20 minutes minimum presentation

Method of Delivery:

- practical demonstration
- interactive guided discussion

Resources Required:

- A range of Australian Standards Approved hearing protection including ear muffs and ear plugs.
- Colour chart of the ear. Attached.
- Chart of dB levels - exposure time. Attached.
- Calibrated sound level meter. *Available on request from* **Australian Centre for Agricultural Health and Safety.** Phone 02 6752 8210
- A referees whistle or similar
- A small engine such as a lawn-mower, motorbike, chainsaw or an electrical tool such as a drill or grinder or similar noise source

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task.

MODULE D. NOISE INJURY PREVENTION

SECTION 2: INSTRUCTOR GUIDELINES

DISCUSSION

Discussion should include the following topics

- How the ear works OH 1
- How load is too load OH 2

  (dB chart is include in students package)
- The 4 Ps of hearing loss OH 3
  - Painless
  - Progressive
  - Permanent
  - Preventable
- Noise injury hazards on the farm OH 4
- How to reduce the risk of receiving a noise injury OH 5
- Things to look for when selecting hearing protection OH 6

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE D. NOISE INJURY PREVENTION

SECTION 3: RESOURCE PACKAGE

Attached Resources:

Student Assessment Sheet

Teacher Answer Sheet

Student Fact Sheet

Overheads

MODULE D. NOISE INJURY PREVENTION

ASSESSMENT TASK

Name:_____Class:_____

1. What is the maximum noise level (over a period of 8 hours) that a person can be exposed to, before damage occurs?

_____

2. An increase of 3 decibels :

   doubles trebles halves

   the exposure time (circle one).

3. How long can you operate a chainsaw before you place your hearing "at risk" of noise injury?

_____

4. What is the dB level of a shotgun at the shooters ear? _____dB
5. Is a noise injury permanent? YES NO
6. What are the 4 P's that describe a noise injury?

   i). _____

   ii). _____

   iii). _____

   iv). _____

7. Name three risk controls that can be used to reduce noise emission of a task?

i)_____

ii)_____

iii)_____

8. If you put an ear plug in the ear correctly, you should be able to see it from the front (looking in the mirror)?

   YES NO

9. When should the cushions on ear muffs be changed?

_____

MODULE D. NOISE INJURY PREVENTION

ASSESSMENT TASK
ANSWERS

1. What is the maximum noise level (over a period of 8 hours) that a person can be exposed to, before damage occurs?

   85 dB

2. An increase of 3 decibels :

   (doubles) trebles halves

3. How long can you operate a chainsaw before you place your hearing "at risk" of noise injury?

   30 seconds - 2 minutes

4. What is the dB level of a shotgun at the shooters ear? *140* dB

5. Is a noise injury permanent? (YES) NO

6. What are the 4 P's that describe a noise injury?

   i). *Painless*

   ii). *Progressive*

   iii).*Permanent*

   iv).*Preventable*

7. Name three risk controls that can be used to reduce noise emission of a task?

   Any three of:

   Eliminate the task, substitute it with a quieter machine, separate the noise from the people - insulate or isolate, regular maintenance of machinery - seals, mufflers, the use of safer work practices - rotation between noisy and quiet tasks.

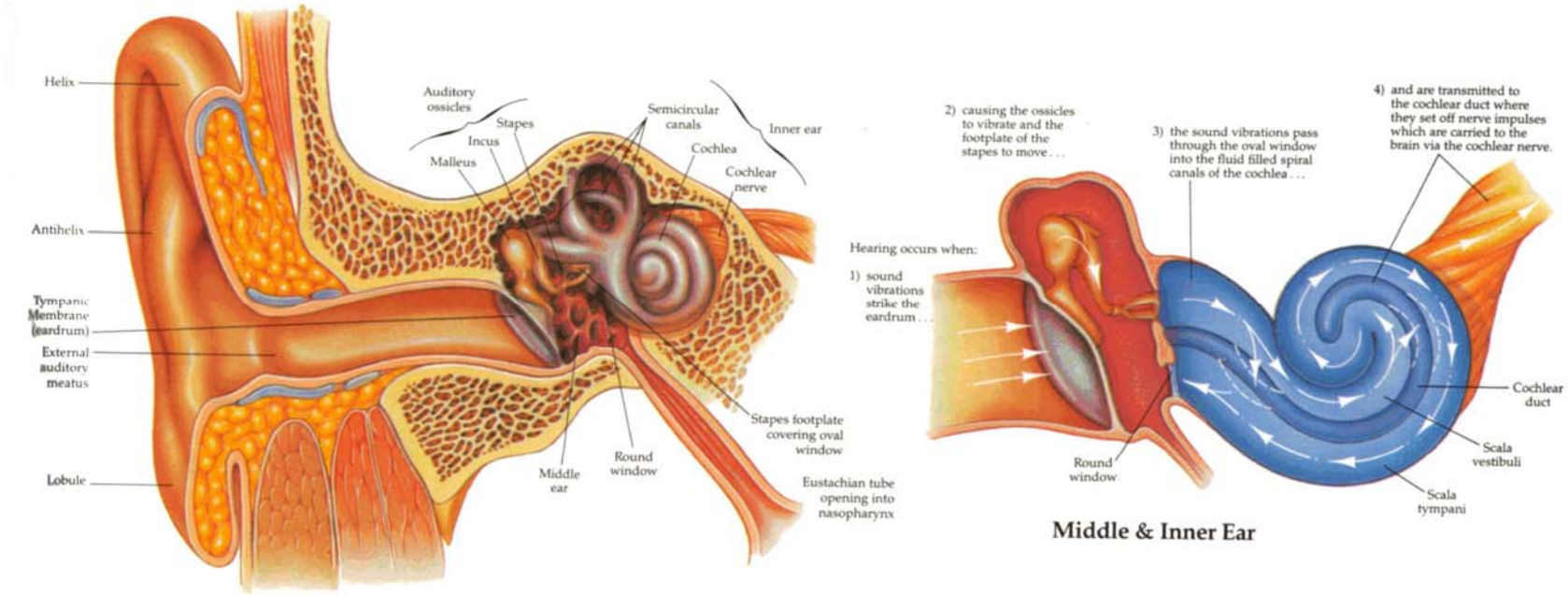
8. If you put an ear plug in the ear correctly, you should be able to see it from the front (looking in the mirror)?

   YES NO ( )

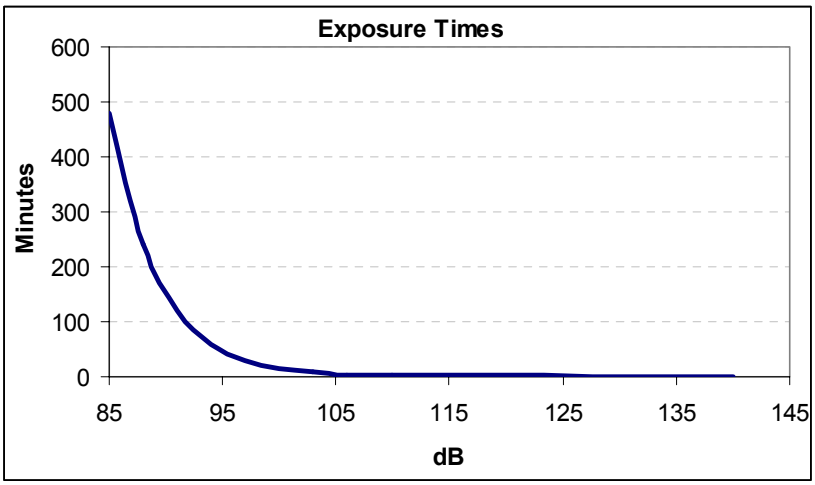
9. When should the cushions on earmuffs be changed?

   If they become cracked or hardened. On farms usually every 6 months.

COLOUR CHART OF THE EAR



Decibels	Time to reach daily noise exposure limit
85 dB	*8 hours*
88 dB	4 hours
91 dB	2 hours
94 dB	1 hour
97 dB	30 minutes
100 dB	15 minutes
103 dB	$7^1/_2$ minutes
106 dB	3 minutes
110 dB	$1^1/_2$ minutes
140 dB	instant damage



THE 4 Ps OF HEARING LOSS

1. Painless
2. Progressive
3. Permanent
4. Preventable

WAYS TO REDUCE NOISE ON THE FARM

Can the noise source be eliminated from the farm?

Is there a quieter way to do the job eg. Use quieter equipment?

Can the noise be separated from the worker and other people eg using walls, screens or other barriers

Make sure that machinery is properly maintained to keep noise to a minimum - seals and mufflers etc

Consider limiting the time that a person is exposed to noisy tasks throughout the day to make sure that their daily noise exposure limit (85dB in 8 hours) is not exceeded

If nothing else can be done then use personal protective equipment

PERSONAL PROTECTIVE EQUIPMENT

MOST IMPORTANT FACTORS WHEN CHOOSING PERSONAL HEARING PROTECTION

1. Comfort
2. Australian Standards Approval (AS 1270)
3. Sufficient protection for the task being done (SLC 80 rating)

MODULE D. NOISE INJURY PREVENTION

SECTION 4: FURTHER INFORMATION

Acknowledgment:

Kathy Challinor - CNC Audiometrist, Tamworth Community Health Centre

Australian Centre for Agricultural Health and Safety, (1997), *Noise on Farms*, Guidance Note no. 4

Farmsafe NSW (1994) *Rural Hearing Conservation Strategy*,

References:

AS/NZS 1269.1 Occupational noise management Part 1: Measurement and assessment of noise emission and exposure (1998)

AS/NZS 1270 Acoustics - Hearing Protectors (1999)

National Standard for Occupational Noise [NOHSC:1007(1993)]

Occupational Health And Safety (Noise) Regulation 1996

Protection Of The Environment Operations (Noise Control) Regulation 2000

URL ~ http://www.workcover.nsw.gov.au - contains links to online WorkCover publications and to Occupational Health and Safety legislation and regulations.

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400,
Phone: 02 6752 8210, Facsimile: 02 6752 6639
Email: aghealth@health.usyd.edu.au, Web: http://www.aghealth.org.au

Kathy Challinor, CNC Audiometrist
Tamworth Community Health Centre, PO Box 83, Tamworth NSW 2340
Phone: 02 6766 2555, Facsimile: 02 6766 3967
Email: kchallinor@doh.health.nsw.gov.au

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246
Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

MODULE E. MANUAL HANDLING ON FARMS

SECTION 1: MODULE OUTLINE

Aim:

- To raise awareness of the hazards present in manual handling by the four main risk factors - posture / position, load / force, repetition, duration
- To provide the knowledge required to adopt safe manual handling techniques.

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Identify some of the key manual handling activities in the agricultural workplace and those that are known to be associated with injuries
- Identify the manual handling risk factors in those activities
- Show awareness of the "hierarchy of control" in preventing manual handling activities
- Demonstrate how safe manual handling techniques fit into that hierarchy

Suggested Time:

- 20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Resources Required:

- Diagram of the spine
- Worksheet and answers
- Farm Safety Solutions Kit – CRS Australia
- 20lt drum pourer and empty, clean 20lt drum
- Drum lifter and empty, clean200lt drum
- Sturdy 2 wheel barrow
- Curved handle shovel
- Wolf handgrip
- Heavy object appropriate to region eg bale of hay, fruit box

Assessment of Achievement of Learning Outcomes:

- Written assessment task is attached
- Demonstration of the ability to implement the skills and principles taught in the session.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

SECTION 2: PRESENTER GUIDELINES

DISCUSSION

- Discussion should include the following topics
  - What is manual handling OH 1
  - How the body moves OH 2
  - How manual handling injuries may occur OH 3
  - Things that can be done to reduce the risk of manual handling injuries OH 4
  - Preferred handling techniques OH 5
  - Assistive technology OH 6

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE E. MANUAL HANDLING ON FARMS

SECTION 3: RESOURCE PACKAGE

Attached Resources:

Student Assessment Sheet

Assessment Answer Sheet

Overheads

MODULE E. MANUAL HANDLING ON FARMS

ASSESSMENT TASK

Name: _____ Class: _____

1. Answer the following true or false statements

   a) Only older workers suffer from back injuries T F
   b) 80% of the population suffer from some type of back pain at some stage of their lifetime. T F
   c) It is easier to hold a weight out in front of you than close to your body T F
   d) It is best to bend your knees when lifting a load T F

2. Circle which of the following makes manual handling safer?

   a) Using the correct lifting techniques
   b) Getting someone to help or using equipment if something is heavy?
   c) Getting the job done quickly

3. Circle which of the following help you work safely?

   a) Standing with your feet together?
   b) Turning your feet in line with your shoulders?
   c) Keeping the curves in your back?
   d) Bending from the waist?
   e) Using a semi squat?
   f) Working in your mid range and close to your body?

4. What is the best way to work at low levels? (*Circle the correct answer)*

   a) Half kneel or Full kneel
   b) Full squat or Semi squat

5. What do you have to remember when you are lifting with somebody else or team lifting?

   _____

6. What assistive technology could be used with the following?

   A 20lt drum of chemical _____

   A bale of hay _____

   A 20kg bag of dog biscuits _____

   A 200lt drum _____

MODULE E. MANUAL HANDLING ON FARMS

ASSESSMENT TASK
ANSWERS

1. Answer the following true or false statements

   a) Only older workers suffer from back injuries — T (F)

   b) 80% of the population suffer from some type of back pain at some stage of their lifetime. — (T) F

   c) It is easier to hold a weight out in front of you than close to your body — T (F)

   d) It is best to bend your knees when lifting a load — (T) F

2. Circle which of the following makes manual handling safer?

   a) Using the correct lifting techniques

   b) Getting someone to help or using equipment if something is heavy?

   c) Getting the job done quickly

3. Circle which of the following help you work safely?

   a) Standing with your feet together?

   b) Turning your feet in line with your shoulders?

   c) Keeping the curves in your back?

   d) Bending from the waist?

   e) Using a semi squat?

   f) Working in your mid range and close to your body?

4. What is the best way to work at low levels? (*Circle the correct answer)*

   Half kneel or Full kneel

   Full squat or **Semi squat**

5. What do you have to remember when you are lifting with somebody else or team lifting?

   Match people for size; decide who is leading; communicate; be aware of where you are going and how you are going to get there

6. What assistive technology could be used with the following?

   A 20lt drum of chemical — *Drum holder/pourer eg Tilt a Drum or SafePour*

   A bale of hay — *Two wheeled barrow or cart, wool bale hooks*

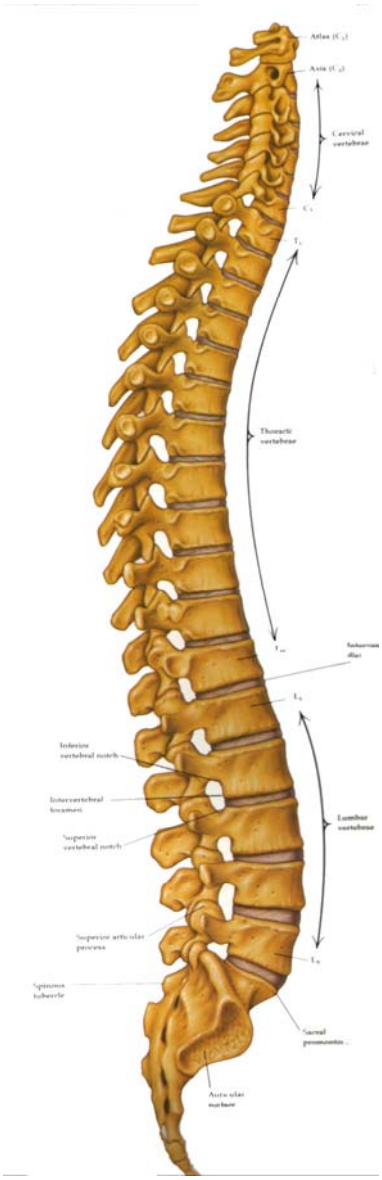
   A 20kg bag of dog biscuits — *Two wheeled barrow or cart*

   A 200lt drum — *Mobile drum lifter or vehicle mounted crane with drum lifter attachment*

WHAT IS MANUAL HANDLING?

Manual handling is any activity requiring human force to:

- Push
- Pull
- Lift
- Lower
- Cary
- Restrain
- Hold a load



Vertebrae bodies	bear 2/3 of the weight
Facet joints	bear 1/3 of the weight and direct movement
Discs	act as spacers and hydraulic shock absorbers
Deep muscles	stabilise or steady the spine (this includes abdominal muscles)
Superficial muscles	move the spine

Manual handling injuries

- Are caused by biomechanical stress and physiological stresses on the musculoskeletal system
- Occur when forces are excessive, or continuously repeated in an unbalanced fashion
- Commonly occur in the lower back but may also occur in other areas of the body including the neck, shoulders, arms and wrists
- Can be the result of cumulative stresses or from a single event where the load handled or force exerted exceeds the physical capability of the musculoskeletal system

The risk of manual handling injuries occurring can be reduced by:

- Reducing the need for manual handling eg eliminate unnecessary tasks
- Lighten the load eg break into smaller portions
- Reduce bending, twisting, reaching movements eg rearrange work layout
- Follow safe procedures eg plan ahead for the work to be safe
- Use preferred handling techniques eg bend your knees
- Avoid muscle fatigue eg consider your posture
- Consider assistive technologies eg trolleys and hoists

LIFTING TECHNIQUES

- Lift using a semi squat
- Diagonal lift – feet diagonally around the load, one foot in front of the other
- Golfer's lift – use back leg as a counter balance for lifting light objects with one hand
- Push pull or roll a load rather than lifting (pushing is better than pulling)
- Carry load close to your body
- Team lifting – communication is important to make sure you lift together

ASSISTIVE TECHNOLOGY EXAMPLES

- A two wheeled barrow – stable and takes the stress out of loading and unloading
- Wolfe Handgrip – reduces the need to bend when using a long handled implement
- Curved handle shovel – allows you to stand up straighter when shovelling
- 20lt drum pourer – helps with the controlled pouring or decanting of chemical from a 20-25lt container

MODULE E. MANUAL HANDLING ON FARMS

SECTION 4: FURTHER INFORMATION

Acknowledgement:

Jill Dyson, Accredited Occupational Therapist, Chair southern Farmsafe

Kate Boughton, Farm Rehabilitation Programs, Australian Centre of Agricultural Health and Safety

Cliff Carrasco, Ergonomist, CABS Team, WorkCover NSW

References:

Australian Centre of Agricultural Health and Safety (1997) *Ergonomics and Manual Handling on Farms* Guidance Note no.6, ACAHS Moree

Accidents Compensation Corporation (1986) *Lifting and Handling: Principles underlying the efficient teaching of manual lifting and handling*. Wellington

Australian Safety and Compensation Council (ASCC). (2207) *National Code of Practice for the Prevention of Muskuloskeletal Disorders Caused From Performing Manual Tasks*. Australian Government.

Further Information

Australian Safety and Compensation Council (ASCC). (2207) *National Code of Practice for the Prevention of Muskuloskeletal Disorders Caused From Performing Manual Tasks*. Australian Government. URL http://www.ascc.gov.au/NR/rdonlyres/65298783-6262-4D0D-A41D-13296040703D/0/ASCC_ManualTasks_COP.pdf

Information Booklet (1992), *Manual Handling*, Commonwealth of Australia

WorkCover NSW, BackWatch Collections, Manual Handling.

URL – http://www.activelifting.com.au/materialsHandling/safePours.htm

URL ~ *http://www.cdc.gov/od/ohs/pdffiles/lifting.pdf*

URL ~ http://www.workcover.nsw.gov.au - contains links to online WorkCover publications and to Occupational Health and Safety legislation and regulations.

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400
Phone: 02 6752 8210, Facsimile: 02 6752 6639
Email: aghealth@health.usyd.edu.au , Web: http://www.aghealth.org.au

CRS Australia
PO Box 111, Woden ACT 2606
Phone: 1800 624 824, Facsimile: 02 6212 2902
Web: http://www.crsrehab.gov.au

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246

MODULE E. MANUAL HANDLING ON FARMS

Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

MODULE F. FIREARMS SAFETY ON FARMS

SECTION 1: MODULE OUTLINE

Aim:

To increase the awareness of the hazards associated with the use of firearms, and provide the knowledge for the safe use of firearms.

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Identify hazards and assess the risks associated with the use of firearms on rural workplaces.
- Describe the legal requirements for the possession and use of firearms.
- Describe safe firearms storage and use practices.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Resources Required:

- Copies of *Handbook on Firearms Safety Awareness* to handout to students and teachers. Available from local police stations, local gun clubs or associations or local firearms dealers.
- Demonstration firearms (optional)

This module may be delivered without the use of demonstration firearms. If demonstration firearms are to be used they must be both open and unloaded, and secured before, after and between presentations. They can be locked in the boot of a car or station wagon, or in a security box on the tray of a utility.

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

MODULE F. FIREARMS SAFETY ON FARMS

SECTION 2: PRESENTER GUIDELINES

STATISTICS

On Australian farms firearms account for 6 unintentional deaths a year, and in NSW 13 hospital admissions. 15-24 year old age group is at the greatest risk of dying from an unintentional firearm accident.

DISCUSSION

Discussion should include the following topics

- General introduction to the different types of firearms — OH 1
- Legal requirements regarding firearms — OH 2
- HAZARDS – How are people most commonly hurt when using firearms?
- RISKS – Who is most commonly hurt and in what way?
- CONTROLS – What can we do to minimise the chance that someone may be hurt when using a firearm?
    - Basic rules for firearms safety — OH 3
    - Clearing a firearm — OH 4
    - Precautions when using a firearm in the field — OH 5
    - Storage and transport — OH 6, 7, 8
    - Personal Protective Equipment — OH 9

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE F. FIREARMS SAFETY ON FARMS

SECTION 3: RESOURCE PACKAGE

Attached Resources

Student Assessment Task

Assessment Answer

Overheads

Other Resources

Copies of *Handbook on Firearms Safety Awareness* to handout to students and teachers. Available from local police stations, local gun clubs or associations or local firearms dealers.

Demonstration firearms (optional)

This module may be delivered without the use of demonstration firearms. If demonstration firearms are to be used they must be both open and unloaded, and secured before, after and between presentations. They can be locked in the boot of a car or station wagon, or in a security box on the tray of a utility.

MODULE F. FIREARMS SAFETY ON FARMS

ASSESSMENT TASK

Name: _____ Class: _____

1. What are the legal requirements for the use of firearms?

_____

2. Name 5 of the basic rules of firearms safety

i) _____

ii) _____

iii) _____

iv) _____

v) _____

3. Name 4 times when a firearm should be **cleared?**

i) _____

ii) _____

iii) _____

iv) _____

4. What personal protective equipment is required when using a firearm?

_____

5. What are the legal requirements for the storage of firearms and ammunition?

_____

_____

MODULE F. FIREARMS SAFETY ON FARMS

ASSESSMENT TASK
ANSWERS

1. What are the legal requirements for the use of firearms?

Hold a firearms license.

2. Name 5 of the basic rules of firearms safety

Any 5 of:

- *Treat* every firearm *as being loaded at all times*
- *Always keep the muzzle pointed in a safe direction*
- *Never have a loaded firearm in the car, home, camp*
- *Always identify your target and what is behind it*
- *Never fire at a hard surface, or at a surface of water*
- *No alcohol or drugs while using or handling firearms*
- *Store firearms and ammunition separately and out of the reach of children*
- *Do not climb fences or other obstacles with loaded firearms*

3. Name 4 times when a firearm should be **cleared?**

i) *Removing a firearm from storage*

ii) *Taking a firearm from a vehicle*

iii) *Passing a firearm from person to person*

iv) *Accepting a firearm that might not be unloaded*

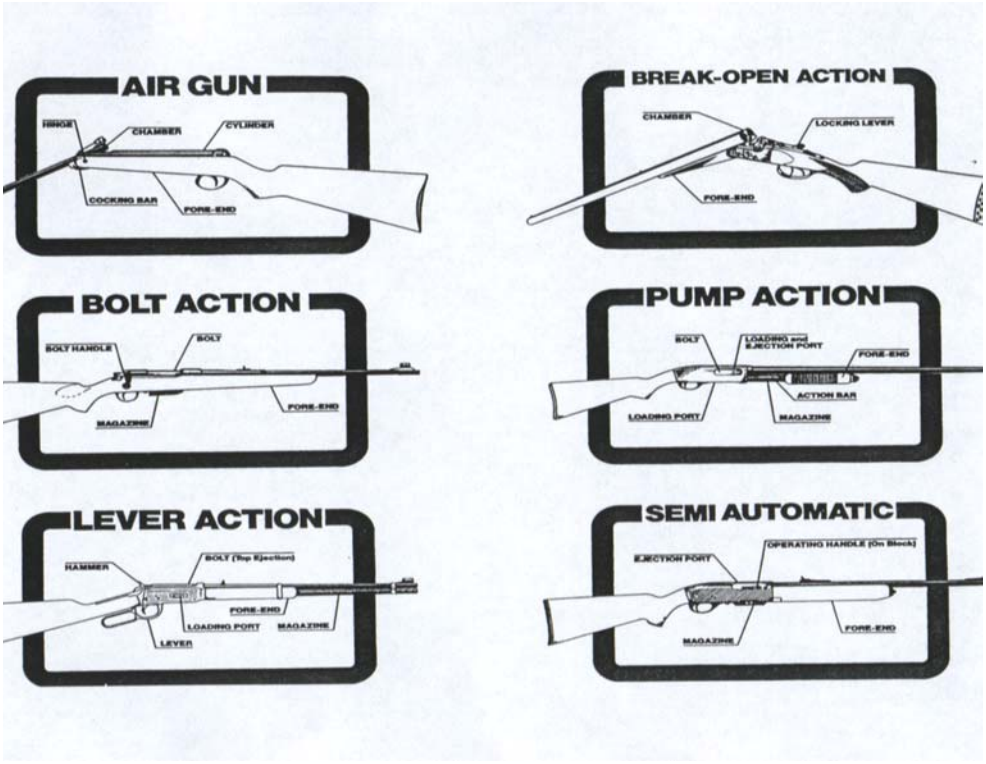
4. What personal protective equipment is required when using a firearm?

Personal hearing protection

5. What are the legal requirements for the storage of firearms and ammunition?

That they are stored in a locked container, separately from any ammunition

TYPES OF FIREARMS



Characteristics of the three main classes of “long arms”.

1. Rimfire rifles - .22 LR and .22 magnum
2. Centrefire rifles – Calibres range from .17 upwards – some common calibres are .222, .223,22/250, .243, 25/06, 270, 308, 303 etc.
3. Shotguns – 12 gauge, 20 gauge, .410

Rifles fire a SINGLE projectile only; Shotguns fire a cluster of small pellets of various sizes.

LEGAL REQUIREMENTS REGARDING FIREARMS

- Gun use is legislated by the FIREARMS ACT 1996 and the FIREARMS (GENERAL) REGULATION 1997
- Since 1997, only people who hold a FIREARMS LICENSE are permitted to own or use firearms.
- To obtain a license, a person must first pass a SAFETY AWARENESS TEST, conducted by a registered Firearms Safety Officer, then obtain a Firearms License Application either from a Police Station or a Shooting Club.
- Younger people, from age 12 to 18, can apply for a MINOR'S PERMIT. This allows them to use firearms under the DIRECT supervision of an ADULT LICENSE HOLDER – meaning that the adult MUST be present while the minor is using the firearm.
- There are several categories of licenses.
  - Class "A" is for rimfire rifles and shotguns with single-loading Single barrels or double barrels.
  - Class "B" is for Centrefire rifles – single shot, bolt action or lever action.
  - Class "C" is restricted – covering self-loading rimfire rifles with a 10-round magazine, self-loading and pump-action shotguns with a magazine holding 5 rounds.
  - Class "D" is highly restricted – self-loading or pump-action Centrefire rifles, self-loading rimfire rifles with a magazine capacity of more than 10rounds, self-loading or pump-action shotguns with a magazine capacity greater than 5 rounds.
  - Class C and D firearms are restricted to professional shooters working directly for NP&WS, or, in some special cases, to farmers with a severe feral animal problem.

BASIC RULES FOR FIREARM SAFETY

1. TREAT EVERY FIREARM AS BEING LOADED AT ALL TIMES.

2. KEEP THE MUZZLE POINTED IN A SAFE DIRECTION.

3. NEVER HAVE A LOADED FIREARM IN THE CAR, HOME OR CAMP.

4. ALWAYS IDENTIFY YOUR TARGET AND WHAT IS BEHIND IT.

5. NEVER FIRE AT A HARD SURFACE, OR AT THE SURFACE OF WATER.

6. NO ALCOHOL OR DRUGS WHILE USING OR HANDLING FIREARMS

7. STORE FIREARMS AND AMMUNITION SEPARATELY, AND OUT OF REACH OF CHILDREN

8. DO NOT CLIMB FENCES OR OTHER OBSTACLES WITH LOADED FIREARMS.

CLEARING A FIREARM

- "Clearing" a firearm, means checking that it is NOT loaded.
- The details of this will vary according to the type of firearm. The common types are: -
  - Bolt Action – single shot or repeater.
  - Break Action – Single or double barrel (usually shotguns, but some older rifles may be found).
  - Lever Action – single shot or repeater.
  - Pump Action – repeater.
- In all cases, the action must be opened to expose the chamber.
- For full clearance the magazine (if present) should be removed.
- Some tube magazines on pump action rifles (especially .22 rimfire rifles) can be easily dented, causing a temporary "hangup" with cartridges still in the tube. A further stroke of the action can then dislodge them and feed them into the chamber. A number of shooting accidents are believed to have happened in this way.
- Make sure that there are no cartridges in either the chamber, action or magazine. The arm is then clear.
- Do this when –
  - Removing a firearm from storage
  - Taking a firearm from a vehicle
  - Passing a firearm from person to person
  - Accepting a firearm that may not be unloaded

PRECUATIONS WHEN USING A FIREARM IN THE FIELD

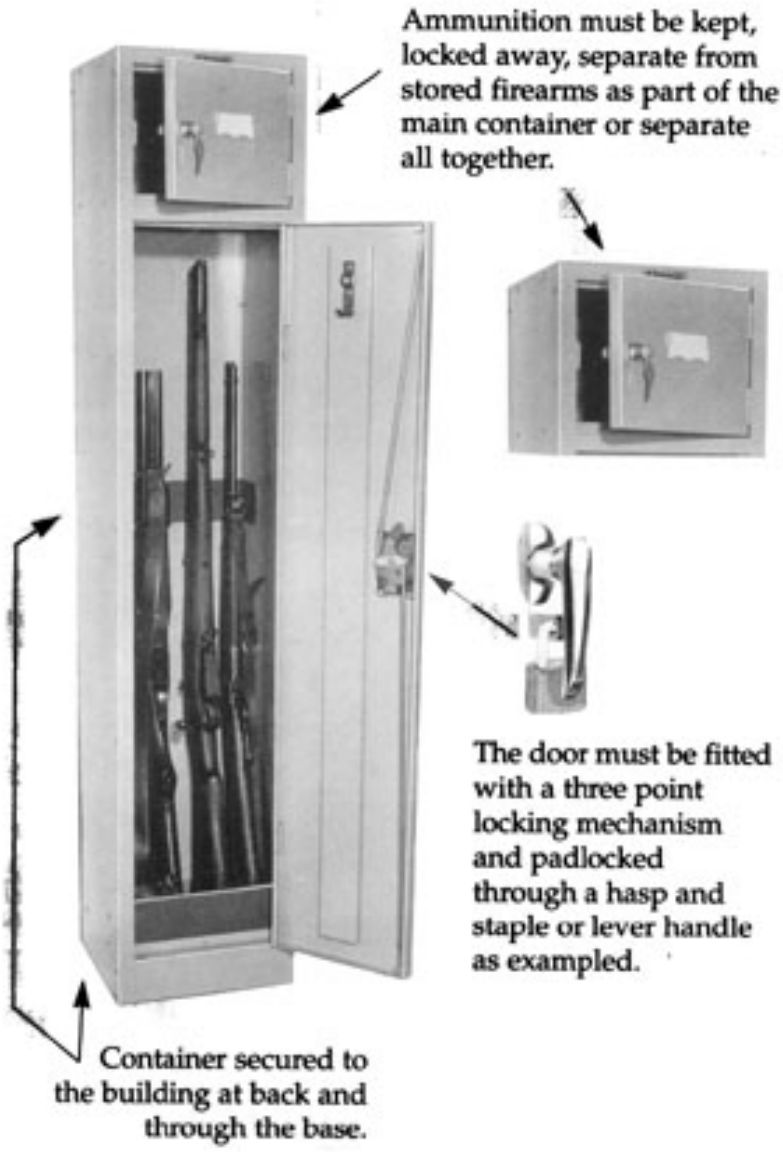
- **Identify your target positively**. If in doubt, DO NOT SHOOT.
    - Do NOT fire at movement
    - Do NOT fire at colour
    - Do NOT fire at shape alone
    - Do NOT fire at sound.
- **Check your Danger Zone**. This is the area between you and your target, and beyond.
- **DO NOT rely on safety catches**. They can be dislodged accidentally. Particularly in vehicles or on rough ground. The only safe way to carry a firearm in the field is either with the action open, or closed on an empty chamber.
- **Observe the correct precautions when crossing fences or other obstacles**.
- **DO NOT lean a loaded firearm against a wall**, fence, tree or vehicle. It can be dislodged and accidentally fire.
- **DO NOT shoot from a moving vehicle**. An exception to this is the need to destroy vermin on large properties, and when this is done; only ONE person should do the shooting and have a loaded firearm.

STORAGE AND TRANSPORT

- The Firearms Act 1997 requires that people who own firearms must take reasonable precautions to ensure that their firearms is kept secure and will not get stolen or lost, or come into the possession of a person who is not authorised to possess a firearm.
- The law states that firearms are to be stored in a locked “receptacle” and that ammunition is to be stored in a separate locked “receptacle”. These “gun cabinets” must meet weight and security requirements.
- For category A and B firearms the storage receptacles must be made of hard wood or solid metal, weigh more than 150 kg empty or be secured to the premise, locks must be made of solid metal and approved by the commissioner.
- Category C, D and H firearms must be stored in a locked steel safe, that must be bolted to the premises.
- When transporting firearms always have them unloaded and locked out of sight. The use of some restraining device such as a trigger lock will also provide extra security.
- If you possess restricted firearms the law requires that it must be transported in a locked container that is either secured to the vehicle or locked within it. It also must have a restraint device such as a trigger lock and kept separate from ammunition

▸ Level 1: Example of a Basic Security Container

Example of a steel container which would comply with the basic storage requirements of the Firearms Act 1996 in respect of firearms held under a Category A and/or B Licence.

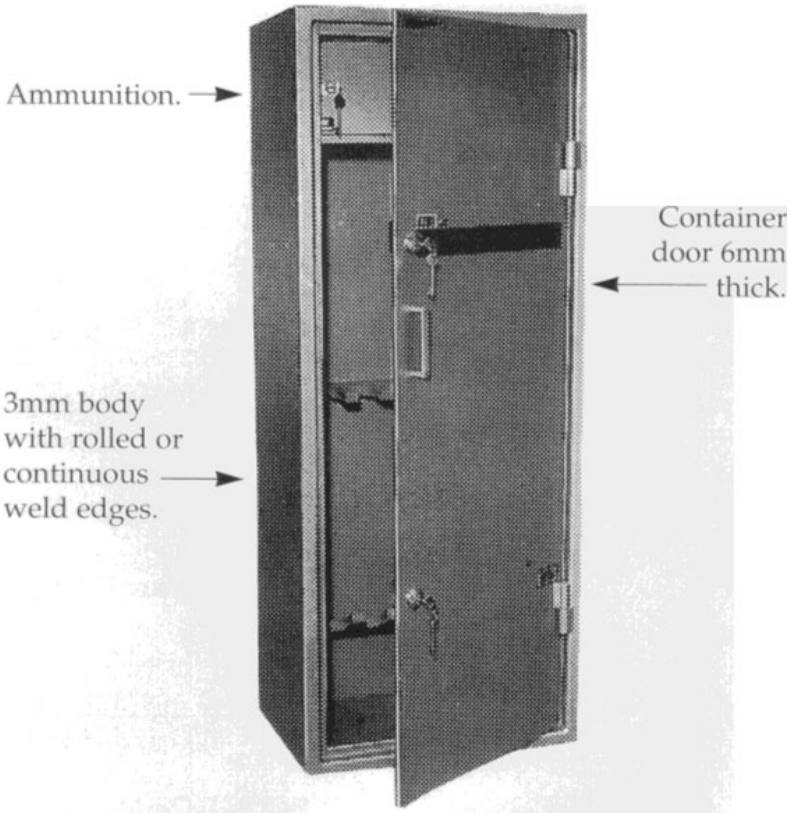


✔ **Note: Display Cabinets and Gun Racks which provide at least equivalent security are acceptable.**

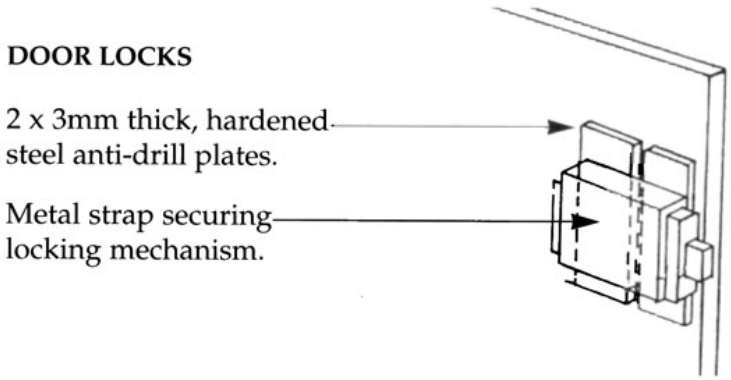
Source: "Safe Storage of firearms" - NSW Police Service

▸ Level 2: Example of a Medium Security Container for Category C & D longarms

Example of a basic container which would comply with the requirements of the Firearms Act 1996 in respect of the storage of Category C & D Firearms.



The container is to be secured to the structure through the back and base.



Source: "Safe Storage of firearms" - NSW Police Service

PERSONAL PROTECTIVE EQUIPMENT

- Shooting is noisy.
- The sound from a shot gun or high calibre rifle can cause instant noise induced hearing loss, so hearing protection should be worn.
- Ear muffs and ear plugs are now normal equipment on farms and properties for use with chainsaws etc, and are quite suitable for use with firearms.

MODULE F. FIREARMS SAFETY ON FARMS

SECTION 4:FURTHER INFORMATION

Acknowledgement:

Paul Tattam - Moree

AJ Smyth, Firearms Safety Officer - Tamworth

WK Cameron, New England Institute of TAFE

References

Australian Centre of Agricultural Health and Safety (1998) *Firearms Safety on Farms* Guidance Note no.17, ACAHS Moree

Firearms Safety Awareness Council *Handbook on Firearms Safety Awareness*

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400
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NSW Firearms Safety Awareness Council Limited
PO Box 393, Terry Hills NSW 2084
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WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246
Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

MODULE G. ELECTRICAL SAFETY ON FARMS

SECTION 1: MODULE OUTLINE

Aim:

To raise the awareness of the health and safety risks associated with electricity in rural workplaces.

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Describe the potential dangers that electricity presents
- Identify hazards, assess the risks and develop controls associated with electricity and power lines
- Describe response required to be undertaken in the case of inadvertent contact with power lines.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- practical demonstration
- interactive guided discussion

Resources Required:

- Country Energy Resources
- literature (pamphlets and stickers).
- Overhead network demonstration model
- Safety switch demonstration model.
    - Phone 13 20 80
- Electricity Association of NSW & WorkCover Pamphlet – Electrical Hazard Awareness for Operators of High Machinery
- Overhead projector.
- Slides.
- Contact local firms for loan or donation of examples of damaged electrical gear eg leads, power tools – mention the firm as a sponsor if necessary

Assessment of Achievement of Learning Outcomes:

- Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

MODULE G. ELECTRICAL SAFETY ON FARMS

SECTION 2: PRESENTER GUIDELINES

DISCUSSION

Discussion should include the following topics

- HAZARDS – How might someone be hurt when working around electricity?
    - Contact with overhead powerlines — OH 1
- RISKS – Who is most commonly hurt and in what way?
- CONTROLS – What can we do to minimise the chance that someone may be hurt when working around electricity? — OH 2
    - Safe operating distance from overhead powerlines — OH 3, OH 4
    - General safety around the home and workshop – RCD demonstration (if available) — OH 5
    - Emergency Procedures — OH 6

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE G. ELECTRICAL SAFETY ON FARMS

SECTION 3: RESOURCE PACKAGE

Attached Resources:

Student Assessment Task

Assessment Answer Sheet

Overheads

MODULE G. ELECTRICAL SAFETY ON FARMS

ASSESSMENT TASK

Name:_____ Class: _____

1. In the event of an overhead power line falling to the ground, what would you do?

   _____

2. What are two tasks that place people at high risk of contacting power lines?

   _____

3 What are the steps to be taken if the plant that you are operating comes into contact with overhead power lines?

   _____

   _____

   _____

4. What are two methods to identify the location of power lines when working on farms?

   _____

   _____

5. What is the most effective method of preventing electrocution in homes and farm workshops?

   _____

6. What checks should be made before using power tools or an extension lead?

   _____

7. In the event of a person receiving an electric shock what should you do?

   _____

   _____

MODULE G. ELECTRICAL SAFETY ON FARMS

ASSESSMENT TASK
ANSWERS

1. In the event of an overhead power line falling to the ground, what would you do?

   Stay clear (8 metres), warn other people and contact local electricity providers

2. What are two tasks that place people at high risk of contacting power lines?

   Any 2 of - people using high machinery, handling and transporting long objects, or digging or driving stakes into the ground

3 What are the steps to be taken if the plant that you are operating comes into contact with overhead power lines?
   Remain in machine cabin until power is isolated. Contact electricity distributor immediately. Attempt to break contact with power lines. In emergency situations (eg fire) jump clear of the machine landing on both feet. Without touching the machine, hop until outside of the step potential zone (8 metres).

4. What are two methods to identify the location of power lines when working on farms?

   Any two of

   1. look for power lines before beginning any activity.

   2. place markers along the path of power lines or have your power distributor place identifying objects such as bird deflectors on the power lines.

   3. call dial before you dig (1100) before digging or driving stakes into the ground.

5. What is the most effective method of preventing electrocution in homes and farm workshops?

   Install a safety switch (RCD) to house and workshop electrical systems

6. What checks should be made before using power tools or an extension lead?

   Ensure there is no damage to leads and plugs, do not use in wet conditions, do not use rolled leads

7. In the event of a person receiving an electric shock what should you do?
   Ensure that the power is off before touching the person. Apply first aid and call for medical assistance.

CONTACT WITH OVERHEAD POWERLINES

By:

- Using high machinery
- Transporting and handling long equipment
- Tipping trailers under powerlines

To avoid being electrocuted:

- When working around overhead powerlines:
  - Look for power lines before beginning any activity.
  - Place markers along the path of power lines or have your power distributor place identifying objects such as bird deflectors on the power lines.
  - Place warning stickers on machinery that is at risk of contacting or becoming “charged” by power lines.
  - Make sure that other people working around you know where the power lines are.

- When digging around electrical lines
  - Call “dial before you dig” (1100) before digging or driving stakes into the ground.

Safe Operating Distances with Overhead Power Lines			
Power Line Type	**Voltages**	**Identify**	**Safe Operating Distance**
Low voltage and high voltage distribution and subtransmission lines	Up to 132 000 volts	Usually on poles	3m
Subtransmission and transmission lines	Between 132 000 and 330 00 volts	On either poles or towers	6m
Transmission lines	More than 330 000 volts	Usually on towers	8m

Farm Plant at Risk of Power Line Contact These heights may vary depending on other factors.	
Plant	**Indicative Height**
Four wheel drive tractor 425 horse power	3.8 m to top of exhaust
Cotton Pickers standard basket extended basket	 operating 4.86 m, dumping 6.12 m, operating 5.33 m, dumping 6.42 m,
Cotton module builder boom retracted boom extended	 5 m 8 m
Grain Harvesters	4.1 m operating 5.3 m unloading auger extended
Chisel Plough	5.4 m in folded transport mode
Tipping truck	7.5 m fully raised
Irrigation pipe	7 – 12 m standing vertical
Stock Floats	4.6 m
Grain auger	4.3 m in transport mode

The best safeguard against electrocution in the home or workshop is the installation of a residual current device or RCD.

Safe work with electricity includes the following:

Extension Cords

- Purchasing ready-made extension cords with sealed plugs.
- Unrolling extension leads prior to use to prevent the build up of heat.
- Inspecting extension cords regularly checking that the plugs are sealed, and that the insulation has not damaged or perished. Extension cords must meet the legal requirements for testing and tagging under AS 3760

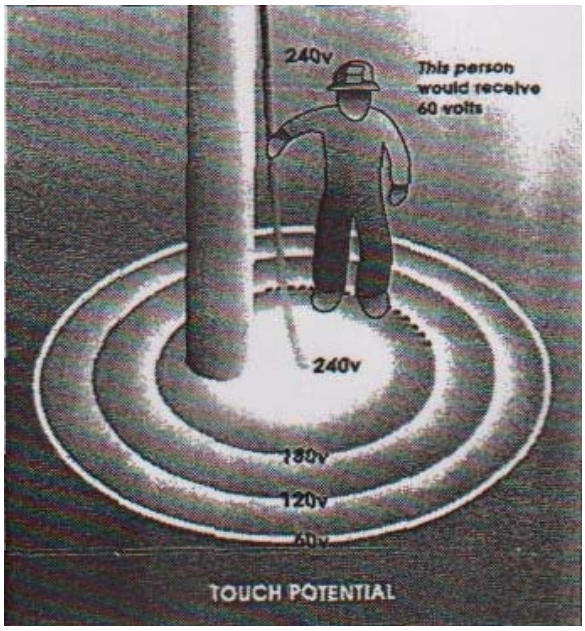
Power Tools

- Power tools suffer more wear and tear in farm workshops
- Unplugging electrical equipment when not in use.
- Ensuring electrical equipment and the areas where they are used are kept dry.
- Power tools should be maintained regularly.

- Always wear shoes when using electricity. In one third of all electric shocks the current flows through the person's feet. Rubber soled or plastic soled shoes give more protection to the wearer than thongs or no shoes.
- Do not use electricity around wet areas.

EMERGENCY PROCEDURES IF A MACHINE COMES INTO CONTACT WITH OVERHEAD POWERLINES

1. Contact local power distributor.
2. The operator should remain in the cabin until the power source has been switched off exiting only in the case of emergency such as a fire in the machine.
3. When exiting in emergency situations the operator needs to jump clear of the machine landing on both feet and hop until 8 metres clear of the machine (outside of the step potential zone). At no time should they touch the machine once exited.
4. Do not attempt to rescue a person you suspect is being electrocuted. Wait until you are sure that the power source has been isolated. People are often electrocuted whilst trying to help earlier victims.



MODULE G. ELECTRICAL SAFETY ON FARMS

SECTION 4: FURTHER INFORMATION

Acknowledgement:

Peter Hyde – Public Safety Officer, Country Energy

References

Australian Centre for Agricultural Health and Safety, (1997), *Farm Machinery*, Guidance Note no. 5

Australian Centre for Agricultural Health and Safety, (1997), *Workshop Safety on the Farm*, Guidance Note no. 11.

Australian Centre for Agricultural Health and Safety, (2001), *Cotton Picking*, Guidance Note no.30

Electricity Association of NSW & WorkCover NSW, (2001), *Electrical Hazard Awareness for Operators of High Machinery*, [326]

Queensland Electricity Commission *Electricity And Using It Safely In Rural Industry*

Quick GR (1985) *Safe farming near high voltage powerlines*, Agfact E7.1, NSW Agriculture

Further Information:

WorkCover NSW has guidance material on electricity in rural industry.

The Electricity Association of NSW & WorkCover NSW have produced an Electrical Safety Induction video. Contact WorkCover NSW or Country Energy.

URL ~ http://www.workcover.nsw.gov.au - contains links to online WorkCover publications and to Occupational Health and Safety legislation and regulations.

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400,
Phone: 02 6752 8210, Facsimile: 02 6752 6639
Email: aghealth@health.usyd.edu.au, Web: http://www.aghealth.org.au

Country Energy
PO BOX 5118
Port Macquarie NSW 2444
Phone: 13 2080
http://www.countryenergy.com.au

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246
Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

MODULE H. CHEMICAL SAFETY ON FARMS

SECTION 1: MODULE OUTLINE

Aim:

To raise awareness of the hazards and risks associated with farm chemicals and to provide underpinning knowledge of the safe handing and use of chemicals.

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Identify hazards and describe risks associated with the use and handling of farm chemicals,
- Describe strategies for safe use and handling of farm chemicals,
- Correctly select personal protective equipment for the use of farm chemicals.

Suggested Time:

- 20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Resources Required:

- A range of Personal Protective Equipment including:
  - Overalls
  - Washable hat
  - Safety glasses (goggles)
  - Waterproof gloves
  - Respirator fitted with P1 filter and Type G cartridge
  - Impermeable boots
  - Face shield
  - Apron
  - Soap and water
- Empty cleaned chemical containers still with readable labels. Use several different types of containers that have different warnings printed.
- Several copies of different MSDSs

Assessment of Achievement of Learning Outcomes:

- Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

SECTION 2: PRESENTER GUIDELINES

2. ROLE PLAY (OPTIONAL)

Perform the role-play included in the resources pack. Before performing the role-play ask the students to identify as many short cuts / errors / blunders that the character makes during the course of the role play.

DISCUSSION

Discussion should include the following topics

- What are some of the most common farm chemicals — OH 1
- HAZARDS - How might someone be hurt when using farm chemicals? — OH 2
  - Material Safety Data Sheets
  - Chemical Labels
- RISKS – Who is most commonly hurt and in what way? — OH 3
  - Poisoning
  - Storage and transport risks
- CONTROLS – What can we do to minimize the chance that someone may be hurt when using farm chemicals?
  - Hierarchy of control — OH 4
  - PPE — OH 5

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE H. CHEMICAL SAFETY ON FARMS

SECTION 3: RESOURCE PACKAGE

Attached Resources

Student Assessment Task

Assessment Answer Sheet

Overheads

Further information

MODULE H. CHEMICAL SAFETY ON FARMS

ASSESSMENT TASK

Name:_____ Class:_____

1. List the major risk associated with the use of farm chemicals?

   _____

2. What are two ways that the hazards associated with farm chemicals may be identified?

   a) _____ b) _____

3. List three ways that pesticide poisoning occurs.

   a) _____ b) _____

   c) _____

3. Name an activity that places a person at high risk of chemical exposure.

   _____

4. How can a user of farm chemicals know what Personal Protective Equipment (PPE) to use for that chemical.

   _____

5. List the appropriate PPE to shield the following body parts from pesticides.

   a) Face: _____

   b) Feet: _____

   c) Torso _____

   d) Lungs _____

   e) Hands _____

MODULE H. CHEMICAL SAFETY ON FARMS

ASSESSMENT TASK
ANSWERS

1. List the major hazard associated with the use of farm chemicals?

   Poisoning

2. What are two ways that the hazards associated with farm chemicals may be identified?

   a) *The chemical MSDS* b) *The chemical label*

3. List three ways that pesticide poisoning occurs.

   a) *absorption through skin* b) *Inhalation of fumes, mists, dusts, vapours*

   c) *Ingestion while eating, drinking etc*

3. Name an activity that places a person at high risk of chemical exposure. *Any of the following: mixing and loading chemicals; spraying with a boom spray, mister, knapsack; fumigating; dipping and jetting stock; hand dressing stock; re-entering sprayed crops.*

5. How can a user of farm chemicals know what Personal Protective Equipment (PPE) to use for that chemical.

   Listed on the label and MSDS

6. List the appropriate PPE to shield the following body parts from pesticides.

   a) Face: *face shield*

   b) Feet: *Impermeable boots*

   c) Torso *Apron, overalls*

   d) Lungs *Respirator*

   e) Hands *Rubber gloves*

COMMON FARM CHEMICALS

Pesticides = anything used to kill a pest

Includes:

- Insecticides
- Herbicides
- Fungicides
- Bactericides
- Rodenticides

Also:

- Plant growth regulators
- Defoliants

Farm chemicals are hazardous because of their ability to harm humans, their combustible nature and their effect on the environment.

To identify how chemicals may harm people there are two main information sources

- MSDS
  - Available from supplier or manufacturer
  - Contains safety information such as health warnings and precautions, safe storage and handling information, all hazardous ingredients their compatibility with other chemicals and emergency procedures
  - **Must** be available to all people who handle farm chemicals
- Labels
  - Ensure correct identification of the chemical held in the container and any risk to health or the environment

RISKS IN USING FARM CHEMICALS

1. Poisoning – by:

- Skin contact (absorption) – *most common*
- Breathing in (inhalation)
- Swallowing (ingestion)
- Injection

- Short term (acute) effects of poisoning may include:
  - Headaches, blurred vision, sweating, rapid pulse, heart palpitations, vomiting diarrhoea, stomach cramps, drooling, convulsions, fits, muscle twitching, death

- Long term (chronic) effects of poisoning may include:
  - Behavioural changes, skin problems, blood disorders, liver disorders, nervous system disorders, reproductive disorders, cancer

2. Storage and Transport Risks

SAFE USE OF PESTICIDES

- Use a combination of pest control measures – not just chemicals
- Use chemicals that are less toxic to humans and the environment
- Use systems for handling, mixing, loading and spraying that result in less exposure to the chemical eg. Closed mixing systems, carbon filters on application equipment
- Make sure everyone follows safe work procedures eg. Training, always read the label, wash thoroughly after using chemicals, always use the required PPE

PERSONAL PROTECTIVE EQUIPMENT

When using chemicals the Personal Protective Equipment that is listed on the label **must** be worn. This may include

- Overalls
- Washable hat
- Glasses or goggles
- Respirator / face mask
- Face shield
- Gloves
- Apron
- Water resistant footwear

MODULE H. CHEMICAL SAFETY ON FARMS

SECTION 4: FURTHER INFORMATION

Acknowledgment:

Tony Cook - NSW Agriculture Centre for Crop Improvement Tamworth

References:

Occupational Health and Safety Act 1983 (NSW)

Occupational Health and Safety Act 2000 (NSW) proposed

Australian Centre of Agricultural Health and Safety (1997) *Farm Chemicals* Guidance Note no.13, ACAHS Moree

WorkCover NSW (1998) *Code of Practice for the safe use and storage of chemicals in agriculture*, Sydney

Further Information:

WorkCover NSW, *Due diligence at* work, [126]

URL ~ http://www.workcover.nsw.gov.au - contains links to online WorkCover publications and to Occupational Health and Safety legislation and regulations.

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400
Phone: 02 6752 8210, Facsimile: 02 6752 6639
Email: aghealth@health.usyd.edu.au, Web: www.aghealth.org.au

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246
Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

ChemCert NSW
249 Bronte Road, Waverley NSW 2024
Phone: 02 9387 4714, Facsimile: 02 9387 4746
Web: http://www.chemcert.com.au

SMARTtrain
SMARTtrain is a project of NSW Agriculture and TAFE NSW. For more details contact your closest NSW Agriculture office or your regional TAFE NSW campus.

MODULE I. WORKSHOP SAFETY ON FARMS

SECTION 1: MODULE OUTLINE

Aim:

To raise awareness of the hazards associated with farm workshops and to provide the knowledge to perform workshop duties safely.

Learning Outcomes*:*

At the conclusion of this module a student will be able to:

- Identify hazards associated with farm workshops.
- Assess risks associated with farm workshops.
- Put into place appropriate risk control measures including the use of correct personal protective equipment.

Suggested Time:

- 20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Resources Required:

The delivery of this module may be best achieved in a farm workshop. Examples of equipment that may be used in a farm workshop are:

- welders
- grinders - bench and angle
- drills - pedestal and hand
- cutting tools
- lathe
- oxy / acetylene torch
- air tools

The presentation should also use Australian Standards Personal Protective Equipment (PPE). The PPE required for the delivery of this module include hearing protection, eye protection, respirators, welding shield, leather apron, hair net.

Assessment of Achievement of Learning Outcomes:

- Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

SECTION 2: PRESENTER GUIDELINES

DISCUSSION

Discussion should include the following topics

- Injury Statistics for farm workshops — OH 1

- Using each item of workshop equipment outline
  - HAZARDS – What activities are likely to result in someone being hurt when working in the farm workshop?
  - RISKS – Who is most commonly hurt and how?
  - CONTROLS – What can we do to minimize the chance that someone may be hurt when working in the farm workshop?
    - Grinders
    - Drills — OH 2
    - Welder – electric — OH 3
    - Air tools — OH 4
    - Oxy Acetylene torch — OH 5
    - Hydraulics — OH 6
      OH 7

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE I. WORKSHOP SAFETY ON FARMS

SECTION 3: RESOURCE PACKAGE

Attached Resources

Student Assessment Task

Assessment Answer Sheet

Other Resources

The delivery of this module may be best achieved within the context of a farm workshop. Examples of equipment that may be used in a farm workshop are:

- welders
- grinders - bench and angle
- drills - pedestal and hand
- cutting tools
- lathe
- oxy / acetylene torch
- air tools

The presentation should also use Australian Standards Personal Protective Equipment (PPE). The PPE required for the delivery of this module include.

- hearing protection
- eye protection
- respirators
- welding shield
- leather apron
- hair net

MODULE I. WORKSHOP SAFETY ON FARMS

ASSESSMENT TASK

Name: _____ Class: _____

Fill in the blanks to complete the table. Choose your answers from the options below (more than one hazard and protection method may apply).

Hazards: hot metal, flames, heat and light rays, sparks, fumes, rotating parts, dusts, flying particles, noise, cluttered / untidy workshop.
Controls: guards, exhaust fans, RCD, work practices, training
Protection: hair net, face shield, gloves, overalls, welding helmet, boots, oxy goggles, respirator, ear muff / plugs, clear goggles.

Workshop Application	*Hazard*	*Controls*	*Protection*
Angle Grinder			
Welder - Electric			
Portable Drill			
Air tools			
Drill press / lathe			
Oxy / Acetylene Torch			

MODULE I. WORKSHOP SAFETY ON FARMS

ASSESSMENT TASK
ANSWERS

Fill in the blanks to complete the table. Choose your answers from the options below (more than one hazard and protection method may apply).

Hazards: hot metal, flames, heat and light rays, sparks, fumes, rotating parts, dusts, flying particles, noise, cluttered / untidy workshop.
Controls: guards, exhaust fans/ventilated area, RCD, work practices, training
Protection: hair net, face shield, gloves, overalls, welding helmet, boots, oxy goggles, respirator, ear muff / plugs, clear goggles.

Workshop Application	*Hazard*	*Controls*	*Protection*
Angle Grinder	sparks, rotating parts, hot metal, noise, flying particles, dusts	Guarding, training, work practices, RCD	face shield, ear muffs, overalls, boots, respirator
Welder - Electric	hot metals, sparks, rays, fumes, leads, cluttering, workshop	Training, exhaust fan/ventilated area, RCD, work practices	welding helmet, overalls, boots, respirator, gloves
Portable Drill	rotating parts, flying particles, hot metal shavings,	Work practices, training, RCD	face shield, overalls, boots
Air tools	rotating parts, noise, flying particles, dust, cluttered workshop	Training, guarding, work practices	face shield, respirator, boots, ear muffs, overalls
Drill press / lathe	rotating parts, flying particles, noise	Guards, training, RCD, work practices	face shield, overalls, boots, ear muffs, hair net
Oxy / Acetylene Torch	hot metal, flames, sparks, fumes	Exhaust fan/ventilated area, training work practices	dry goggles, overalls, boots, respirator, gloves

STATISTICS

Maintenance and repairs, and other workshop associated tasks are among the most common activities where farm injuries occur.

Of these injuries more than 30 percent are eye injuries and more than 30 per cent are hand injuries.

FARM WORKSHOP HAZARDS

- ***Electricity*** **– associated with electric power tools and electrical wiring.**
- ***Mechanical force*** **– associated with grinders, drills, power saws, compressed air, and the use of vehicle supports such as jacks or hydraulics.**
- ***Chemical poisoning*** **– associated with toxic welding fumes and chemicals stored in sheds.**
- ***Noise*** **– associated with grinders, generators, air compressors, power tools, hammering steel.**
- ***Heat*** **– associated with hot machine parts, welding and cutting steel.**
- **Ergonomic problems – associated with moving equipment in workshops, tasks that require awkward posture, inadequate lighting and extremes of temperature.**

MODULE I. WORKSHOP SAFETY ON FARMS

GRINDER

Hazards

- Noise, flying particles, hot metal, electrical energy, rotating parts, dusts, switches

Risks

- Noise induced hearing loss - from intense noise.
- Eye injury - from flying particles / sparks.
- Electrocution - if the electrical insulation of the cords is diminished.
- Cutting or piercing injury - blades shattering and throwing fragments, entanglement / cut because guarding is inadequate.
- Burns - from handling materials hot from energy of grinder
- Large grinders should have a functioning power switch that cannot be left on,

Controls

- Ensure that guards are in place and properly maintained.
- Ensure that work rests on a bench grinder are never more than 2 mm from grinding wheel
- Make sure that grinding / cutting wheels are used for their correct purpose, and are in working order.
- Undertake thorough training in the use of tools, and read the operators manual.
- Use vices or clamps to hold your work.
- Let the grinders force do the work, do not force it.
- Wear appropriate PPE - hearing protection, safety glasses / goggles / face shield, leather apron, respirator, overalls / snug fitting clothing and boots.
- The location of grinders should be in a non-traffic area of the shed,
- The direction of spin should be away from work areas and flammable materials including wool packs,
- Check that discs are rotating in correct direction, dependent on manufacturers' recommendations. Usually there is an arrow on the grinder bearing housing. Operators should check that discs are properly secured before each start-up by attempting to rotate discs in opposite directions simultaneously.
- Regular maintenance.

MODULE I. WORKSHOP SAFETY ON FARMS

DRILLS

Hazards

- Flying particles
- Electrical energy
- Rotating parts
- Hot metal shavings
- Hot drill bit
- Noise

Risks

- Entanglement - long hair caught in pedestal drill, drive belts on pedestal drill if unguarded,
- Eye injury - from flying particles and hot metal shavings
- Electrocution - if the electrical insulation of the cords is damaged or otherwise ineffective
- Cutting or piercing injury - throwing of shavings
- Burns - from hot metal shavings.
- Noise induced hearing loss.
- Drilling body parts.

Controls

- Ensure that guards are appropriately maintained.
- Ensure that electric leads are adequately maintained.
- Undertake thorough training in the use of tools, and read the operators manual if appropriate.
- Use vices or clamps to hold your work.
- Let the drills power do the work, do not force it.
- Regular maintenance
- Wear the appropriate PPE. Safety glasses / eye goggles / face shield, hair net, hearing protection, overalls / snug fitting clothing and boots.

WELDER - ELECTRIC

Hazards

- Hot metals
- Sparks
- Rays - intense light
- Fumes
- Electrical energy
- Cluttering workshop
- Damaged leads
- Manual handling

Risks

- Burns - hot metals, sparks and rays from arc
- Eye injury - sparks, light burns from the rays of the welding arc.
- Fire - sparks may set alight combustible materials. Batteries around welders are a major risk as sparks may cause an explosion.
- Poisoning from welding fumes.
- Electrocution, particularly when welding on wet surfaces.

Controls

- Undergo training in welding. Available from most TAFE colleges.
- Maintain an uncluttered welding area, ensure that batteries or other flammable substances such as fuel or oily rags are not within the distance a spark can travel.
- Only weld on dry surfaces.
- Be aware of potential for flammable vapours in “empty” drums and tanks.
- Only weld in a well-ventilated area. Some metals will give off toxic fumes when welding; wear a respirator when welding these metals.
- Have a fire extinguisher in the workshop. Check regularly that it is charged.
- Regular maintenance.
- Wear appropriate PPE - welding helmet, leather apron, leather gloves, and overalls.

AIR TOOLS

Hazards

- Rotating parts.
- Noise.
- Flying particles.
- Dust.
- Cluttered workshop
- High pressured air

Risks

- Death from compressed air entering the body
- Respiratory problems from dusts.
- Piercing and cutting injuries from blown hoses and mechanical force of rotating parts.
- Entanglement in unguarded air compressor belts and pulleys.
- Tripping over cluttered air hoses
- Noise induced hearing loss.

Controls

- Maintain guards on air-compressor if possible insulate air compressor and isolate the air compressor from the workshop to reduce noise hazard.
- Undertake thorough training in the use of tools, and read the operators manual if appropriate.
- Use vices or clamps to hold your work.
- Let the tools power do the work, do not force it.
- Maintain air-hoses. Roll them up out of the way when not in use.
- Turn off air taps before changing air tools.
- Regular maintenance of air compressor, air tools and air hoses.
- Wear appropriate PPE - safety glasses / goggles / face shield, respirator if appropriate, hearing protection, overalls and boots.

OXY / ACETYLENE TORCH

Hazards

- Hot metal
- Fumes
- Flames
- Sparks
- Explosive gases – There are legal requirements for transport and storage of gas bottles that must be followed.
- Manual handling

Risks

- Burns - from hot metal, flames and sparks.
- Fire - from flames or sparks hitting combustible material
- Eye injury - from sparks and ray burns.
- Poisoning from fumes.

Controls

- Only use oxy away from combustibles.
- Only use oxy in well ventilated areas and use a respirator if materials give off toxic fumes.
- Have a fire extinguisher in the workshop. Check regularly that it is charged.
- Appropriate training (TAFE)
- Wear the appropriate PPE - leather apron and gloves, dark goggles, overalls and boots.

HYDRAULICS

Hazard

- Failed supports
- Corrosive fluids

Risk

- Death or permanent injury from crushing
- Chemical burns

Control

- Maintenance of gear including any hydraulic hoses and fittings.
- The use of jack stands and other mechanical supports.
- Work practices about standing near objects supported by only hydraulic force

MODULE I. WORKSHOP SAFETY ON FARMS

SECTION 3: RESOURCE PACKAGE

Acknowledgement:

Warren Shultz – New England Institute of TAFE, Moree

References:

Australian Centre of Agricultural Health and Safety (1997) *Workshop Safety on the Farm* Guidance Note no. 11 ACAHS Moree

Rural Industry Safety No. 4, *Workshop Safety*, The Department of Labour and Industry, Melbourne

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400,
Phone: 02 6752 8210, Facsimile: 02 6752 6639
Email: aghealth@health.usyd.edu.au, Web: http://www.aghealth.org.au

TAFE NSW
Information Centre, 47 York Street Sydney 2001
Phone: 131 601
Web: http://www.tafensw.edu.au

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246
Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

MODULE J. SAFE HANDLING OF CATTLE

SECTION 1: MODULE OUTLINE

Aim:

To raise awareness of hazards and risks involved in the handling of cattle and to provide knowledge of safe cattle handling techniques.

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Identify hazards involved in the handling of cattle.
- Describe strategies to manage the risk associated with handling cattle
- Select correct personal protective equipment for handling cattle.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Whilst this module has been designed to be delivered using live cattle in suitable cattle handling facilities by experienced cattle handlers it may be delivered without the use of cattle.

If the presenter should choose to use live animals in the teaching of the module then the standard operating procedures for the use of animals in teaching should be followed. These are detailed in NSW Agriculture approved procedures for the use of animals in teaching, research and extension [NSW Agriculture, (1997)].

At no times during the field day should the students should be exposed to any potential hazards posed by the use of cattle in the delivery of this module and should at all times remain outside of the cattle yards

Resources Required:

Cattle – weaned, dry stock (steers or heifers) over 12 months age
Stock Yards – including a cattle crush of a Cattlecare approved standard.
Stock handling aids

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

MODULE J. SAFE HANDLING OF CATTLE

SECTION 2: PRESENTER GUIDELINES

DISCUSSION

Discussion should include the following topics

- HAZARDS – How might someone be hurt when working with and around cattle? OH 1
    - Mechanical
    - Zoonoses
    - Chemical
- RISKS – Who is most commonly hurt and in what way?
- CONTROLS – What can we do to minimise the chance that someone may be hurt when working with or around cattle? (*Use diagram or demo*)
    - Principle of 'flight' zone OH 2
    - Point of balance OH 3
    - Mob movement OH 4
    - Mustering OH 6
    - Yard handling OH 6
- Personal Protective Equipment OH 7

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE J. SAFE HANDLING OF CATTLE

SECTION 3: RESOURCE PACKAGE

Attached Resources

Student Assessment Task

Assessment Answer Sheet

Overheads

Other Resources

Cattle – weaned, dry stock (steers or heifers) over 12 months age

Stock Yards – including a cattle crush of a Cattlecare approved standard.

Stock handling aids

MODULE J. SAFE HANDLING OF CATTLE

ASSESSMENT TASK

Name:_____ Class:_____

1. What are the three features of handling cattle that should be looked at when identifying hazards?

   a) _____

   b) _____

   c) _____

2. When handling cattle whose safety are you responsible for?

   _____

3. Where is the safest place to handle cattle from?

   _____

4. What are 2 of the signs that cattle may give that indicate aggression or fear?

   a) _____ b) _____

5. What clothing should be worn when handling cattle?

   _____

   _____

MODULE J. SAFE HANDLING OF CATTLE

ASSESSMENT TASK
ANSWERS

1. What are the three features of handling cattle that should be looked at when identifying hazards? Give an example.

   a) *the stock – breed and size, gender, horned or poll ,familiar with handling*

   b) *the handler – competency, age,*

   c) *the environment – poorly designed cattle yards, time of day*

2. When handling cattle whose safety are you responsible for?

   Your safety, the safety of other workers and visitors, the safety of the cattle

3. Where is the safest place to handle cattle from?

   The edge of the cattle/mobs flight zone

4. What are 2 of the signs that cattle may give that indicate aggression or fear?

   a) *positioning of head, tail, ears, nostrils* b)*rolling eyes, pawing at the ground, snorting*

5. What clothing should be worn when handling cattle?

   Snug fitting clothing, sturdy boots with a reinforced toe or steel capped and a

   non-slip sole, leather gloves to reduce rope burns and lacerations to the hands

IDENTIFYING HAZARDS

Mechanical hazards

- Animals kicking or charging when handling or mustering; being crushed against handling facilities

Zoonotic hazards

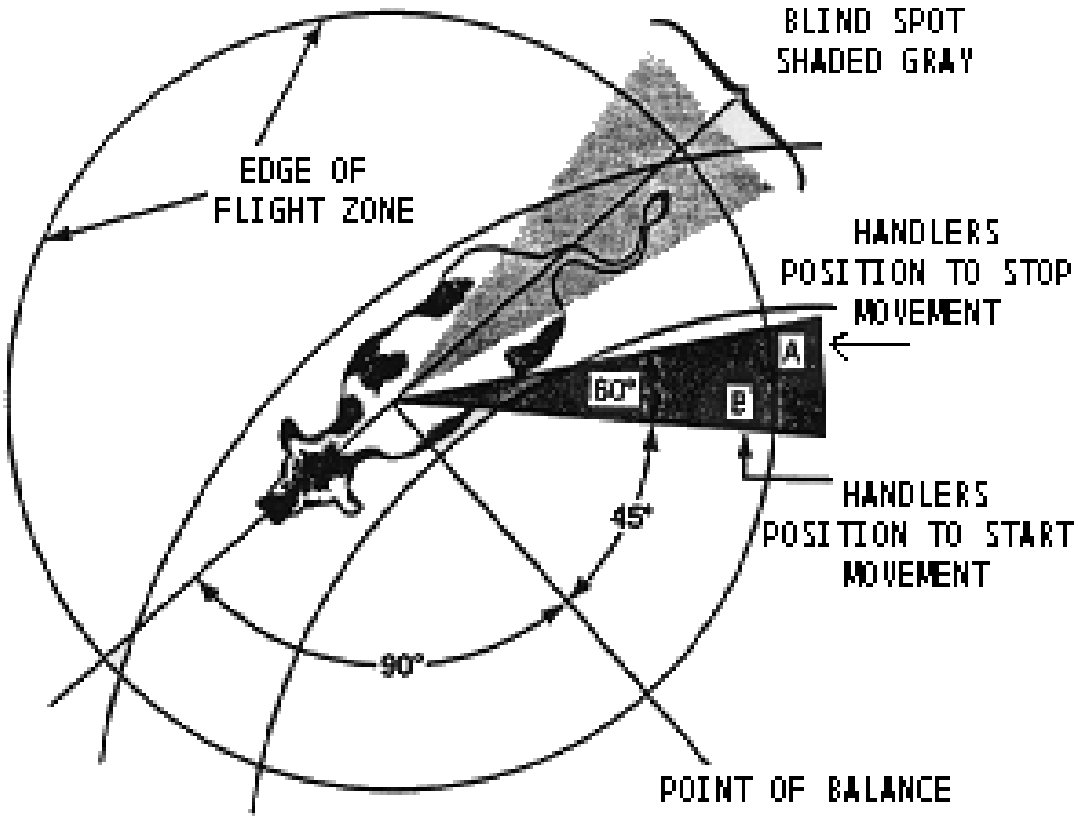
- Disease that can be passed from cattle to human

Chemical hazards

- Associated with parasite control

Identification of hazards involves examining the features of the stock being handled, the attributes of the handler, and the handling environment.

Flight Zone



T.Grandin http://grandin.com accessed 06/01 - http://grandin.com/behaviour/principles/flight.zone.html

- An animal's flight zone is bigger when it is excited or if you approach head on
- Animals handled gently or intensively reared tend to have smaller flight zones
- Signs of fear and aggression in cattle may include:
  - Positioning of the head, tail, ears and nostrils, rolling eyes, pawing at the ground and snorting.

Point of Balance

FIGURE 2 Shoulder point of balance

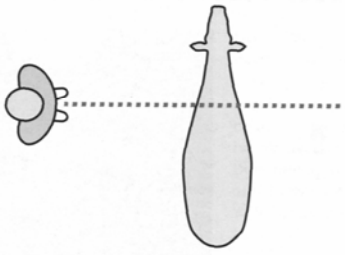


FIGURE 3 Moving behind shoulder point of balance

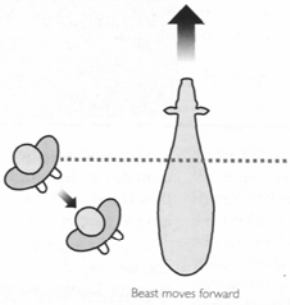


FIGURE 4 Moving in front of shoulder point of balance

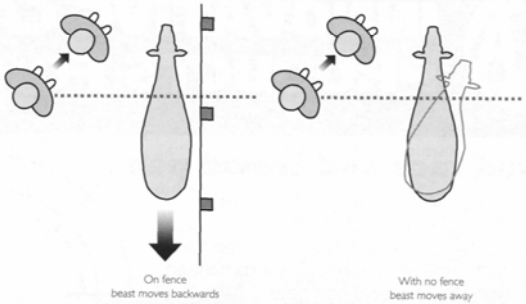
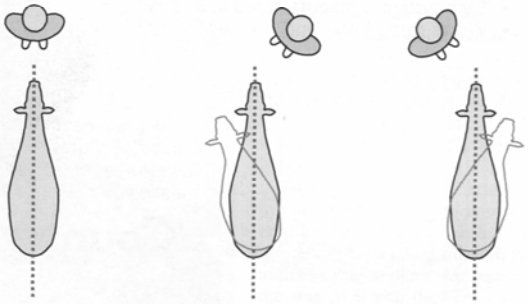
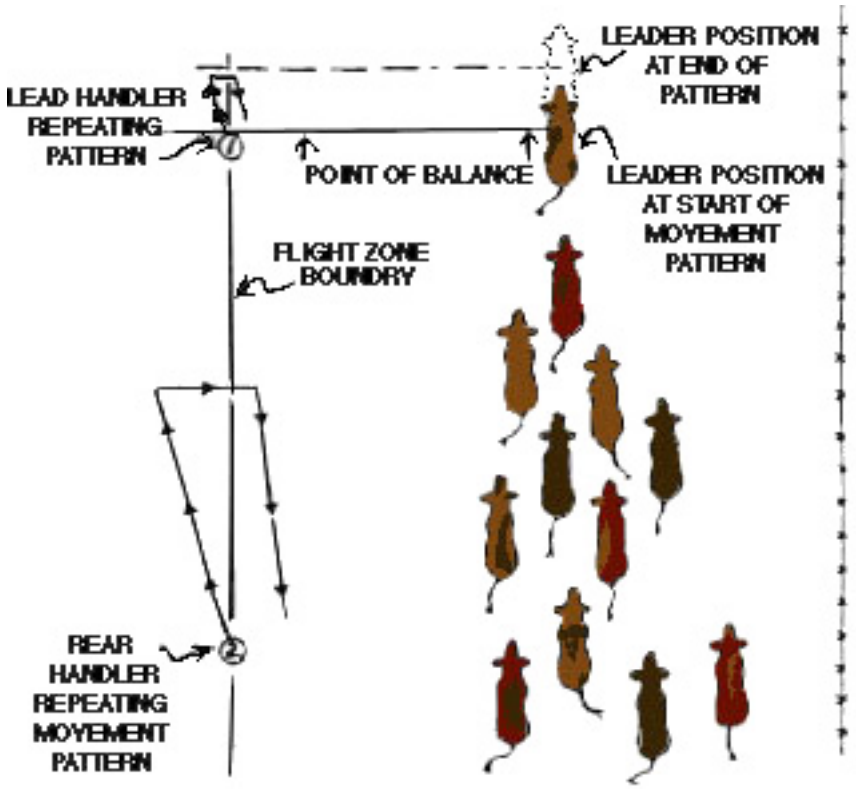


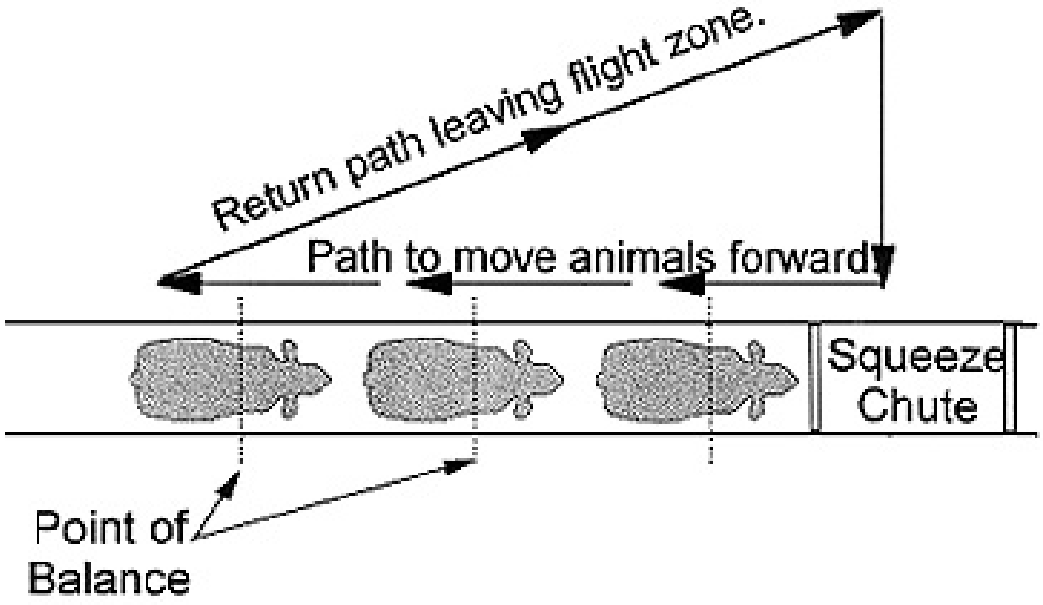
FIGURE 5 Moving from centre point of balance



Mob Movement

- Mobs of cattle have a collective flight zone and point of balance




Return path leaving flight zone.
Path to move animals forward
Squeeze Chute
Point of Balance

Mustering

- The use of a horse instead of a motorcycle will decrease the risk of a beast charging
- Mustering should be planned taking into account wind speed, location of water and adequate time to avoid rushing.

Yard handling

- Always operate at a safe distance from stock
- Avoid placing arms and legs between stock and equipment/rails

A good cattle handler is:

Observant – will notice changes in animal behavior

Confident – will react the same way each time with firm, sure movements, will be in control and avoid over-excitement

Competent – will have the ability to control animals and know where to stand in relation to animals

Personal Protective Equipment

When handling cattle the Personal Protective Equipment and clothing that should be worn is:

- Snug fitting clothing to reduce the risk of clothing catching on horns, gates and rails. When working outside a hat, sunscreen and collared shirt should be part of clothing.
- Sturdy boots with non-slip soles and a reinforced toe (preferably steel capped) to reduce the risk of having a foot crushed or slipping over.
- Leather gloves may be used to reduce rope burns and lacerations to hands.
- If coming into contact with stock fluids, rubber or plastic gloves should be worn to reduce exposure to disease.
- If applying chemicals to stock, the appropriate clothing and personal protective equipment as recommended on the label or the Material Safety Data Sheet (MSDS) must be worn.

MODULE J. SAFE HANDLING OF CATTLE

SECTION 4: FURTHER INFORMATION

Acknowledgement:

Michael Beer - NSW Agriculture Tamworth

References:

Australian Centre of Agricultural Health and Safety (1997) *Animal Handling* Guidance Note no.10, ACAHS Moree

Hurst R (1998) *Handling and Transporting Beef Cattle. The Beef Business – Strategies for Greater Productivity*. NSW Agriculture Orange

Grandin T (2001). http://grandin.com url accessed 18/06/01

NSW Agriculture (1997) *NSW Agriculture approved procedures for the use of animals in teaching, research and extension*

Further Information:

URL ~ http://www.workcover.nsw.gov.au - contains links to online WorkCover publications and to Occupational Health and Safety legislation and regulations.

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400,
Phone: 02 6752 8210, Fax: 02 6752 6639
Email: aghealth@health.usyd.edu.au, Web: http://www.aghealth.org.au

NSW Agriculture
Michael Beer, Livestock Officer (Beef Products)
NSW Agriculture, Tamworth CCI, Tamworth NSW 2340

Meat and Livestock Australia
Locked Bag 991, North Sydney NSW 2059
Phone: 1800 023 100, Fax: 02 9463 9393

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246
Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

MODULE K. HORSE SAFETY ON FARMS

SECTION 1: MODULE OUTLINE

Aim:

To raise awareness of the hazards associated with horses and provide the knowledge for the safe use of horses on farms

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Identify the hazards associated with the use of horses on farms.
- Describe strategies for safe use of horses on farms.
- Correctly select and wear appropriate personal protective equipment (PPE).

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Whilst the delivery of this module may include the use of a horse for demonstration purposes, it may be delivered without the use of live animals.

If the presenter should choose to use live animals in the teaching of the module then the standard operating procedures for the use of animals in teaching should be followed. These are detailed in NSW Agriculture approved procedures for the use of animals in teaching, research and extension [NSW Agriculture, (1997)].

At no time during the field day should the students be exposed to any potential hazards posed by the use of horses in the delivery of this module, and should at all times be isolated from the horse by the use of an appropriate holding pen.

Resources Required

Equestrian Helmet AS2063.3
Riding tack such as safety stirrups appropriate footwear, trousers etc
Horse and appropriate holding pen (optional)

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

MODULE K. HORSE SAFETY ON FARMS

SECTION 2: PRESENTER GUIDELINES

STATISTICS

- 2-11% of all injuries presenting to rural hospitals are horse related.
- 75% of injuries are sustained when riding and 25% when handling horses from the ground.
- 10-19 year olds are the most likely to sustain a horse related injury.

DISCUSSION

Discussion should include the following topics

- HAZARD – How might someone be hurt when working with and around horses? OH 1
  - Riding
  - Handling
- RISK – who is most commonly hurt and in what way? OH 2
  OH 3
- CONTROLS – What can we do to minimize the chance that someone may be hurt when working with or around horses? OH 4
- Personal protective equipment and tack OH 5

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE K. HORSE SAFETY ON FARMS

SECTION 3: RESOURCE PACKAGE

Attached Resources

Student Assessment Task

Teacher Answer Sheet

Overheads

Other Resources

Equestrian Helmet AS2063.3

Riding tack such as safety stirrups appropriate footwear, trousers etc

Horse and appropriate holding pen (optional)

MODULE K. HORSE SAFETY ON FARMS

ASSESSMENT TASK

Name: _____ Class: _____

1. What is a horse's instinctive reaction when scared or hurt?

_____

2. Should inexperienced riders be given young inexperienced horses to ride and handle? YES NO

3. Name two causes of injury from riding horses and handling horses

a) **Riding** i) _____ ii) _____

b) **Handling** i) _____ ii) _____

4. List three environmental factors that you should be aware of when riding horses. Why might they be dangerous?

a) _____

b) _____

c) _____

5. Is it a safe practice to wrap the reins or a lead rope around any part of your body?

YES NO

6. What sort of boots should you wear when riding or handling horses. What are the advantages?

_____

_____

7. What PPE (personal protective equipment) will reduce the risk of a head injury if worn when riding a horse?

_____

MODULE K. HORSE SAFETY ON FARMS

ASSESSMENT TASK
ANSWERS

1. What is a horse's instinctive reaction when scared or hurt?

To run away, remove itself from the danger, defend itself (kick, bite)

2. Should inexperienced riders be given young inexperienced horses to ride and handle? YES (NO)

3. Name two causes of injury from riding horses and handling horses

a) **Riding** i) *Falling from horse, crushed by horse* ii) *foot caught in stirrup, kicked*

b) **Handling** i) *hand entangled in rope, stepped on* ii) *blow from horse head, bitten*

4. List three environmental factors that you should be aware of when riding horses. Why might they be dangerous?

a) *Wire, uneven ground, potholes, sticks, rocks – cause horse to trip, stumble fall*

b) *other animal, vehicles – may scare horse; riding too close to horses/stock - kicked*

c) *low tree branches – knock rider off;*

5. Is it a safe practice to wrap the reins or a lead rope around any part of your body?

YES (NO)

6. What sort of boots should you wear when riding or handling horses. What are the advantages?

Smooth soled riding boots with a small heel. Fits in stirrup, but is able to slide out

6. What PPE will reduce the risk of a head injury if worn when riding a horse?

an equestrian helmet meeting AS 2063.3

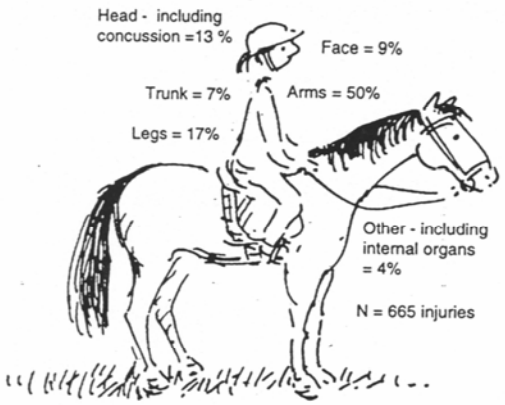
Horse related injuries

- Riding accidents:
  - Falling from the horse
  - Being crushed by a falling horse
  - Getting a foot caught in the stirrup and being dragged along the ground
  - Hitting something eg a tree when riding

- Handling accidents
  - Having a hand entangled in a lead rope
  - Being hit by a horse's head
  - Being stepped on by a horse
  - Being bitten by a horse
  - Being crushed between a horse and something else eg a yard or fence
  - Being kicked

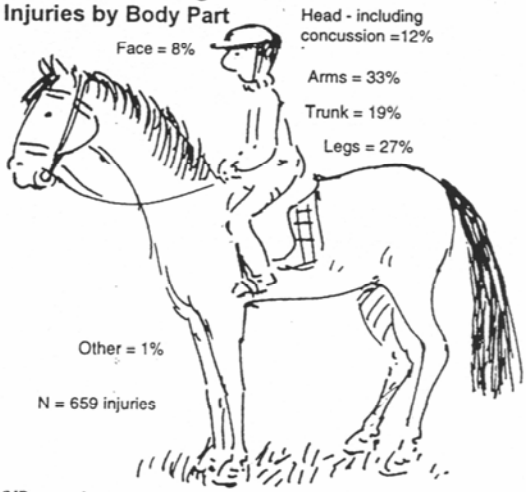
Children's Horse Riding Injuries by Body Part

Figure 2



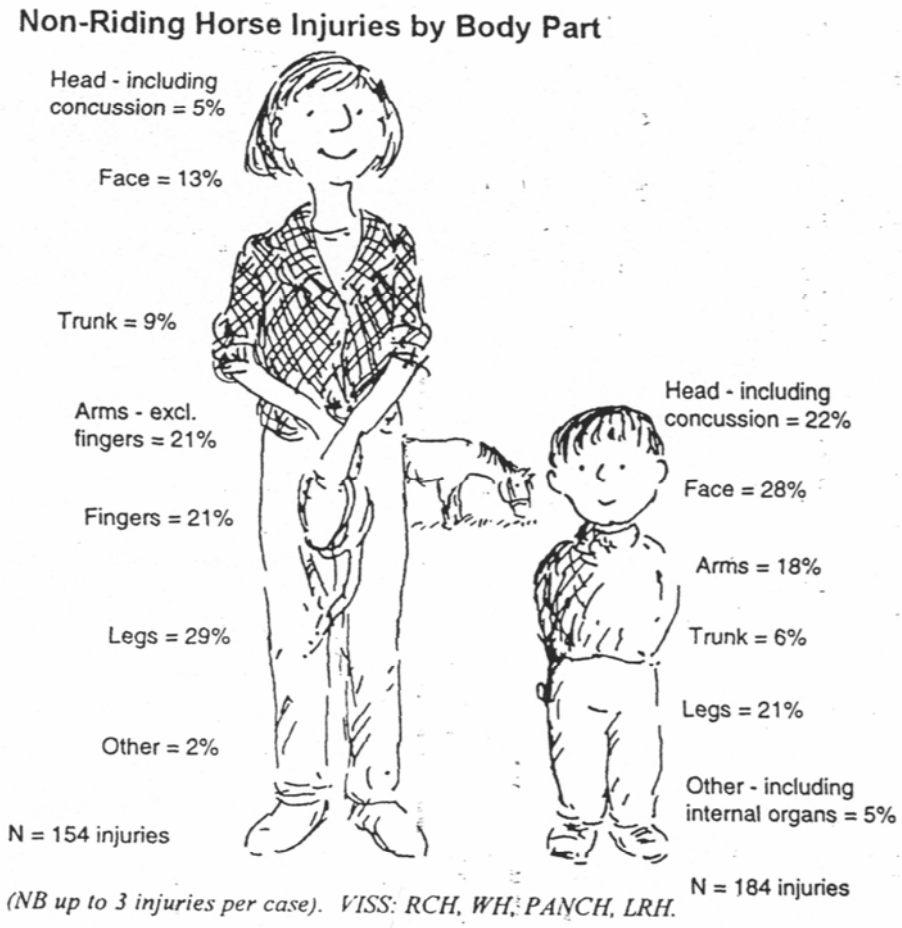
(NB up to 3 injuries per case).
VISS: RCH, WH, PANCH, RMH, LRH.

Adult Horse Riding Injuries by Body Part



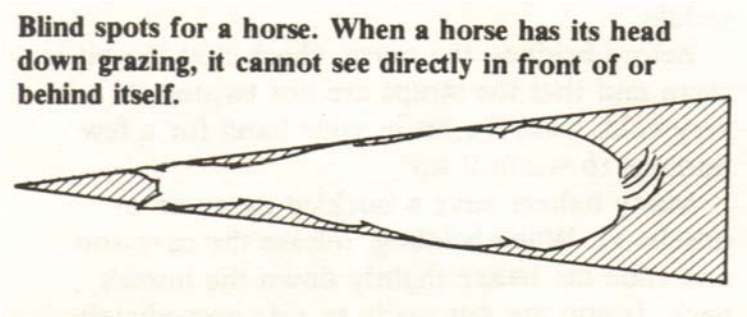
(NB up to 3 injuries per case).
VISS: WH, PANCH, RMH, LRH.

Source: Victorian Injury Surveillance System - Hazard No. 23 , 1995



Source: Victorian Injury Surveillance System - Hazard No. 23 , 1995

Safe Horse Handling



Mackay B (1984) *Commonsense with horses*, Agfact A6.2.3, NSW Agriculture

- Always approach a horse at an angle and talk quietly to the horse
- Avoid having distractions around such as dogs
- Never wrap a lead rope around your hand or fingers
- Avoid walking behind a horse – if unavoidable walk as close to the hind legs as possible and keep a hand on the horse's rump
- Always ensure that tack is in good repair
- Check the correct tightness of the gear – check girth tightness 3 times (after saddling, after walking a few steps and after riding a short distance)
- Ride slowly up and down hills and lead the horse through particularly rough terrain
- Always keep a horses length between horses when riding
- Always walk back to home so as not to encourage the horse to gallop home
- Never skylark
- Never ride a sick or injured horse

Tack and PPE

- Tack should be well maintained. In particular stirrup leathers, girths and reins need regular oiling.
- Stirrup irons need to be 2.5cm wider than the boot so the foot does not become caught in a stirrup in the event of a fall. Safety stirrups may be used to prevent being dragged in the event of a fall. Safety stirrups are designed so that if the rider should fall they will release the riders foot.
- Always ride with the ball of the foot on the stirrup, not the instep.
- Helmets of AS2063.3 Equestrian Helmet, should be worn at all times when riding a horse.
- Helmets need to be worn correctly and should not wobble or slip backwards or forwards.
- Should a helmet be involved in a fall it will need replacing.
- Boots should always be worn and should have a smooth sole and a heel to fit in the stirrup but still release in the event of a fall. Never wear sandshoes or thongs
- Clothes should be close fitting so as not to catch on objects, or flap and scare the horse.

MODULE K. HORSE SAFETY ON FARMS

SECTION 4: FURTHER INFORMATION

Acknowledgement:

Justin Crosby – Farm Safety Education Officer, Australian Centre of Agricultural Health and Safety

References:

Australian Centre of Agricultural Health and Safety (1997) *Horses on Farms* Guidance Note no 8. ACAHS Moree

Farmsafe NSW (1994) *Horse Related Injury Prevention Strategy*, Farmsafe NSW and WorkCover Authority of NSW

Bruce Mackay (1984) *Commonsense with horses*, Agfact A6.2.3, Department of Agriculture NSW

Further Information and Training:

URL ~ http://www.workcover.nsw.gov.au - contains links to online WorkCover publications and to Occupational Health and Safety legislation and regulations.

NSW Agriculture (1997) *NSW Agriculture approved procedures for the use of animals in teaching, research and extension*,

Specific horse training is available from:

TAFE NSW

Tocal CB Alexander Agricultural College
Patterson NSW 2421
Phone: 1800 025520
http://www.agric.nsw.gov.au/reader/tocal-college

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400,
Phone: 02 6752 8210, Fax: 02 6752 6639
Email: aghealth@health.usyd.edu.au, Web: http://www.aghealth.org.au

Australian Pony Club Association
PO Box 4317, Sydney NSW 2001
Phone: 02 3960 2536, Fax: 02 9360 2719

Australian Stock Horse Society
92 Kelly St, Scone NSW 2337
Phone: 02 6545 1122, Fax: 02 6545 2165

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246
Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

MODULE L. ON FARM EMERGENCY RESPONSE

SECTION 1: MODULE OUTLINE

Aim:

To increase students knowledge of on-farm emergencies and to provide knowledge required for the development and implementation of on-farm emergency procedures.

Learning Outcomes:

At the conclusion of this module a student will be able to:

- Develop on-farm emergency procedures.
- Implement on-farm emergency procedures.

Suggested Time:

- 20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Resources Required:

- Role play
- St John Ambulance Service Farm Specific First Aid Kit or equivalent

Assessment of Achievement of Learning Outcomes:

- Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

MODULE L. ON FARM EMERGENCY RESPONSE

SECTION 2: PRESENTER GUIDELINES

DISCUSSION

Discussion should include the following topics

- What is considered an on farm emergency OH 1
- Emergency response plans OH 2
  - Why have one
  - What should be included in one
- Emergency response for injury OH 3
  - Assess danger
  - Stabilise the scene
  - Contact emergency services – 000 / 112
  - Provide first aid
- First Aid Kits

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE L. ON FARM EMERGENCY RESPONSE

SECTION 3: RESOURCE PACKAGE

Attached Resources

Role Play

Student Assessment Task

Assessment Answer Sheet

On-Farm Emergency Card

Overheads

Other Resources

St John Ambulance Service Farm Specific First Aid Kit (or equivalent)

MODULE L. ON FARM EMERGENCY RESPONSE

ASSESSMENT TASK

Name: _____

Class: _____

1. Name three types of on-farm emergency.
   i) _____
   ii) _____
   iii) _____
2. What are the three major actions to be taken when finding an accident on a farm?
   i) _____
   ii) _____
   iii) _____
3. What is the most important priority if you find an accident site?

   _____
4. Using your home address fill out the on-farm emergency card beside.

Property Name: _____

Manager: _____

Tel _____ **Mob** _____ **UHF** _____

EMERGENCY NUMBERS

Police/Ambulance/Fire: **000**

From a mobile: **112**

Poisons Information: **13 11 26**

Local Police: _____ **Local Fire:** _____

Local SES: **13 25 00** **Hospital:** _____

DIRECTIONS TO PROPERTY

Nearest Town:

Directions from town (include specific roads, and distances) **:**

_____

_____

NEIGHBOURS

Name: _____

Address: _____

Tel _____ **Mob** _____ **UHF** _____

Name: _____

Address: _____

Tel _____ **Mob** _____ **UHF** _____

ASSESSMENT TASK
ANSWERS

1. Name three types of on-farm emergency.

Answers may include any three of

a. *Electrocution*
b. *Fire*
c. *Flood*
d. *Chemical spills*
e. *Storms and cyclones*
f. *Gases in confined spaces*
g. *Serious injury*

2. What are the three major actions to be taken when finding an accident on a farm?

i) *Stabilise the scene*

ii) *Contact the emergency services*

iii) *Provide first aid*

3. What is the most important priority if you find an accident site?

Your own safety

4. Using your home address fill out the on-farm emergency card beside.

On farm emergencies

- Tractor accidents (rollover, run-over)
- Serious injury associated with machines, animals, vehicles, firearms, grains suffocation
- Electrocution
- Fire
- Chemical spills
- Storms and flood
- Gases in confined spaces
- Gas leaks

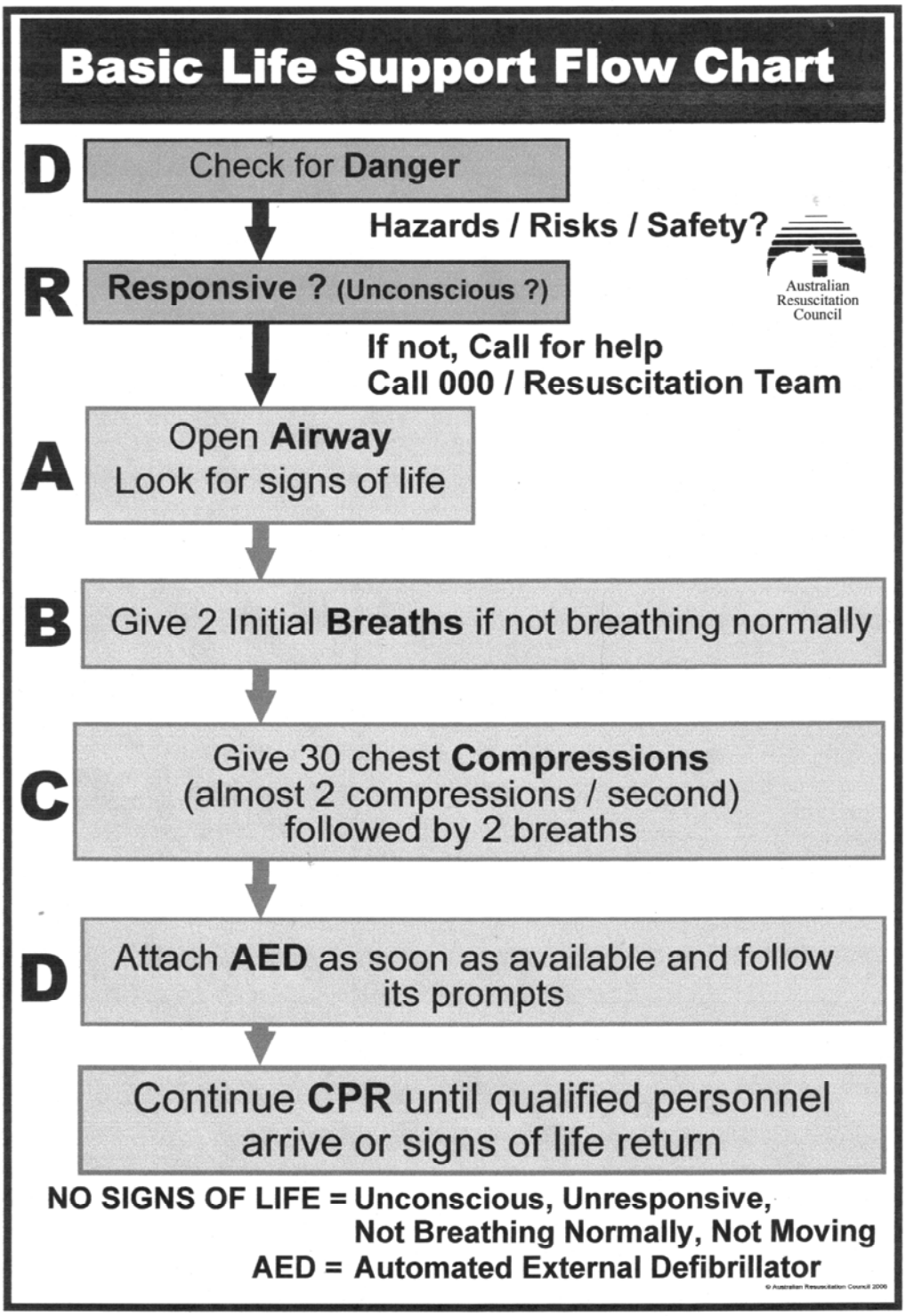
Emergency Response Plans

Why have one?

- Decreases response time
- Increases rescue efficiency
- Decreases the chance of further injury to the victim and rescuers
- The law requires it

What should be on one?

- Possible emergencies that may occur
- Actions to be taken in the event of an emergency including:
    - How to communicate eg UHF, mobile phone, land line
    - Which emergency services to notify
    - Concise directions to the property to give to emergency services



Source: Australian Resuscitation Council, http://www.resus.org.au/public/arc_basic_life_support.pdf

MODULE L. ON FARM EMERGENCY RESPONSE

SECTION 4: FURTHER INFORMATION

Acknowledgement:

Justin Crosby – Farm Safety Education Officer, Australian Centre of Agricultural Health and Safety

References:

ACAHS (2001) *Emergency Response*, Guidance Note no.18, ACAHS Moree

Australian Resuscitation Council (2007). *Basic Life Support Flow Chart*.

Farmsafe Australia & Royal Australasian College of Surgeons (1996) *Farm Injury Resource Manual*

Murphy D, et al (1989) *First on the Scene*, Northeast Regional Agricultural Engineering Service, Ithica NY

Contacts:

Australian Centre for Agricultural Health and Safety
PO Box 256, Moree NSW 2400,
Phone: 02 6752 8210, Fax: 02 6752 6639
Email: aghealth@health.usyd.edu.au, Web: http://www.aghealth.org.au

St John Ambulance Australia
St John House, 6 Hunt Street, Surrey Hills NSW 2010
Phone: 02 9212 1088, Fax: 02 9281 6923
Training: 1300 360 455, First Aid Kits: 1800 451 391
Web: http://www.stjohn.org.au

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
Phone: 02 9671 8717, Fax: 02 9831 8246
Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

MODULE M. SAFE HANDLING OF SHEEP

SECTION 1: MODULE OUTLINE

Aim:

To raise awareness of hazards and risks involved in the handling of sheep and provide knowledge of safe handling techniques.

Learning Outcomes:

At the conclusion of this module, a student will be able to:

- identify hazards involved in the handling of sheep
- describe strategies to manage the risk associated with handling sheep

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Whilst this module was designed to be delivered using live sheep in suitable facilities by an experienced sheep handler, it may be delivered without the use of sheep. If the presenter should choose to use live animals in the teaching of the module then the standard operating procedures for the use of animals in teaching should be followed. These are detailed in *NSW Agriculture approved procedures* for *the* use of *animals in teaching, research and extension* [NSW Agriculture, (1997) 1.

At no time during the field day should the students should be exposed to any potential hazards posed by the use of sheep in the delivery of this module.

Resources Required:

- Sheep - over 12 months in age.
- Sheep Yards/pens.
- Overheads Transparencies and projector if module is unable to be performed with live animals.

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

MODULE M. SAFE HANDLING OF SHEEP

SECTION 2: PRESENTER GUIDELINES

STATISTICS

Back or musculoskeletal injuries are the most common injuries that occur from the handling of sheep.

DISCUSSION

Discussion should include the following topics

- HAZARDS – How might someone be hurt when working with and around sheep? OH 1
    - Mechanical
    - Manual handling
    - Zoonotic diseases
    - Chemical
    - Noise
- RISKS – Who is most commonly hurt and in what way?
- CONTROLS – What can we do to minimise the chance that someone may be hurt when working with or around sheep?
    - Animal behaviour OH 2
    - Mustering OH 3
    - Handling individual sheep OH 3
    - Yarding and drafting OH 4
    - Veterinary and husbandry practices OH 5
    - Lamb marking and mulesing OH 5
    - Slaughter OH 6
    - Zoonoses OH 6
    - Personal protective equipment OH 7

Assessment Task and Guidance Material

The students have a resource folder with them. This folder will contain both an assessment task and guidance material for each module. The students are to complete the assessment task following and hand it in to their agriculture teacher.

MODULE M. SAFE HANDLING OF SHEEP

SECTION 3: RESOURCE PACKAGE

Attached Resources

Student Assessment Task

Assessment Answer Sheet

Overheads

Other Resources

Sheep – over 12 months of age

Stock Yards – including a race or pen of an approved standard.

MODULE M. SAFE HANDLING OF SHEEP

ASSESSMENT TASK

Name: _____ Class: _____

1. What are three things to look at to identify hazards in sheep handling?

2. What are four types of hazards you might identify in handling sheep?

3. What are five risky sheep handling operations

4. What is the most frequent cause of injury when handling sheep?

5. What can you do to avoid it?

6. What are three features of a good sheep handler?

MODULE M. SAFE HANDLING OF SHEEP

ASSESSMENT TASK
ANSWERS

1. What are three things to look at to identify hazards in sheep handling?

Any three of:

- *the features of the sheep being handled,*
- *the attributes of the handler,*
- *the working environment, and*
- *the work itself.*

2. What are four types of hazards you might identify in handling sheep?

Any four of:

- *Mechanical - the sheep butting or crushing the handler's limb*
- *Manual handling - injuries caused by lifting, dragging or catching sheep*
- *Zoonotic disease - disease that can be transferred from sheep or working dog to human.*
- *Chemical hazards associated with parasite control.*
- *Noise*

3. What are five risky sheep handling operations

Any five of:

- *Mustering*
- *Yarding*
- *Drafting and using races and ramps*
- *Handling individual sheep*
- *Veterinary and husbandry practices*
- *Slaughter*

4. What is the most frequent cause of injury when handling sheep?

People most often injure themselves around sheep because of lifting or restraining them incorrectly. Incorrect techniques for catching or lifting sheep increase the risk of back or musculoskeletal injury.

5. What can you do to avoid it?

Avoid lifting sheep alone if possible
Learn and use correct techniques for catching and restraining sheep.

6. What are three features of a good sheep handler

Any three of:
Observant - will notice differences in animal behaviour.
Confident - will react the same way each time with firm, sure movements, will be in control and avoid over-excitement.
Competent - will have the knowledge & ability to control animals and know where to stand to move them as required.
Aware – of the correct manual handling procedures to work with individual sheep.

IDENTIFYING HAZARDS

Mechanical hazards

- The sheep butting or crushing the handler or a limb against fences or the ground

Manual handling hazards

- Lifting, dragging or catching sheep eg shearing

Zoonotic hazards

- Disease that can be passed from sheep to working dog to human

Chemical hazards

- Associated with parasite control – both when applying the pesticide and with residue in the wool

Noise hazards

- Loud working environments especially the shearing shed

Identification of hazards involves examining the features of the stock being handled, the attributes of the handler, and the handling environment.

RISK CONTROL

Animal behaviour

- Consider the state of the animal - sick or insured, breeding stock, young stock and those isolated from the group can be unpredictable
- Rams need to be segregated from other sheep to reduce acts of aggression and level of stress, therefore reducing the risk of injury to other sheep and the worker.
- Ensure animal stress levels are appropriate for the task eg when moving lead animals through gates stress levels need to be slightly raised, dogs or noise may be used
- Keeping sheep in a tight group and the working environment quiet reduces the risk of injury by lowering the sheep arousal level.
- Use rules of position and movement (point of balance and flight distance) and dogs to move sheep

Mustering

- Take account of wind direction, location of water and paddock and lane design and always allow plenty of time to bring stock in.
- Ensure motorcycles are regularly maintained particularly with respect to brakes and suspension.
- Wear a helmet and appropriate protective equipment and clothing that protect arms, legs and feet when riding motorcycles.
- Use a regularly worked and well-trained dog to give increased control of a mob

Handling individual sheep

- Use mechanical systems for handling sheep where possible eg. VE belt machines whereby sheep walk into moving pair of belts that move the sheep allowing vaccinating, drenching, crutching, etc to be undertaken at waist height.
- Use of more specialised systems for jobs such as crutching, lamb marking and mulesing may reduce the risk of back and musculoskeletal strain and injury
- The entrance to restraint devices such as weighing crates should be well lit to prevent the animal baulking.
- Livestock in restraint devices will remain calmer if they can see other animals in touching distance.

Yarding and drafting

- Use yard design that will encourage sheep to work freely. Yards of “Bugle” design could be considered.
- Build yards on sloping ground for better drainage.
- Keep shadows to a minimum, where not required to provide shade.
- Build protective coverings over working and drafting races, where practical.
- Avoid slippery surfaces, especially in races and forcing yards.
- Keep dust levels to a minimum.
- Always allow sheep to see an escape route.
- Only half fill the drafting yards. Allow sheep room to move.
- Have only the necessary amount of handlers (and dogs) in the yard for the job at hand.
- A drafting gate will reduce the need for lifting sheep. Drop gates for separating sheep will reduce hazards to the handler.
- Handlers should operate at a safe distance from the stock, check the safe operation of handling equipment before starting work and avoid placing arms and legs between stock and equipment.
- Always handle animals from outside the race when possible. Use animals flight zone and point of balance to move them.

Veterinary and husbandry practices

- Back lining rather than dipping sheep may reduce the risk from chemical exposure, providing the appropriate protective gear is used.
- It may be possible to use a less dangerous (to humans) chemical that still does the job on the sheep.
- Use of systems for applying chemical that minimise human exposure to chemicals.
- When jetting or dipping, use the correct mixing rates and maintain all equipment to prevent leakage and exposure.
- Appropriate personal protective equipment as advised on the label or Material Safety Data sheet (MSDS) should **always** be worn when using chemicals. ·
- Read labels on chemical containers carefully and follow manufacturer's instructions and safety directions.
- Observe recommended withholding periods for drugs or chemicals before stock are slaughtered.

Lamb-marking and Mulesing

- Hold lambs firmly when held by hand. Use a cradle where feasible.
- Catchers should wear protective gloves.
- Work to a system along the cradles so that operators are not in danger of being cut, sprayed with chemicals or jabbed with a needle. Once the system has been set, stick to it.

- Sterilise all knives, shears and ear pliers and ensure operators observe hygiene practices

Slaughter

- Use of chain mail gloves during slaughtering and butchering will reduce the risk of serious hand lacerations.
- Make sure workers are properly trained and supervised.

Zoonoses

- Animals carry diseases that are transferable to humans by urine, blood and saliva and through open wounds (e.g. scabby mouth) - be familiar with the symptoms so that you can determine if these diseases may exist in the flock.
- Keep open wounds covered and wash well with soap, water and antiseptic if contact is made with body fluids from diseased animals.
- Keep animal handling facilities clean, and test and immunise animals.
- Do not feeding animal offal to dogs. Dogs should be vaccinated and wormed.

Personal Protective Equipment

- A hat, sun-screen and shirt with a collar will protect the worker from the sun.
- Sturdy work boots with a non-slip sole and a reinforced toe (preferably steel-capped) protect the feet when stood on by sheep.
- Leather gloves protect the hands from nicks and bruises during tasks such as lamb marking, mulesing, crutching and shearing if there is much burr contamination (as long as they don't interfere with the hand movements required for the task).
- Clothing needs to be snug fitting so that it doesn't catch on horns, gates or other protruding objects.
- If coming into contact with stock fluids (urine, blood, or saliva), rubber or plastic gloves should be worn to reduce exposure to disease.

MODULE M. SAFE HANDLING OF SHEEP

SECTION 4: FURTHER INFORMATION

Acknowledgment:

Brent Turner Workcover NSW *formerly* NSW Agriculture Orange

References:

Australian Centre of Agricultural Health and Safety (1997) *Animal Handling* Guidance Note no.10, ACAHS Moree

Behavioral (sic) Principles of Livestock Handling (With 1999 Updates on Vision and Hearing in Cattle and Pigs) December 1989 pages 1-11 published by: American Registry of Professional Animal Scientists TEMPLE GRANDIN Livestock Handling Systems. Inc, Animal Science Department Colorado State University Fort Collins, Colorado 80523

Sheep and Goats Module, Version 2001B College of Agriculture and Life Sciences at the University of Arizona in Tucson.
http://www.ahsc.arizona.edu/uac/iacuc/sheep/behave.shtml

O'Driscoll, Jennifer, ed. (December 1998). Information Resources for Livestock and Poultry Handling and Transport. *AWIC Resource Series* No. 4. U.S. Department of Agriculture, National Agricultural Library, Animal Welfare Information Center (sic), Beltsville, MD. http://www.nal.usda.gov/awic/pubs/livestock/lvstshee.htm,

Sheep Handling No. 14 Queensland Government Safety Link
http://www.whs.qld.gov.au/safetylink/rural/rural14v2.pdf

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Sheep Industry Development Centre
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Phone 02 6391 3800, Fax: 02 6391 3899
Web: http://www.agric.nsw.gov.au/reader/258

WorkCover NSW
Rural Industries Team, 125 Main St Blacktown 2148
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Email: contact@workcover.nsw.gov.au, Web: http://www.workcover.nsw.gov.au

Responsibilities of People on Farm Workplaces

- Agriculture is the third most dangerous industry in Australia behind mining and transport.
- As a result of incidents on Australian farms, each year there is around 150 deaths, 6500 admissions to hospital and close to 6000 worker's compensation claims each year.
- The main causes of farm injury resulting in death include: tractors and implements, farm machinery, farm vehicles and motorcycles, drowning in water sources, horses and firearms.
- The main cause of farm injury resulting in hospital admissions include: tractors and machinery, horse related injury, motorcycle injury, animal handling injury, child injury.
- The main cause of farm injury resulting in worker's compensation claims include: handling farm animals, the use of workshop tools, tractors and powered machinery and manual handling.
- Children are the victims of 20% of all farm injury and deaths.
- The estimated costs of farm injury is between $500 million and $1.29 billion each year.

NSW Occupational Health and Safety law gives responsibilities to people in workplaces to ensure the health and safety of people at work or visiting the workplaces including farms. These responsibilities include:

- *Employers (farmers and farm managers):* are to ensure the health and safety of employees and visitors. This duty extends to contractors and their employees.
- *Employees (farm hands):* have a duty to take reasonable care for the health and safety of other people in their workplace. This includes visitors to the workplace. They must also comply with the health and safety directives of their employer.
- *Suppliers and manufacturers:* have a duty to provide goods and substances that are safe and provide information on how to safely use their goods and substances.
- *Self employed persons:* have a duty to ensure that they don't affect their own health and safety, or that of other people when they work.

WorkCover NSW is the government agency responsible for the enforcement of occupational health and safety law, as well as educating employers and employees how they can meet their occupational health and safety obligations.

Managing health and safety risks is seen as the best way to ensure the health and safety of people on farms. Risk management follows the SAF principles.

See it – identify hazards to health and safety in the workplace

Assess it – assess the risks associated with the hazard

Fix it – put into place risk controls

See it

Hazards are anything that has the potential to harm life, health or property, and are the major cause of injury and illness in the workplace. The identification of hazards is the first step in risk management. All people on farms should be involved in the identification of hazards as different people may be aware of different hazards and ways that they may be controlled.

Assess it

The risk of a hazard is the chance or potential that it will injure someone who is exposed to it. In assessing risks, the severity of any potential injury needs to be assessed against the exposure.

Fix it

A control is a measure taken to reduce the degree of risk that a hazard poses. Controls have been arranged in a hierarchy that categorises controls from most effective to least effective. When risks are being managed when ever practical controls from the higher orders should be utilised. The hierarchy of controls is as follows.

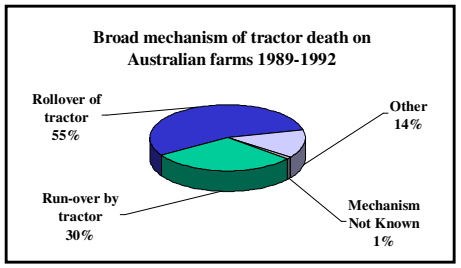
- *Eliminate the hazard:* where ever possible remove the hazard from the workplace.
- *Substitute for a lesser risk:* use a different machine, material or work process to do the same task with less risk.
- *Engineer/re-design:* redesign machinery or work places to manage the risks, eg machine guarding, isolation.
- *Work practice:* setting rules that enforce safer work practices for all workers.
- *Personal Protective Equipment:* wearing equipment that lessens the effect of the hazard on the human body, eg personal hearing protection.

The first three controls are passive controls as workers are not required to be active in the reduction of risks. The second two are called active controls for they require the active participation of workers to reduce risk and are more prone to human error or inaction.

Tractor Safety

Tractor accidents are the major cause of deaths and injury on Australian farms. Between 1989-1992, 87 people on Australian farms died as a result of an accident involving tractors.

- 75 % of operators involved in tractor accidents have had more than 5 years experience driving tractors
- 60 % of tractor accidents occurred on ground of less than 5 degrees of slope
- 90 % of tractor accidents occurred at speeds of less than 8 kph



Source: Franklin et al. Farm-Related Fatalities, 1989-1992

Tractor Rollover

Tractor rollovers occur due to the high centre of gravity of most tractors which reduces tractor stability.

Sideways Rollover: most commonly occur when operating tractors on steep slopes, when cornering at speed or when operating over broken ground or in long grass.

Back flip: most commonly occur when:

- driving off in a low gear, but with high engine speed
- attempting to drive off forward when the wheels are unable to turn.
- rapid engagement of the clutch
- rapid acceleration, particularly uphill or pulling a heavy load
- hitching higher than the drawbar

Ways of managing the risks associated with tractor rollover include:

- where possible do not use tractors
- use the appropriate tractor for a task, eg use a tractor with a low centre of gravity if clearance is not required.
- ensure that all tractors are fitted with a Roll Over Protection Structure (ROPS) meeting AS 1636.
- wear seat belt when operating tractors with ROPS
- fit a FOPS when using a front end loader or clearing.
- ensure that tractor drivers are trained in tractor operation.

Tractor Runover

Tractor runovers occur in three common situations:

- where trips, slips and falls on the ground or from the tractor result in a runover by the rear wheel or a towed implement.
- runover when the person is standing beside a tractor, in front of the rear wheels or a towed implement
- where a person is crushed against a pole, gate or building by the front of a tractor.

High risk activities include:

- mounting and dismounting a moving tractor.
- carrying passengers.
- starting the tractor from the ground.
- bystanders around the tractor when it is started.

Ways of managing risks associated with tractor runover include:

- use other farm vehicles when the task requires frequent mounting/dismounting.
- install a safe tractor access platform. This will allow entry and exit from outside the line of the rear wheels.
- use quick hitches for the hitching of tractor implements.
- never carry passengers on tractors.
- never disembark a tractor without first applying the park brake and lowering the front end loader.
- operator training

Tractor Power Take-Offs (PTOs)

PTOs can cause death and major disability through entanglement. The common injury from PTO entanglement is amputation of limbs and/or severe muscle damage.

High risk activities include:

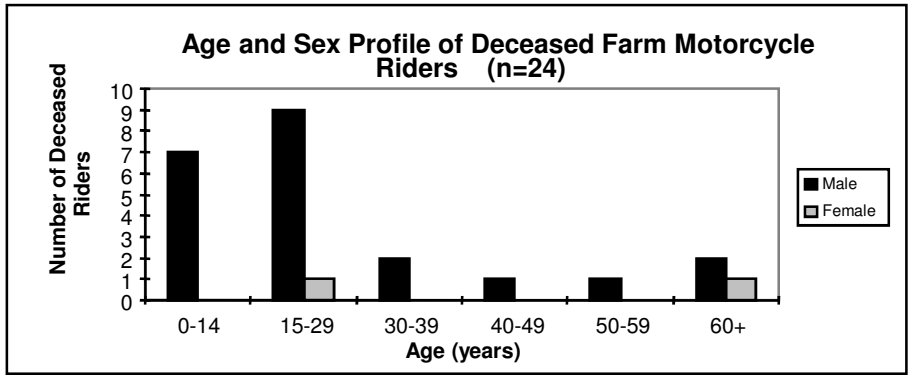
- tractors and implements with inadequate PTO guarding
- stepping over a rotating PTO shaft
- adjusting a PTO driven implement without disengaging the PTO
- small children as they are head high to the PTO shaft
- loose fitting clothing or clothing that has toggles and drawstrings that may increase the risk of entanglement. Long hair which is not tied back and covered also increases the risk of entanglement.

Ways of managing risk associated with tractor PTOs include:

- guarding the PTO shaft with a master shield and a shaft guard.
- always disengage the PTO when disembarking the tractor
- wear snug fitting clothing without toggles or drawstrings

Farm Motorcycle Safety

Farm motorcycles are generally 2-wheeled agbikes, 2-wheeled trail bikes and 4-wheeled All Terrain Vehicles (ATV). Farm motorcycles have become and integral part of Australian farms. They however pose significant risks and dangers to the health and safety of people using them.



Source: NOHSC-Preliminary Results Work-Related Fatality Study (1989-1992)

The hazards involved with the use of farm motorcycles include:

Operator hazards: The training and skill level of the rider, rider age, speed, fatigue, speed, use of alcohol and drugs, use or non-use of Personal Protective Equipment (PPE).

Motorcycle hazards: Unserviceable or poorly maintained equipment eg brake failure, and sticking throttle, instability eg rollover, hitching hazards of ATVs.

Environmental hazards: changes in the terrain, and livestock and wildlife.

One way to identify the hazards with riding farm motorcycles is by reading the Operator's manual and the safety decals on the motorcycle. These provide guidance as to safe and unsafe use of the motorcycle

The risks involved with riding farm motorcycles range from minor injury to death.

The risks associated with 2-wheel motorcycles and ATVs differ and are outlined below:

The risks for 2-wheel motorcycles include:

- the most common injuries are cuts and lacerations.
- the most common area of injury is the lower leg.
- the most common causes of accident is hitting stationary objects or riding across a paddock.
- the major cause of death is a head injury.

The risks for ATVs include:

- the common injuries are fractures and sprains.
- the most common area of injury is the upper body.
- the most common causes of accident is riding across a paddock, hitting a stationary object and rollover.
- the major cause of ATV death is a multiple crush injury, most commonly caused by ATV rollover.

Before operating a farm motorcycle perform a safety check. Examine the tyres, the lights and electrics, the oil and fuel, the chain or drive-shaft, suspension.

Safe Riding Practices

- Riders of farm motorcycles should be trained.
- Be aware of environmental hazards, place them on a map
- When mustering remain a safe distance away from the animals and watch for sudden stock movements.
- Always follow the recommendations in operator's manual. These include recommended tyre pressure, load and towing capacity, rider age guidelines, passenger guidelines.
- Where possible ride with a partner. If not possible inform a responsible person of your whereabouts and return time.
- Always store motorcycles away from children and remove the key.

In particular on ATVs:

- Carrying passengers, operating with excessive tyre pressure (>3-4 psi) or carrying greater weight than recommended.

Personal Protective Equipment (PPE)

When riding farm motorcycles it is important to wear:

- A bike helmet that meets AS 1698
- Gloves to protect your hands
- Sturdy boots
- Long sleeved shirt and long pants
- Eye protection, preferably goggles but sunglasses provide some protection from foreign particles.

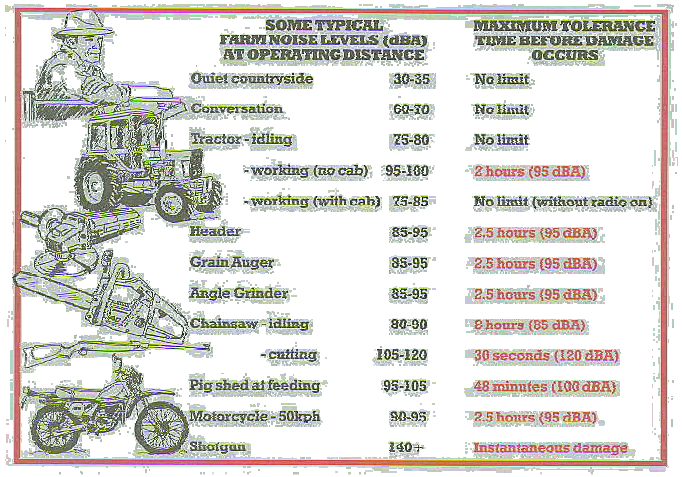
Noise Injury Prevention

From hearing screening conducted it is apparent that 60 percent of Australian male farmers show evidence of notable noise injury. The average farmer older than 40 years has a severe hearing impairment that affects their lifestyle.

Noise is measured in decibels (dB) which is in logarithmic scale. This means that for every increase of three dB the actual noise intensity doubles. In NSW the acceptable exposure to noise in an 8 hour working day is 85 dB(A). This means if the noise level was to increase to 88 dB(A) that the time of exposure required to reach the daily noise dose would be 4 hours. This relationship is shown to the left.

Noise Levels and Exposure Times

85dB	8 hours
88dB	4 hours
91dB	2 hours
94dB	1 hour
97dB	30 mins
100dB	15 mins
103dB	$7^1/_2$ mins
106dB	3 mins
110dB	$1^1/_2$ mins
140dB	instant damage



Source: Farmsafe NSW, *Don't Let Farm Noise Destroy Your Hearing*

Individuals suffering from a noise injury have trouble hearing the soft sounds of speech, such as *sh, f, th, t, p* or *ch.*

The 4 P's of Noise Injury

Painless: With a noise injury there is no obvious signal that damage is occurring unlike an eye injury where there is obvious pain.

Progressive: Normally noise injury occurs over a period of time. Noise injury often goes undetected until such a time that significant damage has been done.

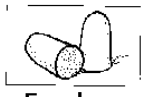
Permanent: There is no cure for noise injury. After noise injury hearing does not recover.

Preventable: Noise injury is the only form of hearing loss which is totally preventable.

"On-farm" noise reduction strategies:
- Where possible use quieter machinery
- Regular maintenance of machinery
- Placing loud tools outside of the workshop or near open areas
- Wearing personal hearing protection

Personal Hearing Protection


Earmuffs


Earplugs

When selecting personal hearing protection it is important to ensure that:

It is **Comfortable**

That it is **Australian Standards Approved**. This should be evident on the packaging.

That it has an **SLC(80)** rating of at least 20 dB.

There are two forms of personal hearing protection:
Ear muffs may be either single units or caps attached to hard hats. Ear muffs may be difficult to wear with other safety equipment. Cushions on ear muffs should be regularly removed and washed, and replaced should they become cracked or hardened (on farms this is usually 6 months).
Ear plugs may be either disposable or reusable. Ear plugs are either pre-molded or require shaping prior to use. When fitting ear plugs it is essential to hold the outer ear with one hand and pull it up and out. After placing the shaped ear plug in the ear canal the index finger should hold pressure against the plug whilst it fully expands. If the ear plug is correctly fitted it should not be visible from the front. Disposable ear plugs should be discarded after use, reusable ear plugs should be washed in warm soapy water and dried after use.

Manual Handling on Farms

Back injury is a major health and safety concern for Australian agriculture with up to 17% of all workers compensation claims for Agriculture and Services to Agriculture.

Over 80% of the population will have an episode of back pain during their life.

In NSW agriculture has the second highest incidence of back injury across all industry with 11 back injuries per 1000 workers.

Young males are at high risk of back injury when working in agriculture because they are more likely to take greater risks when manual handling.

Manual handling is any activity requiring human force to:

- push
- carry
- lift
- pull
- restrain
- lower
- hold a load

Some ways people sustain manual handling injuries on farms include:

- Lifting a silo door
- Shearing
- Lifting a barrel
- Working on vehicles
- Pulling cotton from picker
- Drenching sheep
- Shoeing a horse
- Loading hay bales
- Lifting the end of a concrete trough
- Bending to release feed from silo

Activities that increase the risk of back injury from manual handling include:

- continuous or repeated bending without a break.
- lifting, lowering or bending to ground with straight legs.
- unexpected or uncontrolled forces.
- lifting and twisting at the same time.
- handling objects that are too heavy, or awkward for one person to control.

Safe manual handling is:

- when using your own body force use the correct technique
- when your own body force is not enough, or it is not the best way use assistive technology

Principles of safe manual handling

- Use your legs for force and movement.
- Always keep a slight curve in your lower back when lifting or exerting force.
- Use your feet to move not your back. Do not keep your feet stuck together or nailed to the ground.
- Get close to your work (squat, kneel or sit), or get it close to you (bench or hoist).
- Keep things that you are lifting/pushing/handling close to your centre of gravity. Holding weights out from your body increases the strain.
- Test the force needed first. If the load is too heavy then lighten the load, get help from other people, use assistive technology or split the load
- Avoid bending at the waist
- Do not twist your back whilst handling a load

Assistive technology that may be used when manual handling on the farm include:

- Ascender barrow: a two wheeled barrow that is stable and takes the stress out of loading and unloading
- Wolfe handgrip: reduces the need to bend when using a long handled implement eg hoe, mop, shovel
- Curved handled shovel
- Tilt a drum: to help with the controlled pouring or decanting of chemicals from a 20-25 litre container

Firearms Safety on Farms

Firearms are used on farms to control feral pests, put down injured or sick livestock and for recreational hunting. Firearms however also account for six unintentional deaths on Australian farms a year and thirteen hospital admissions on NSW farms alone. The 15-24 year old age group is at the greatest risk of dying from an unintentional firearm accident.

The risks associated with the use of firearms on farms is the accidental shooting of either humans or livestock, loss of hearing and/or vision.

The Basic Rules of Firearms Safety

1. TREAT EVERY FIREARM AS BEING LOADED
2. ALWAYS POINT FIREARMS IN A SAFE DIRECTION
3. NEVER HAVE LOADED FIREARMS IN THE CAR, HOME OR CAMP
4. IDENTIFY YOUR TARGET AND WHAT IS BEHIND IT
5. NEVER FIRE AT HARD SURFACES OR WATER
6. STORE FIREARMS AND AMMUNITION SEPARATELY
7. NO ALCOHOL OR DRUGS WHEN HANDLING FIREARMS
8. DO NOT CLIMB FENCES OR OBSTACLES WITH LOADED FIREARMS

Gun ownership, storage and use in NSW is regulated by the Firearms Act 1996 and the Firearms (General) Regulation 1997.

- Only people who hold a firearms license are permitted to own or use firearms. To obtain a firearms license a person must first pass a Safety Awareness Test and have a genuine reason for possessing or using firearms
- People aged 12-18 are able to apply for a Minor's permit which allows them to use firearms under the direct supervision of an adult who holds a firearm license.
- Firearms must be held in a locked gun cabinet and ammunition must be locked separately to firearms.

Precautions when using a firearms in the field

- Identify your target positively – if in doubt do not shoot
  - -do not fire at movement
  - -do not fire at colour
  - -do not fire at shape alone
  - -do not fire at sound
- Check your danger zone – this is the area between you and your target
  - -check for domestic animals nearby
  - -never shoot over the top of hills or ridges
- Do not rely on safety catches
  - -the only safe way to carry a firearm in the field is either with the action open, or closed on an empty chamber
- Observe the correct precautions when crossing fences or other obstacles
  - -do not jump over streams or other low obstacles
- Do not lean a loaded firearm against a wall, fence, tree or vehicle
  - -they may be dislodged and accidentally fire
- Do not shoot from a moving vehicle
  - -the only exception to this rule is when controlling vermin on large properties. At this time only one person should have a loaded firearm and do the shooting.

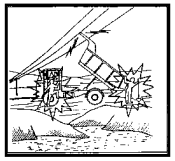
Firearms are a source of loud noise which can permanently damage hearing. The effect of exposure to firearm noise accumulates so that hearing slowly worsens with continued exposure. When ever shooting wear hearing protection that meets Australian Standards that has an SLC rating between 25-30 dB(A)

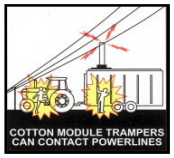
Electrical Safety on Farms

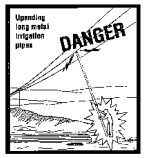
Between 1989-1992, 28 deaths from electrocution occurred on Australian farms. Over half of these fatalities involved contact with power lines, and nearly 30 percent involved extension cords and accessories and household appliances.

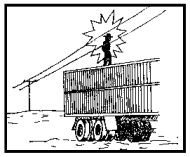
Electrical Safety With Overhead Power lines

It is recommended that farm equipment is not operated within 3 metres of power lines with voltages up to 132 000 volts and further for lines with higher voltages. Across most farming land power lines may be as low as 5.5 metres, with access lines to buildings even lower . Contact does not need to be made for electrical charges to pass through machinery that comes within this range.







Farm Plant at Risk of Power Line Contact

Plant	Height
Four wheel drive tractor 425 horse power	3.8 m to top of exhaust
Cotton Pickers standard basket extended basket	 operating 4.86 m, dumping 6.12 m, operating 5.33 m, dumping 6.42 m,
Cotton module builder boom retracted boom extended	 5 m 8 m
Grain Harvesters	4.1 m operating 5.3 m unloading auger extended
Chisel Plough	5.4 m in folded transport mode
Tipping truck	7.5 fully raised
Irrigation pipe	7 – 12 m standing vertical
Stock Floats	4.6 m
Grain auger	4.3 m in transport mode

Note:Heights tabled as indicators. Check your own machines for variation

When working near overhead power lines to reduce the risk of contact with power lines:
•Always make sure that all operators are aware of the location of power lines.
•Always place machinery into transport mode prior to moving.
•Make the position of power lines more visible by marking their path along the ground and by having bird deflectors fitted to the power lines.
•Use a "spotter" to inform operators of the position of power lines.
•Always carry irrigation pipes horizontal to the ground.
•Fit machinery and surroundings with appropriate safety signs.

If a machine makes contact with power lines:
•Do not exit the machines cabin until you have been informed that the power has been switched off, or in an emergency.
•Attempt to break the machines contact with the power line.
•Contact the local power distributor.
•Bystanders should remain 8 metres away from the machine or any fallen power lines. **Do not attempt to rescue someone you suspect is being electrocuted. Wait until the source of electricity has been isolated.**
•If an emergency evacuation of the vehicle is necessary, jump well clear of the cab. Do not touch the machine and the ground at the same time. Land with both feet together and hop away from the machine.

Electrical Safety in the Home or Workshop

When identifying electrical hazards in the home or workshop, check that:
•a Residual Current Device (RCD) has been fitted. This will shut off the power supply should any current flow to earth in less than 40 milliseconds.
•all extension cords are fully unrolled prior to use and that no damage is evident to the cord or plug.
•the area around the use of power tools is clean and dry.
•power points are switched off prior to plugging in appliances.
• electrical tools are unplugged from power source and packed away after use

Electrical systems in the home or workshop should be:
•installed by a qualified electrician and approved by relevant authorities.
•have adequate capacity to handle lighting and power tool requirements.
•have sufficient outlets so that the use of extension cords is kept to a minimum
•have three-wire grounding type to prevent electrical shock whilst using power tools.
•able to expand for future needs.

Chemical Safety on Farms

Nearly all farms at one stage or another will use agricultural chemicals. Whilst the use of chemicals is often seen as an essential part of farming operations, the transport, storage and application of chemicals is serious business. This is because of chemicals ability to harm people and the environment because of their often toxic or flammable compositions.

For chemicals to effect a person's health they only have to make contact with or enter the body. The main way that chemicals enter the body is when; they make contact with the skin by either spills or exposure to sprays, when we inhale chemical fumes or spray mists, when we swallow them through the contamination of food and drinks that we consume.

Absorption through the skin is the most common way that people on farms are exposed to chemicals. Exposure through absorption is more likely to occur when handling concentrated chemicals and when protective equipment or clothing is not worn.

Chemicals enter the body by:

breathing in *swallowing* *absorption*

The two major ways of identifying the hazards associated with farm chemicals is by reading the container labels and material safety data sheets (MSDS).

The label on chemical not only lets us know what the chemical is but also provides information about the safe use of chemicals. Using a chemical other than as directed on the label is illegal.

Read the label and MSDS

MSDS contain important information about the chemical composition, how it is a health hazard, first aid information, protective equipment and safe handling procedures. If you are using or handling chemicals you must be able to access that chemical's MSDS.

Chemical exposure has short and long term risks to health.

The short term risks may include: headaches, blurred vision, sweating, heart fluctuations, vomiting, diarrhea and stomach cramps, drooling, convulsions, fits and muscle twitching and death.

Long term risks may include: behavioural changes, skin problems, blood disorders, liver disorders, nervous system disorders, reproductive disorders and cancer

When using chemicals the risks involved should be assessed bearing in mind:

Handler Features; whether the handler has done an accredited chemical users course, the age of the handler, and the individuals susceptibility to toxicity.

Chemical Features; the chemical's toxicity and flammability, the method of applying the chemical.

Environmental Features; the heat and humidity may effect the chemicals composition and the handlers use of PPE, the wind direction and velocity may cause spray drift.

Safe Use of Chemicals:

- Use the least toxic chemical that will effectively control target population.
- Engineer safe chemical using systems; bottom fill spray tanks, use cabined tractors with charcoal air filters, use nozzles that reduce misting and spray drift, store chemicals in a locked area with appropriate emergency spill and fire resources.
- Work safer; undertake accredited chemical user training, never transport chemicals in the same compartment as people or food, always wash hands thoroughly before eating or drinking, and shower after use of chemicals, triple rinse chemical containers after use, monitor pesticide exposure levels.

Personal Protective Equipment (PPE)

The minimum protective for handling chemicals is: a long sleeved shirt, overalls or long trousers, waterproof gloves and boots and a washable hat. Always change clothes worn when handling chemicals daily and wash separately from other laundry.

PVC aprons provide protection to the torso from spills and splashes. Goggles, face shields or respirator masks should be used when there is a risk of chemical splash or inhalation.

Workshop Safety on the Farm

Injury statistics reveal that maintenance and repair of machinery and other tasks performed in farm workshops are among the most common activities resulting in farm injuries.

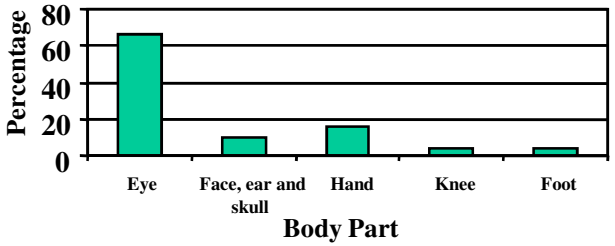
There are a number of hazards that are faced in farm workshops. These include:

- *Electricity* – associated with electric power tools and electrical wiring.
- *Mechanical force* – associated with grinders, drills, power saws, compressed air, and the use of vehicle supports such as jacks or hydraulics.
- *Chemical poisoning* – associated with toxic welding fumes and chemicals stored in sheds.
- *Noise* – associated with grinders, generators, air compressors, power tools, hammering steel.
- *Heat* – associated with hot machine parts, welding and cutting steel.
- Ergonomic problems – associated with moving equipment in workshops, tasks that require awkward posture, inadequate lighting and extremes of temperature.

The risks associated with farm workshops include injury and death.

Body Part Injured in the workshop

Latrobe Valley, Vic and North West Plains, NSW, 1990-93



Source: Rural Injury Prevention Program and Victorian Injury Surveillance System

- Deaths in the farm workshop normally result from entanglement in the moving parts of machinery, crushing due to hydraulic Failure, explosion of tyres, shattering of grinder wheels and electrocution.
- Injury and permanent disability may also result from the causes of death listed above. The most common injury resulting from the workshop is foreign body in the eye, such as dust particles or metal shards. Other common injuries include cuts, burns and crush injury to the hands and eyes.

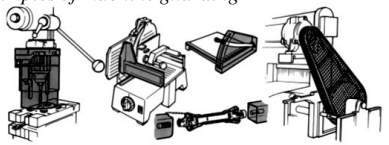
The risks associated with workshop accident are influenced by the following:

- *Operator features:* the training and experience of workers. If a worker has not been trained to use workshop equipment then they are more likely to be injured. Younger and older workers are at greater risk of workshop injury.
- *Workshop machinery and equipment:* there is greater risk of injury if: moving parts of machines are exposed, poorly maintained machines and equipment including electricity leads, switches and tools, the workshop area is cluttered, noisy machinery.

Workshop Safety

- *Eliminate:* the most practical time to eliminate workshop hazards is when designing or modifying the workshop.
- *Substitute:* selecting the most appropriate tool to perform a task will reduce the risks of injury. When substituting a tool for one with a less risk, the new tool will have its own associated hazards. An example of substitution is the use of a cutting tool instead of using an angle grinder or the use of a pneumatic tool instead of an electric tool.
- *Engineer/redesign:*

Examples of machine guarding



- Mechanical hazards – fit and maintain machinery guards. Use a safety cage for fitting tyres
- Electrical hazards – install an RCD. Only have electricians install and maintain electrical systems. Have sufficient outlets to reduce the need for extension cords.
- Manual handling hazards – Install benches at waist height to load/unload and store drums and other materials. Workbenches should be set at the right height for workers.
- *Safer work practices and procedures:* Only allow people essential to the task to be in the workshop, particularly do not allow children in the workshop. Undertake training for workshop equipment and read operators manuals.
- *Personal Protective Equipment (PPE):* Appropriate PPE should be worn for workshop tasks.
- Safety Glasses/goggles – protect from flying particles from grinders, power drills and air tools.
- Ear muffs/ear plugs – grinder, generators/air compressors, power tools.
- Welding helmet/goggles – for use when welding or using an oxy-acetylene torch.
- Leather apron and gloves – protect from burns sparks and hot metal
- Reinforced boots – protect feet from crushing injuries
- Respirator – prevents inhalation of dusts, fumes and vapours

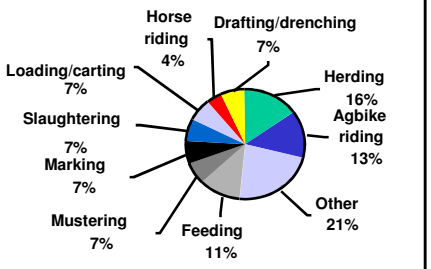
Safe Cattle Handling

A study of farm related deaths during the period 1989-1992 found that over 16% of Australian farm related deaths occurred on meat cattle properties. This represented the single largest proportion of deaths on Australian farms by enterprise type.

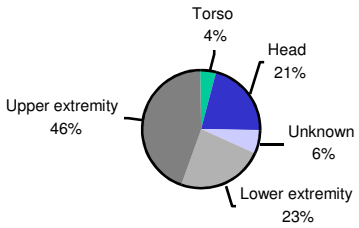
The hazards involved with handling cattle are:

- Injury – from an animal kicking or charging when being handling or mustering and crushing against handling facilities.
- Illness – zoonotic disease which may be passed to humans

Cattle Activities Resulting in Injury
Victoria



Body Part Injured in Cattle-Related Injury
Victoria



Victorian Injury Surveillance System in Injury Data Collection Project. Update No. 3 1994

Identifying the hazards associated with handling cattle involves examining:

The Stock:

- The breed and the size of animal – breeds such as Jerseys and Angus are more likely to be aggressive than herefords.
- Physical attributes that may cause injury – eg horned cattle are more likely to cause injury than poll cattle
- Gender of the animal – bulls tend to be more aggressive than cows
- Physiological state – are the cattle mating, nurturing calves, separated from the herd or familiar with handling from humans. Signs that cattle are aggressive or in fear include, the positioning of the head, tail, ears and nostrils, rolling eyes, pawing at the ground or snorting.

The Handler:

- Handler competence – this includes knowledge of animal behaviour and experience in handling cattle
- Handler age – younger handlers are less likely to have good working experience in cattle handling. Older people tend to have slower reflexes and be less agile increasing risk of injury.

The Environment:

- Cattle handling facilities - some features of cattle yards may increase the risk of injury. These include:
  -the lack of escape routes like man ways and foot holes
  -poor crush design, levers on head bails
  -yard materials of insufficient strength
  -protrusions; eg. gate latches and poorly swung gates
  -slippery surfaces
  -missing rails
  -features that may cause cattle to baulk, eg reflections, jiggling chains, changes in flooring and texture, dark race entrances
- Time of day – light, wind and heat factors can effect the way that stock behave

Safe Cattle Handling Practices

- Cattle handlers should have experience in cattle handling practices.
- Cattle handlers should understand the principles of cattle behaviour and movement, including the concepts of flight zone and point of balance. The safest place to handle cattle from is the edge of the cattle/mobs flight zone.
- Avoid placing body between animals and equipment.
- When mustering the use of a horse instead of a motorcycle will decrease the risk of being charged.

Personal Protective Equipment and Clothing

When handling cattle it is recommended that you wear:

- Snug fitting clothing
- Sturdy boots with non-slip soles, preferably with a reinforced toe/steel capped
- Leather gloves to reduce rope burns and hand lacerations
- If coming into contact with animal body fluids rubber/plastic gloves will reduce the risk of disease.
- If applying chemicals the appropriate PPE as recommended on the label or the MSDS should be worn

Horse Safety on Farms

Horse injuries are a major component of rural injuries with studies showing that horse injuries accounting for 2-11% of all injuries presented to rural hospital Accidents and Emergency units.
In the 15-24 years age group horse injury accounts for 35.6% of all farm injuries to females and 3.8% of all farm injuries to males.

Horse related injuries can occur either riding or handling a horse. Common causes of riding injury include, falling from horses, being crushed by a falling horse, being dragged whilst caught in a stirrup and hitting a stationary object.
Common causes of handling injury include, being trodden on or kicked, hit by the horses head, horse bite, getting entangled in lead ropes and being crushed between a horse and yard or fence.

Identifying the hazards associated with riding and handling horses involves examining:

The Rider:

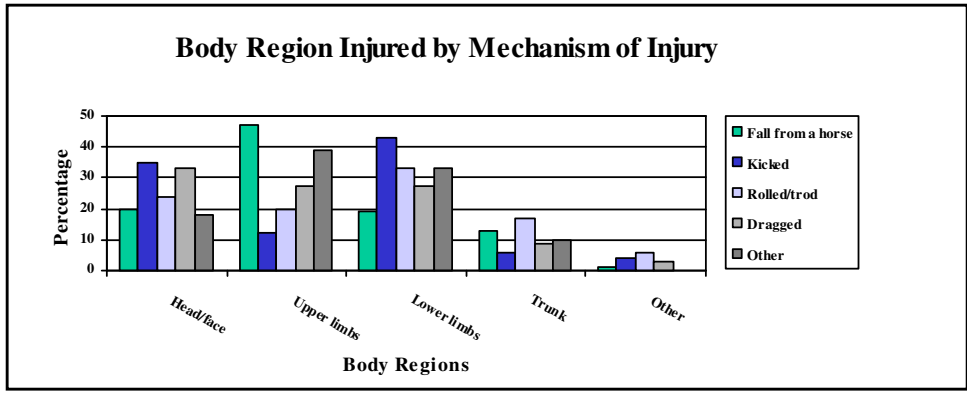
- Age of the rider. Younger riders are at greater risk of injury, if older riders sustain an injury it is more likely to be severe.
- People who have not been given instruction in safe riding and handling techniques are at greater risk of injury.

The Horse:

- Older horses tend to be quieter and best for inexperienced riders.
- Horses that have been well educated are easier to ride.
- The breed of horse may affect its temperament, eg thorough breeds are more likely to be flighty than quarter horses.
- Horses have an instinctive reaction to flee danger. This is often displayed when a horse is scared or hurt.
- Horses have poor eyesight and react instinctively to motion.

The Environment:

- Riding over steep slopes, pot holes, rocks and gullies increase the likelihood of horse injury. Many horses are uncertain of going through water and dislike moving in the rain.
- Horses become more flighty and difficult to handle in windy weather due to confused sense of smell.
- The design of yards and stables. E.g. narrow doorways increase the risk of being crushed by the horse.
- There is greater risk of injury when a horse is used for any activity that requires speed or jumping heights.



Australian Centre of Agricultural Health and Safety *Horses on Farms* Guidance Note No. 8

Safe Horse Handling

- Always approach a horse within its range of vision, this is usually on an angle
- Avoid handling horses around distractions such as dogs or traffic.
- When leading a horse never wrap the lead around your hand or fingers.
- When leading a horse through a doorway stop the horse, move through the doorway and then bring the horse through
- Avoid walking behind a horse

Safe Horse Riding

- Always ensure that tack is in good condition
- Before saddling up check that there are no foreign objects on the horse's back and that the stirrup irons are fastened up
- Check the tightness of the girth 3 times. After saddling, after walking a short distance and after riding a short distance.
- When riding over difficult terrain ride slowly or get off and lead the horse.
- When riding with other horses maintain a safe distance.
- When riding horses be aware of other animals or vehicles that could startle your horse.

Riding Tack and Personal Protective Equipment (PPE)

- Keep tack well maintained. In particular keep stirrup leathers, girths and reins oiled.
- Stirrups should be 2.5 cm wider than the riders boots to allow the foot to release in the event of a fall.
- An Equestrian helmet meeting Australian Standard AS 2063.3
- Smooth soled boots with a heel
- Clothes should be close fitting so as not to catch objects, or flap and scare the horse.