

FUTURE FARMERS

A RURAL HEALTH & SAFETY RESOURCE FOR HIGH SCHOOL STUDENTS



TRAINERS MANUAL 2002

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 intent 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 may be facilitated through setting up a committee containing members of your Farm Safety Action Group or other organisation 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 well before 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 template in Appendix 1 - School Invitation.

FIELD DAY VENUE

When selecting a venue for the field day it is important to first assess whether the venue is suitable for the delivery of the modules selected. Section 4 of each module 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 have 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 the venue management as set out in Farmsafe Australia's Managing Farm Safety course and 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 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 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

Each module contains Minimum Presenter Qualifications information to assist in the identification of suitable presenters. It is desirable that presenters either meet these qualifications or are judged as having equivalent qualifications. It is important that presenters have some experience not only in the content area, but also in presentation.

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 whom 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 in case any 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, hire, 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, the worked answers for the student assessment and the guidelines for teachers of agriculture for each module to be undertaken during the day.

These could be simple manila folders or something more elaborate if funding permits. (See Appendix 3- Sample Workbook Title Page)

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 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 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 before 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 groups to rotate through the workstations in the one direction.

Allocate time before the start of the modules 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 e.g. via whistle or car-horn.

Depending on the number 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. (See Appendix 4 – Sample Timetable)

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) to the appropriate target audience (Students, Presenters, Organisers)

The student evaluation forms could 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

Future Farmers – High School Farm Safety Field Day

(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, Safe Handling of Sheep, Horse Safety on Farms, On Farm Emergency Response.

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

✂ -----

School: _____

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

Preferred Topics (circle all those required)

**Responsibilities Of
People In Farm
Workplaces**

Tractor Safety

Farm Motorcycle Safety

Noise Injury Prevention

Manual Handling

Firearms Safety

Electrical Safety

Chemical Safety

Workshop Safety

Safe Handling of Cattle

Safe Handling of Sheep

Horse Safety on Farms

On Farm Emergency Response

School Contact Person details

Name: _____

Phone: _____ **Fax:** _____

Email: _____

Separate and return to (Organisation) at (Address)

Appendix 2 - Working With The Media¹

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 way. A story that the local TV news is not interested in may be more 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 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.

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. Don't say "contusions" when you can say "bruises".

¹ Our thanks to Angela Hinchley for approval to use this information on media

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 result will be a story that 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 chance 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.

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.

INTERVIEWS

Speak clearly and concisely and 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 worth remembering that the media generally operate as would any business - to make a profit.

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- Sample Workbook Title Page

Organisation FUTURE FARMERS Farm Safety Field Day – Venue – Date

INTRODUCTION AND WELCOME (Appropriate person/s)

MODULES TO BE PRESENTED

	NAME	PRESENTER
A	Responsibilities of people in farm workplaces	?
B	Tractors safety	?
C	Farm motor cycle safety	?
D	Noise injury prevention	?
E	<i>Manual handling on farms</i>	?
F	<i>Firearms safety on farms</i>	?
G	<i>Electrical safety on farms</i>	?
H	<i>Chemical safety on farms</i>	?

We gratefully acknowledge the contributions of the following:

SPONSORS

Sponsor 1

Sponsor 2

Sponsor 3

Sponsor 4

Appendix 4 – Sample Timetable

Sample Timetable

Organisation FUTURE FARMERS Farm Safety Field Day – *Location* - *Date*

10am-10:10	Arrivals, Welcome & Introductions							
WorkStation	A	B	C	D	E	F	G	H
10:15-10:35	RED	ORANGE	YELLOW	GREEN	BLUE	PURPLE	BROWN	WHITE
10:40-11:00	WHITE	RED	ORANGE	YELLOW	GREEN	BLUE	PURPLE	BROWN
11:05-11:25	BROWN	WHITE	RED	ORANGE	YELLOW	GREEN	BLUE	PURPLE
11:30-11:50	PURPLE	BROWN	WHITE	RED	ORANGE	YELLOW	GREEN	BLUE
11:55-12:15	BLUE	PURPLE	BROWN	WHITE	RED	ORANGE	YELLOW	GREEN
12:20-12:40	GREEN	BLUE	PURPLE	BROWN	WHITE	RED	ORANGE	YELLOW
12:40-1:15	Lunch							
1:20-2:00	YELLOW	GREEN	BLUE	PURPLE	BROWN	WHITE	RED	ORANGE
2:05-2:25	ORANGE	YELLOW	GREEN	BLUE	PURPLE	BROWN	WHITE	RED
2:30-2:55	Optional – Farm Safety Scenarios							
3:00	End – close and thanks to participants, sponsors and co-operators							

Assuming 8 groups (named after Colours) of 10-15 students doing Modules A-H

Appendix 5 - 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 you did <i>Place a tick in the relevant boxes.</i>	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	OK	poor	Very good	good	OK	poor	Very good	good	OK	poor	too long	OK	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															
Safe handling of sheep															

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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?

Any other constructive comments?

Appendix 6 - Presenters Evaluation Form

To assist the improvement of the 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?

Appendix 7 - Future Farmers – 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

5. Did you run any other modules? YES NO

If yes what modules were run? _____

Why? _____

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? (circle)

very good

good

satisfactory

poor

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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: (circle)

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. Were 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? _____

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

CONTENTS

	Administration Guidelines
	Contacts
Module A:	Responsibilities of people in farm workplaces
Module B:	Tractor safety
Module C:	Farm motor cycle safety
Module D:	Noise injury prevention
Module E:	Manual handling on farms
Module F:	Firearms safety on farms
Module G:	Electrical safety on farms
Module H:	Chemical safety on farms
Module I:	Workshop safety on farms
Module J:	Safe handling of cattle
Module K:	Horse safety on farms
Module L:	On-Farm Emergency Response
Module M:	Safe handling of sheep

Each Module consists of:

Section 1:	Module Outline
Section 2:	Presenter Guidelines
Section 3:	Guidelines for Teachers of Agriculture

Section 4: Resource Package
 Student Assessment Questions & Answers
 Overhead transparencies and other supporting material

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There have been many people that have contributed to the proposal, development, editing and production of this resource. These include:

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Bill Brooks – WorkCover NSW
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Patsy Bourke – Tamworth Farmsafe/New England Area Health Service
Wal Cameron – New England Institute of TAFE
Kathy Challinor – Tamworth Farmsafe/New England Area Health Service
Tony Cook – NSW Agriculture
Justin Crosby – Australian Centre for Agricultural Health and Safety
Ted Dugdale – WorkCover NSW
Geoff Dunlop - New England Institute of TAFE
Beth Fuller – Mid North Coast Farmsafe/Mid North Coast Area Health Service
Sue Fullerton – WorkCover NSW/Rural Industrial Reference Group
James Houlahan – Australian Centre for Agricultural Health and Safety
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Garry Rhyder – WorkCover NSW
Tony Robinson – WorkCover NSW
Linda Row – Macquarie Area Health Service
Warren Shultz - New England Institute of TAFE
Anthony Smyth – Fire Arms Safety Awareness Officer, Tamworth
Kirsty Taylor – WorkCover NSW
Brent Turner – WorkCover NSW
Rachael Williams – Ex Farmsafe NSW
Clerical and administrative staff of contributing organisations

Particular acknowledgment should be made of the development of the Field Day format by Tamworth, North West, Mid North and North Coast Farm Safety Action Groups and NSW Health - Health Promotion and Injury Prevention staff.

MODULE A.

RESPONSIBILITIES OF PEOPLE IN FARM WORKPLACES

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures.

CORE2.2 Comply with provisions of relevant state OHS legislation.

“This OHS competency involves application of relevant agricultural occupational health and safety principles and conformity with legislation and codes of practice in each state, including the duties and responsibilities of all parties under the general duty of care.”

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.

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- Practical demonstration risk management principles
- Interactive guided discussion

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

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 for Agricultural Health and Safety (1997) *Agricultural Health and Safety Guidance Notes* ACAHS Moree

Further Information:

www.workcover.nsw.gov.au/pdf/farm.pdf

MODULE A.

RESPONSIBILITIES OF PEOPLE IN FARM WORKPLACES

SECTION 2: PRESENTER GUIDELINES

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.

Resources Required:

Slides

Risk Management Scenario

Presentation Guidelines:

1. INTRODUCTION

Introduce yourself to the students.



Explain the purpose of this module and how it seeks to give the students a greater understanding of the health and safety responsibilities of people in farm workplaces.

2. WORKPLACE AND FARM INJURY

Explain to students that work can be a dangerous place to be.



Ask them if they know of anyone who has been injured at work and how did they do it.

Ask them if they know of anyone who has been injured working on a farm and how they did it.

Discussion should include:

- Agriculture is the third most dangerous industry in Australia behind mining and transport.
- As a result from incidents on Australian farms there are 150 deaths, around 6500 admissions to hospital and close to 6000 workers compensation claims each year.
- Type of farm injuries tends to be related to the commodities of production. Examples of specific farm injury are tractor injury - rollover, run-over, PTO entanglement, motorcycle injury, back injury and other manual handling injury, etc.
- It is estimated that the cost of farm injury is between \$500 million and \$1.29 billion each year.

3. OCCUPATIONAL HEALTH AND SAFETY



If workplace injury and illness is such a problem then what is being done about it?

Explain that there is law that exists that attempts to ensure the safety of people at work. The name for this kind of law is Occupational Health and Safety (or OHS) law.



Explain to the students that OHS law gives people duties to ensure the health and safety of people in workplaces and that these duties are enforceable.

Discussion should include:

- Occupational Health and Safety Act (NSW). How the act has general responsibilities, not specific responsibilities i.e. there is no maximum weight that a person can lift set by law, only that it must be done safely. In some places though the law set specific duties eg the fitting of ROPS on tractors.
- The duties of care that the OHS Act places upon people in the workplace.
 - 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.

The role of WorkCover NSW to enforce the duties given under OHS law. WorkCover also devote effort to the education of people in the workplace to better OHS practices.



Ask the students why there is a need for OHS law.



Use an analogy about how laws offer us assurance that the goods that we buy are of a certain quality, or that agreements that we enter into will be abided by.

4. OHS ON FARMS



Ask the students how they think that OHS law applies to farms.



Explain that even though farms are different to “ordinary workplaces” they are still subject to OHS law.

Discussion should include:

- families generally own the farm, with over 60% trading as family partnerships and 29% as sole proprietors. Farms are often the homes of the people operating them as a business.
- farms are remote.
- farms often rely on casual labour forces in peak periods of work.
- deals with changing circumstances making controls less effective, eg working with animals.



Ask the students then to extend what they learned about duty of care into the farm situation.



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.



If a person who is trained in using the tractor removes the PTO master guard, but doesn't put it back into place because it takes too much time, has this person exercised reasonable care to others at the workplace?



No.

Explain that whilst farms are subject to OHS law, because they are different it changes the way that OHS occurs on farms.

Because of the isolation, WorkCover inspectors do not often physically inspect farms. Often the only time that inspectors visit farms is after an accident has occurred. Because of this it may be seen that there is a need for more than OHS law to ensure the health and safety of people working and visiting farms.

5. MANAGING HEALTH AND SAFETY RISKS

Explain to the students that the agriculture industry has seen the management of occupational health and safety risks as the best way to ensure the health and safety of people on farms.



Ask the students if any of them know what risk management is.



Explain to the students that in managing health and safety risks farmers need to identify hazards to health, assess the risks that are associated with these hazards, and put into place the appropriate controls.



Use an analogy to explain managing risks is something that everybody does. Crossing the road, the amount of preparation we use before a test, what we do on a football field - run the ball or kick it.



Use the risk management scenario in the resource package (or design your own) in the group's discussion to explain the concepts involved.

Discussion should include:

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

Hazard Identification: The first step to putting into place risk management strategies is the identification of hazards. All people on the farm should be involved in the identification of hazards as they may be aware of different hazards and ways that they may be controlled.

Risk : The risk of a hazard is the chance or potential that it will injure someone whom is exposed to it. A risk on farms may be:

- Risk of death/disability/pain
- Risk of incurring the costs involved with injury or death
- Risk of prosecution under OHS law.

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

The matrix used by Farmsafe Australia in the assessing of risks is included in the resource package.

By assessing the risks of on-farm hazards we can identify and prioritise action maximising the ability to manage the on-farm health and safety risks.

Controls

A measure taken to reduce the degree of risk.



Hierarchy of control

When putting into place a control, there is a general hierarchy of control that categorises controls from most effective to least effective. When putting into place a control always attempt to select a control from the highest category in the hierarchy

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 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.

Explain to the students that this process of risk management is known by the short cut SAF.

See it – identify the hazard

Assess it – assess the risks associated with the hazard

Fix it – put in place risk controls

Explain to the students that an important part of managing health and safety risks in farm workplaces is the interaction between all people working or visiting farms.

Discussion should include:

- The requirement to ensure that workers are competent in the tasks that they perform, and that they receive training to ensure competency.
- The interaction of hazard identification being an ongoing process in which workers inform the employer of any health and safety risk that they perceive on the job.
- The putting into place controls that are respected by all people on farms.

5. CONCLUSION



Highlight that occupational health and safety is a responsibility enforced by law, that it is a requirement on farms and that it is a shared responsibility of all people on the farm.

Use any remaining time to field questions from students, or to ask prompter questions to students.

Assessment Task and Guidance Material

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

References:

Occupational Health and Safety Act 2000 (NSW)

Occupational Health and Safety Regulation 2001 (NSW)

Australian Centre for 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 on-line WorkCover publications and to Occupational Health and Safety legislation and regulations.

NOHSC *Workplace health and safety responsibilities* URL ~

<http://www.nohsc.gov.au/OHSInformation/NOHSCPublications/factsheets/rspon1.htm>
accessed 01/07/01

Contacts: See Module 1 - Contacts

MODULE A

RESPONSIBILITIES OF PEOPLE IN FARM WORKPLACES

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures

CORE2.2 Comply with provisions of relevant state OHS legislation

“This OHS competency involves application of relevant agricultural occupational health and safety principles and conformity with legislation and codes of practice in each state, including the duties and responsibilities of all parties under the general duty of care.”

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 how the principle of duty of care applies to farm workplaces.
- explain what the responsibilities of employers, employees and visitors are at the farm workplace
- describe the practical arrangements of risk management on farms.

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

Students have been given an assessment task related to the Responsibilities of People on Farm Workplaces module that they attended at the Future Farmers Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

References:

Occupational Health and Safety Act 1983 (NSW)

Occupational Health and Safety Act 2000 (NSW) pending

Australian Centre for 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 on-line WorkCover publications and to Occupational Health and Safety legislation and regulations.

NOHSC *Workplace health and safety responsibilities* URL ~ <http://www.nohsc.gov.au/OHSInformation/NOHSCPublications/factsheets/rspon1.htm>
accessed 01/07/01

Contacts: See Module 1 - Contacts

MODULE A.

RESPONSIBILITIES OF PEOPLE IN FARM WORKPLACES

SECTION 4: Resource Package

Attached Resources

Risk Management Scenario / Assessment

Risk Management Scenario Model Answer

Slide 1 – Farm injury

Slide 2 – Scenario overhead

Slide 3 - Risk Assessment Matrix

RESPONSIBILITIES OF PEOPLE IN FARM WORKPLACES

RISK MANAGEMENT ASSESSMENT

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.



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 un-cabined 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.

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.

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

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:

RESPONSIBILITIES OF PEOPLE IN FARM WORKPLACES

RISK MANAGEMENT MODEL ANSWERS

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

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 un-cabined 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 above 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.

Hazard:

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: *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, sun-screen and a hat when working.*

OH1

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

OH2 – Scenario Overhead

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 un-cabined 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.

Hazards:

Tractor rollover

PTO entanglement

Noise

Sun

Risks

Controls

OH3 Risk Assessment Matrix

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.

Responsibilities of People in Farm Workplaces

Agriculture is the third most dangerous industry in Australia behind mining & transport. As a result of incidents on Australian farms, each year there is around 150 deaths, 6500 admissions to hospital & close to 6000 worker's compensation claims each year.

The main causes of farm injury resulting in death include: tractors & implements, farm machinery, farm vehicles & motorcycles, drowning in water sources, horses & firearms.

The main causes of farm injury resulting in hospital admissions include: tractors & machinery, horse related injury, motorcycle injury, animal-handling injury, and child injury.

The main cause of farm injury resulting in worker's compensation claims includes: handling farm animals, the use of workshop tools, tractors & powered machinery & manual handling.

Children are the victims of 20% of all farm injury & deaths.

The estimated cost of farm injury is between \$500 million & \$1.29 billion each year. NSW Occupational Health & Safety law gives responsibilities to people in workplaces to ensure the health & safety of people at work or visiting the workplaces including farms. These responsibilities include:

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

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

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

See it – identify hazards to health & 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, & are the major cause of injury & 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 & 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 whenever 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 so have more chance of being effective. The second two are called active controls for they require the active participation of workers to reduce risk & are more prone to human error or inaction.

OH1

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

OH2 - Scenario Overhead

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 un-cabined 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.

Hazards:

Tractor rollover
PTO entanglement
Noise
Sun

Risks

Controls

OH3 - Risk Assessment Matrix

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.

MODULE B

TRACTOR SAFETY

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AG2102EO A Operate Tractors

2102.1 Describe the factors affecting safe tractor operation

"Tractors include:... 2 wheel drive, 4 wheel drive, front wheel assist, articulated tractors including scrapers, track or crawler driven"

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.

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

Practical demonstration

Interactive guided discussion

Assessment of Achievement of Learning Outcomes:

Assessment task attached

Evaluation Method:

Student Field Day Evaluation Form

Module specific assessment task

Acknowledgment:

Author of this module: Bill Brooks – Principal Inspector Rural Industry Team – WorkCover NSW

Further Information:

http://www.workcover.nsw.gov.au/html/rops_home.htm

MODULE B

TRACTOR SAFETY

SECTION 2: PRESENTER GUIDELINES

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.

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.

Each Student should receive a copy of the WorkCover Tractor Safety Booklet as their take-home material.

Presentation Guidelines:

1. INTRODUCTION.



Introduce yourself. Explain the purpose of the session.



The session is a practical session with participants usually standing around the tractor. Have one or more participants act as demonstrators during the course of the session.

2. STATISTICS:

Discuss any available tractor accident statistics e.g.

Since 1990, WorkCover NSW has investigated 53 fatalities attributed to tractors, their attachments and drawn implements (excluding those caused by falling objects striking the tractor operator). These fatalities include 19 rollovers.¹

90% of Tractor Accidents occur at speeds less than 8km/h²

60% of all accidents occur on slopes of less than 5 degrees (mostly run-overs)

¹ Workcover NSW Rural Industry Team

² National Tractor Safety Project Final Report .A.Davidson 1996

2. TRACTOR SAFETY FEATURES



Demonstrate or show OHP 1 (page 6&7 tractor booklet)



Encourage the participants by;

Walking around the tractor, demonstrate by asking the participants to point out the safety features of a tractor.

Using the tractor booklet as a guide, and reference source, there are 23 safety features shown.



Ensure the *main* features are identified eg, ROPS, Seat, Steps and PTO guarding.

Enforce the need to read the tractor operator's manual as a good source of information about the tractor.



State: persons under the age of 18 are **not permitted** to drive tractors **unless** they are under strict supervision or unless they have received sufficient training. A TRACTOR IS NOT A TOY.

3. CLIMBING UP AND DOWN



Demonstrate or Show OHP 2 (page 9 tractor booklet)



Specifically emphasise: A tractor must be stationary when being mounted or dismounted.



Ask participants to demonstrate the way they would mount and dismount a tractor.



State: Always get on and off the tractor from the **left side** facing the back of the tractor.



Ask *WHY?*



The right hand side is crowded with controls, you might accidentally release the hand brake and your clothing may become caught in the controls such as brake pedal, foot throttle and hydraulic controls. Don't jump from the tractor.



Demonstrate the correct way of getting on the tractor by, facing the rear wheels, taking a firm grip on the hand holds, ensure your footing is stable and there is no likelihood of clothing becoming caught. Keep the steps clean and dry and don't carry tools on the platform.

5. BEFORE STARTING YOUR TRACTOR



Demonstrate or show OHP 3 (page 10 tractor booklet)

Go through this check list and point or demonstrate the items, or as you read the check-list have one of the participants demonstrate the following

- Adjust the seat. (all controls must be in reach)
- Where fitted, seat belts must be worn when driving tractors fitted with a ROPS.
- Know where to find and how to operate, brakes, clutch and gears.
- Know how to stop the tractor.
- Know what other controls and instruments are on the tractor.
- Check the tractor is in neutral and the handbrake is on.
- Always start the tractor from the driving position only.
- Check that the PTO is disengaged and is properly guarded.
- Keep children away from the tractor.



Caution: If you have to jump-start a tractor be sure the tractor is in neutral and the hand brake is on.

6. PASSENGERS



Demonstrate or show OHP 4 (page 12 tractor booklet)



Specifically mention:

Under no circumstances are persons to ride on tractors or attachments, this includes trailers. Unless there are an approved seat, seatbelt, handholds and foot rests provided and incorporated within the protective structure of the roll over frame.

7. GENERAL SAFETY PRECAUTIONS



Discuss some general safety principles – group discussion.

- Wear tight fitting comfortable clothes.
- Always sit on the seat while riding tractor.
- Do not run the tractor's engine in confined space – the exhaust fumes (carbon monoxide) are fatal.
- Rest when you are tired. Tired drivers have more accidents.
- Keep all guards in place.
- Stop engine before any maintenance is carried out. Always maintain the tractor in good working order.
- Never work under a tractor when the engine is running.

8. ROPS (ROLL-OVER PROTECTIVE STRUCTURES)



Demonstrate or show OHP 5 & 6 (page 16 17 & 18 tractor booklet)



Discuss the legislative requirements for ROPS. (re-iterate/indicate what the ROPS is on the display tractor.)



ALL tractors weighing between 560 and 15000 kilograms when carrying a full load of fuel, coolant and oil must, by NSW law, be fitted with an approved ROPS. The frame must comply with Australian Standard 2297-1996 for agricultural tractors. An equivalent overseas standard is acceptable.

Once installed, ROPS must not be altered or modified in any way. They **must not be welded, cut or drilled**.



Discuss – the different types of ROPS eg, *two post* - standard, *four post* - gives greater protection, *fold down* - for orchard or confined space work and the *enclosed cab* - giving a controlled environment.

9. GUARDING THE POWER TAKE-OFF (PTO)



Demonstrate or show OHP 7 (page 19 & 20 tractor booklet)

Discuss the legislative requirement for the correct guarding of the power take off. (Indicate the PTO on the implement attached to the display tractor.)

Discuss - A power take off implement fitted to a tractor must be treated with care. Clothing may become entangled in an unguarded PTO resulting in serious bodily injury, loss of limbs or death.

Discuss - All PTO's must be guarded and the guards must enclose the entire length of the input shaft from above and on either side. (Note. If the guard revolves with the shaft it must be capable of being stopped by hand.

Mention – PTO guards are easily damaged and need to be treated carefully to avoid breakage.

10. HITCHING HAZARDS



Demonstrate or show OHP 8 (page 21 tractor booklet)

Discuss that most major tractor accidents involve the vehicle rolling or tipping over and many farmers still hitch loads to the rear axle or by attaching loads to a high drawbar hitch.

Discuss - What can happen when the drawbar height is increased or when loads are hitched around the axle or top link – the front wheels are lifted off the ground and the tractor may topple over backwards.

Discuss – A tractor front wheel can be kept firmly on the ground by fitting attachments only in accordance with the manufacturers instructions. When attaching equipment use drawbars fitted to tractor mounting points.

Discuss – when pulling stumps etc ... it is a good idea to hitch to the front of the tractor.

11. OBSTRUCTIONS, BOGGING AND DITCHES



Demonstrate or show OHP 9 (page 23 tractor booklet)

Discuss – Tractors are a farm workhorse and are used in many areas on the farm exposing them to many hazards eg. striking obstructions – they can cause the tractor to turn over.

Discuss – When pulling another vehicle from a bog, it is better to use reverse gear and pull from a low hitch point at the front of the tractor, if one is fitted. Pulling from the front will stop the tractor from rearing over backwards. When using reverse gear use the lowest gear ratio.



Reinforce – High hitching can cause overturning, if the rear wheels will not turn, they act as a pivot and the tractor will turn backwards on the rear axle. If you get bogged and cannot back out, **GET HELP**. Too many operators have been killed because they hitched to high – **HITCH LOW FOR SAFETY**.

Discuss – When driving in unfamiliar ground or surfaces use caution when near edges, ditches, embankments or depressions in the ground. Never drive close to the edge of a trench or ditch.

A tractor is quite safe when handled properly but dangerous if mishandled.

12. STEEP SLOPES



Demonstrate or show OHP 10 (page 25 tractor booklet)

Discuss - Even though most tractor accidents occur on level ground, the danger of a tractor overturning is greatly increased on hills and sloping ground.

Discuss – some basic principles when operating a tractor on steep slopes. Eg,

- Always back up steep slopes and if the rear wheels slip or spin, abandon the attempt.
- For crossing slopes, you should increase the wheel track for greater traction and stability. If the tractor slips or seems likely to slide abandon the attempt.
- Engage the clutch gently when driving up hill and descend slopes cautiously in low gear.

Do not park a tractor on a steep slope.

13. POWERLINES



Demonstrate or show OHP 11 (page 28 tractor booklet)

Discuss – Overhead high tension power lines cross many properties and if contacted can be extremely dangerous. A number of rural workers are killed each year from coming into contact with power lines. Treat them with great caution.

Tall farm machinery – headers, augers cotton pickers and tractor fitted with radio aerials – become instant killer if they contact power lines.

Given the right atmospheric condition the equipment does not actually have to contact the power lines the electricity will ‘flashover’ earthing to the ground through the machinery and you.

Farm machinery and equipment that conducts electricity should remain at least six metres (6) away from powerlines carrying more than 132,000 volts (132 kilovolts) and three metres (3) away from power lines less than 132000 volts (132kilovolts).

Before operating tall farm machinery near power lines, including towing field bins, check the voltage and safe working distance of the powerlines by contacting the local electricity supply authority.

There is only one truly safe place for tall farm equipment – and that’s well clear of high-voltage powerlines.

14. INSIDE THE TRACTOR.

First Aid.

Mention - Quick and effective first aid can save your life. First aid kits should be kept in the cab of the tractor and as most tractors are a workplace it is a requirement, by law, in NSW that a first aid kit is made available to employees. It’s just *common sense* to have one in the cab or toolbox.

Noise Protection.

Mention – Tractor operators are a high-risk group when it comes to occupational noise – and constant exposure to loud noises can produce permanent hearing loss.

Protect your ears by using earplugs or muffs. Keep them handy on the tractor cab.

Radio headphones do not provide good ear protection if the music is turned up loud enough to drown the tractor noise. It only adds to the problem.

Regular maintenance of a tractor - and attention to its muffler - helps to keep down the noise level.

Chemicals and Pesticides.

Mention – Tractor operators are exposed to pesticides and other chemicals when they are using the tractor during chemical application eg pesticides and fertilisers.

Always read the label on the container of any chemical you may be applying carefully BEFORE you use it.

Follow all the manufacturers instructions exactly.

Read the manufactures Material Safety Data Sheet (MSDS) thoroughly.

Always use the appropriate Personal Protective Equipment (PPE) and maintain respirator and cabin filters as required.

Assessment Task and Guidance Material

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

Contacts: See also Module 1 - Contacts

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>

MODULE B

Tractor Safety

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AG2102EO A Operate Tractors

2102.1 Describe the factors affecting safe tractor operation

“Tractors include:

2 wheel drive, 4 wheel drive, front wheel assist, articulated tractors including scrapers, track or crawler driven”

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.

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

EACH STUDENT SHOULD BE GIVEN A COPY OF THE WorkCover TRACTOR SAFETY BOOKLET AS THE TAKE HOME MATERIAL

ASSESSMENT:

Students have been given an assessment task related to the Tractor Safety prevention module that they attended at the Farm Safety Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment:

Key Reference:

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

Contacts: See also Module 1 - Contacts

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>

MODULE B

TRACTOR SAFETY

SECTION 4: RESOURCE PACKAGE

Attached Resources

Slide 1 – Tractor safety features

Slide 2 – Climbing up and down

Slide 3 – Before starting your tractor

Slide 4 – Passengers

Slide 5 – ROPS

Slide 6 – ROPS & FOPS

Slide 7 – Guarding the PTO

Slide 8 – Hitching hazards

Slide 9 – Bogging

Slide 10 - Steep Slopes

Slide 11 – Power lines

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

Other Resources

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.

Desirable.

Tractor access platform attached to tractor.

TRACTOR SAFETY ON FARMS

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? (out of 23 in booklet)
 - 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 driving the tractor and you approach a closed gate that you want to go through should you (Circle one):

Just keep driving who cares about the closed gate.

Slow the tractor down, jump off and try to open the gate before the tractor runs you over.

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

Tell your passenger to jump off and open the gate before you run them over.

TRACTOR SAFETY ON FARMS

ASSESSMENT 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

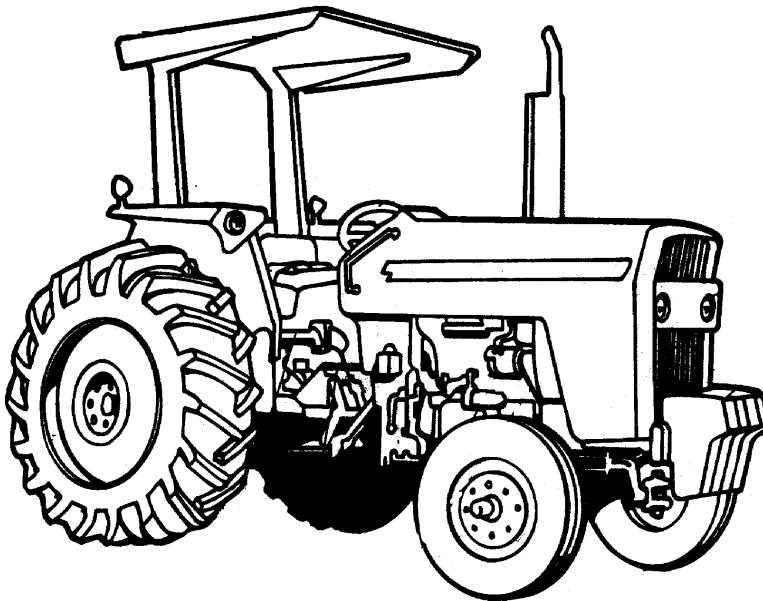
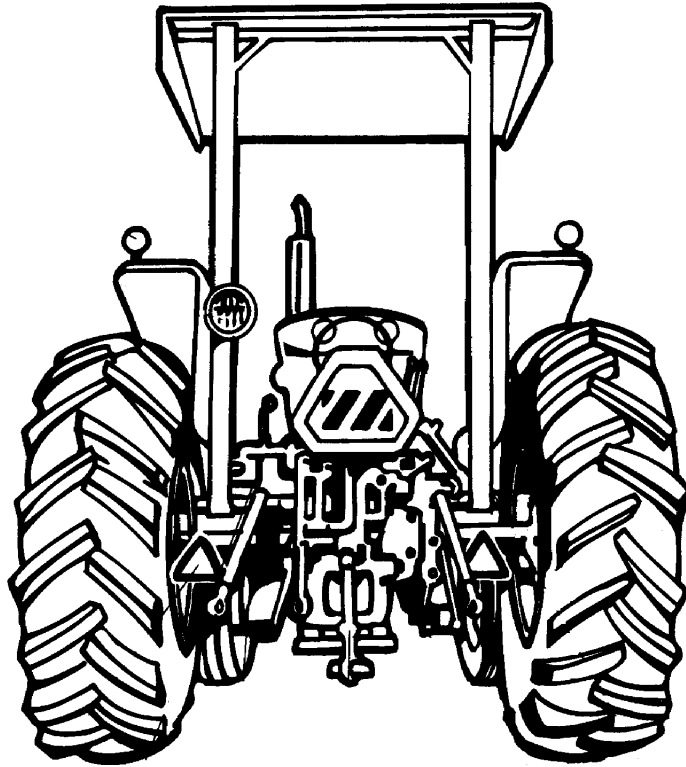
- 3) List five (5) safety features of a tractor? (Any five out of 23 in booklet)
ROPS, seatbelt, protective PTO shaft cover, lights, 3 point hitch, sunshield, non slip steps

- 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 that you want to go through should you:
Stop the tractor, engage neutral gear, put the park brake on and turn it off, before you open the gate.

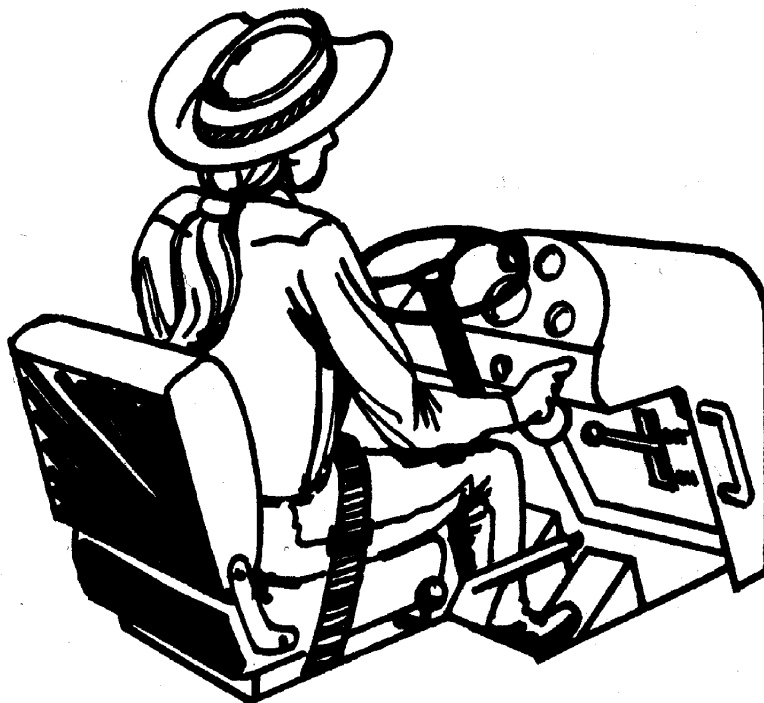
OH 1 – Tractor Safety Features



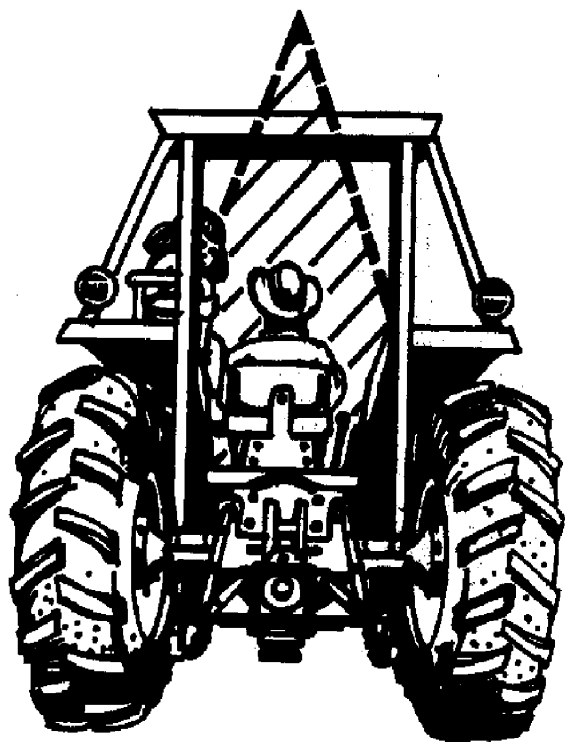
OH2 – Climbing up and down



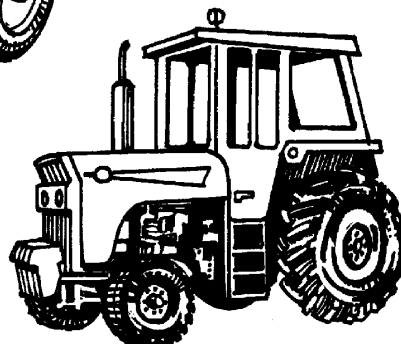
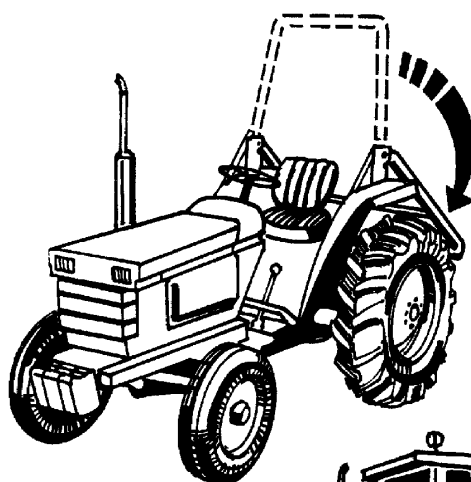
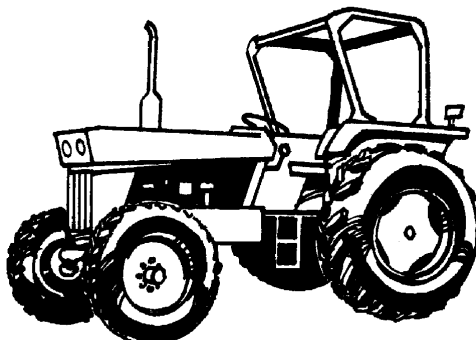
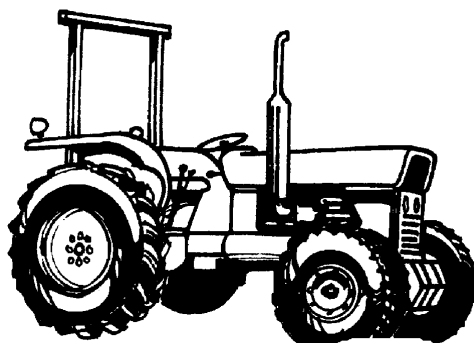
OH3 – Before Starting your tractor



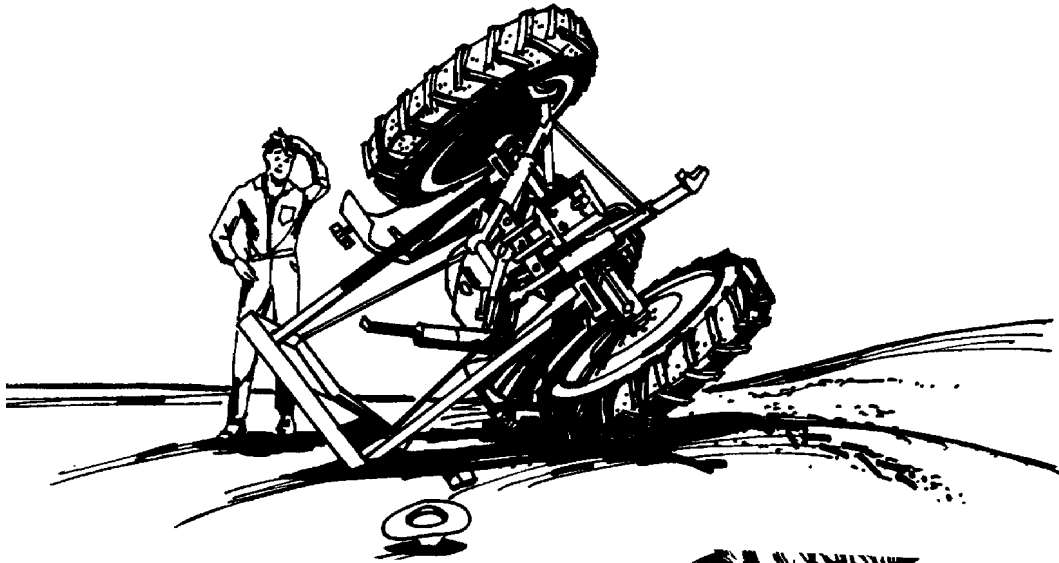
OH4 - Passengers



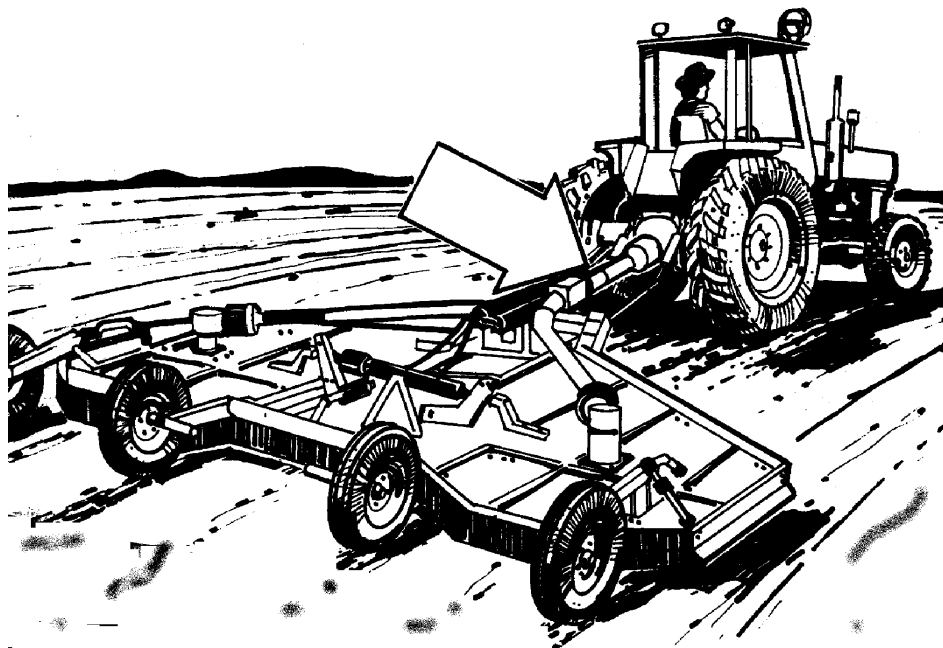
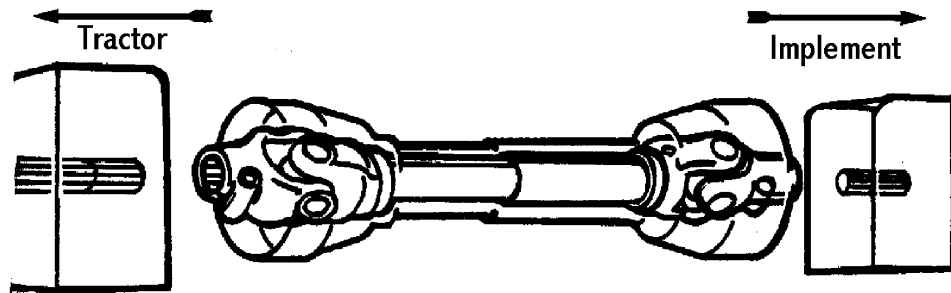
OH5 - ROPS



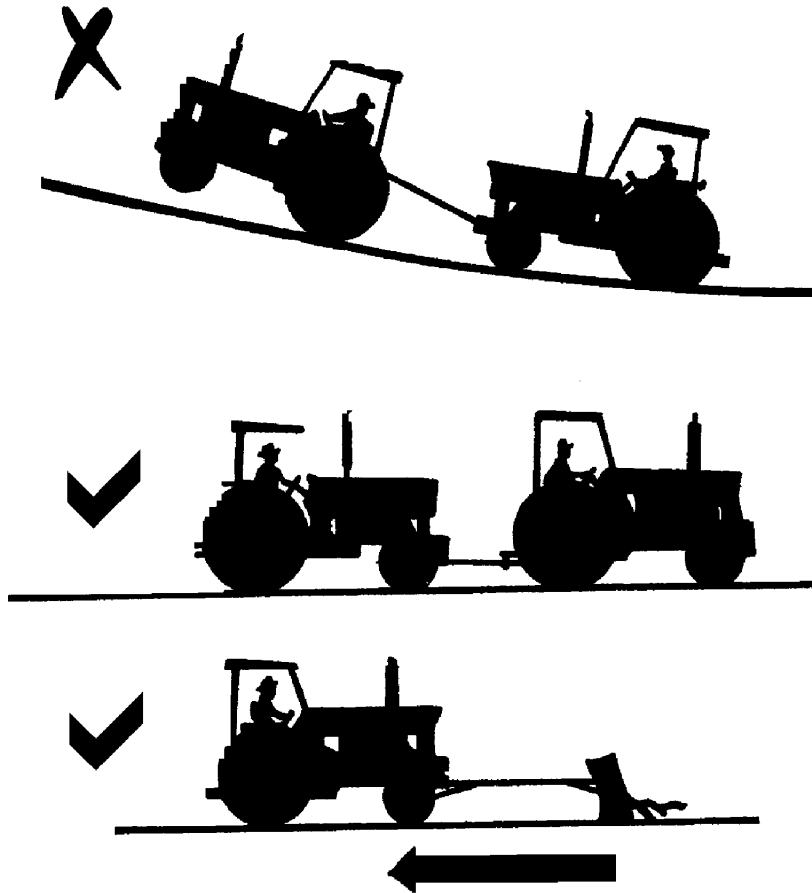
OH 6 – ROPS & FOPS



OH 7 - PTO



OH 8 – Hitching hazards



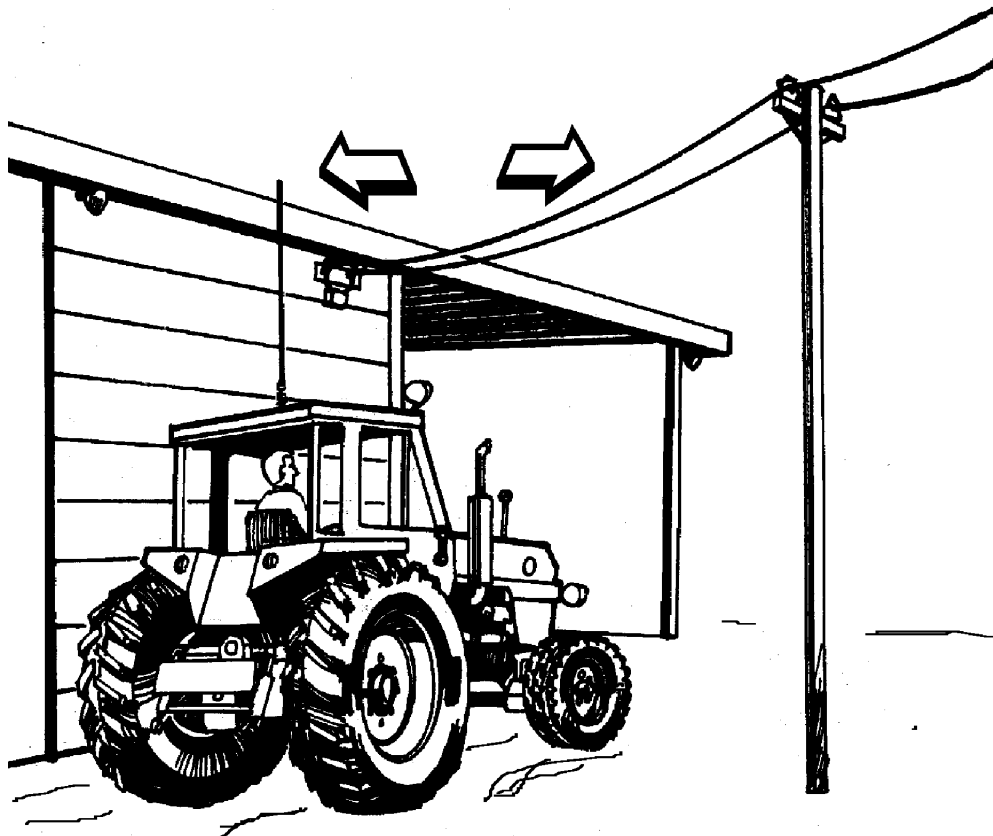
OH9 - Bogging



OH 10 – Steep Slopes



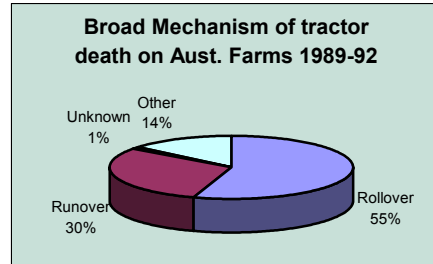
OH11 – Power Lines



TRACTOR SAFETY HANDOUT

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

- ◆ More than 30% of farm deaths are tractor related.
- ◆ 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: *Farmsafe*

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
- ◆ 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.
- ◆ 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 (if fitted).
- ◆ 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.

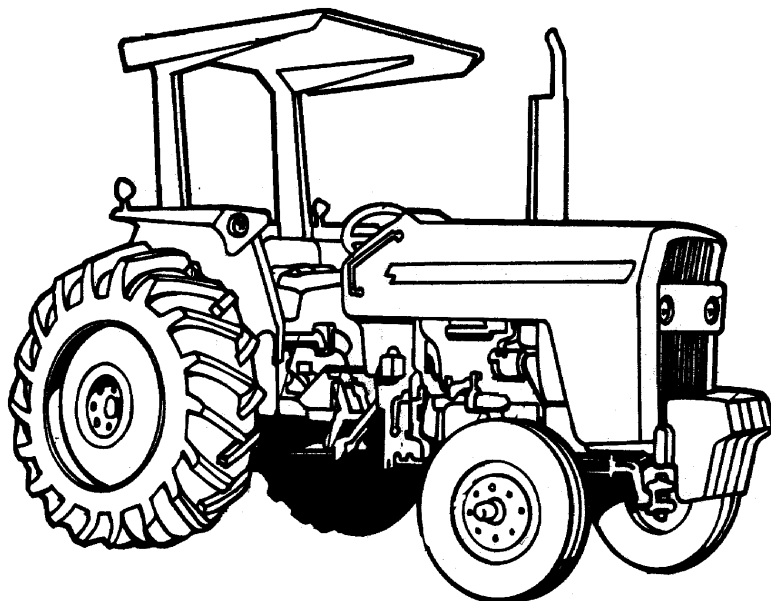
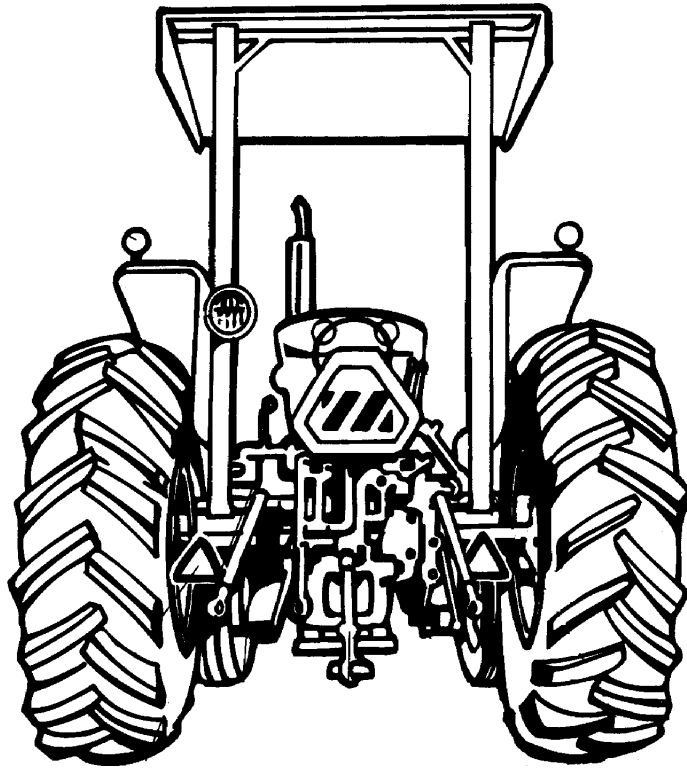
High-risk activities include:

- ◆ 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

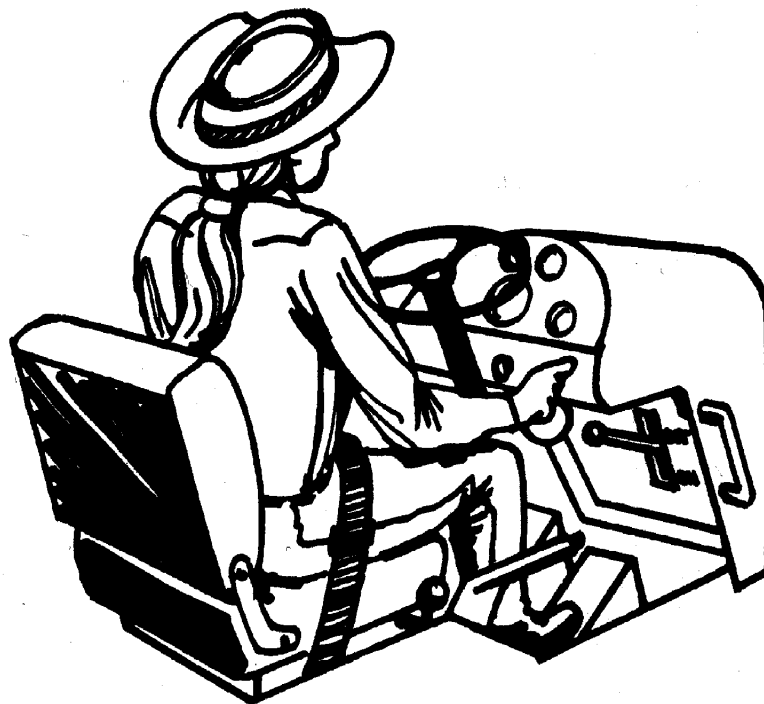
OH1 - Tractor Safety Features



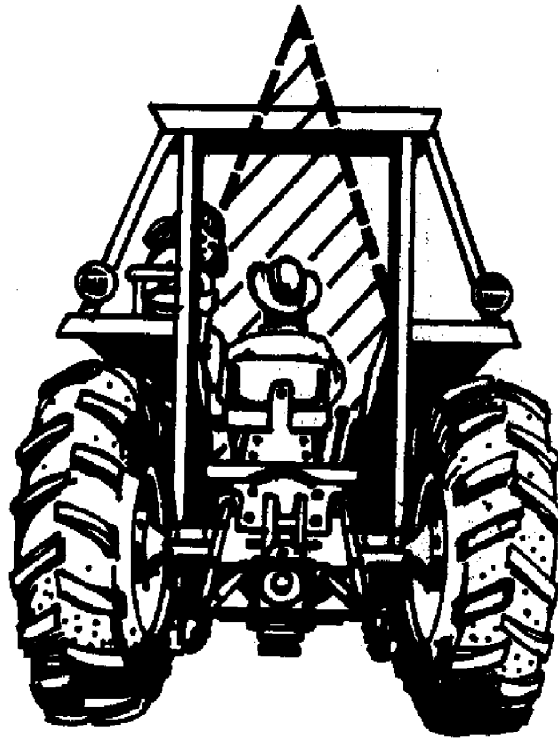
OH2 – Climbing up and down



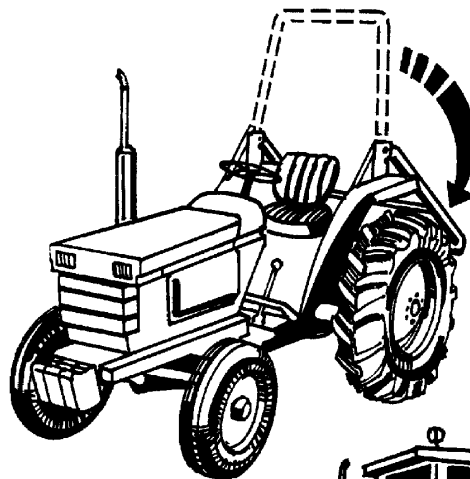
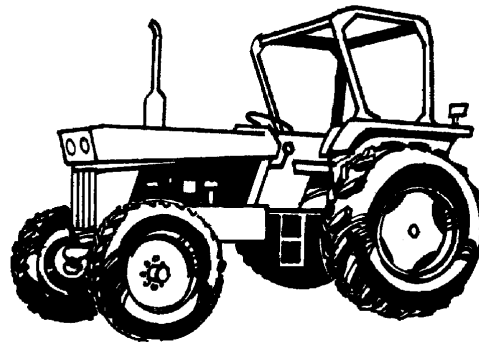
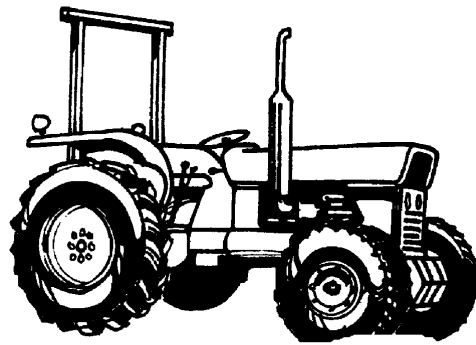
OH3 – Before Starting your tractor



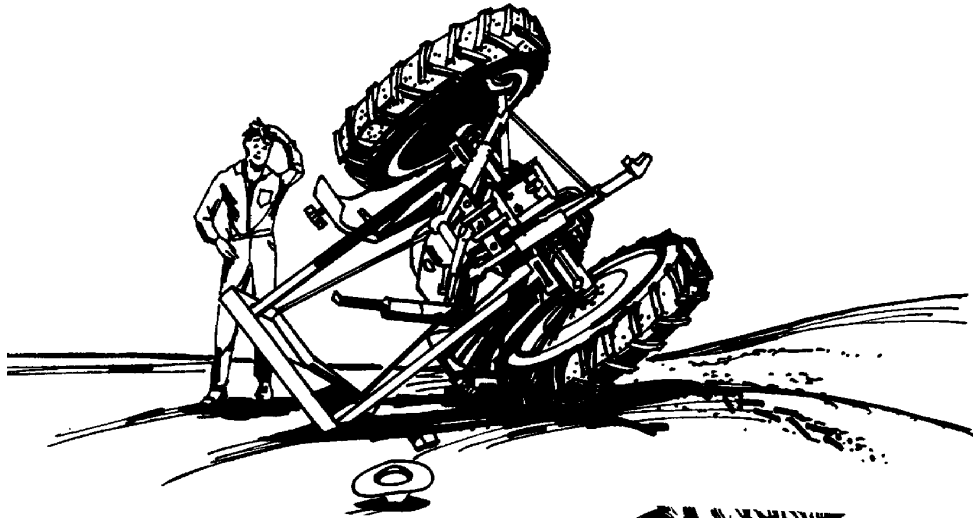
OH4 - Passengers



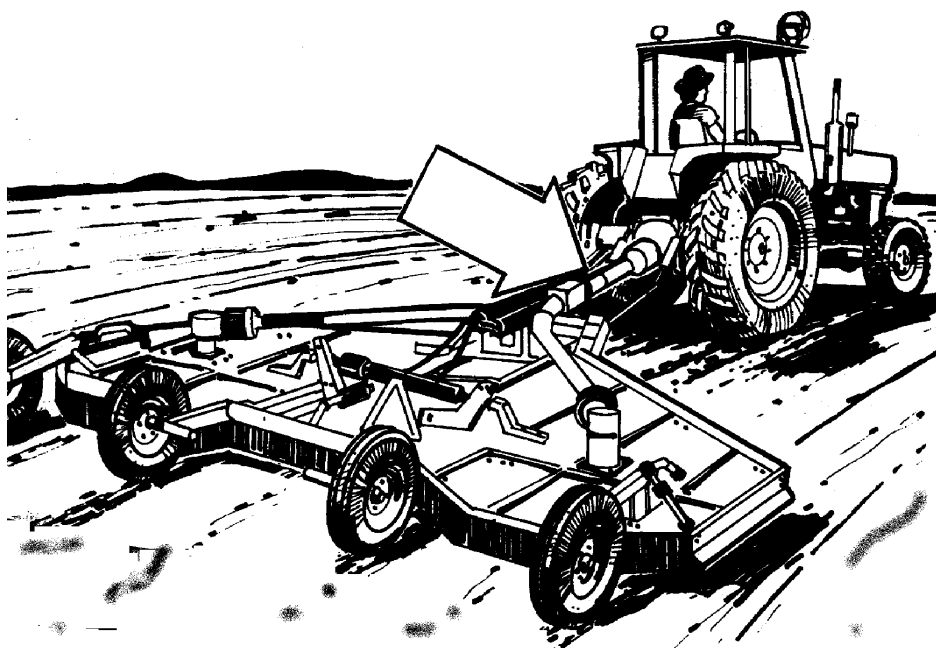
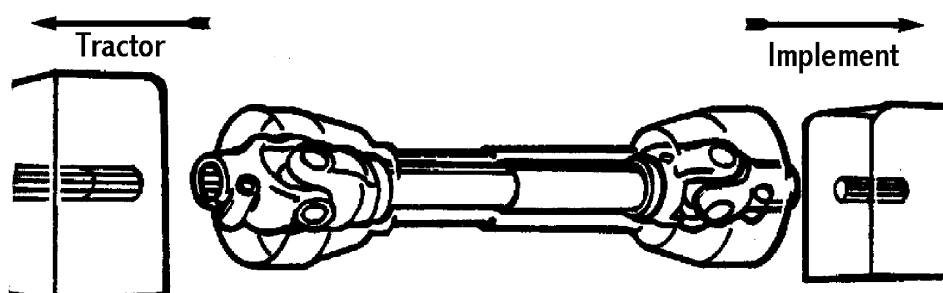
OH5 - ROPS



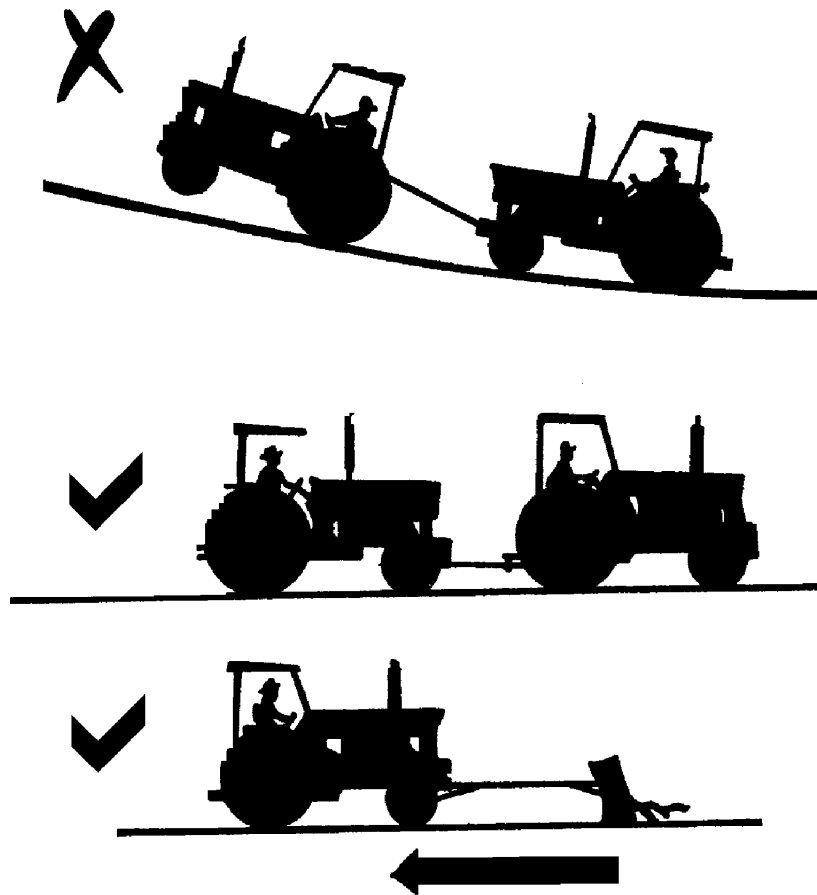
OH 6 – ROPS & FOPS



OH 7 - PTO



OH 8 – Hitching hazards



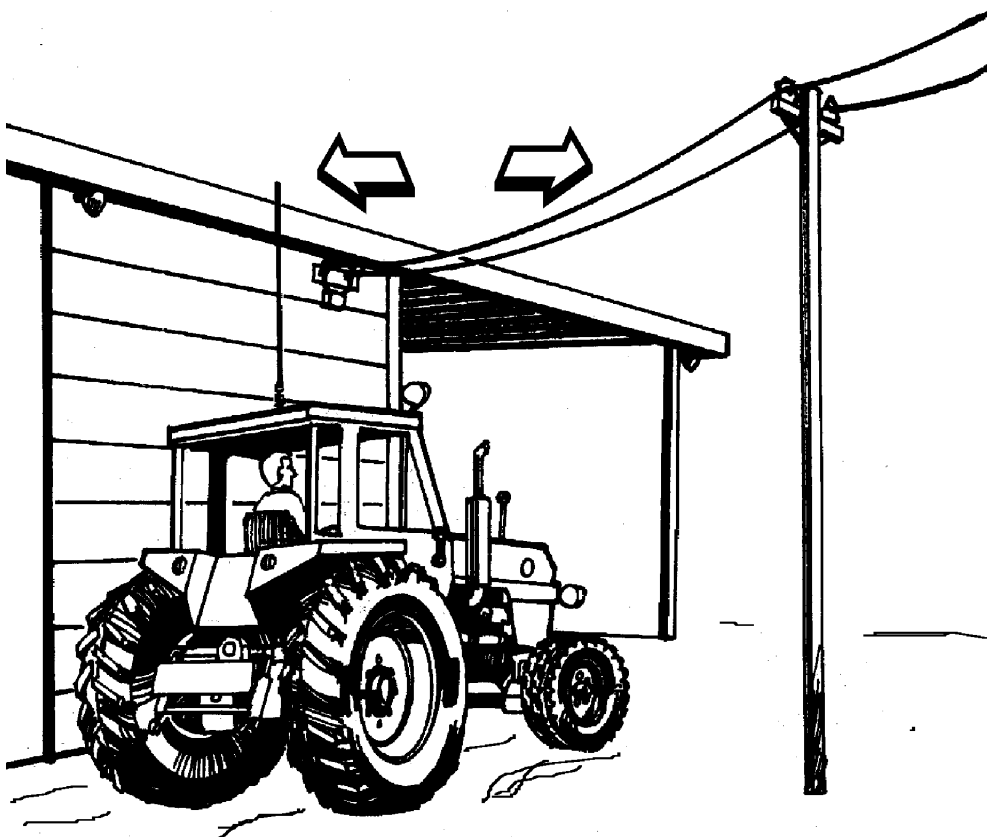
OH9 - Bogging



OH 10 – Steep Slopes



OH11 – Power Lines



MODULE C

FARM MOTORCYCLE SAFETY

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AG210EO A Operate ride-on farm vehicles

2100.3 Operate ride-on farm vehicle to perform enterprise requirements

Ride-on farm vehicles include:

- farm motorcycles: any 2 wheeled motorcycle that is primarily used for farm work, excluding road motorcycles.
- ATV: generally a vehicle with 4 or more wheels, travelling on low pressure tyres, having a seat to be straddled by the rider and handlebars for steering control.

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.

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

Suggested Time:

- 20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Assessment of Achievement of Learning Outcomes:

- Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

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

MODULE C

FARM MOTORCYCLE SAFETY

SECTION 2: PRESENTER GUIDELINES

Learning Outcomes:

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

- describe safe operating techniques for farm motorcycles.
- select appropriate personal protective equipment for the operation of farm motorcycles.

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*).
- OH/Slides provided

Presentation Guidelines:

1. INTRODUCTION

Introduce yourself to the students.



Explain the purpose of the module, and how it will look at the major causes of injury on farm motorcycle and some operational practices to make riding farm motorcycles safer.

2. FARM MOTORCYCLES AND THEIR USES

Farm motorcycles can be either 2-wheeled ag-bikes, 2-wheeled trail bikes or 4 wheeled All Terrain Vehicles (ATVs or Quad-Runners).



Ask the students if any of them use farm motorcycles and what they use them for?



Farm motorcycles may be used for:

- personal transport around the farm
- mustering of livestock
- inspection of crops, pastures, fences and livestock
- timber marking
- inspection of irrigation fields, pipes and channels
- recreation

ATVs in addition may be associated with the following activities

- towing and or carrying of goods
- seeding, fertilizing and applying chemicals, particularly with add on spray tanks, which are a major hazard
- mowing grass
- small-scale earthmoving

3. FARM MOTORCYCLE HAZARDS



Ask the students if anyone has been injured or had an accident whilst riding a motorcycle on farms. If any students have had an accident ask them what caused it.

Explain that a study done in 1998-2000 showed that:

- Approximately half of farm motorcycle riders indicated that they had suffered some form of injury as a result of riding.
- A high percentage of riders injured are under 19
- During the period 1989 to 1992, 24 deaths occurred on Australian farms due to farm motorcycles



Slide 1 – Farm motorcycle deaths



Ask the students what they see as the hazards involved in riding farm motorcycles?



Operator Hazards

- Skills and training:
- Age and physical limitations
- Fatigue
- Speed
- Visibility
- Alcohol and drugs
- Misuse or Non Use of Personal Protective Equipment

Machine Hazards

- Instability
- Load shift
- Hitching
- Unserviceable or poorly maintained equipment.

Environmental Hazards

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



Slide 2 – Cause of farm motorcycle accidents



Ask the students how we might be able to identify the hazards associated with riding farm motorcycles?



By reading the operators manual and the decals that are placed on the motorcycle.

Explain that operator's manuals and the safety decals on the bike give instruction to unsafe operation of the motorcycle. The hazardous practices that are included in operators' manuals and on the safety decals (for ATV operation) include:

- no carrying of passengers.
- age limit for riders. This is normally 16 for adult sized motorcycles.
- overloading cautions. These include weight limits for safe operation of the motorcycle, and safe towing limits.
- recommended operating tyre pressure.
- never ride too fast for skills or conditions.
- never ride on public roads.
- never ride after drinking alcohol or using drugs.
- always wear a helmet, eye protection and protective gear.



Demonstrate where the safety decals are on the motorcycle at the display, or use slide 3 – safety decals.

4. RISKS OF FARM MOTORCYCLES



Ask the students what they think the main risks associated with the use of motorcycles on farms?



They are different for 2 wheeled motorcycles and ATVs

2 wheelers

- Most common injuries are cuts and lacerations.
- Most common area of injury is the lower leg.
- The most common cause of accidents is hitting a stationary object or riding across a paddock.
- The major cause of death is head injury.

ATVs

- Most common injuries are fractures and sprains.
- Most common area of injury is the upper body.

- Most common causes of accidents are riding across a paddock, hitting a stationary object and rolling.
- The major cause of ATV death is multiple crush injury, most commonly caused by ATV rollover.



Slide 4 – Major body part injured

Explain that the general risk factors associated with farm motorcycle injury include:

- the age of the rider:
There is a strong correlation between the age of motorcycle riders and injury. This is supported by manufacturers of ATVs who discourage the use of ATVs by people younger than 16. This is seen to be because of size, poorly developed balance and co-ordination as well as lack of understanding of the risks that are associated with farm motorcycles.
- training of the rider:
Inexperience and lack of training often leads to loss of control on motorcycles. This has greater emphasis in the use of ATVs with weight distribution playing a greater role in the stability of the vehicle.
- the riders use of PPE:
- ATVs are more likely to be involved in injuries of more serious nature (fractures and sprains) compared to cuts and lacerations on 2 wheeled motorcycles.
- The operating environment.
One major cause of accident was riding across a paddock and then hitting a stationary object such as a log or a rock. Other environmental risks include rolling, hitting animals and carrying passengers for ATVs and animals/tyre ruts, hitting animals and fences and losing control due to the surface.

5. SAFE OPERATION OF FARM MOTORCYCLES



Ask what they see as some key ways that riders can manage the risks that they face when riding motorcycles on farms



- Rider training
- Motorcycle maintenance and pre-operational safety check.
- Safe operation, including following manufacturers recommendations as to weight limits, rider characteristics, passengers. Caution around environmental hazards such as animals and rough terrain.
- The use of PPE

Pre-Operational Safety Check.



Explain to students that it is important to check the safety features of farm motorcycles prior to use. Demonstrate a pre-operational safety check on a demonstration motorcycle.

Include the following.:

Tyres and Wheels

- Check that tyre pressure is at recommended levels. ATVs have floatation tyres that act as part of the suspension, and should be maintained at around 3-4 psi to improve bike stability. Ordinary pressure gauges cannot measure the pressure required in ATV tyres.
- Check that the walls of tyres do not have any cracks or cuts.
- Check that the tyres are in a serviceable condition and they are suitable for the terrain being ridden over.
- On 2 wheeled motorcycles check that none of the spokes are broken and that they all are at the same tension.
- On 2 wheeled motorcycles, if rim locks are fitted check that they are tight and that they valve stem is at 90 degrees to the rim.
- Check that wheels nuts and axle nuts are tight and that the cotter pins are firmly secured.

Controls and Cables

- Ensure that the throttle moves smoothly and with no sticking points and returns to the idle position without assistance.
- Ensure that the brakes are adjusted correctly and are in working condition.

Lights and Electrics

- Check that the ignition and the stop switch are in working condition and that the lights work.

Oil and Fuel

- Check the oil level in the gearbox at the dipstick or sight glass before starting the engine.
- For two stroke engine check the two stroke oil reservoir.
- Check that the fuel tank has sufficient fuel to perform scheduled tasks, with enough in reserve in the case of an emergency.

Chain and Drive-Shaft

- Inspect, adjust and lubricate the drive chain if necessary.
- Ensure all chain guards are fitted.
- Ensure that the drive sprockets (if applicable) are serviceable.
- Check for oil leaks surrounding the drive-shaft.
- Check the drive-shaft / differential oil level (ATVs)

Suspension

- Check that there are no oil leaks from the front or rear suspension, and (if applicable) that the settings are correct for the individual rider.
- Check that the mounting bolts are tight.
- Check for any free play and rectify if necessary.

Personal Protective Equipment (PPE)



Explain the PPE required for the safe operation of farm motorcycles. Using PPE explain the benefits of wearing the piece of PPE and demonstrate its correct use.

- Helmets: Should be of AS 1698. The fit of helmets is important, it should not slip forward, backward or wobble while on the head
- Gloves: will provide protection to hands in the event of a fall.
- Footwear – Long boots will act to reduce injury to legs, where the majority of motorcycle injuries occur.
- Eye protection – reduce the risk of eye injury from foreign materials. Goggles are preferable.
- Long sleeved shirt and long pants: provide protection from contact with the ground and other surfaces in a fall.



To conclude the PPE demonstration on a lighter note, hold up a pair of rubber thongs and a baseball hat and explain that while common, they are not part of suitable PPE for riding motorcycles

Riding Practices

Explain to the students that when they are riding farm motorcycles they should be aware of the following practices.

Known **environmental hazards** should be identified to riders of farm motorcycles. This could be achieved by their inclusion on farm maps. All riders should exercise extra caution when they are unfamiliar with the area of the farm they are riding over.

Slide 5 – Unfamiliar terrain

When mustering livestock remain a safe distance away from animals and watch for sudden stock movements. Falls from motorcycles often occur from hitting animals.

If riding in long grass be aware of hidden obstacles.

Always operate the farm motorcycle within the manufacturers specifications. These specifications are listed in the owner's manual and on the decals placed on the farm motorcycle. Some of the specifications may include:

- load capacity
- towing capacity
- age guidelines
- passenger guidelines

When riding ATVs the following are of particular importance.

- Never carry passengers. Carrying extra people may alter the weight distribution of the ATV enough to contribute towards rollover.



Slide 6 – No passengers

- Do not exceed load or towing limitations, and seek to distribute any load as evenly as possible. If the load or towed attachment is a chemical spray pack remember that 1 litre of water weighs approximately 1 kilogram. This or other attachments may dangerously overload the bike.
- Beware of riding across steep terrain. It increases the possibility of rollover.



Slide 7 – Riding across steep terrain

- Beware of the possibility of flipping the ATV over backwards when riding up steep terrain. The risk of this increases when carrying weight on the back of the ATV such as a saddle mounted spray pack.



Slide 8 – Up and down hills

When possible, always ride with a partner on another bike. If you are riding alone inform a responsible person of your whereabouts and when you are set to return. If possible you should take some form of communication such as a portable 2-way radio.

Finally when the farm motorcycle is not in use store the machine away from younger children and remove the key from ignition.

CONCLUSION

Use any remaining time to recap important points, answer questions from the students and to ask them questions based on the student assessment task.

Assessment Task and Guidance Material

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

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

Further Information:

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

Contacts: See also Module 1 - Contacts

Honda Australia Rider Training

PO Box 766

Tullamarine VIC 3043

Phone: 03 9335 4808

Facsimile: 03 9335 2766

MODULE C

FARM MOTORCYCLE SAFETY

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AG210EO A Operate ride-on farm vehicles

RANGE OF VARIABLES

Ride-on farm vehicles include:

- farm motorcycles: any 2 wheeled motorcycle that is primarily used for farm work, excluding road motorcycles
- ATV: generally a vehicle with 4 or more wheels, travelling on low pressure tyres, having a seat to be straddled by the rider and handlebars for steering control.

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:

- describe safe operating techniques for farm motorcycles.
- describe routine maintenance requirements for farm motorcycles.
- select appropriate personal protective equipment for the operation of farm motorcycles.

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

Farm motorcycles represent a significant hazard on Australian farms with 8 fatalities every year being attributed to farm motorcycle use. In particular they represent a hazard to both the 0-14 and 15-29 age groups.

Students have been given an assessment task related to the Farm Motorcycle Safety module that they attended at the Future Farmers Farm Safety Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

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

Further Information:

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

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

<http://www.stayupright.com.au>

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

Contacts: See also Module 1 - Contacts

Honda Australia Rider Training

PO Box 766

Tullamarine VIC 3043

Phone: 03 9335 4808

Facsimile: 03 9335 2766

MODULE C

FARM MOTORCYCLE SAFETY

SECTION 4: Resource Package

Attached Resources

Student Assessment Task

Assessment Answer Sheet

Slide 1 – Farm motorcycle deaths

Slide 2 – Cause of farm motorcycle accidents

Slide 3 – Safety decals

Slide 4 – Major body part injured

Slide 5 – Terrain

Slide 6 – No passengers

Slide 7 – Riding across steep terrain

Slide 8 - Up and down hills

Other Resources

- 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*).
- A pair of rubber thongs and a baseball cap (*optional*).

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?

FARM MOTORCYCLE SAFETY

ASSESSMENT TASK

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.

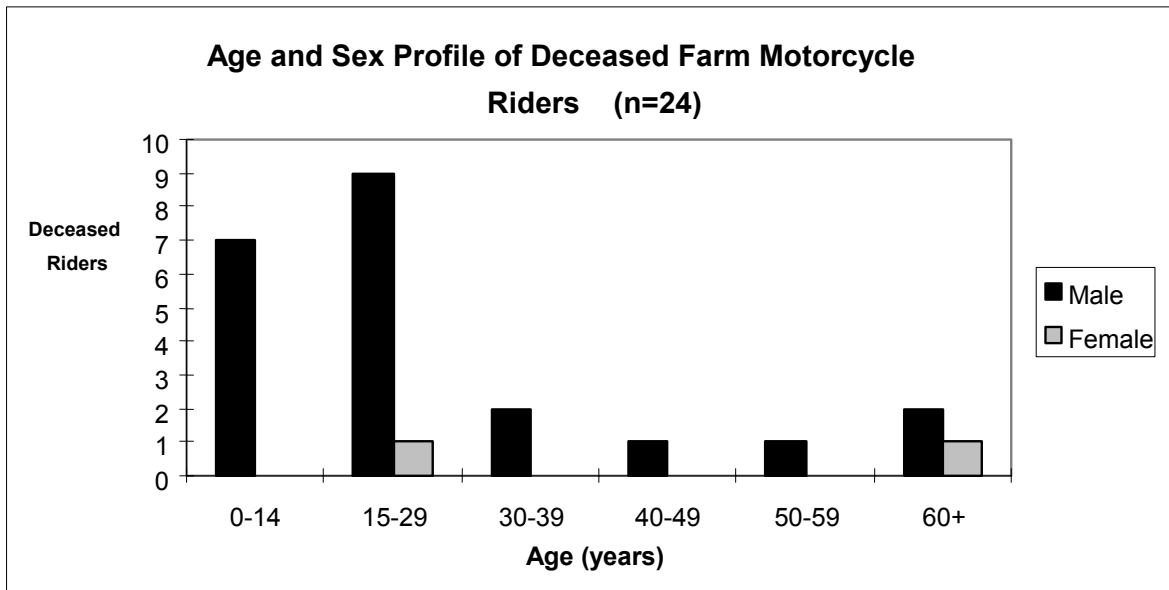
Having a farm map that outlines where environmental hazards may exist

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?

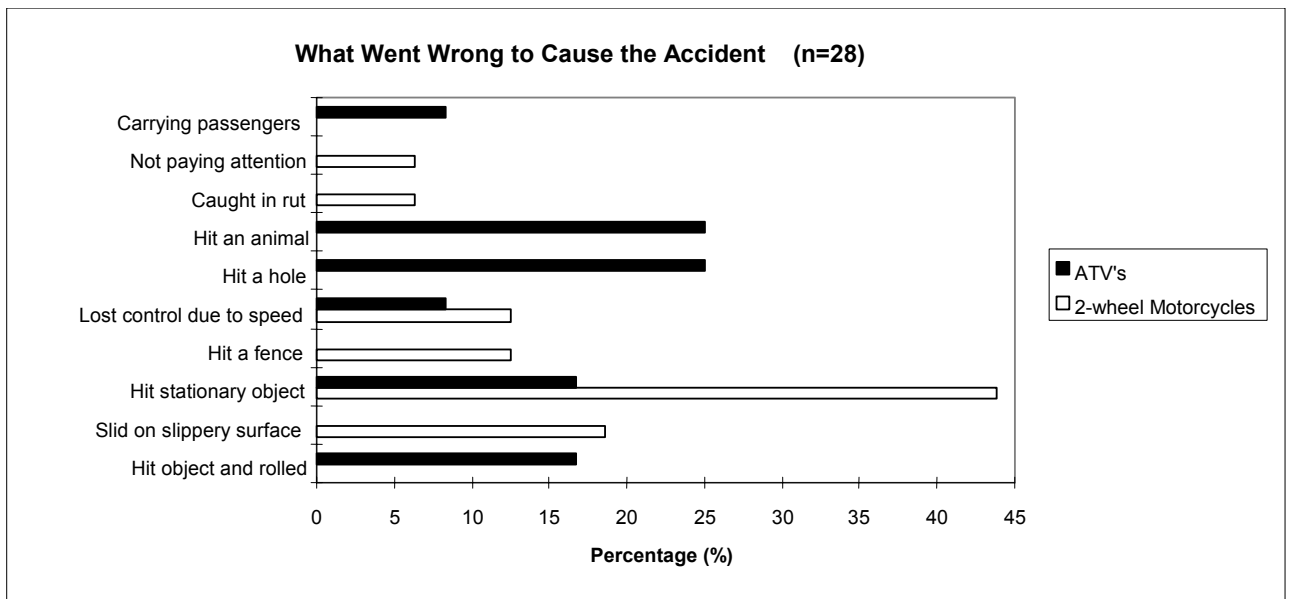
Helmet, gloves, sturdy boots, long pants, long sleeved shirt, eye protection

OH1 – Farm Motorcycle deaths



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

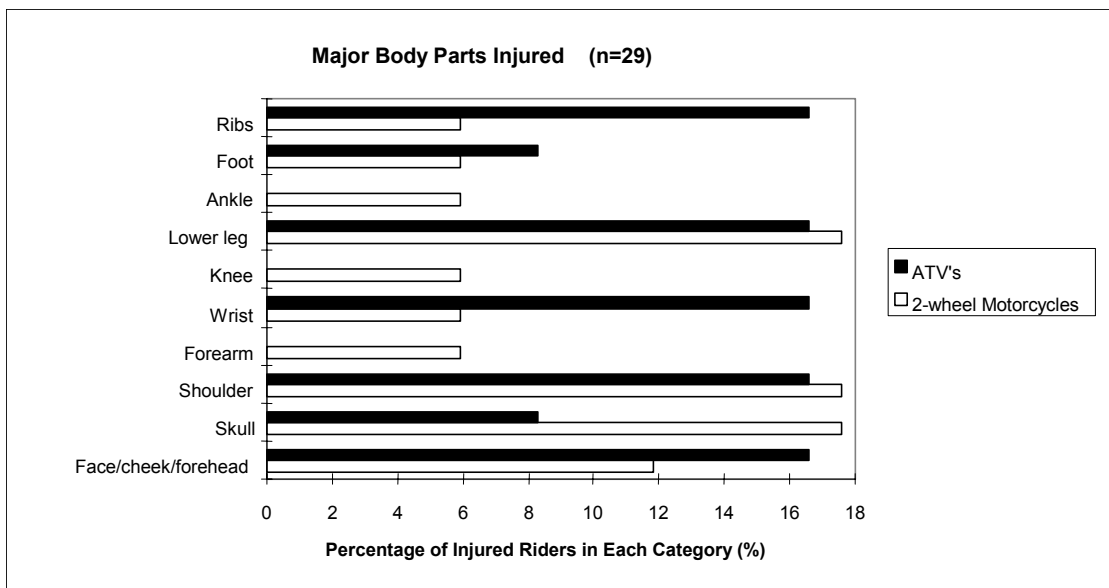
OH2 – Cause of farm motorcycle accidents



Source: Schalk T and Fragar L (2000) *Injury Associated With Farm Motorcycles on Farms in Australia*

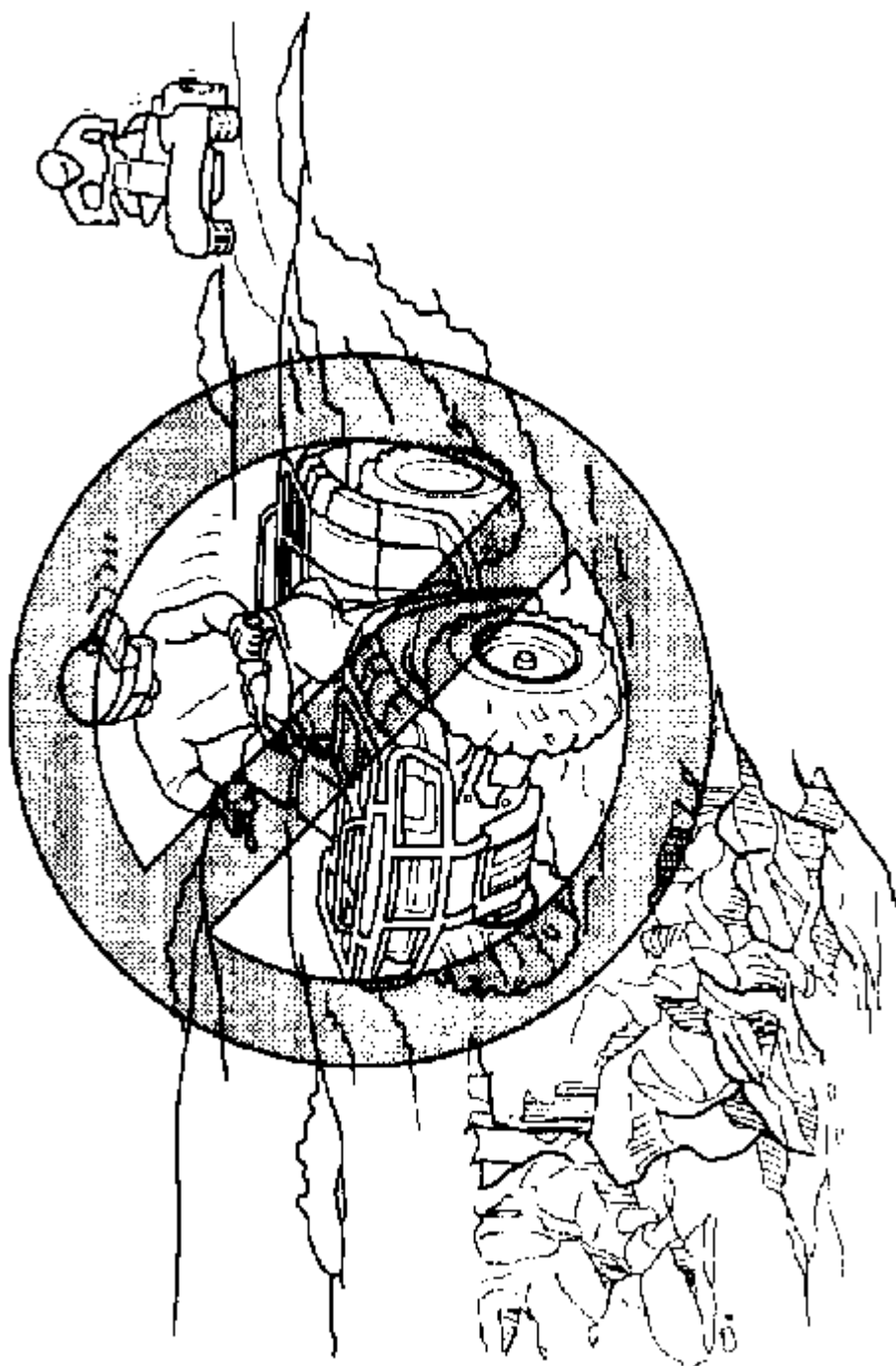


OH 4 – Major body parts injured



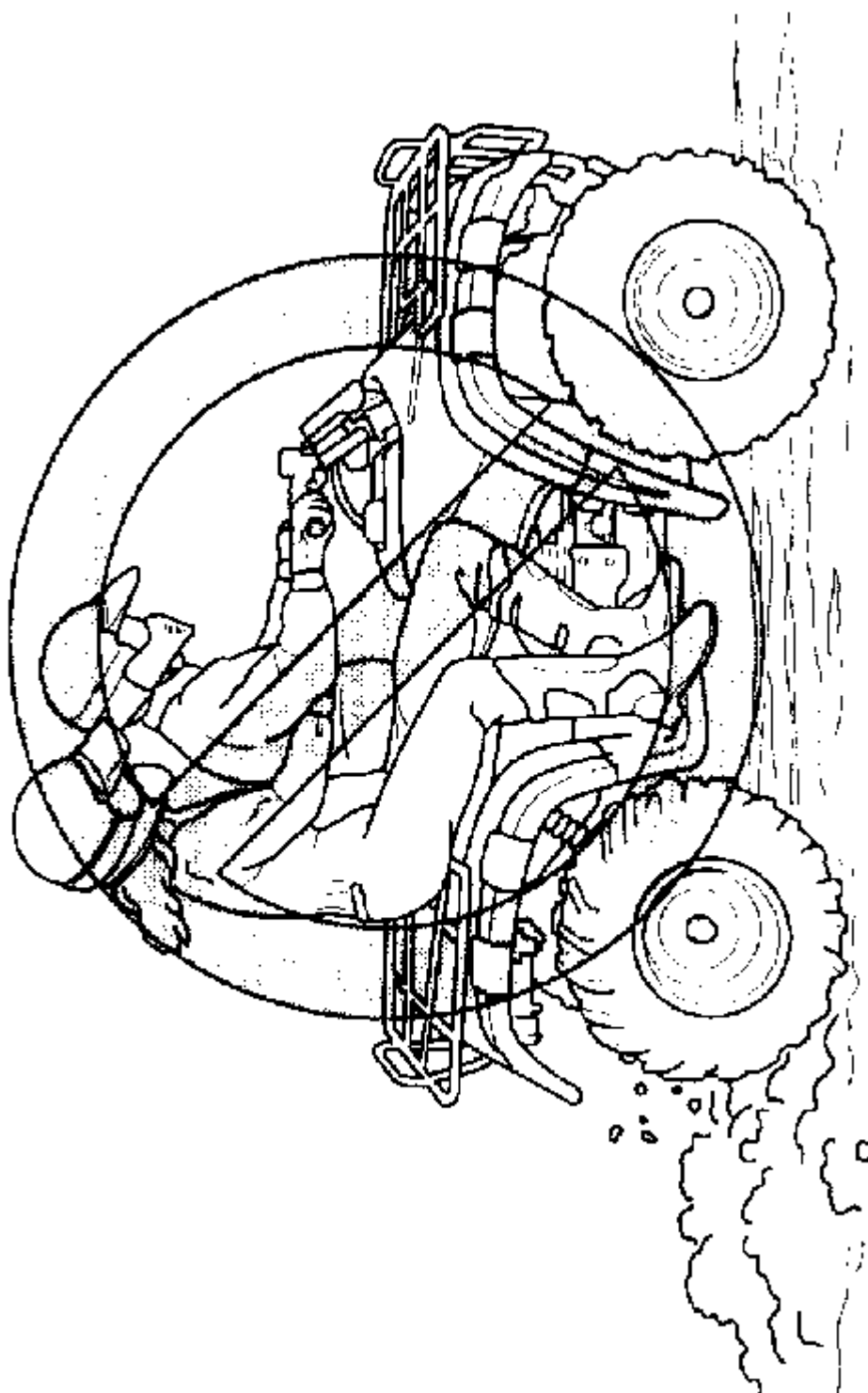
Source: Schalk T and Fragar L (2000) *Injury Associated With Farm Motorcycles on Farms in Australia*

OH5 - Terrain

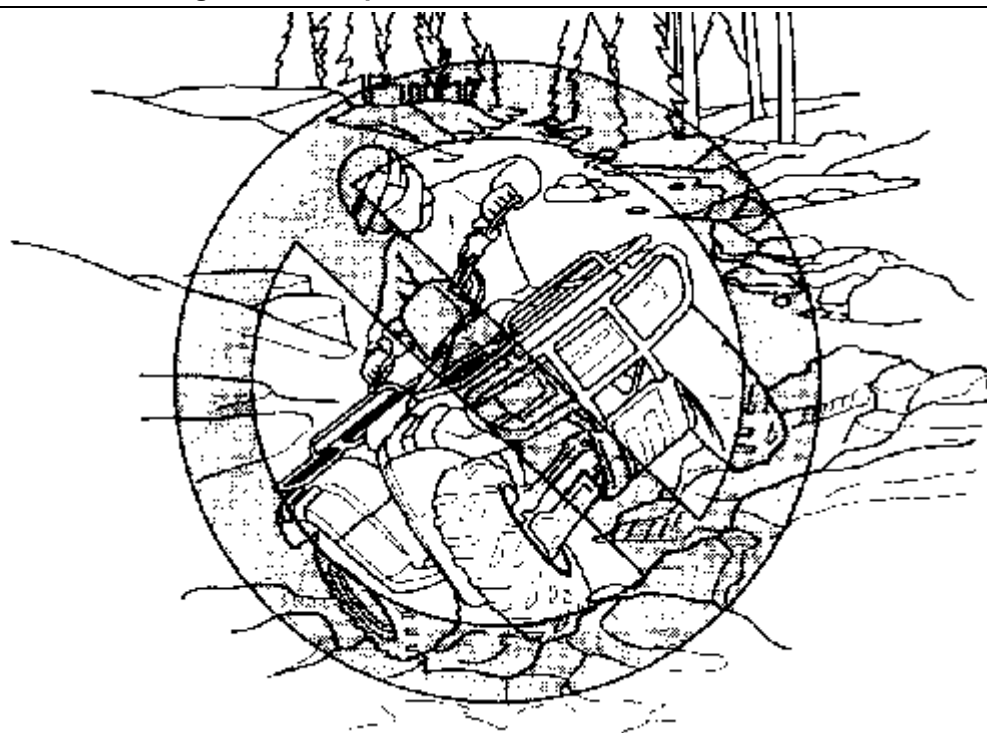


Be alert for changes on Terrain

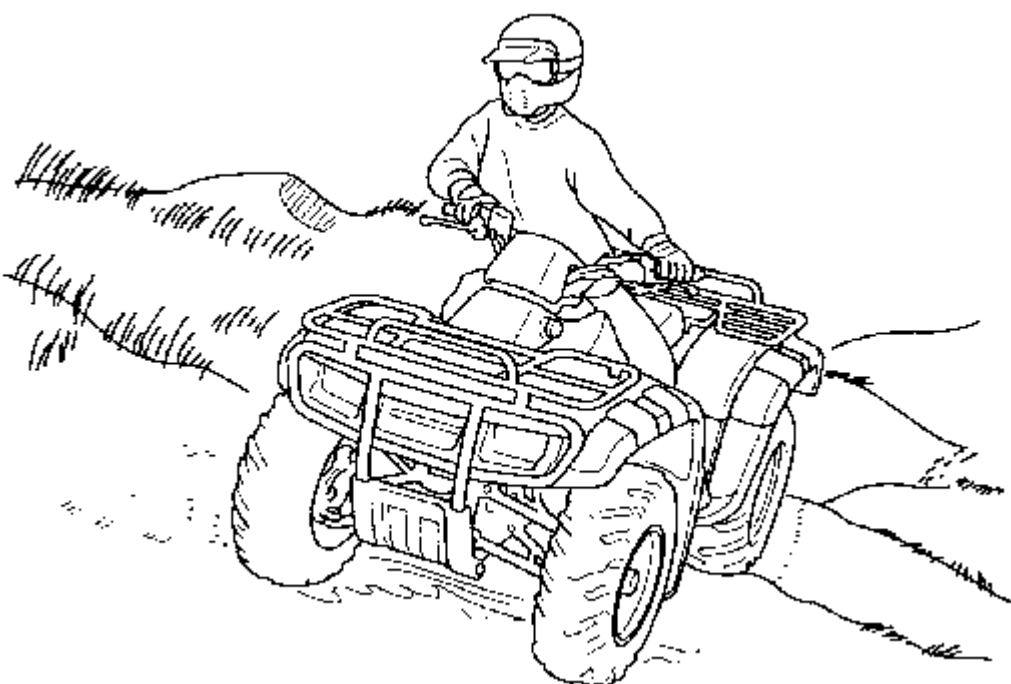
OH 6 – No passengers



OH 7 – Riding across steep terrain

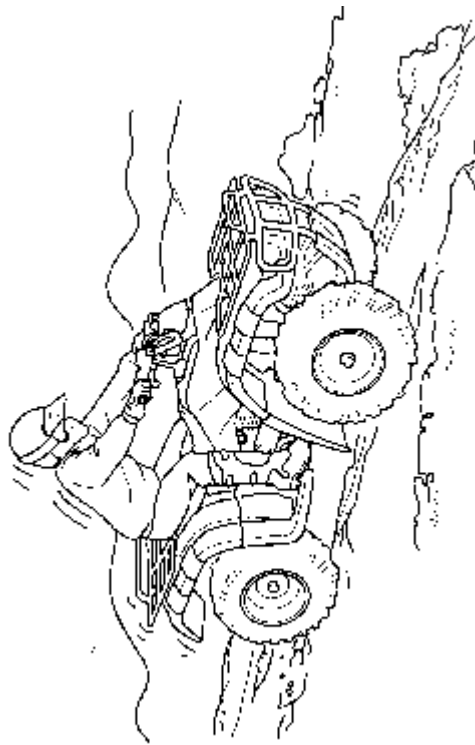


Use extra care on rough terrain

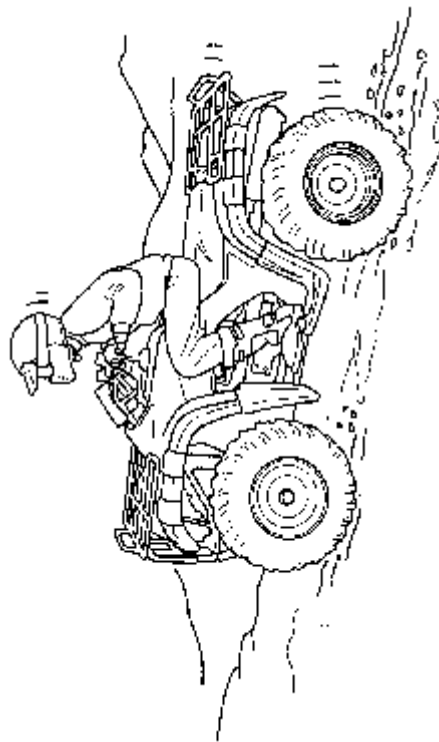


Shift weight up hill when crossing slopes

OH 8 – Up & down hills



On downhills, shift your weight back

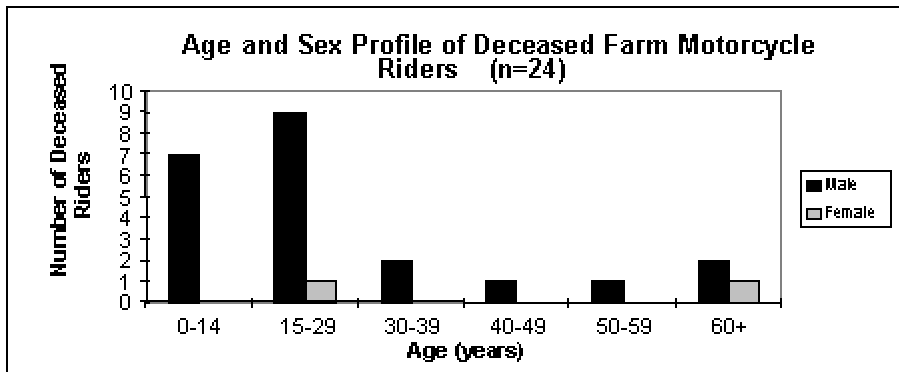


Shift weight forward when climbing hills

Source: Honda Owners Manual

Farm Motorcycle Safety

Farm motorcycles are generally 2-wheeled ag- & trail- bikes & 4-wheeled All Terrain Vehicles (ATV). Motorcycles have become an integral part of Australian farms. However, they pose significant risks & dangers to the health & 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 & skill level of the rider, rider age, fatigue, speed, use of alcohol & drugs, non-use of Personal Protective Equipment (PPE).

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

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

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

The risks involved with riding farm motorcycles range from minor injury to death. The risks associated with 2-wheel motorcycles & ATVs differ.

The risks for 2-wheel motorcycles include:

- the most common injuries are cuts & 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 head injury.

The risks for ATVs include:

- the common injuries are fractures & 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 then rolling over.
- the major cause of death is a multiple crush injury, most commonly caused by roll-over.

Before operating a farm motorcycle perform a safety check. Examine the tyres, the lights & electrics, the oil & 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 & watch for sudden stock movements.
- Always follow the recommendations in operator's manual. These include recommended tyre pressure, load & towing capacity, rider age guidelines, & passenger guidelines.
- Where possible ride with a partner. If not possible inform a responsible person of your whereabouts & return time.
- Always store motorcycles away from young children & remove the key.

In particular on ATVs:

- DON'T carry passengers, operate with excessive tyre pressure (>3-4 psi) or carry greater loads than recommended.

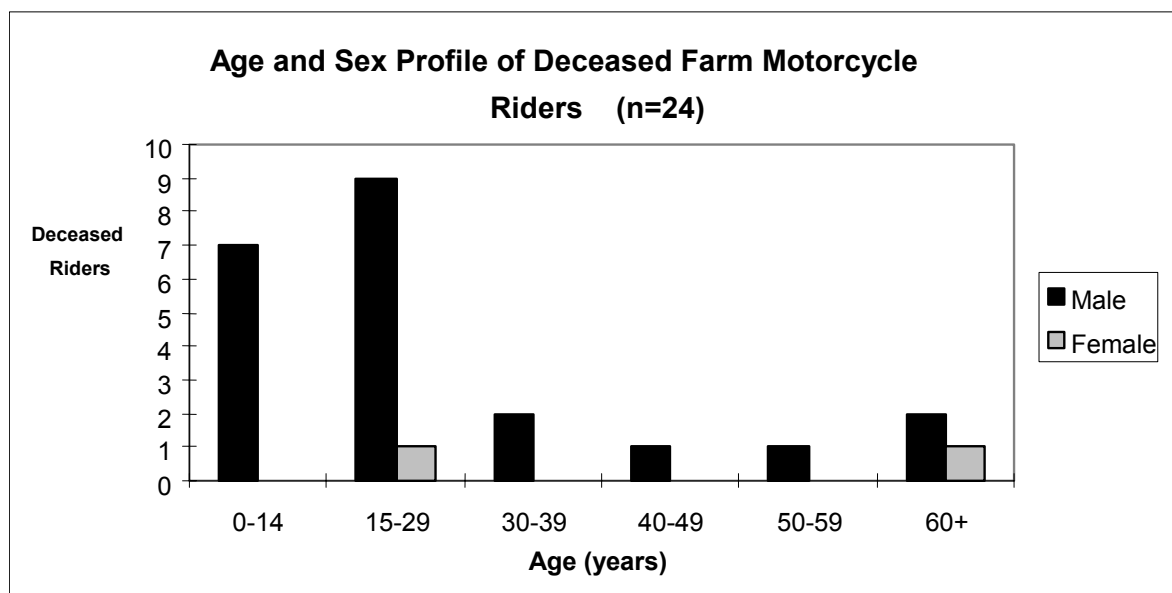
Personal Protective Equipment (PPE)

When riding farm motorcycles it is important to wear:

- A bike helmet that meets AS 1698.
- Gloves to protect the hands.
- Sturdy boots.
- Long sleeved shirt & long pants.

- Eye protection, preferably goggles but sunglasses provide some protection from foreign particles.

OH1 – Farm Motorcycle deaths



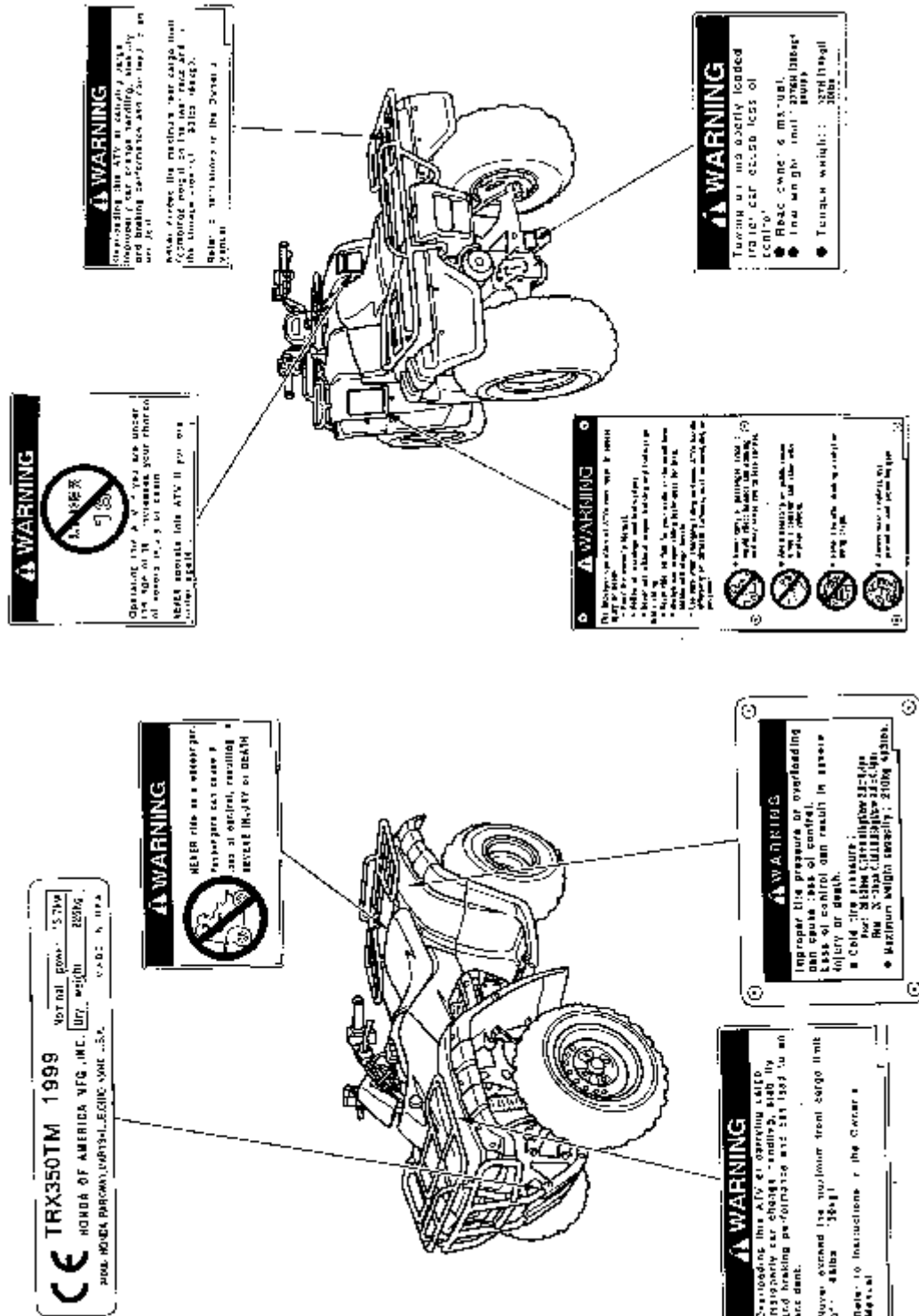
Source: NOHSC-Preliminary Results - Work-Related Fatality Study (1989-1992)

OH2 – Cause of farm motorcycle accidents



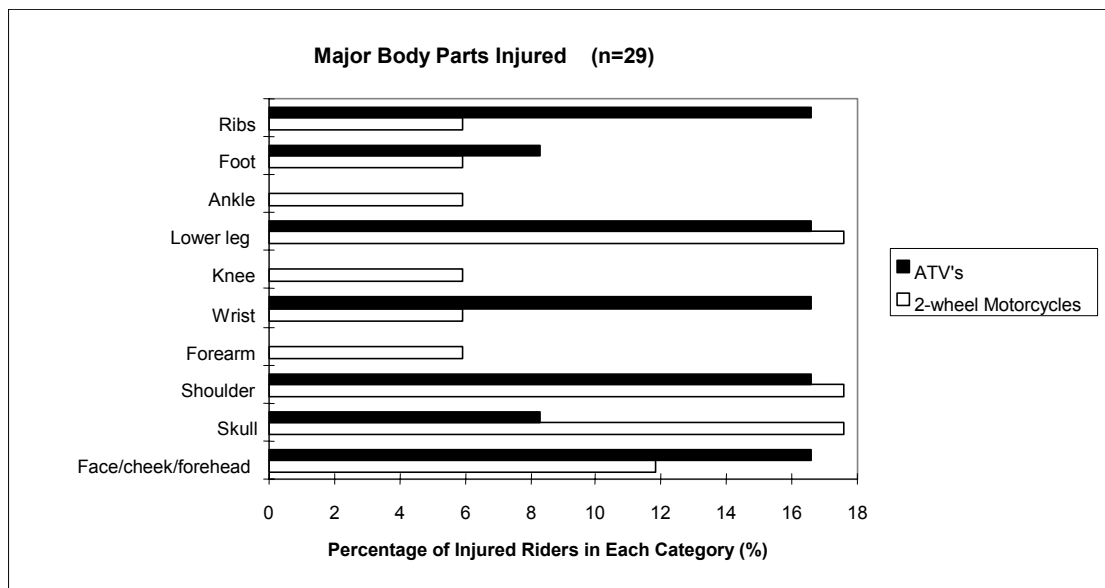
Source: Schalk T and Fragar L (2000) *Injury Associated With Farm Motorcycles on Farms in Australia*

OH3 – Safety decals



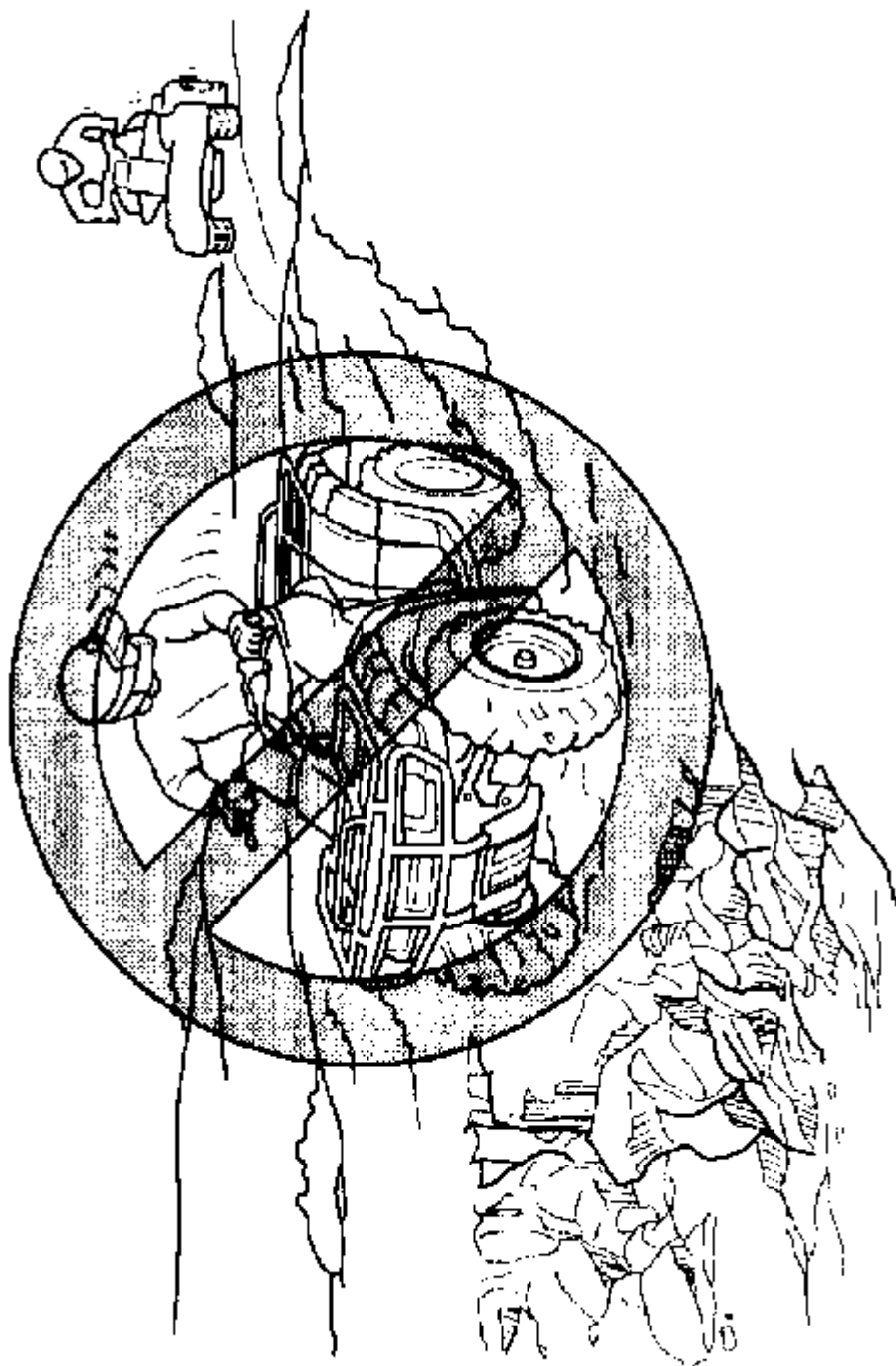
Source: Honda Owners Manual

OH 4 – Major body parts injured



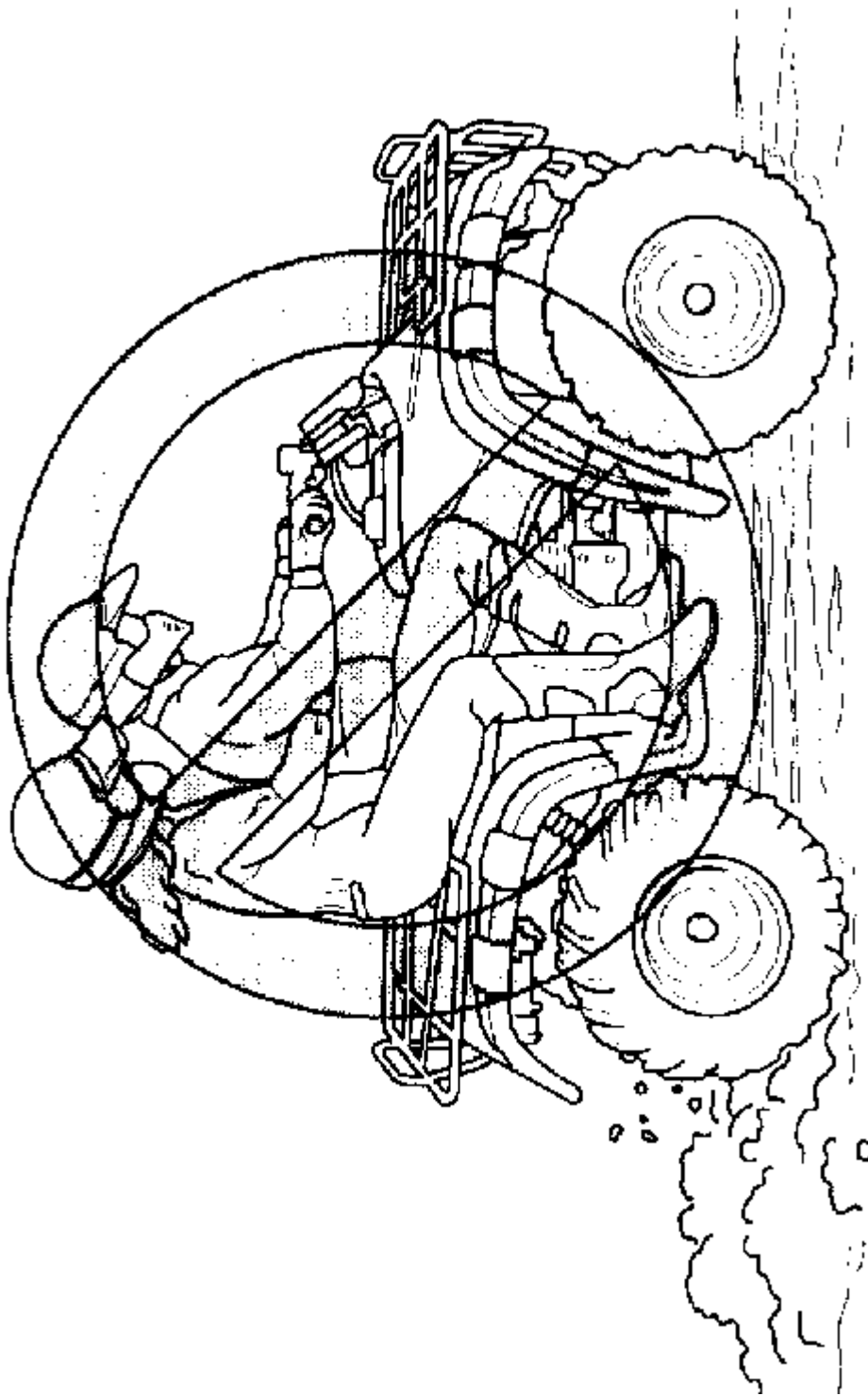
Source: Schalk T and Fragar L (2000) *Injury Associated With Farm Motorcycles on Farms in Australia*

OH5 - Terrain

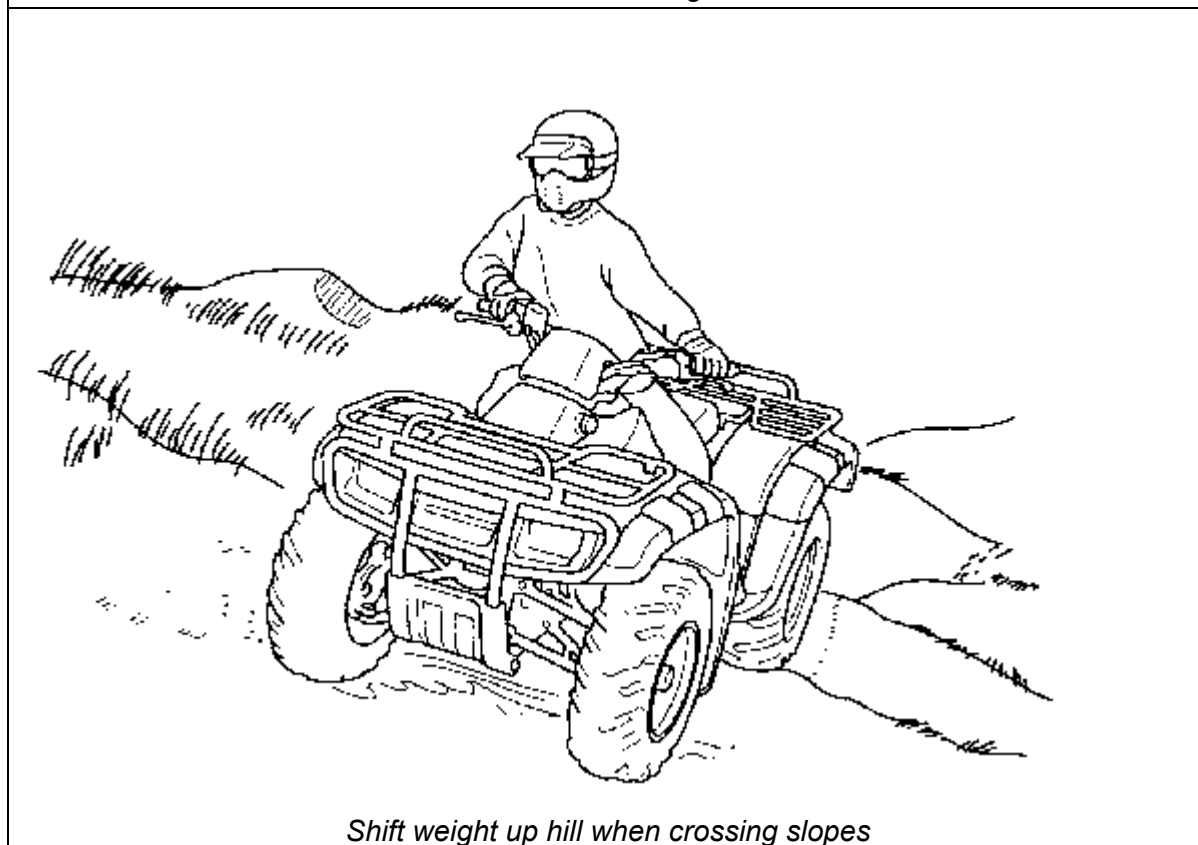
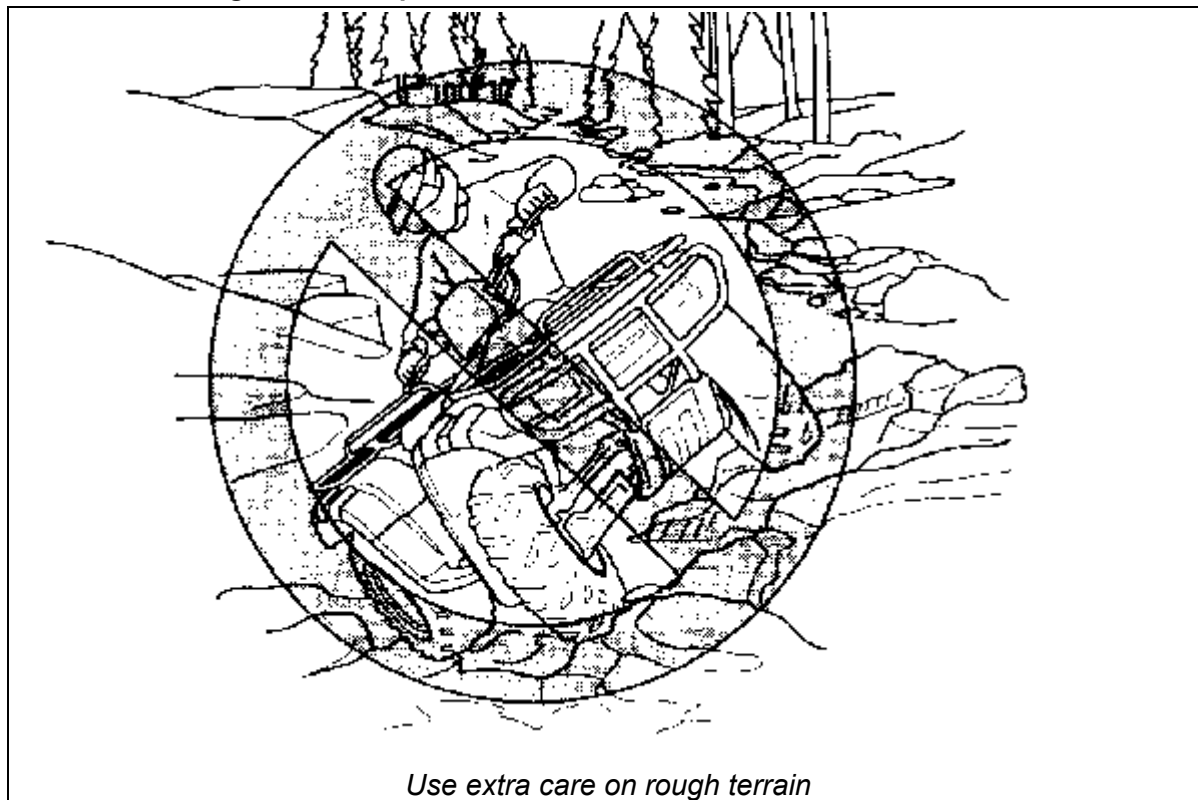


Be alert for changes on Terrain

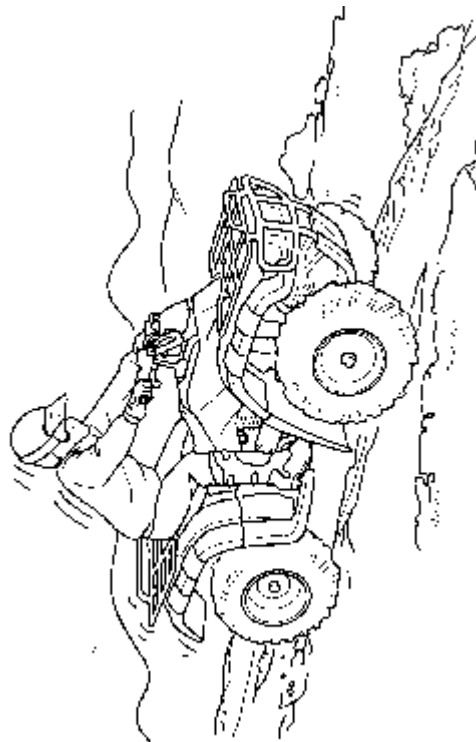
OH 6 – No passengers



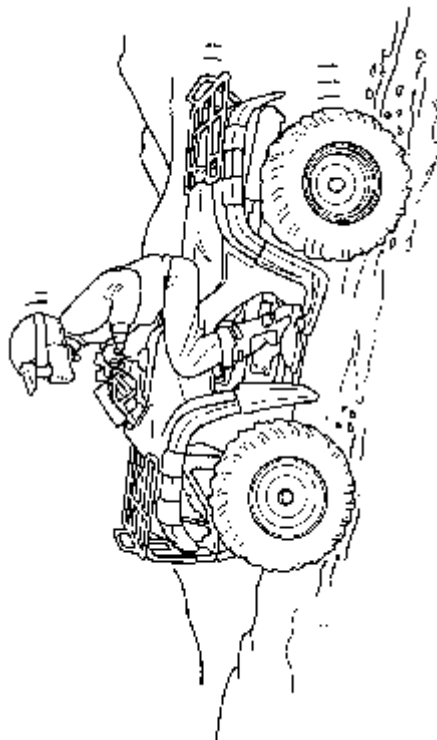
OH 7 – Riding across steep terrain



OH 8 – Up & down hills



On downhills, shift your weight back



Shift weight forward when climbing hills

Source: Honda Owners Manual

MODULE D

NOISE INJURY PREVENTION

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AGCORE2A - Follow enterprise occupational health and safety (OHS) procedures.

CORE2.2 - Follow farm procedures for hazard identification and risk control.

"Hazards in the rural workplace include: ... noise..."

RUH CORE2 A -Meet workplace health and safety requirements

CORE2.1 - Follow workplace procedure for hazard identification and risk control. Noise hazard noted throughout Range of Variables of many agricultural and horticultural units of competency.

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.

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- practical demonstration
- interactive guided discussion

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

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

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*,

MODULE D

NOISE INJURY PREVENTION

SECTION 2: INSTRUCTOR GUIDELINES

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.

Resources Required:

- A range of Australian Standards Approved hearing protection including ear-muffs and ear plugs.
- Colour chart of the ear. (Attached)
- Table 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

Optional – Overhead transparencies (attached)

Presentation Guidelines:

1. INTRODUCTION



Introduce yourself and any assistants.

Outline the aims and objectives of the presentation to the students.

2. HOW THE EAR WORKS



Using the colour chart of the ear or the overheads, provide a description of how the ear works.

Include:

- The role of the pinna, the ear-drum, the ossicles and the cochlea.
- How the hair cells in the cochlea are arranged so to describe different ranges of sound.
- How the hair cells may be damaged by excessive noise and how once they have been damaged, the body does not repair them.

3. HOW LOUD IS TOO LOUD?



Using the dB chart (which is also included in the students handout) explain that noise is measured in decibels which is a logarithmic scale, i.e. 2 decibels is more than twice as loud as one decibel.

The acceptable exposure to noise over an average 8-hour workday without reducing the noise or wearing hearing protection, is 85dB. However, if 3dBs are added to become 88dB, it actually doubles the intensity of the noise level, consequently you would have to halve the exposure time to 4 hours. If it is doubled again (91dB) one could only be exposed for a period of 2 hours. (Use the chart to demonstrate this). At 110 dB one could only be exposed for 1 minute before hearing is placed at risk (the chart is included in the student fact sheet).



Using a sound level meter (if available) measure the noise emitted by various noise sources.

E.g.

- a lawn mower or other small engine.
- a whistle from a student or a sports whistle.
- the level of a voice when spoken softly, and loudly.



Ask the students to record the level of sound emitted by each as they will be used later in the presentation.



Ask the students to work out how long it would take at those noise levels , before they would be at risk of noise injury.



See Chart (OH1)

4. WHO IS EXPOSED TO FARM NOISE?



Ask the students to indicate by a show of hands, the following :

- How many students are off the land?
- How many visit farms?
- How many drive tractors with a cabin?
- Keep your hands up if hearing protection is **always** worn.
- How many operate chainsaws?
- Keep the hands up if hearing protection is **always** worn.
- How many use firearms?
- Keep the hands up if hearing protection is **always** worn.

5. TYPICAL FARM NOISE LEVELS (Interactive using the dB chart in instructors package and on student fact sheet)



Refer to the dB chart and outline that the noise level of a chainsaw operating is approximately 105-110dB - therefore after about 2 minutes (unprotected) hearing is placed at risk.



Ask the students how loud they believe a shotgun at the shooter's ear would be.



Following guesses, explain that it is about 140dB and at this level there is instant damage to the hair cells.



Use a local analogy such as a wheat or cotton field or the following - ask the students to think about a tropical beach with the tall palm trees swaying in the breeze. Then a hurricane hits. The trees after the storm are flattened beyond recovery. The same thing happens to the hair cells when a loud noise occurs. They do not recover especially following shotgun and high calibre rifle shots.

6. NOISE INJURY - THE 4 Ps OF HEARING LOSS

PAINLESS (use the analogy that if you used an angle grinder without eye protection and got metal in the eye, it would be very painful so that the next time you used the grinder, eye protection would be used). With noise, the ears do not bleed therefore they cannot let you know that they are being damaged. Perhaps the only signal the brain would receive that there is a problem is the ringing or buzzing in the ears after the exposure.

PROGRESSIVE - a noise injury does not occur in a short time (except when exposed to very loud noise such as a shotgun). It happens over a period and it is often not noticed until a significant amount of damage has already occurred

PERMANENT - hearing lost because of exposure to noise does not recover - it is gone for good

PREVENTABLE - a noise injury is the only type of hearing loss that is totally preventable

7. WAYS TO REDUCE NOISE ON THE FARM



Encourage the students to identify different ways to reduce noise on the farm.



If the students do not identify all of the following, ensure that you highlight their importance as a means of noise reduction on farms.

Risk control

There is usually more than one means of reducing the risk associated with a particular hazard. A ranking of risk control options from most effective to least effective has been established and should always be considered. Often a combination of the strategies used simultaneously is the best option. The options are:

Eliminate the Hazard

This control measure is rarely available, but should always be considered first. Does the noise source have to be used at all?

Substitute a hazard for a less hazardous option

When replacing machinery, encourage students to talk to their parents about buying quieter equipment

Engineering or design change

- Consider separating the noise from people not involved in the work or the general work area. This could be done with walls, screens, or other barriers.
- Regular maintenance of the farm machinery - seals, mufflers etc

Use of Safer Working Procedures

Where the hazard cannot be removed or reduced using the above principles, then establishment of work rules or practices may be the only option e.g. rotating jobs throughout the day - noisy and quiet tasks

Personal Protective Equipment (PPE)

This option should only be used when no other control measures are practical or when it is necessary to increase the level of protection.

8. PERSONAL HEARING PROTECTION (interactive - demonstration)



Ask the students what do they think is the BEST protection - earmuffs or earplugs?



This will vary depending on their experiences. It is essential to allow discussion to determine the reasons why they personally feel either plugs or muffs are better. It is also important to reassure them that either may be appropriate.

When selecting hearing protection, the 3 most important factors to consider are:

- Comfort
- Australian Standards Approval - AS 1270
- Sufficient protection for the task to be undertaken



Demonstrate how to identify the Australian Standard Approval on the packaging of the earmuffs or plugs.



Show the students where to find the information that indicates how much noise the protective device will block out (if used properly) - this is on the packaging. In Australia it is the SLC80 rating (example - muffs or plugs with an SLC80 rating of 25dB is usually sufficient for most farming activities).



Reinforce the need to maintain personal hearing protection.

Cushions on ear muffs should be washed in hot soapy water. The cushions should be replaced if they become cracked or hardened. On farms, this is usually every 6 months.

Disposable ear plugs should not be reused. Reusable ear plugs should be washed before reuse.



Invite one of the students who previously indicated that they feel earplugs are better, to assist you in demonstrating how to fit the plug. (It is important that the student pulls the pinna up to straighten the ear canal and holds the plug in place for a few seconds to enable it to expand in the canal. If the earplug is in correctly, it should not be visible from the front). Ask the students to tell you if the student inserted it correctly. You as the presenter should also correctly insert an earplug. This is a very good exercise to engage all the student's attention and to use peers as educators.

9. CONCLUSION

Use the student evaluation form on the back of the student handout as a guide to ask the students questions based on the content of the presentation. E.g. "how loud is a shotgun at the shooter's ear?" "How often should the ear cushions in ear muffs be changed?" "If you double the noise level, how many decibels are you adding?" etc

Assessment Task and Guidance Material

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

References:

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

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

Further information:

AS/NZS 1269.0:1998 Occupational noise management - Overview

AS/NZS 1269.1:1998 Occupational noise management - Measurement and assessment of noise emission and exposure

AS/NZS 1269.2:1998 Occupational noise management - Noise control management

AS/NZS 1270:1999 Acoustics - Hearing protectors

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 on-line WorkCover publications and to Occupational Health and Safety legislation and regulations.

Contacts: - See also Module 1 - Contacts

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

MODULE D

NOISE INJURY PREVENTION

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AGCORE2 A - Follow enterprise occupational health and safety (OHS) procedures
CORE2.2 Follow farm procedures for hazard identification and risk control

“Hazards in the rural workplace include:... noise...”

RUH CORE2 A - Meet workplace health and safety requirements
CORE2.1 Follow workplace procedure for hazard identification and risk control
hazard noted throughout Range of Variables of many agricultural and horticultural units of competency.

Aim:

To increase the awareness of rural noise, and reduce the incidence of noise injury in young 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.

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

Noise injury prevention is an important occupational health and safety aspect of agriculture, with 60 percent of NSW farmers over the age of 45 having a significant hearing impairment affecting their everyday lives. Moreover one third of young farmers between the ages 15-24 years already suffer from hearing loss, which is consistent with noise exposure

Students have been given an assessment task related to the Noise Injury Prevention module that they attended at the Future Farmers Farm Safety Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

References:

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

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

Further information:

AS/NZS 1269.0:1998 Occupational noise management - Overview

AS/NZS 1269.1:1998 Occupational noise management - Measurement and assessment of noise emission and exposure

AS/NZS 1269.2:1998 Occupational noise management - Noise control management

AS/NZS 1270:1999 Acoustics - Hearing protectors

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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

MODULE D

NOISE INJURY PREVENTION

SECTION 4: Resource Package

Attached Resources

- Student Assessment Sheet
- Teacher Answer Sheet
- Student Fact Sheet
- Slide 1 - Table of Noise Levels and Exposure Times
- Slide 2 - Colour chart of the ear
- Slide 3 – Ear detail
- Slide 4 – Hair cells & cochlea

Other Resources

- A range of Australian Standards Approved personal hearing protection including ear muffs and ear plugs.
- 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

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 does what to the amount of time a person can be exposed before damage occurs?

doubles

Trebles

halves

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?

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:

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

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)? NO

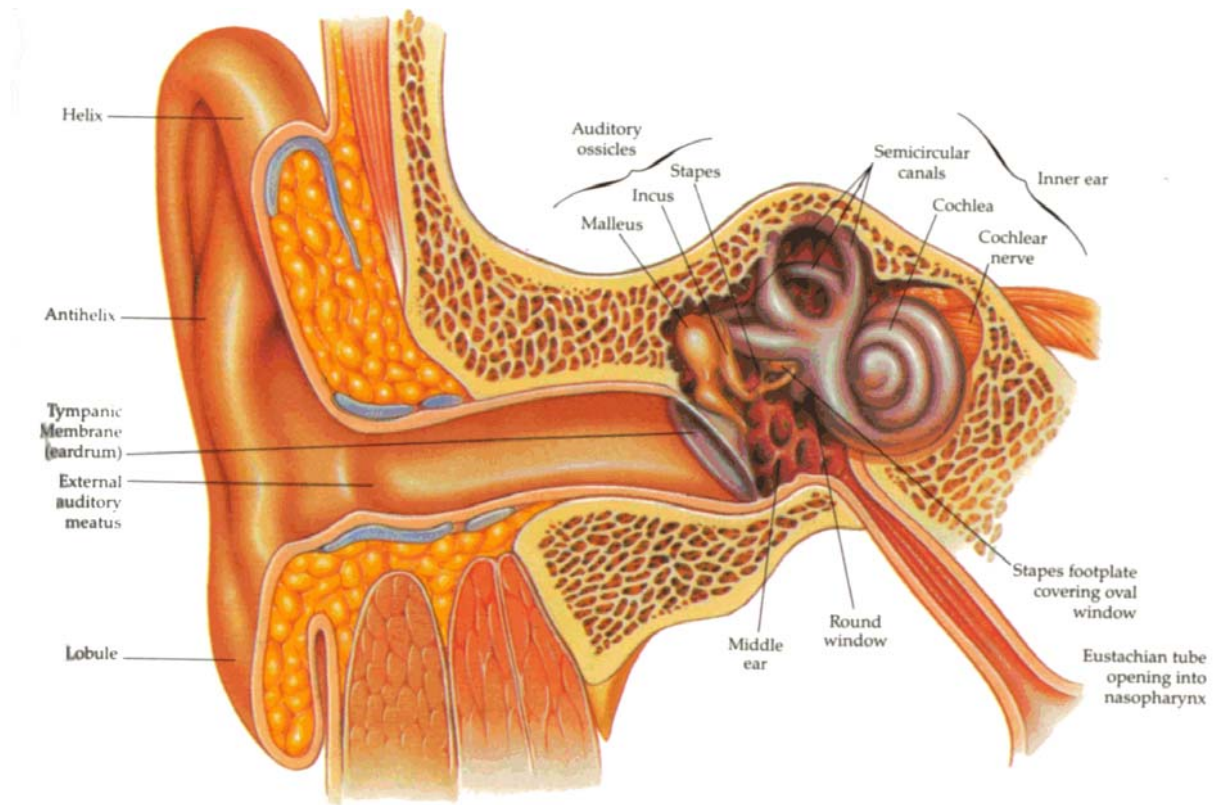
9. When should the cushions on earmuffs be changed?

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

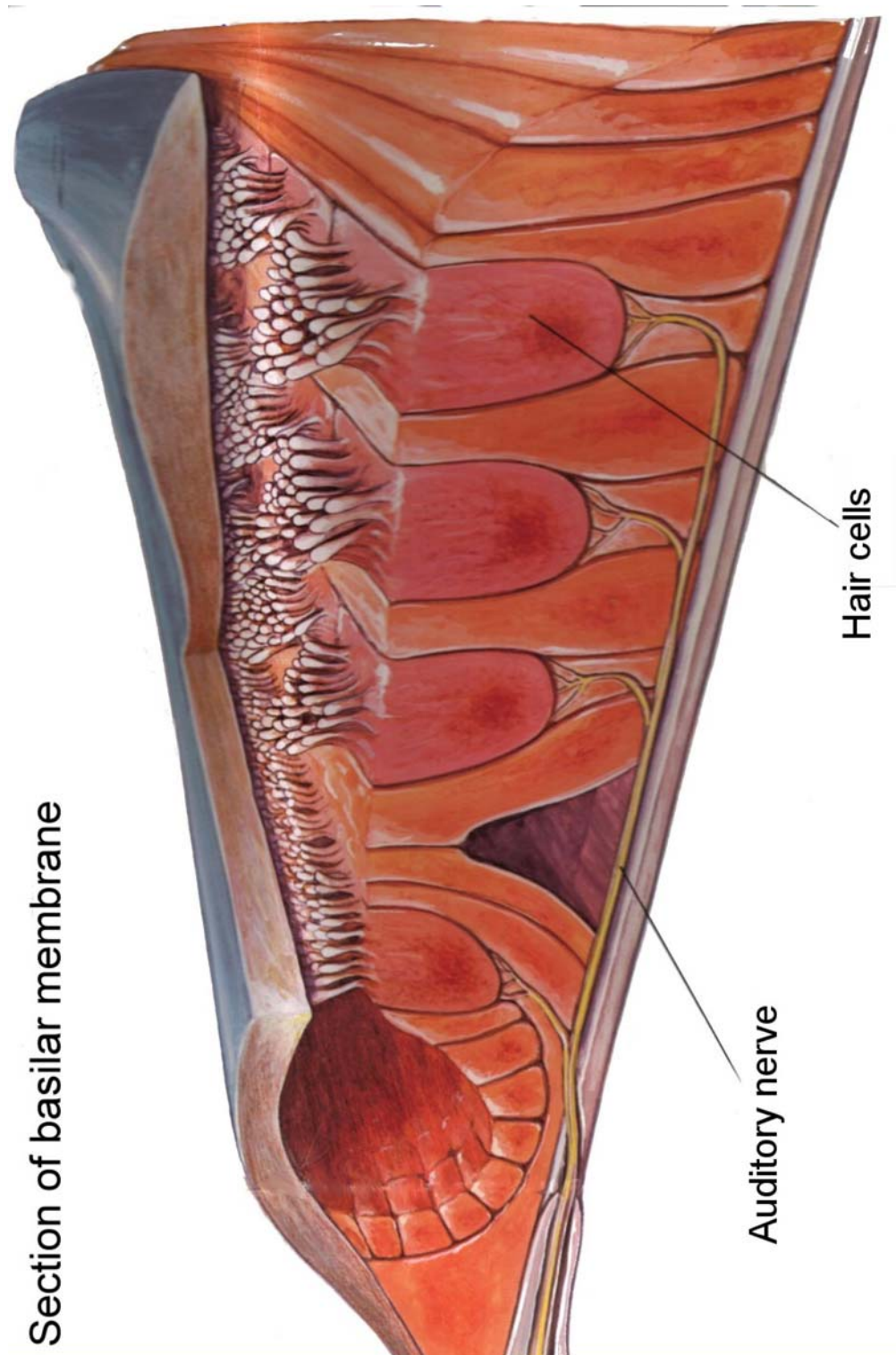
OH 1 Table of NOISE LEVELS AND EXPOSURE TIMES

dB	Exposure
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes
103	8 minutes
106	4 minutes
109	2 minutes
112	1 minute
140	Instant damage

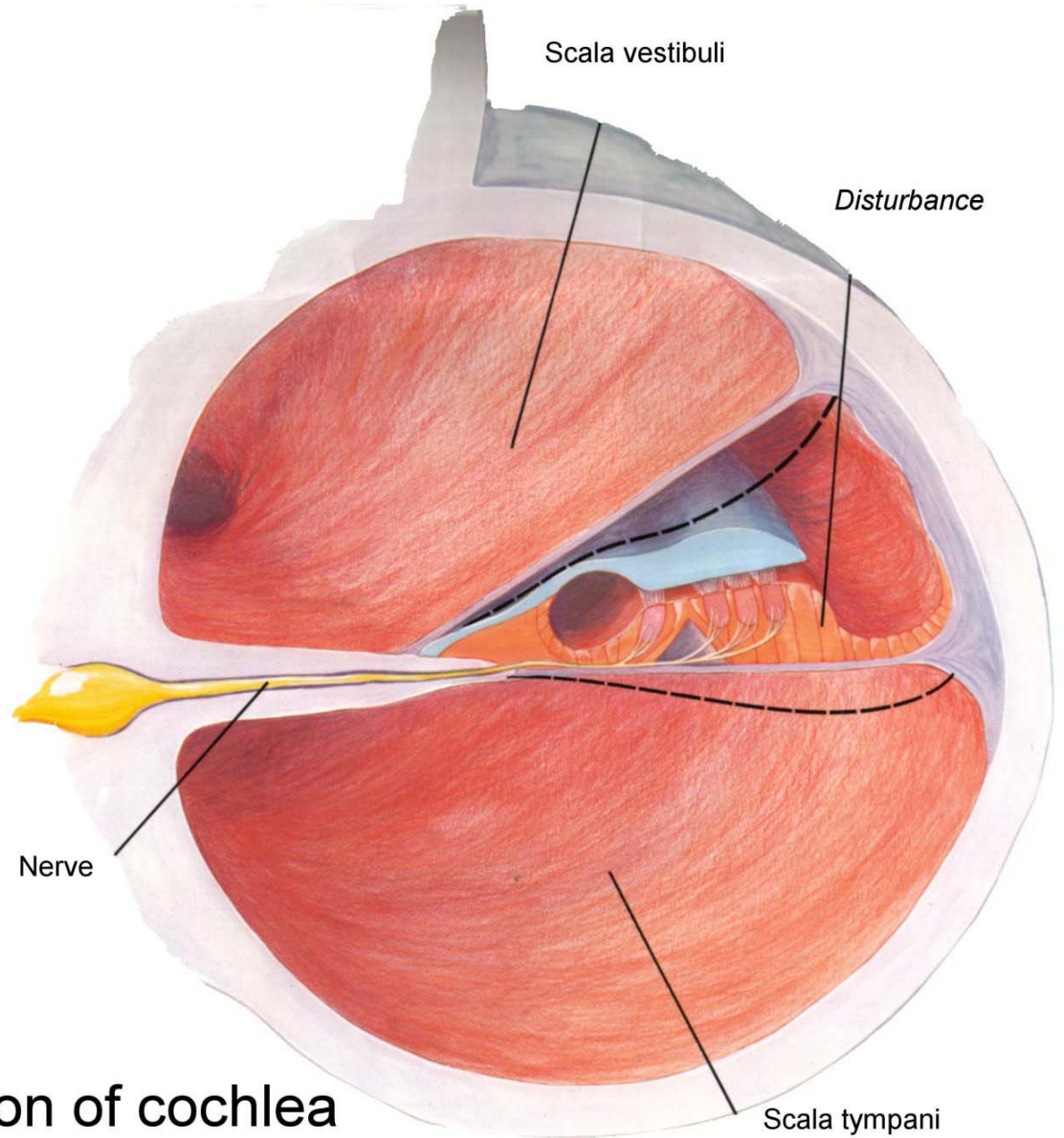
OH 2 – Colour chart of the ear



OH 3 – Detail of Hair cells



OH 4 – Cochlea



Section of cochlea

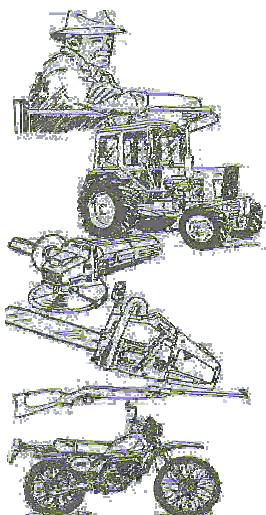
Noise Injury Prevention

From hearing screening it is apparent that 60% 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 Levels & Exposure Times

dB	Time till damage
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 mins
10	15 mins
103	7½ mins
106	3 mins
110	1½ mins
140	instant damage

Noise is measured in decibels (dB), which is a 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.



Typical noise source	Typical Noise Levels dB(A) at operating distance	Time required to exceed regulatory limit
Quiet countryside	30-35	No limit
Conversation	60-70	No limit
Grain Auger or Header	85-95	8 hrs (at 85 dB)
Angle Grinder	85-95	4 hrs (at 88 dB)
Motorcycle – 50 kph	90-95	48min (at 95 dB)
Tractor – idling	75-80	No limit
- working (no cab)	95-100	15min (at 100 dB)
- working (cab)	75-85	26 hrs (at 80 dB)
Chainsaw – idling	80-90	2.5 hrs (at 90 dB)
- cutting	105-120	1 minute (at 112 dB)
Pig shed feeding	95-105	5 minutes (at 105 dB)
Shotgun firing	140+	Instant damage

Source: Modified by WorkCover NSW using formula in AS 1269 from 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 that is totally preventable.

On-farm noise reduction strategies:

- Where possible use quieter machinery
- Do regular maintenance of machinery
- Placing loud tools outside of the workshop or near open areas
- Wearing personal hearing protection



Earplugs



Earmuffs

Personal Hearing Protection

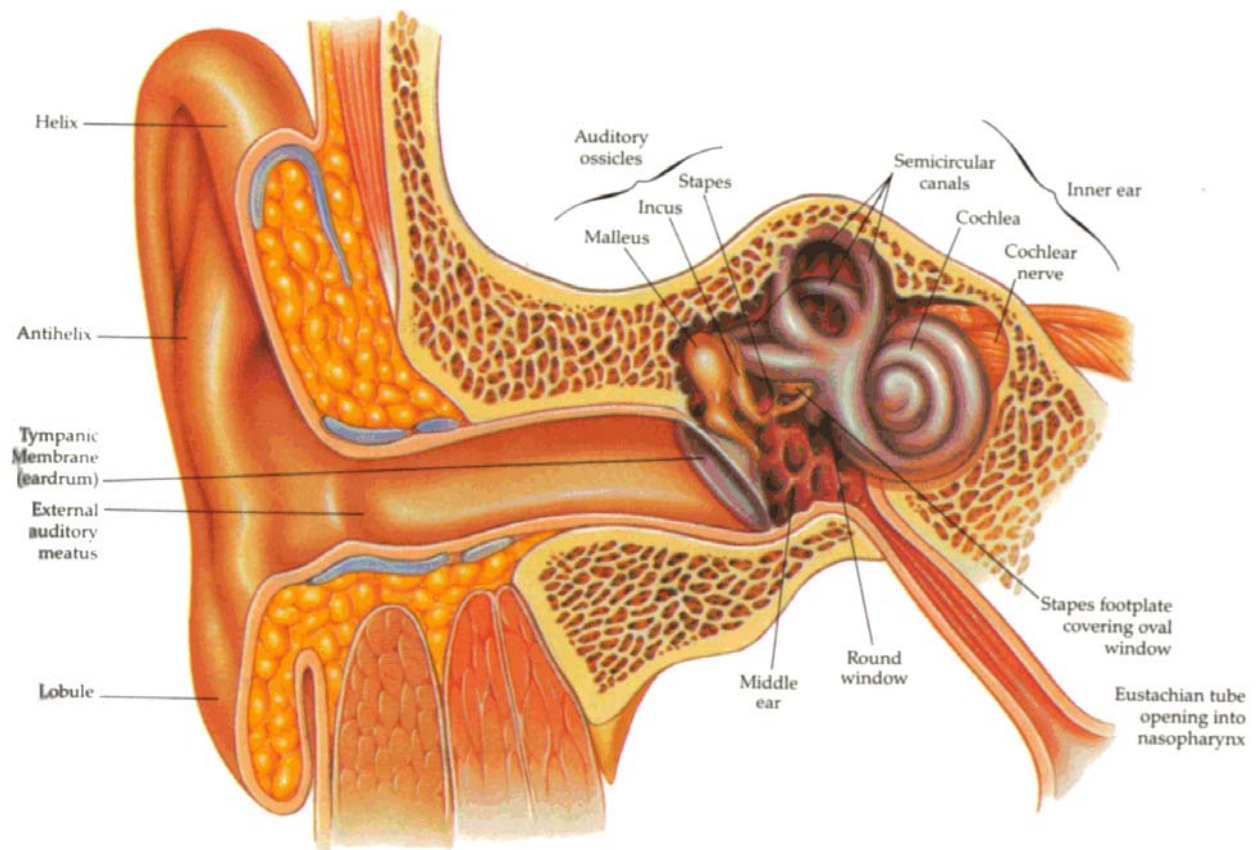
When selecting personal hearing protection it is important to ensure that:

- 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:
 - Earmuffs may be either single units or caps attached to hard hats. Earmuffs may be difficult to wear with other safety equipment. Cushions on earmuffs should be regularly removed & washed, & replaced should they become cracked or hardened (on farms this is usually 6 months). Earplugs may be either disposable or reusable. Earplugs are either pre-moulded or require shaping prior to use. When fitting earplugs it is essential to hold the outer ear with one hand & pull it up & 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 earplug is correctly fitted it should not be visible from the front. Disposable earplugs should be discarded after use, reusable earplugs should be washed in warm soapy water & dried after use.

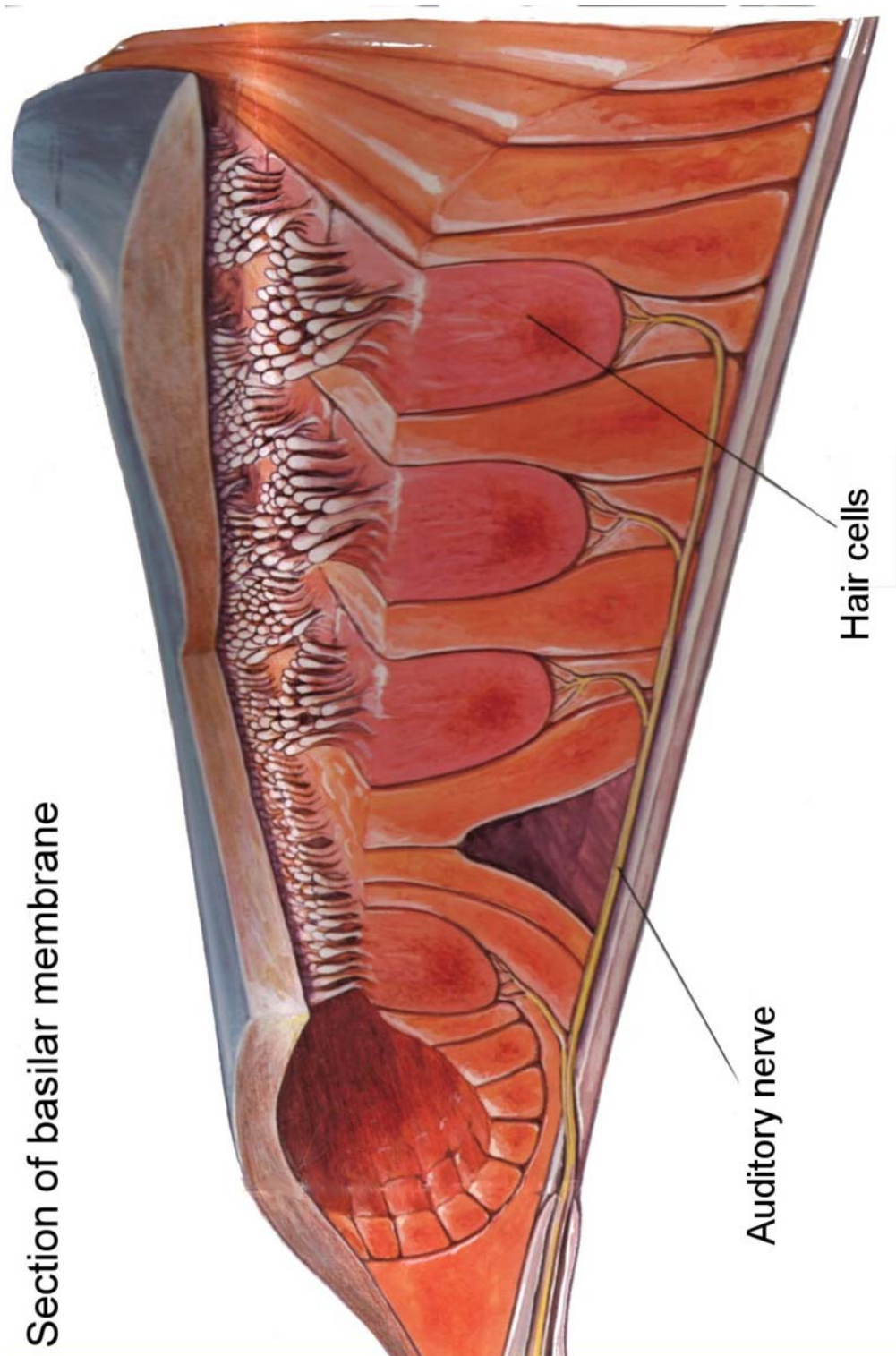
OH 1 Table of NOISE LEVELS AND EXPOSURE TIMES

<u>dB</u>	<u>Exposure</u>
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes
103	8 minutes
106	4 minutes
109	2 minutes
112	1 minute
140	Instant damage

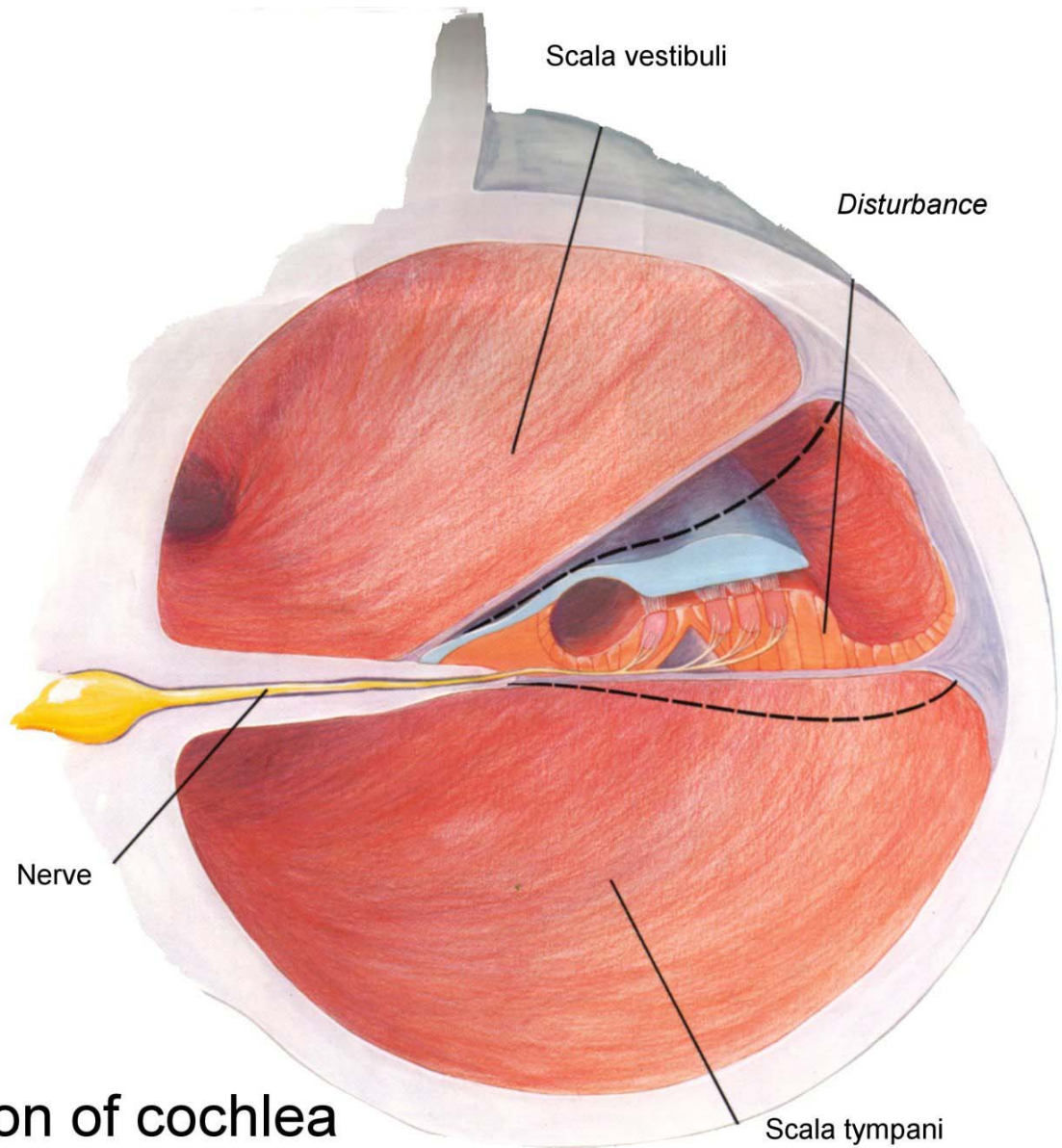
OH 2 – Colour chart of the ear



OH 3 – Detail of Hair cells



OH 4 – Cochlea



Section of cochlea

MODULE E

MANUAL HANDLING ON FARMS

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures

CORE2.2 Follow farm procedures for hazard identification and risk control

“Hazardous manual handling tasks include: moving, lifting, carrying of bags, drums, cartons, animals, bales, shovelling, loading materials, pulling, pushing, up-ending materials, chipping weeds, picking fruit, vegetables, shearing sheep, goats”

Aim:

To raise awareness of the hazards present in manual handling by the four main risk factors:

- Posture
- Load/force
- Repetition
- Duration

and 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 injuries
- demonstrate how safe manual handling techniques fit into that hierarchy.

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

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

Acknowledgement:

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

National Standard for Manual Handling, [NOHSC: 1001 (1990)], and the *National Code of Practice for Manual Handling*, [NOHSC: 2005 (1990)], Commonwealth of Australia

MODULE E

MANUAL HANDLING ON FARMS

SECTION 2: PRESENTER GUIDELINES

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 injuries
- demonstrate how safe manual handling techniques fit into that hierarchy.

Resources Required:

- Diagram of the spine.
- The worksheet and answer sheet.
- Farm Safety Solutions Kit –CRS Australia.
- Tilt-a-drum and an empty, clean 20 litre drum.
- Drum lifter and an empty, clean 200 litre drum.
- Ascender barrow.
- Curved handled shovel.
- A heavy object appropriate to the region. Eg, a bale of hay, or a fruit box.

Presentation Guidelines:

1. INTRODUCTION

Introduce yourself to the students.



Explain the purpose of the module, and how it will look at how manual handling causes injuries and at safe practices to reduce the risk of a manual handling injury.

To highlight the risks of manual handling injury in the agricultural industries use the following statistics from WorkCover NSW BackWatch Statistics 1993/94.

- 5% of all major back injuries in NSW occurred in Agricultural Industries
- Agricultural industries have an equally high rate (11 per 1000) of back injuries per worker compared to other industries such as construction, wholesale, or manufacturing.
- 80% of the population have an episode of back pain during their lifetime.
- Of the major back injuries in Agriculture, the most common age was 30-34 years old for both male and females.
- Young males are more likely to have a back injury because they take more risks.
- To avoid back injury, you must take care during manual handling.

2. WHAT IS MANUAL HANDLING?

Manual handling is any activity requiring human force to:

- Push
- Pull
- Lift
- Lower
- Carry
- Restrain
- Hold a Load

3. HOW THE BODY MOVES



Using the diagram of the spine, identify the each part of the spine and the muscles moving the spine.

Vertebrae bodies	bear $\frac{2}{3}$ of the weight
Facet joints	bear $\frac{1}{3}$ of the weight and direct movement
Discs	act as spacers, and as hydraulic shock absorbers.
Deep muscles	stabilise, or steady the spine. This includes abdominal muscles.
Superficial muscles	move the spine.

4. HOW MANUAL HANDLING INJURIES MAY OCCUR



MH injuries are commonly caused by biomechanical stress and physiological stresses on the musculoskeletal system.

Manual handling injuries may occur when forces are excessive, or continuously repeated in an unbalanced fashion.

Manual handling also causes injuries to other parts of the body besides the back. Neck, shoulder, arms and wrists being the other areas that are commonly affected.

Manual Handling injuries can be the result of cumulative stresses and from a single event where the “load handled or force exerted” exceeds the physical capability of the musculoskeletal system.



Ask the students to name some typical ways that people injure themselves when manual handling on the farm.



Fencing, Shearing, Lifting a barrel or a drum, Marking calves/lambs, Drenching sheep, Shoeing a horse, Loading hay bales, Lifting the end of a concrete trough

Explain that manual handling injuries can effect any part of the body, but people commonly injure their lower backs.



Ask the students to name some reasons why the people commonly injure their back when manual handling on farms. (risk factors)



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 too heavy, or awkward for one person to control.

5. THE HIERARCHY OF CONTROL

The OHS Regulation 2001 imposes an obligation to control a risk to health or safety by taking measures to minimise the risk to the lowest level reasonably practicable: These measures are called the “Hierarchy of controls”. You should select from the highest level possible. Measures higher in the order are the most effective. Often a combination of the strategies used simultaneously to minimise the risk to the lowest level reasonably practicable is the best option to be taken, if no single measure is sufficient for that purpose.

(a) firstly, substituting the hazard giving rise to the risk with a hazard that gives rise to a lesser risk,

(b) secondly, isolating the hazard from the person put at risk,

(c) thirdly, minimising the risk by engineering means,

(d) fourthly, minimising the risk by administrative means (for example, by adopting safe working practices or providing appropriate training, instruction or information),

(e) fifthly, using personal protective equipment.

If it is not reasonably practicable to eliminate a risk arising from manual handling, an employer must design the work activity involving manual handling to control the risk and, if necessary, must:

(a) modify the design of the objects to be handled or the work environment (to the extent that it is under the employer’s control), taking into account work design and work practices,

(b) provide mechanical aids or, arrange for team lifting, or both,

(c) ensure that the persons carrying out the activity are trained in manual handling techniques, correct use of mechanical aids and team lifting procedures appropriate to the activity.

6. REDUCING THE RISK

- Reduce 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 not your back
- Avoid muscle fatigue eg consider your posture
- Consider Assistive Technology – eg trolleys and hoists

7. PREFERRED HANDLING TECHNIQUES

Explain that manual handling safety is

- When you use your own body force, use the correct technique
- When your own body force is not enough, or is not the best way, use assistive equipment

Lifting Techniques



Explain and demonstrate the following lifting techniques. Have the students demonstrate the techniques:

- Deep-squat or partial squat lift. Partial squat is usually more practical.
- Diagonal lift. Feet diagonally around the load, one foot in front of the other.
- Golfer's lift. Use back leg as a counter balance.
- One knee lift. Bend at the hips not the back.
- Push, pull or roll a load rather than lifting. Pushing is better than pulling.
- Carry the load on your shoulder when carrying long distances.
- Minimise obstacles and nasty surprises.

More information about lifting techniques can be found at <http://www.cdc.gov/od/ohs/pdffiles/lifting.pdf>

Principles of Good Movement and Manual Handling

- Think about how you move.
- Use your legs for force and movement and **always** keep a slight curve in your lower back when lifting or exerting force. Watch professional weight lifters techniques.
- Footwork. Use your feet to move, not your back. Do not nail your feet to the ground, or keep them stuck together. Watch boxers.
- Get close to your work (squat, kneel or sit), or get it close to you (bench or hoist).
- Keep things you are lifting/pushing/handling close to your centre of gravity. You don't walk down the street holding even 5 kg at arms length.
- Test the force needed first. If it is too heavy lighten the load, get a second persons help, use equipment, and split the load.
- Avoid bending around the waist.
- Do not twist your back whilst handling a load.

Assistive Technology



Demonstrate the use of some assistive technology and show how it enables loads to be more safely handled. It is important to bring to the attention of the students the **safe methods of use** and the **limitations** of each piece of equipment. Set up a number of workstations where the students can handle objects using the assistive technology.

Some examples that you may use 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 etc.
- *Curved handle shovel*. Studies have shown that it is useful for certain types of activities and may be as versatile as a traditional straight handled shovel.
- *Tilt a drum*. To help with the controlled pouring or decanting of chemicals from a 20-25 litre container.

6. CONCLUSION



Conclude - reminding students that not only can one mistake injure their backs permanently but doing the wrong thing repeatedly over time can also result in major problems - so they should ALWAYS use safe manual handling techniques.

MOVE SAFE, WORK SAFE, LAST LONG.

Use any remaining time to answer questions, demonstrate the equipment and ask questions based from the assessment guide.

Assessment Task and Guidance Material

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

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

Further Information

NOHSC: 1001 (1990), *National Standard for Manual Handling*, Commonwealth of Australia.

NOHSC: 2005 (1990), *National Code of Practice for Manual Handling*, Commonwealth of Australia.

NOHSC *Manual Handling*, available online at:

URL

<http://www.nohsc.gov.au/OHSInformation/NOHSCPublications/factsheets/manha1.htm> ~

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

WorkCover NSW, BackWatch Collections, Manual Handling.

URL ~ <http://www.cdc.gov/od/ohs/pdf/files/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: See also Module 1 - Contacts

CRS Australia

PO Box 111 Woden ACT 2606 Phone: 1800 624 824 Facsimile: 02 6212 2902

<http://www.crsrehab.gov.au>

MODULE E

MANUAL HANDLING ON FARMS

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures

CORE2.2 Follow farm procedures for hazard identification and risk control

RANGE OF VARIABLES

Hazardous manual handling tasks include: moving, lifting, carrying of bags, drums, cartons, animals, bales, shovelling, loading materials, pulling, pushing, up-ending materials, chipping weeds, picking fruit, vegetables, shearing sheep, goats

Aim:

To raise awareness of the hazards present in manual handling by the four main risk factors:

- posture
- load/force
- repetition
- duration

and 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 injuries
- demonstrate how safe manual handling techniques fit into that hierarchy.

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

Manual handling is an important component of on-farm occupational health and safety, with the agriculture industry having an above all industry incidence of back injury, with manual handling being the biggest contributor to back injury. Moreover the 15–19 age group combined with the 20-24 age group account for 17% of back injury in the agricultural industry highlighting the need to raise the awareness of hazards associated with manual handling to students.

Students have been given an assessment task related to the Manual Handling Safety module that they attended at the Future Farmers Farm Safety Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

The Labour Council of NSW has produced in association with WorkCover NSW an online teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

CRS Australia provides specific manual handling training.

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

Further Information:

NOHSC: 1001 (1990), *National Standard for Manual Handling*, Commonwealth of Australia.

NOHSC: 2005 (1990), *National Code of Practice for Manual Handling*, Commonwealth of Australia.

NOHSC *Manual Handling*, available online at:

URL ~

<http://www.nohsc.gov.au/OHSInformation/NOHSCPUBLICATIONS/factsheets/manha1.htm>

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

WorkCover NSW, BackWatch Collections, Manual Handling.

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: See also Module 1 - Contacts

CRS Australia

PO Box 111

Woden ACT 2606

Phone: 1800 624 824

Facsimile: 02 6212 2902

<http://www.crsrehab.gov.au>

MODULE E

MANUAL HANDLING ON FARMS

SECTION 4: Resource Package

Attached Resources

- Student Assessment Sheet
- Assessment Answer Sheet
- Slide 1 - Diagram of the spine

Other Resources

- Farm Safety Solutions Kit –CRS Australia.
- Tilt-a-drum and an empty, clean 20 litre drum.
- Drum lifter and an empty, clean 200 litre drum.
- Ascender barrow.
- Curved handled shovel.
- Box with 5kg weight.
- An appropriate regional handling object. Eg, a bale of hay, or a fruit box.

SAFE 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. What two components make up safe manual handling
 - a) _____
 - b) _____

3. List three of the principles of safe manual handling
 - a) _____
 - b) _____
 - c) _____

4. List three different lifting techniques
 - a) _____
 - b) _____
 - c) _____

5. What assistive technology could be used with the following?
 - a) A hoe _____
 - b) A drum of chemical _____
 - c) A bale of hay _____

SAFE MANUAL HANDLING ON FARMS

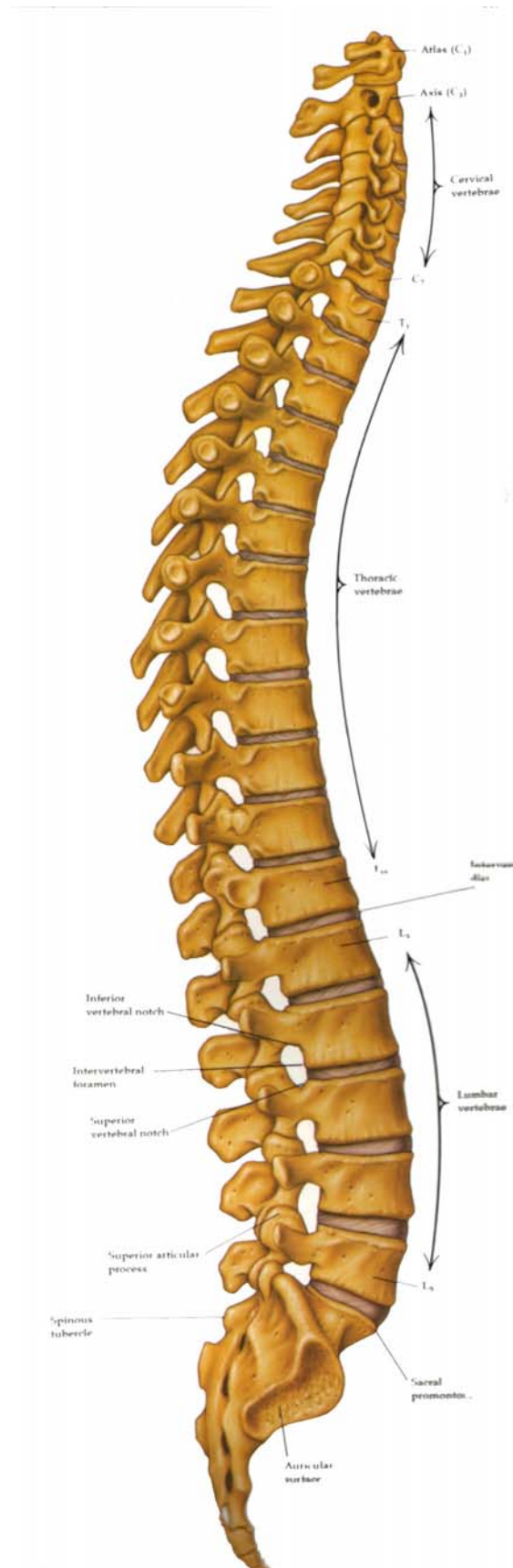
ASSESSMENT ANSWERS

1. Answer the following true or false statements
 - a) Only older workers suffer from back injuries F
 - b) 80% of the population suffer from some type of back pain at some stage of their lifetime. T
 - c) It is easier to hold a weight out in front of you than close to your body. F
 - d) It is best to bend your knees when lifting a load. T
2. What is safe manual handling
Correct lifting technique ____ Use of assistive technology
3. List three of the principles of safe manual handling
Any three of :

<i>use your legs for force and movement</i>	<i>get close to your work, or get it close to you</i>
<i>always keep a slight curve in your back</i>	<i>avoid bending from the waist</i>
<i>use your feet to move not your back</i>	<i>do not twist your back whilst handling a load</i>
4. List three different lifting techniques *Any three of:*

<i>Deep squat</i>	<i>Golfer's lift</i>
<i>Partial squat</i>	<i>One knee lift</i>
<i>Diagonal lift</i>	
5. What assistive technology could be used with the following?
 - a) A hoe *Wolfe Handgrip*
 - b) A drum of chemical *Tilt a drum*
 - c) A bale of hay *Ascender barrow*

OH1 – Diagram of spine



Manual Handling on Farms

Manual handling is any activity requiring human force to:

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

One of the major consequences of manual handling injury is Back injury. In NSW, agriculture has the second highest incidence of back injury across all industries 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 also causes injuries to other parts of the body besides the back. Neck, shoulder, arms and wrists being the other areas that are commonly affected.

Manual handling injuries can be the result of **cumulative stresses** and from a **single event** where the “load handled or force exerted” exceeds the physical capability of the musculoskeletal system.

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.

Manual handling risks can be controlled in many ways. These include:

◆ Reduce 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 not your back

◆ Avoid muscle fatigue eg consider your posture

◆ Consider Assistive Technology – eg trolleys and hoists

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:

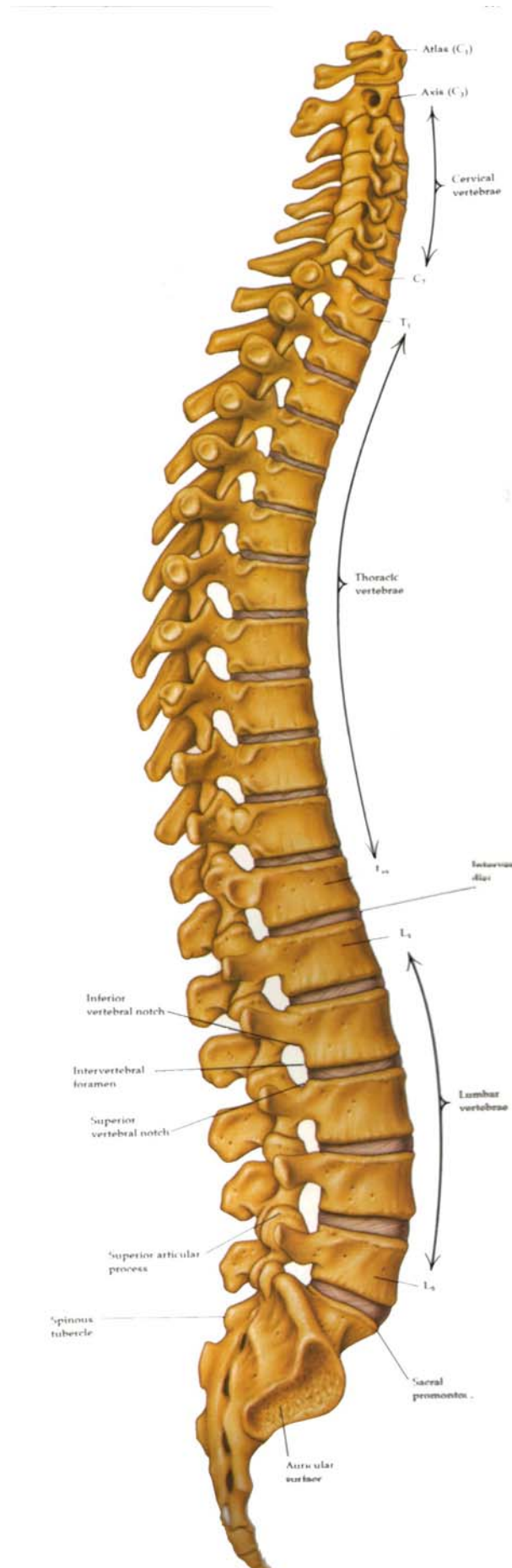
◆ Ascender barrow: a two-wheeled barrow that is stable and takes the stress out of loading and unloading

◆ 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

OH1 – Diagram of spine



MODULE F

FIREARMS SAFETY ON FARMS

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures

CORE2.2 Follow farm procedures for hazard identification and risk control

“Hazards in the rural workplace include: ... firearms ... “

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.

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- Practical demonstration eg simulated cleaning of rifle.
- Interactive guided discussion

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

Acknowledgments:

AJ Smyth, Firearms Safety Officer - Tamworth

WK Cameron, B.Ed 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*

MODULE F

FIREARMS SAFETY ON FARMS

SECTION 2: PRESENTER GUIDELINES

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.

Resources Required:

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

Basic Rules for Firearms Safety overheads.

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.

Presentation Guidelines:

1. INTRODUCTION

Welcome to the presentation, introduce yourself and the objectives of the module.

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



Please note that the demonstration firearms (if present) are OPEN and UNLOADED, and that there is NO LIVE AMMUNITION here.

2. USES OF FIREARMS



Ask what firearms are used for on farms.



Control of feral pests.

Putting down sick or injured stock animals.

Recreational hunting.

3. FARM FIREARMS



Explain the characteristics of the three main classes of “long arms”.



Show Overhead 2

Rim-fire rifles - .22 LR and .22 magnum

Centre-fire rifles – Calibres range from .17 upwards – some common calibres are:

.222, .223, 22/250, .243, 250/3000, 25/06, 270, 308, 303 etc.

Shotguns – 12 gauge, 20 gauge, .410

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

4. SAFE DISTANCES FOR FIRING FIREARMS



Explain what a safe distance for firing a firearm is, then provide guidance as to what they may be.

.22 Long Rifle – If High Velocity ammunition is used, the shot can carry for nearly 2.5 km. The bullet travels around 300 metres per second, so if the rifle discharges accidentally, it would travel the length of a Ute in .013 seconds – not enough time to duck!!

Centre-fire Rifle – depends on muzzle velocity and bullet weight. The standard .303 military cartridge will carry up to 6 km, but smaller calibres will not travel this far.

Shotguns – have a reach of 50 to 100 metres (depending on shot size). If “solid slugs” are used, they will carry for 300 metres.

NOTE that all distances are MAXIMUM carrying distances. Maximum “Effective” range is something else again. Beyond the effective distance, variables such as wind speed and direction make long shots more likely to miss the target and hit something other than the intended target.



Question time – to review topics to date.

5. LEGAL REQUIREMENTS

Gun use is legislated by the FIREARMS ACT 1996 and the FIREARMS (GENERAL) REGULATION 1997

Since 1997, only people who hold a **firearms licence** are permitted to own or use firearms.

To obtain a licence, a person must first pass a **safety awareness test**, conducted by a registered Firearms Safety Officer. Once this test is passed, then the person has to obtain a Firearms Licence 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 licence holder** – meaning that the adult **MUST** be present while the minor is using the firearm.

The holder of a licence must comply with numerous rules in respect of any firearm to which the licence applies

There are several categories of licences.

Class “A” is for rim-fire rifles and shotguns with single-loading Single barrels or double barrels.

Class “B” is for Centre-fire rifles – single shot, bolt action or lever action.

Class “C” is restricted – covering self-loading rim-fire 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 Centre-fire rifles, self-loading rim-fire rifles with a magazine capacity of more than 10 rounds, 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.

6. THE BASIC RULES OF FIREARM SAFETY



Show Overhead 1

Treat every firearm as being loaded at all times, particularly if you have not held it continuously. ALWAYS check and clear a firearm before you pass it and that is passed to you by someone else.

Keep the muzzle pointed in a SAFE direction. DO NOT aim or point the firearm at ANYTHING you do NOT wish to shoot. NEVER "skylark" or engage in "horseplay" with a firearm – it is NOT a toy and must never be used as such. Do not EVER allow it to point at another person. When carrying a firearm either keep it pointed towards the ground or up in the air.

NEVER have a loaded firearm in the car, home or camp. Make sure that you are well clear of house or camp before loading the firearm, and be sure to unload it while a safe distance away. Do NOT leave firearms unattended unless they are securely stored.

ALWAYS identify your target and what is behind it. Check for farm buildings, water tanks, farm animals, etc.

NEVER fire at a hard surface, or at the surface of water. Bullets will ricochet and you have no idea where they may land.

NO ALCOHOL OR DRUGS while using or handling firearms. All of these will affect your concentration and slow your reactions, and cause you to become careless and overconfident.

STORE FIREARMS AND AMMUNITION SEPARATELY, AND OUT OF REACH OF CHILDREN. The current laws require secure storage of both arms and ammunition, in separate units (though they may be part of the one cabinet).

DO NOT CLIMB FENCES OR OTHER OBSTACLES WITH LOADED FIREARMS.



Question time – to review previous two topics.

7. 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 rim-fire rifles) can be easily dented, causing a temporary "hang-up" 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 gun or fire-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



Demonstrate using a range of firearms.

8. PRECAUTIONS 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. Check for domestic animals nearby, and other structures. NEVER shoot over the top of hills or ridges – you do not know what may be on the other side.

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. Repeating rifles or shotguns can be loaded very quickly, so load only when you are ready to shoot.

Observe the correct precautions when crossing fences or other obstacles.

Do not jump over streams or other low obstacles

If you are on your own, unload the firearm and with its action open, place it either through the fence or over the obstacle and put it flat on the ground with the muzzle pointing away from where you are going to cross.

If you have others with you, then one person hands his/her UNLOADED firearm to someone else, then goes through the fence or over the obstacle without it. That person then accepts the UNLOADED firearms from the others over the fence and holds them while the others cross.

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.

DO NOT aim or point the firearm at ANYTHING you do NOT wish to shoot. NEVER “skylark” or engage in “horseplay” with a firearm – it is NOT a toy and must never be used as such. Do not EVER allow it to point at another person. When carrying a firearm either keep it pointed towards the ground or up in the air.



Question time – to review previous topic.

9. STORAGE AND TRANSPORT OF FIREARMS AND AMMUNITION

Explain that 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, which must be bolted to the premises.



Show OHs 2 and 3.

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.

10. PERSONAL PROTECTION

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.

10. CONCLUSION

Use any remaining time to reinforce important points, field questions, and ask the students questions based on the student assessment task.

Assessment Task and Guidance Material

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

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*

Further Information:

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

Contacts: See also Module 1 - Contacts

NSW Firearms Safety Awareness Council Limited

PO Box 393

Terry Hills NSW 2084

Phone: 02 9486 3077

Facsimile: 02 9486 3497

MODULE F

FIREARMS SAFETY ON FARMS

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures

CORE2.2 Follow farm procedures for hazard identification and risk control

“Hazards in the rural workplace include: ... firearms ... “

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.

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

The use of firearms in rural workplaces is an important occupational health and safety aspect of agriculture, with 6 unintentional on-farm deaths caused each year in Australia by incidents involving firearms. Moreover the 15-24 years old age group is at the greatest risk of such a death.

Students have been given an assessment task related to the Firearms safety module that they attended at the Future Farmers Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

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*

Further Information:

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

Contacts: See also Module 1 - Contacts

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Phone: 02 9486 3077

Facsimile: 02 9486 3497

MODULE F

FIREARMS SAFETY ON FARMS

SECTION 4: Resource Package

Attached Resources

- Student Assessment Task
- Assessment Answer
- OH 1 – The Basic Rules of Firearms Safety
- OH 2 – Types of Firearms
- OH 3 – Basic Security Container
- OH 4 – Medium Security Container

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.

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?

FIREARMS SAFETY ON FARMS

ASSESSMENT ANSWERS

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

Hold a firearms licence.

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?

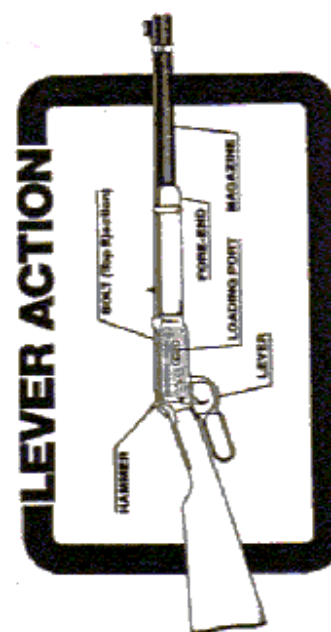
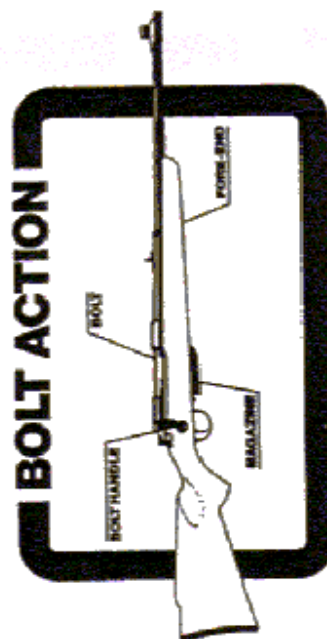
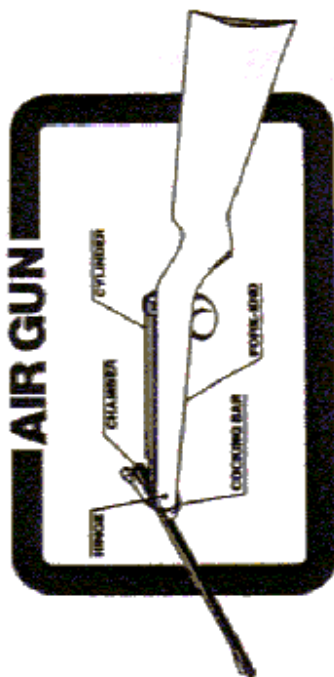
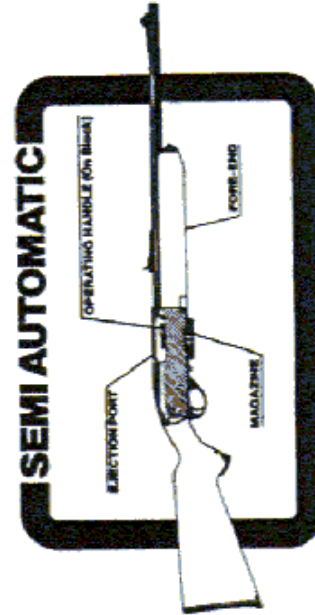
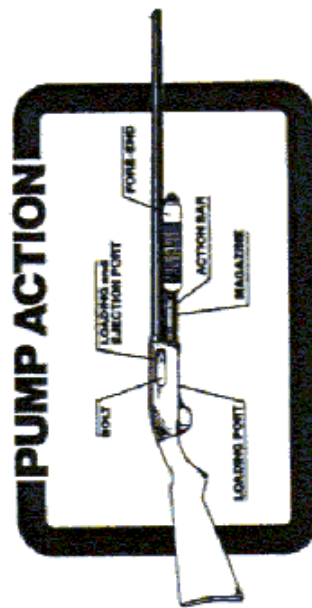
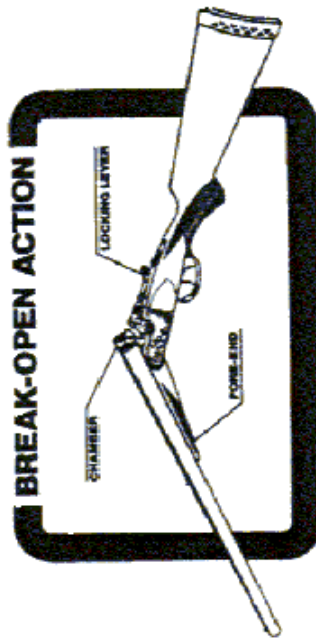
That they are stored in a locked container, separately from any ammunition

OH1 – Basic Rules

Basic Rules for Firearms Safety

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

OH 2 – Types of Firearms



OH3 – Basic Security Container

► 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.



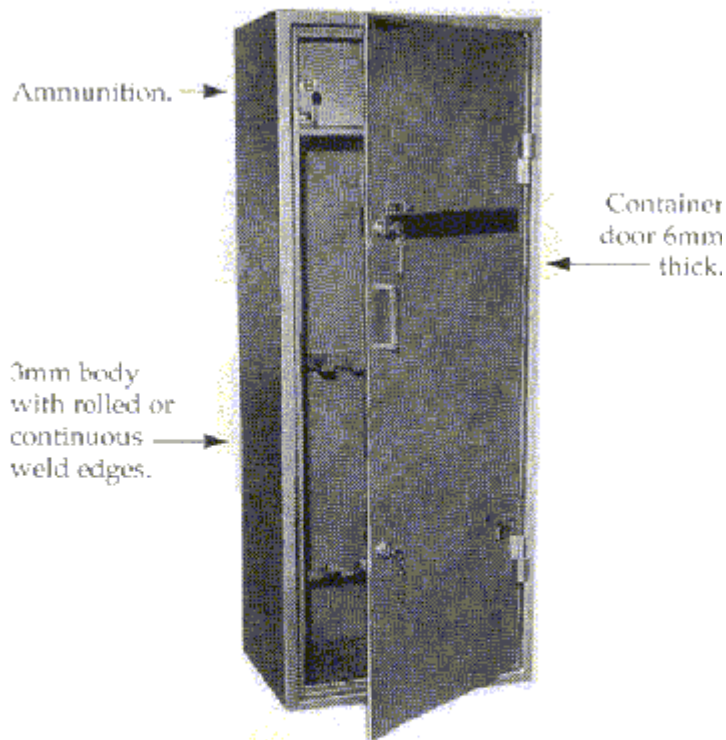
- ✓ **Note:** Display Cabinets and Gun Racks which provide at least equivalent security are acceptable.

Source: "Safe Storage of firearms" NSW Police Service

OH4 – Medium Security Container

► **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.

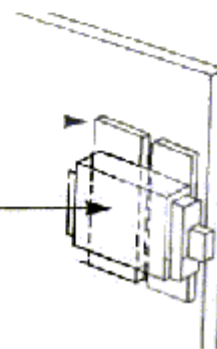


The container is to be secured to the structure through the back and base.

DOOR LOCKS

2 x 3mm thick, hardened steel anti-drill plates.

Metal strap securing locking mechanism.



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

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 are the accidental shooting of 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 & WHAT IS BEHIND IT
5. NEVER FIRE AT HARD SURFACES OR WATER
6. STORE FIREARMS & 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 firearms in the field

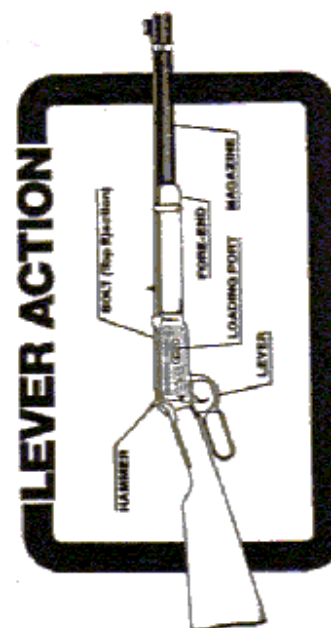
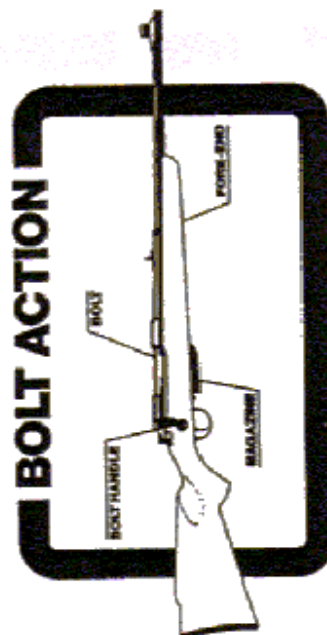
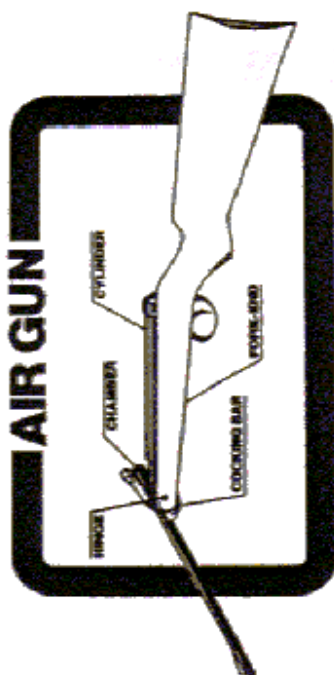
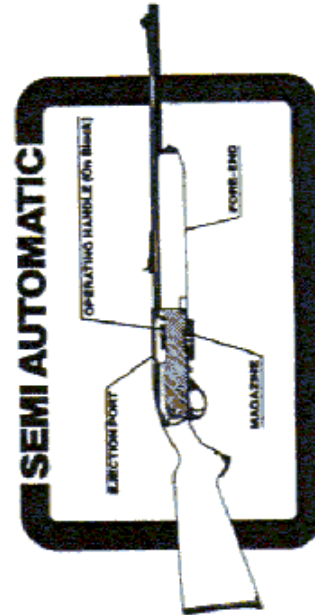
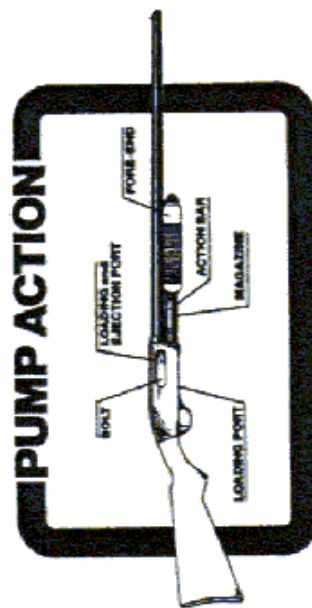
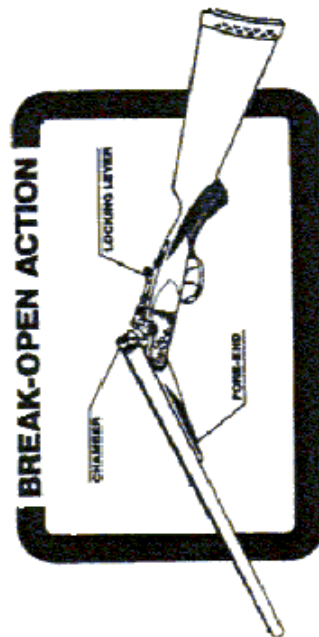
- ✳ Identify your target positively – if in doubt do not shoot
 - do not fire at movement
 - do not fire at colour
 - do not fire at shape alone
 - do not fire at sound
- ✳ Check your danger zone – this is the area between you and your target
 - check for domestic animals nearby
 - never shoot over the 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 that can permanently damage hearing. The effect of exposure to firearm noise accumulates so that hearing slowly worsens with continued exposure.
- 👂 When shooting, wear hearing protection that meets Australian Standards that has an SLC rating between 25-30 dB(A)

OH1 – Basic Rules

Basic Rules for Firearms Safety

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

OH 2 – Types of Firearms



OH3 – Basic Security Container

► 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.



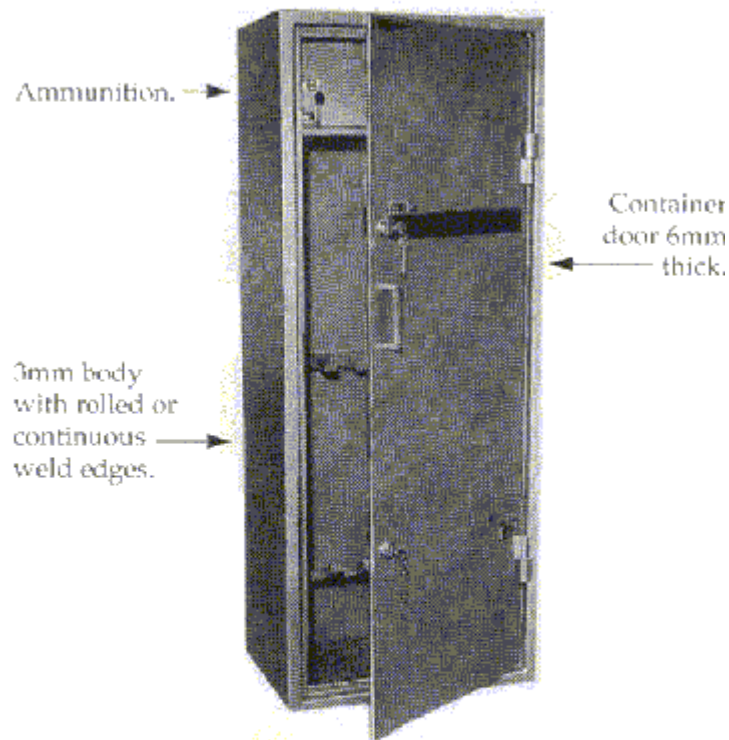
- ✓ **Note:** Display Cabinets and Gun Racks which provide at least equivalent security are acceptable.

Source: "Safe Storage of firearms" NSW Police Service

OH4 – Medium Security Container

► **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.

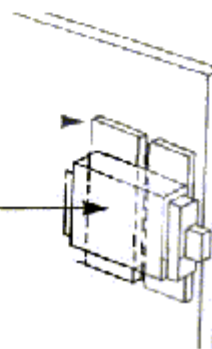


The container is to be secured to the structure through the back and base.

DOOR LOCKS

2 x 3mm thick, hardened steel anti-drill plates.

Metal strap securing locking mechanism.



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

MODULE G

ELECTRICAL SAFETY ON FARMS

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AGCORE2 A - Follow enterprise occupational health and safety (OHS) procedures
CORE2.2 Follow farm procedures for hazard identification and risk control “Hazards in the rural workplace include: ... electricity,...”

RUH CORE2 A - Meet workplace health and safety requirements

CORE2.1 Follow workplace procedure for hazard identification and risk control

Electricity hazard noted throughout Range of Variables of many agricultural and horticultural units of competency.

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.

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- practical demonstration
- interactive guided discussion

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- student Field Day Evaluation Form
- module specific assessment task

Acknowledgment:

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:

http://www.workcover.nsw.gov.au/pdf/elec_hazard.pdf

MODULE G

ELECTRICAL SAFETY ON FARMS

SECTION 2: PRESENTER GUIDELINES

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

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

Presentation Guidelines:

1. INTRODUCTION

Introduce yourself to the students.



Explain the purpose of the module, and how it looks at two major components of electrical safety; Electrical Safety with Power Lines and Electrical Safety Around the Home and Workshop.

2. ELECTRICAL SAFETY WITH POWER LINES



Ask the students if they know of any recent incidents involving overhead power lines.



If they are unaware, you should describe any recent events. These are available from your local Electricity Distributor.



Describe the **SAFE** principle to the students (Use overhead)

Spot the Hazard – What causes risks to health and safety.

Assess the risk – Who is at risk? What is the risk? What is the degree of risk?

Fix and control the identified hazard - What options are available to reduce risk?
What is current “Best Practice?”

Evaluate the control – does the control put into place work, has it reduced injury and illness, has the workplace or work practices changed.

Spot the hazard



Explain to the students that contact with overhead power lines is the greatest hazard to health and safety associated with electricity on farms.



Ask how a situation that would lead to the likelihood of contact with overhead power lines maybe identified.



The use of high machinery, eg Headers, cotton pickers and module builders, and crop dusting planes.

Transporting and handling long equipment, eg irrigation pipes, ladders.

The location of overhead power lines around workshops and running across paddocks.



Explain that the minimum safe operating distance from overhead powerlines depends on the type of power line.

For power lines up to 132 000 volts the safe operating distance is three metres. These powerlines are normally run on poles.

For power lines between 132 000 and 330 000 volts the safe operating distance is six metres. These power lines are run on either poles or towers.

For power lines over 330 000 volts the safe operating distance is 8 metres. These power lines are usually run on towers.

Using the chart listing the heights of machinery explain that much of the plant used in farming when operated in the same field as overhead power lines come within this distance. Explain that if machinery comes within this distance the electrical current may still pass through the machine **even if no contact occurs**.



If the overhead network model is available, utilise it to display this feature.

Describe the existence of electrical fields in the ground when power lines are earthed either through a fallen power line, or when machinery comes into contact with them. Use the touch and step overheads to describe how an individual may receive an electrical charge when standing in an electrical field. Explain that it is important to remain 8 metres away from an earthed power line and when exiting this area to keep your feet together.



Use the touch potential and the step potential slides to illustrate this.

Assess The Risks



Ask what they think the risks involved with electrical power lines are.



The risks associated with electrical power lines are death and severe injury including paralysis. The people who are at risk from these power lines include people using high machinery, handling and transporting long objects, or digging or driving stakes into the ground around buried electrical power lines. People performing these tasks should assess the risks involved with power lines as high and put into place some form of control.

Control



Ask what can be done to avoid contact with, or being shocked by, power lines



By being aware of where the power lines are. It is important when using high machinery or moving and handling long objects such as irrigation pipes, or digging or driving stakes that we are aware of where power lines may be. :

The measures that may be taken to be aware of the location of power lines include

- looking for power lines before beginning any activity.
- placing markers along the path of power lines or have your power distributor place identifying objects such as bird deflectors on the power lines.
- placing warning stickers on machinery that is at risk of contacting or becoming “charged” by power lines.
- making sure that other people working around you know where the power lines are.
- calling “dial before you dig” (1100) before digging or driving stakes into the ground.

Evaluate Controls

- Check that procedures put into place work.
- Check that the hazard has not changed since controls were last put into place, eg purchase of new machinery, after floods and extreme weather.

Emergency Procedure



Describe emergency procedure that the students should follow should a piece of machinery that they are driving encounter power lines.

- Contact local power distributor.
- 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.

- 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.
- 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.

3. GENERAL SAFETY AROUND THE HOME AND WORKSHOP



Reinforce to the students that only licensed electricians are allowed by law to carry out work on the electrical installations of buildings.

The best safeguard against electrocution on farms is the installation of a residual current device commonly known as an RCD or a safety switch. A fixed RCD can be installed instead of a fuse box in the house, shed, or workshop, or a portable RCD can be used with individual power tools. The electricity supplier may be able to help with specific farm power requirements. Remember that whilst an RCD may shut off a lethal dose of electricity, it does not prevent electric shocks. Live contact must be avoided, particularly if you are working at height or operating hazardous machinery.



If the RCD demonstration model is available, use it here.

Make students aware of safe behaviour when working with electricity in the home or workshops. This includes:

Extension Cords

- Purchasing ready-made extension cords with sealed plugs.
- Unrolling extension leads before 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.



Show some damaged equipment and ask the students “Who has stuff like this at home?” – “Who is still using it”. Ask what action should be taken with such equipment

General Work Practices

- 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.

4. CONCLUSION

Use any remaining time to ask questions based on the student assessment task.

Assessment Task and Guidance Material:

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

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 on-line WorkCover publications and to Occupational Health and Safety legislation and regulations.

Contacts: See also Module 1 - Contacts

Country Energy

PO BOX 5118

Port Macquarie NSW 2444

Phone: 13 2080

<http://www.countryenergy.com.au>

MODULE G

ELECTRICAL SAFETY ON FARMS

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures

CORE2.2 Follow farm procedures for hazard identification and risk control

“Hazards in the rural workplace include:... electricity,...”

RUH CORE2 A Meet workplace health and safety requirements

CORE2.1 Follow workplace procedure for hazard identification and risk control

Noise hazard noted throughout Range of Variables of many agricultural and horticultural units of competency.

Aim:

To raise the awareness of electrical safety and emergency preparedness and to prevent accidents involving electricity in rural situations.

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

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

Electrical safety is an important occupational health and safety issue of agriculture due to the high potential for fatality and injury that exists with contact to electricity.

Students have been given an assessment task related to the Electrical Safety on Farms module they completed at the Future Farmer's Farm Safety Field day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, and to provide follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia, provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

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:

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

WorkCover NSW have a range of guidance material on electricity.

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 on-line WorkCover publications and to Occupational Health and Safety legislation and regulations.

Contacts:

Country Energy

PO BOX 5118

Port Macquarie NSW 2444

Phone: 13 2080

<http://www.countryenergy.com.au>

MODULE G

ELECTRICAL SAFETY ON FARMS

SECTION 4: Resource Package

Attached Resources:

Student Assessment Task

Assessment Answer Sheet

Slide 1 – SAFE Principle

Slide 2 – Farm Plant at Risk of Power Line Contact

Slide 3 - Safe Operating Distances

Slide 4 – Touch Potential

Slide 5 - Step Potential

Other Resources:

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

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

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 avoid contact with 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?

ELECTRICAL SAFETY ON FARMS ASSESSMENT 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 an emergency (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 avoid contact with power lines when working on farms?

Any two of

- 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.*
- 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?

Have a safety switch (RCD) to house and workshop electrical systems installed.

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.

OH 1 – SAFE Principle

SAFE Principle

S	spot the hazard
A	ssess the risks
F	ix and control the identified hazard
E	valuate the control

OH 2 – Farm Plant at Risk of Power Line Contact

Farm Plant at Risk of Power Line Contact

NOTE: These heights may vary depending on other factors.

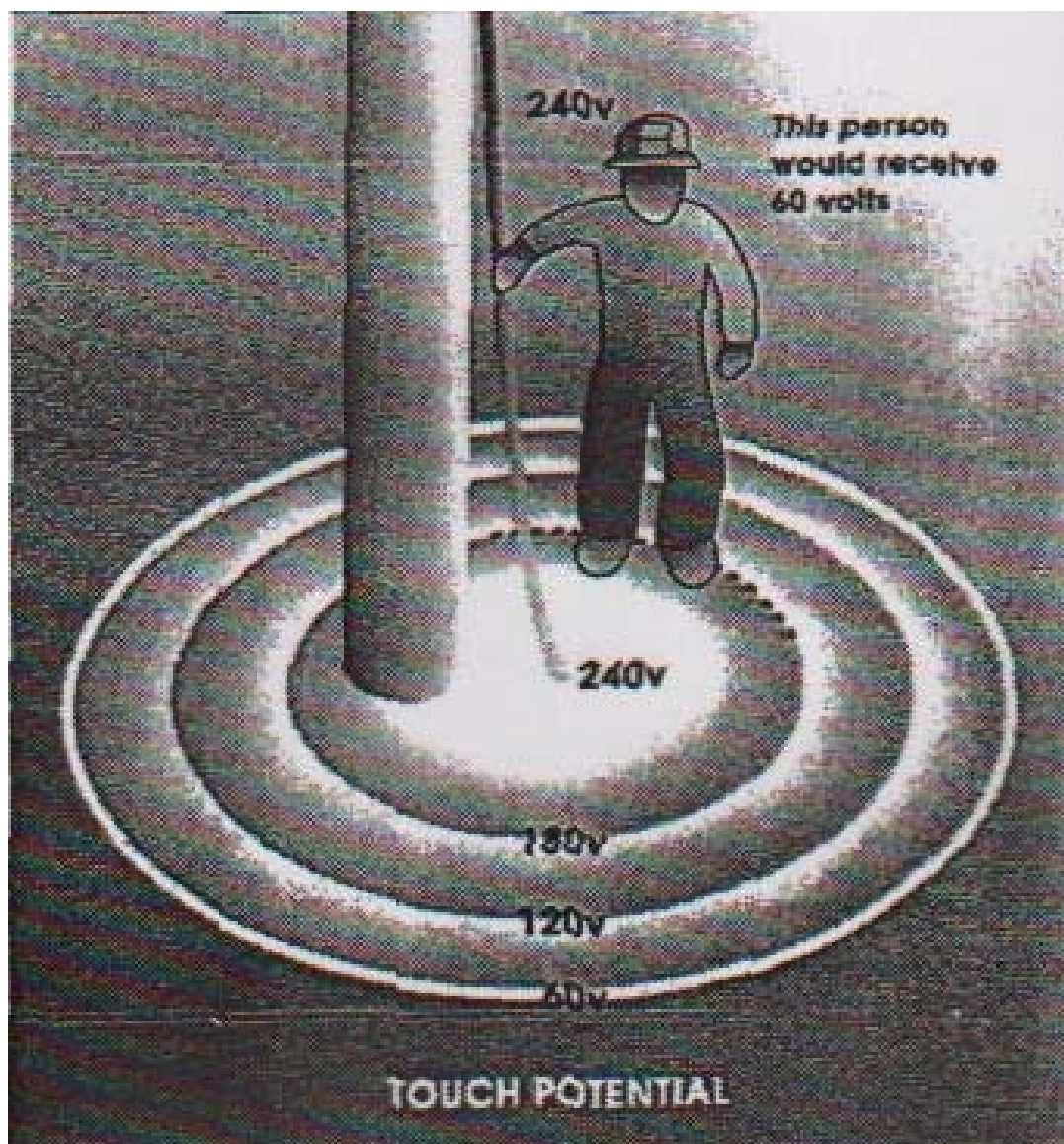
Plant	Indicative Height
Four wheel drive tractor 425 horse power	3.8 m to top of exhaust
Cotton Pickers standard basket extended basket	operating 4.86 m, dumping 6.12 m, operating 5.33 m, dumping 6.42 m,
Cotton module builder boom retracted boom extended	5 m 8 m
Grain Harvesters	4.1 m operating 5.3 m 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

OH 3 – Safe Operating Distances

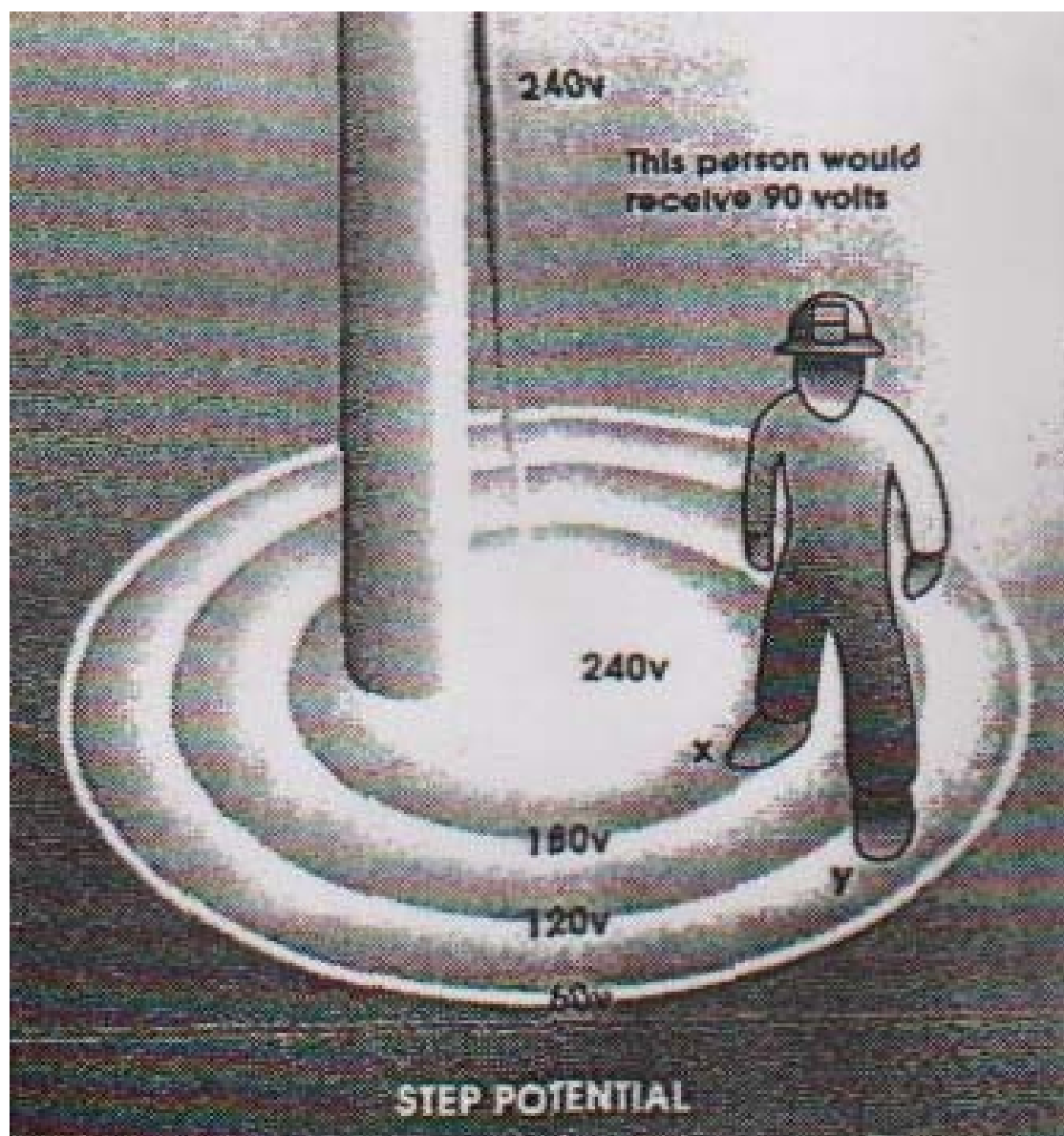
Safe Operating Distances with Overhead Power Lines

Power Line Type	Voltages	Identify	Safe Operating Distance
Low voltage and high voltage distribution and sub-transmission lines	Up to 132 000 volts	Usually on poles	3m
Sub-transmission and transmission lines	Between 132 000 and 330 000 volts	On either poles or towers	6m
Transmission lines	More than 330 000 volts	Usually on towers	8m

OH 4 – Touch potential



OH 5 – Step Potential



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, & nearly 30 percent involved extension cords, accessories & 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 & 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	Indicative Height
Four wheel drive tractor	3.8 m to top of exhaust
Cotton Pickers - standard basket	operating 4.86 m dumping 6.12 m
Cotton module builder - boom retracted	5 m
Grain Harvesters - operating	4.1 m
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

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 & 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 & surroundings with appropriate safety signs.

If a machine makes contact with power lines:

- Do not exit the machine's cabin until you have been informed that the power has been switched off, or in an emergency.
- Attempt to break the machine's 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 & the ground at the same time. Land with both feet together & hop away from the machine.



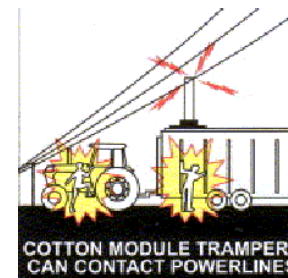
Electrical Safety in the Workshop or Home

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 & that no damage is evident to the cord or plug.
- The area around the use of power tools is clean & dry.
- Power points are switched off prior to plugging in appliances.
- Electrical tools are unplugged from power source & packed away after use

Electrical systems in the home or workshop should be:

- Installed by a qualified electrician & approved by relevant authorities.
- Have adequate capacity to handle lighting & 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.



OH 1 – SAFE Principle

SAFE Principle

S	pot the hazard
A	ssess the risks
F	ix and control the identified hazard
E	valuate the control

OH 2 – Farm Plant at Risk of Power Line Contact

Farm Plant at Risk of Power Line Contact

NOTE: These heights may vary depending on other factors.

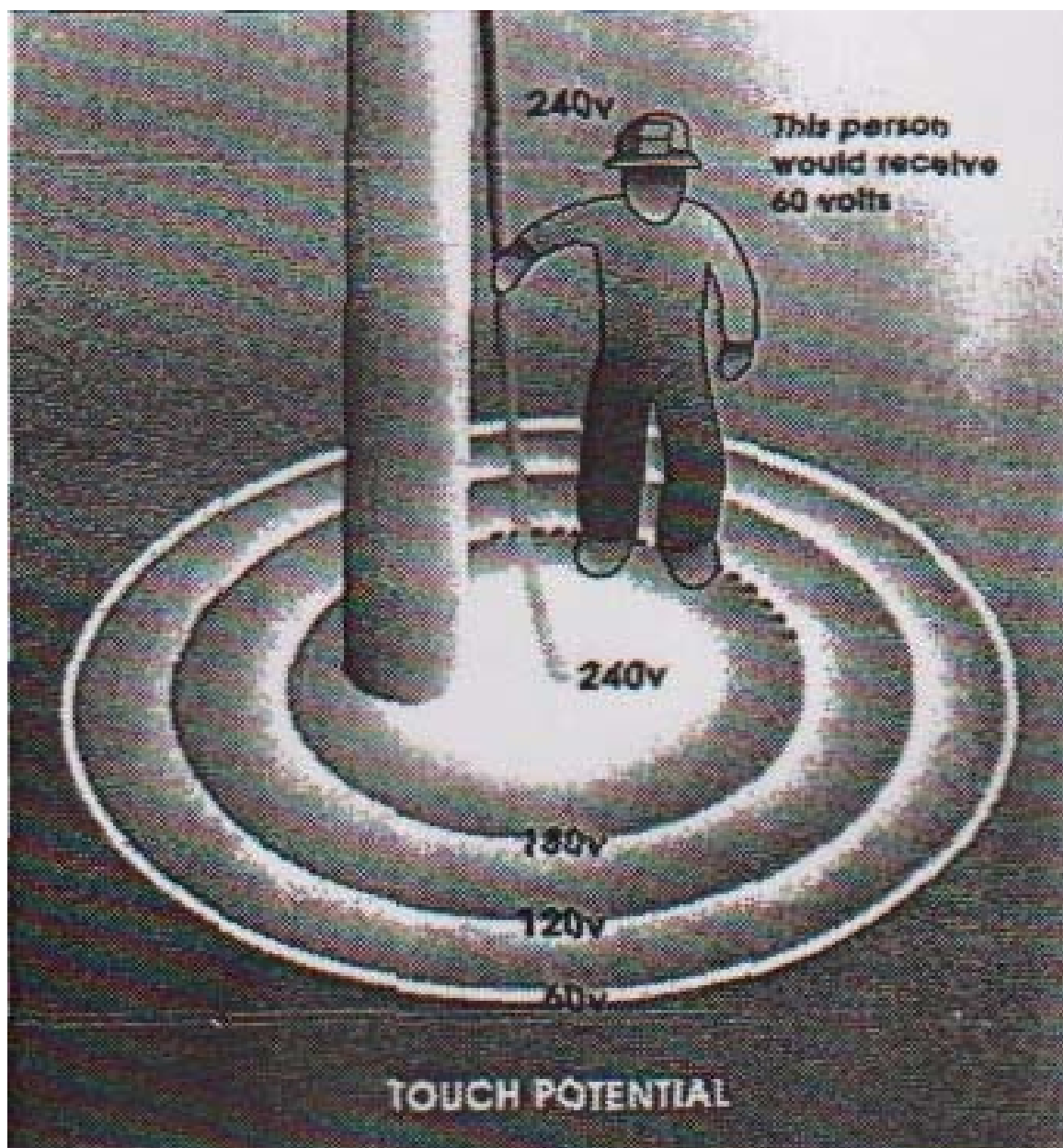
Plant	Indicative Height
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Cotton module builder boom retracted boom extended	5 m 8 m
Grain Harvesters	4.1 m operating 5.3 m unloading auger extended
Chisel Plough	5.4 m in folded transport mode
Tipping truck	7.5 m fully raised
Irrigation pipe	7 – 12 m standing vertical
Stock Floats	4.6 m
Grain auger	4.3 m in transport mode

OH 3 – Safe Operating Distances

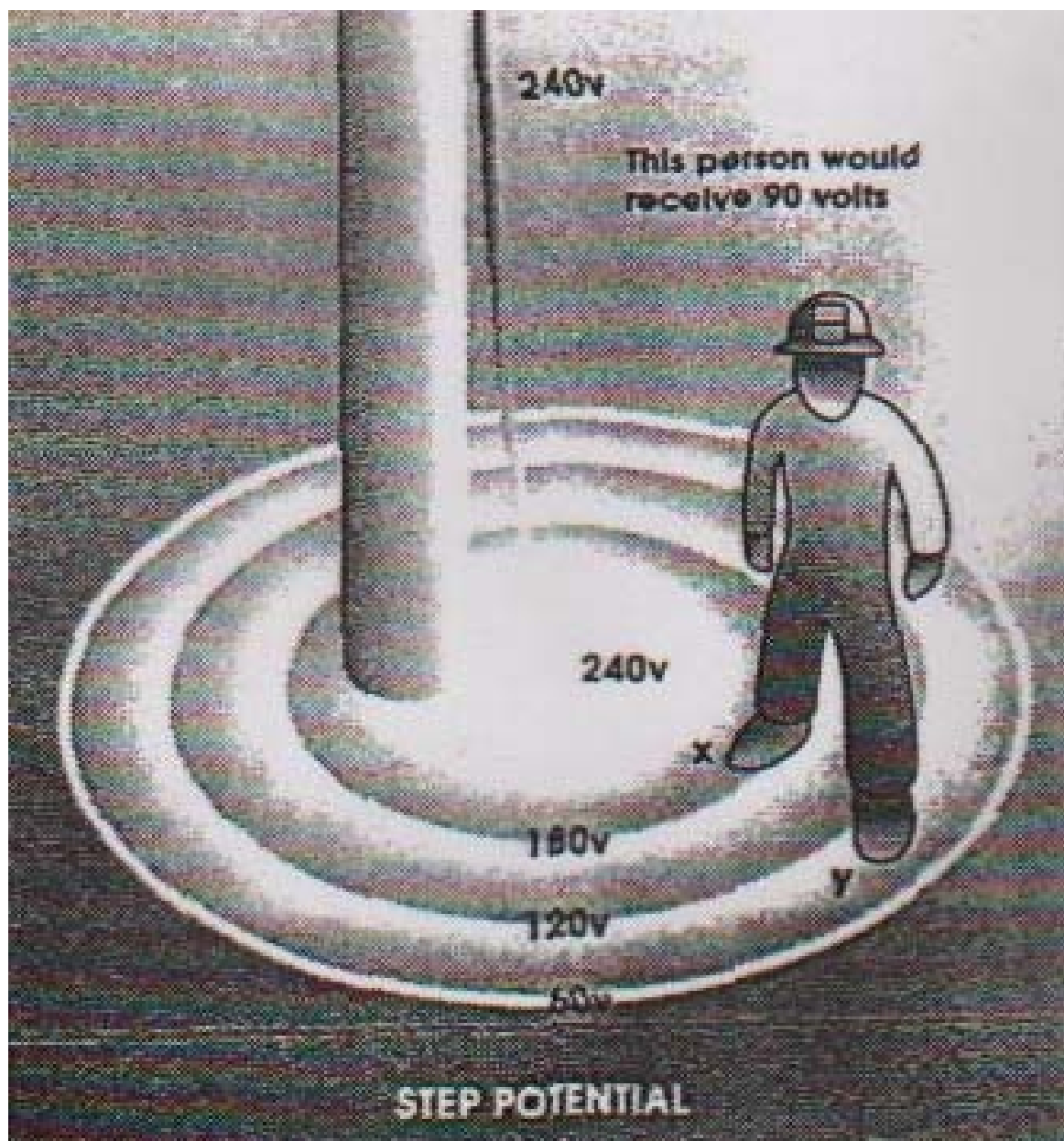
Safe Operating Distances with Overhead Power Lines

Power Line Type	Voltages	Identify	Safe Operating Distance
Low voltage and high voltage distribution and sub-transmission lines	Up to 132 000 volts	Usually on poles	3m
Sub-transmission and transmission lines	Between 132 000 and 330 000 volts	On either poles or towers	6m
Transmission lines	More than 330 000 volts	Usually on towers	8m

OH 4 – Touch potential



OH 5 – Step Potential



MODULE H. CHEMICAL SAFETY ON FARMS

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

This module covers some of the elements of competency contained in the following competency units.

RUA AG2005CH A Maintain supplies of chemical and biological agents.

RUA AG2006CH A Determine chemicals and biological agents.

RUA AG2007CH A Prepare chemicals and biological agents.

RUA AG2008CH A Maintain chemical equipment.

RUA AG2009CH A Apply chemicals and biological agents.

Aim:

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

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area e.g. ChemCert Certificate, AQF2 SmartTrain, and WorkCover Workplace Hazardous substances training course, AGSAFE Accreditation.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

Practical demonstration

Interactive guided discussion

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

Student Field Day Evaluation Form

Module specific assessment task

Acknowledgment:

Tony Cook - NSW Agriculture Centre for Crop Improvement Tamworth

References:

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

MODULE H. CHEMICAL SAFETY ON FARMS

SECTION 2: PRESENTER GUIDELINES

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.

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

Presentation Guidelines:

1. INTRODUCTION

Introduce yourself to the students.



Explain to them the purpose of the module and how it looks at how to use farm chemicals safely.

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.

3. FARM CHEMICALS



Ask if they know why chemicals are used for on farms.



Explain that the most common farm chemicals are usually pesticides and are generally used to destroy, prevent, control, attract, or repel pests or to regulate plant growth.

The following are different kinds of pesticides

- Insecticides

- Herbicides
- Fungicides
- Bactericides
- Plant growth regulators
- Defoliants
- Rodenticides
- Biological control agents

Explain to the students that it is the chemicals themselves that are the hazard because of their ability to harm humans, some because of their flammable composition and because they may have an effect on the environment if used incorrectly or are involved in an accident.

Explain to students that in NSW there is a requirement from the EPA for all users of pesticides to have completed an accredited chemical users course and that in NSW ChemCert and SmartTrain are the two accredited courses.

Explain that there are also legal requirements regarding the transport and storage of dangerous goods and hazardous substances.

4. IDENTIFYING FARM CHEMICAL HAZARDS

Explain to the students that when identifying the hazards involved with the use of pesticides on farms, there are two major sources that should be used, Material Safety Data Sheets (MSDS) and chemical labels

Your discussion with the students should include.

Material Safety Data Sheets (MSDS)

MSDSs contain additional information to the label. This information includes identification, health hazard warnings, precautions for the application of the chemical, safe storage and handling information, all hazardous ingredients, incompatibility with other chemicals, and what emergency procedures including contact details, should be put into place.

MSDS must be supplied by suppliers for all hazardous substance on request and with the first supply of the chemical.

If you are handling chemicals you must be able to access the MSDS for those chemicals.

Labels

Labels ensure correct identification of the chemical held in the container, and the particular risks to health and environment that they may cause.



Discuss where the warnings about health and safety may be found on the label, and what these warnings mean. This could be best done with one of the clean empty drums used for the presentation.

Labels are a legal requirement and the format, restrictions and instructions that they contain are there for the safety of those using the chemical, the end user of the commodity and others that the chemical may affect.

5. RISKS OF FARM CHEMICALS

The major risk of the use of pesticides is poisoning. There are also risks associated with storage and transport of chemicals.

Poisoning

Explain to students the main ways that chemicals can enter the body, and the effects that exposure can have.

Discussion should include:

Chemicals can enter the body in three main ways, inhalation (breathing in), ingestion (swallowing) and absorption (skin contact). In most cases of accidental poisoning the skin is the entry point.



Ask the students what might be “risky” activities that expose people to chemical hazards.



Choose examples relevant to the agricultural commodities in the region:

e.g.

- mixing and loading – handling concentrate chemicals, especially under awkward conditions where splashes may be likely.
- boom spray – chance for spill if pouring chemical into tank overhead, wind might blow spray onto tractor/operator, driver exposed when adjusting nozzles, or cleaning nozzles.
- blower misters – fine mist is easily inhaled and absorbed, the mist hangs in the air for a long time and drifts easily.
- knapsack – leaking equipment wets operators back
- hand held wand (tractor, bike, knapsack) – may wet feet and legs accidentally, mists may contact lower body, absorption via skin and inhalation, skin absorption is higher when working in hot conditions.
- fumigation – are lethal if inhaled. Fumigation may also leave behind a residue in grain silos or in soil.
- dipping – spray may drift if using spray dips, skin exposure from dip and handling wet sheep, disposal of rinsate and wastes, timing of application – eg absorption is greater in when hot.
- jetting – absorption through the skin especially in hot conditions
- hand dressing sheep – skin exposure, site exposure, inhalations of aerosols or dusts, there may also be a risk of spills fumes or splashes.
- Re-entry of crops after spraying – hand weeders (cotton chippers), agronomists.

Acute (immediate / short term) effects of chemical poisoning.

These often occur very rapidly after exposure and recover relatively quickly after exposure. Acute symptoms differ according to the pesticide and may include:

- headaches
- blurred vision
- sweating
- rapid pulse, heart palpitations
- vomiting, diarrhoea, stomach cramps
- drooling
- convulsions, fits, muscle twitching
- death

Chronic (long term) effects of chemical poisoning.

These effects may occur after a period of time and/or with multiple exposures. The chronic effects depend on the pesticide and may include:

- behavioural changes
- skin problems
- blood disorders
- liver disorders
- nervous system disorders

- reproductive disorders
- cancer

Storage and transport of chemicals

Explain to students the risks associated with the storage of chemicals.

Discussion should include:

- when transporting chemicals to farm there is a risk of exposure in the case of an accident or a leak.
- storage risks depend on the amount of chemical being stored, the planned duration of the storage, the type of chemical to be stored eg packaging group, toxicity, stability (flammability) and the compatibility with other chemicals.

Explain that the risk of using pesticides needs to be assessed bearing in mind:

- the handler – whether they are trained in chemical use, their age, their individual susceptibility to allergies
- the chemical – how toxic the chemical is, the application technique has different risks, how the chemical is handled and stored as a concentrate, eg decanted.
- the environment – high temperatures/humidity increase the risk of absorption as people are less inclined to wear appropriate PPE, and because chemical composition may change at higher temperatures. Wind direction and velocity may increase the risk of exposure.

6. SAFE USE OF PESTICIDES

Explain to the students that there is a number of ways that the use of chemicals can be managed to ensure safety.



Ask the students to recall some of the risks that were associated with the use and storage of pesticide and how they considered that these risks could be minimised.



Talk them through the controls that are available utilising the hierarchy of controls. Place emphasis on utilising controls from the higher orders.

Discussion must include:

Elimination

Elimination is an effective option but often not practicable.. It is however practiced by a number of organic farmers who use a combination of methods to control the pests associated with their enterprises.

Substitution

Use of a chemical that has less associated risks, eg is less toxic, is less flammable

Only use chemical drums that are returnable as this reduces the hazard caused by empty chemical containers left on the property.

Engineer

Ensure good ventilation where chemicals are mixed.

Use bottom fill systems for filling up spray tanks.

Use of carbon filters on implements used to apply spray – cabined tractors, self-propelled spray rigs and utility spray rigs.

Pressure regulators that decrease the amount of mist that is caused by spraying.

Secure and locked chemical storage area.

Cement pad for handling chemicals with a “bunded” area to contain any chemical spills.

Use of spray nozzles to reduce misting.

Safer Work Practices

Ensure that everybody who uses chemicals can read and understand MSDS's and should have completed accredited chemical training. Like SmartTrain or ChemCert.

Never transport chemicals in the same compartment as people or foodstuffs.

Always read the label before using a chemical.

Prohibit eating, drinking or smoking when dealing with chemicals and wash thoroughly after using chemicals and before eating, drinking or smoking

Make re-entry periods known to all whose tasks involve entering the crop.

Thoroughly shower after using chemicals.

Adequately label decanted chemical

Thoroughly clean empty containers to specification, before disposal

Have pesticide exposure levels monitored.

7. PERSONAL PROTECTIVE EQUIPMENT (PPE)



Ask students what were the three ways that chemicals entered the body.



Inhalation (breathing in), ingestion (swallowing) and absorption (skin contact).

Explain to students that the most effective way to stop pesticide exposure is the correct use of **Personal Protective Equipment and correct attire**.



Using the PPE explain the correct way to wear PPE and the reasons why PPE is worn in certain ways. This can be done by demonstrating which parts of the body are protected and the situations when the particular PPE is required.

For example, a face shield is best suited when the operator is mixing and decanting the concentrated chemical because it prevents splash droplets from contacting an area from the neck up.

Overalls – moderate protection for torso, arms and legs

Washable hat – moderate protection for scalp

Glasses (goggles) – moderate (glasses) to high (goggles) protection of eyes

Waterproof gloves – excellent protection of hands

Respirator – excellent interception of air borne particles

Impermeable boots – excellent protection of feet

Face shield – high level of safety for the head

Apron – prevents chemical being absorbed onto torso

Soap and spare water - carry at least 20 L to wash any chemical off operator

8. CONCLUSION

Use any remaining time to recap important points, answer questions from the students and to ask them questions based on the student assessment guide.

Assessment Task and Guidance Material:

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

References:

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 (1996) *Use of personal protective equipment at work – a guidance note*. [032]

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

Contacts: See also Module 1 - Contacts

ChemCert NSW

249 Bronte Road

Waverley NSW 2024

Phone: 02 9387 4714

Facsimile: 02 9387 4746

<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.

<http://www.agric.nsw.gov.au>

<http://www.tafensw.edu.au>

MODULE H. CHEMICAL SAFETY ON FARMS

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

This module covers some of the elements of competency contained in the following competency units.

RUA AG2005CH A Maintain supplies of chemical and biological agents.

RUA AG2006CH A Determine chemicals and biological agents.

RUA AG2007CH A Prepare chemicals and biological agents.

RUA AG2008CH A Maintain chemical equipment.

RUA AG2009CH A Apply chemicals and biological agents.

Aim:

To raise awareness of the hazards and risks associated with farm chemicals and to provide knowledge of the safe handling 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 of farm chemicals.
- describe safe chemical use practices.
- correctly select and maintain personal protective equipment for the use of farm chemicals.

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

Students have been given an assessment task related to the Chemical Safety On Farms module that they attended at the Farm Safety Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

Specific chemical user training is available from ChemCert NSW and SmartTrain providers.

References:

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:

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

WorkCover NSW (1996) *Use of personal protective equipment at work – a guidance note*. [032]

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

Contacts: See also Module 1 - Contacts

ChemCert NSW

249 Bronte Road

Waverley NSW 2024

Phone: 02 9387 4714

Facsimile: 02 9387 4746

<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.

<http://www.agric.nsw.gov.au>

<http://www.tafensw.edu.au>

MODULE H. CHEMICAL SAFETY ON FARMS

SECTION 4: Resource Package

Attached Resources

Student Assessment Task

Assessment Answer Sheet

Other Resources

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

CHEMICAL SAFETY ON FARMS ASSESSMENT TASK

Name:	
Class	

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

2. List three ways that this occurs.

i)

ii)

iii)

3. Name a group of people who are at high risk of pesticide exposure.

4. List two conditions that may be hazardous when using farm chemicals.

i)

ii)

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

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

i) Face

ii) Feet:

iii) Torso

iv) Lungs

v) Hands

CHEMICAL SAFETY ON FARMS ASSESSMENT ANSWERS

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

Poisoning

2. List three ways that pesticide poisoning occurs.

i.) *absorption through skin*

ii.) *Inhalation of fumes, mists, dusts, vapours*

iii.) *Ingestion while eating, drinking etc*

3. Name a group of people who are at high risk of pesticide exposure.

Mixers, loaders, sprayers, cotton chippers, orchard workers, agronomists, people living near paddocks

4. List two conditions that may be hazardous when using farm chemicals.

i.) *Wind*

ii.) *Conditions other than those stated on the label*

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

Listed on the label

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

i.) Face: *face shield*

ii.) Feet: *Impermeable boots*

iii.) Torso: *Apron, overalls*

iv.) Lungs: *Respirator*

v.) Hands: *Rubber gloves*

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 & application of chemicals is serious business. This is because of chemicals ability to harm people & the environment because of their often toxic or flammable compositions.

For chemicals to affect 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 & 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 & when protective equipment or clothing is not worn.

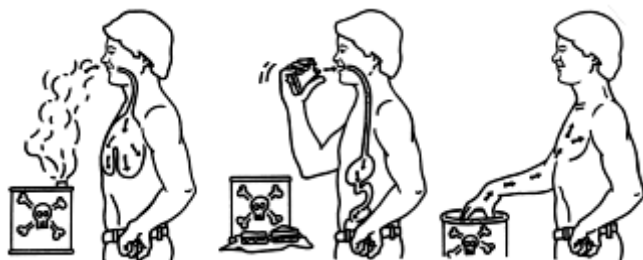
The two major ways of identifying the hazards associated with farm chemicals are by reading the 1) container labels & 2) material safety data sheets (MSDS).

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

MSDS contain important information about the chemical composition, how it is a health hazard, first-

Chemicals enter the body by:

Breathing in Swallowing Absorption



aid information, protective equipment & safe handling procedures. If you are using or handling chemicals you must be able to access that chemical's MSDS.

Chemical exposure has short & long term risks to health.

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

Long-term risks may include: behavioural changes, skin problems, blood disorders, liver disorders, nervous system disorders, reproductive disorders & 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 & the individual's susceptibility to toxicity.

Chemical Features - the chemical's toxicity & flammability, the method of applying the chemical.

Environmental Features - heat & humidity may effect the chemicals composition & the handler's use of PPE, the wind direction & velocity may cause spray drift.

Safe Use of Chemicals:

Use the least toxic chemical that will effectively do the job.

Engineer safe chemical using systems; bottom fill spray tanks, use cabined tractors with charcoal air filters, use nozzles that reduce misting & spray drift, store chemicals in a locked area with appropriate emergency spill & 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 & shower after use of chemicals, triple rinse chemical containers after use, monitor pesticide exposure levels.

Personal Protective Equipment (PPE)

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

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

MODULE I

WORKSHOP SAFETY ON FARMS

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AG2130EM A Equip a workshop

“Hazards to health and safety in the workshop include: mechanical hazards associated with moving parts, noise, dusts, ergonomic hazards associated with posture, movement and vibration, electricity, chemical hazards”

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.

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

Practical demonstration

Interactive guided discussion

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 types
- cutting tools
- lathe
- Oxy / acetylene torch
- air tools

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

Student Field Day Evaluation Form

Module specific assessment task

Acknowledgment:

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

MODULE I

WORKSHOP SAFETY ON FARMS

SECTION 2: PRESENTER GUIDELINES

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.

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

Presentation Guidelines:

1. INTRODUCTION

Introduce yourself to the students.



Explain that the module will seek to look at some of the hazards associated with workshops and particularly with the tools that are commonly in farm workshops.

2. FARM WORKSHOPS



Explain that statistics have shown maintenance and repairs, and other workshop associated tasks are among the most common activities where farm injuries occur.



In the delivery of the module, seek to be interactive with the students introducing them to the hazards of farm workshops through the simulated use of workshop equipment. Ask students if they can identify any hazards and risks associated with the equipment and outline strategies that may be used to manage these risks.



These strategies should be based on the established hierarchy of control, with the passive controls - elimination of hazard, substitution of hazard, and engineering the hazard out considered first, and then the active controls of work practices and the use of personal protective equipment.

The first two have the same implications for all workshop equipment and are discussed directly below. Elimination, safe work practices and correct PPE is then discussed in the context of certain workshop equipment that may be featured in the presentation.

Eliminate the hazard

Generally in a workshop the best time to eliminate hazards is at the time of planning a new workshop, or when modifying a workshop. An example of this would be to have an electrician install a Residual Current Device (or Safety Switch) to the workshop.

Substitute the hazard

When working in a workshop the selection of the most appropriate tool will reduce the risk of injury. However always remember that when substituting a tool for one with less risk, the new tool will have its own set of associated hazards.

a) GRINDERS

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 the grinder.

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,

Large grinders should have a functioning power switch that cannot be left on,

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.

b) 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.

c) 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.

d) 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.

e) 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.

f) 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

3. CONCLUSION



Explain to the students that along with the controls examined today that first aid skills in the situation of a workshop emergency has the potential to save a life. Suitable first aid kits should be located in farm workshops and people working in workshops should be made aware of who is trained to administer first aid.

Take any remaining time to answer questions or to ask questions based on the assessment task.

Assessment Task and Guidance Material

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

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

Further Information:

WorkCover NSW (1996) *Use of personal protective equipment at work – a guidance note.* [032]

WorkCover NSW *Principles of machine guarding*

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

Contacts: See also Module 1 - Contacts

TAFE NSW

Information Centre

47 York Street Sydney 2001

Phone: 131 601

<http://www.tafensw.edu.au>

MODULE I

WORKSHOP SAFETY ON FARMS

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AG2130EM A Equip a workshop

“Hazards to health and safety in the workshop include:

mechanical hazards associated with moving parts, noise, dusts, ergonomic hazards associated with posture, movement and vibration, electricity, chemical hazards”

Aim:

To raise awareness of the hazards associated with farm workshops and to provide the underpinning 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.

Resources:

Student assessment task

Answer sheet for assessment task

Student guidance material

Workshop safety is an important component of on-farm occupational health and safety, with statistics indicating that the maintenance and repair of machinery and equipment and associated workshop tasks are among the most common activities where farm injury occurs.

Students have been given an assessment task related to the Workshop Safety on Farms module that they attended at the Future Farmers’ Farm Safety Field Safety Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia, provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

Training in the use of farm workshop equipment is available from TAFE NSW.

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

Further Information:

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

WorkCover NSW (1996) *Use of personal protective equipment at work – a guidance note*. [032]

WorkCover NSW *Principles of machine guarding*

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

Contacts: See also Module 1 - Contacts

TAFE NSW

Information Centre

47 York Street Sydney 2001

Phone: 131 601

<http://www.tafensw.edu.au>

MODULE I

WORKSHOP SAFETY ON FARMS

SECTION 4: 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

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.

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

WORKSHOP SAFETY ON FARMS**ASSESSMENT 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

Workshop Safety on the Farm

Injury statistics reveal that maintenance & repair of machinery & 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 & electrical wiring.

Mechanical force – associated with grinders, drills, power saws, compressed air, & the use of vehicle supports such as jacks or hydraulics.

Chemical poisoning – associated with toxic welding fumes & chemicals stored in sheds.

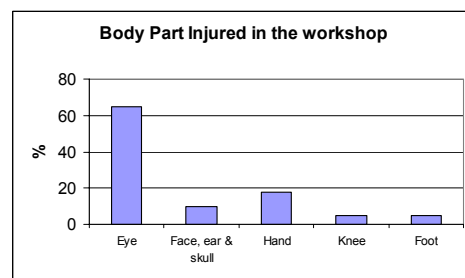
Noise – associated with grinders, generators, air compressors, power tools, hammering steel.

Heat – associated with hot machine parts, welding & cutting steel.

Ergonomic problems – associated with moving equipment in workshops, tasks that require awkward posture, inadequate lighting & extremes of temperature.

The risks associated with farm workshops include injury & death. 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 & electrocution.

Injury & permanent disability may also result from the same causes as those of death. The most common injury resulting from the workshop is foreign bodies in the eye, such as dust particles or metal shards. Other common injuries include cuts, burns & crush injury to the hands & eyes.



Latrobe Valley Vic. & NW Plains NSW 90/93

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

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

Mechanical hazards –

- fit & maintain machinery guards. Use a safety cage for fitting tyres

Examples of machinery guards



Electrical hazards – install an RCD. Only have electricians install & maintain electrical systems. Have sufficient outlets to reduce the need for extension cords.

Manual handling hazards – Install benches at waist height to load/unload & store drums & other materials. Workbenches should be set at the right height for workers.

- **Safer work practices & 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 & 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 & air tools.

Ear muffs/ear plugs – grinder, generators/air compressors, and power tools.

Welding helmet/goggles – for use when welding or using an oxy-acetylene torch.

Leather apron & gloves – protect from burns sparks & hot metal

Reinforced boots – protect feet from crushing injuries

Respirator – prevents inhalation of dusts, fumes & vapours

MODULE J

SAFE HANDLING OF CATTLE

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AG1500BC A Carry out basic beef cattle handling duties

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.

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area e.g. an experienced livestock handler.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

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 a 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 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

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

Acknowledgment:

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

MODULE J

SAFE HANDLING OF CATTLE

SECTION 2: PRESENTER GUIDELINES

Learning Outcomes:

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

- identify hazards involved in the handling of cattle and assess the associated risks.
- describe strategies to manage the risk associated with handling cattle
- select correct personal protective equipment for handling cattle.

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 – incorporate the use of stock handling aids into the demonstrations. Point out to the students that handling aids extend the reach of the handler and that it is unnecessary and dangerous to poke an animal that is already moving.
- Overheads if module is unable to be performed with live animals.

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 a 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 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

Presentation Guidelines:

1. INTRODUCTION

Introduce yourself to the students.



Explain the purpose of the module and how it will look at the major hazards involved in handling cattle and how handling cattle can be done safely through using correct techniques and equipment.

2. CATTLE HANDLING HAZARDS

Explain that working with cattle is a dangerous occupation. In a study of farming related fatalities in Australia during the period 1989 to 1992 beef cattle properties had the highest amount of on farm deaths with 22 deaths a year occurring on cattle farms.

Explain that the sources of accident, injury and illness arise from a combination of lack of confidence, stress due to poor facilities and poor work practices and a lack of understanding of cattle behaviour.

The hazards involved with handling cattle are injury from the animal kicking or charging when handling or mustering, crushing against handling facilities and illness transmitted by cattle (zoonoses).

The identification of the hazards involved in the handling of cattle involves examining the features of the stock being handled, the attributes of the handler and the environment of handling.

Stock

- The breed and size of the animals being handled.
- Physical attributes that may cause injury eg horned cattle against 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.
- The source of disease (zoonoses).

Handlers:

- Competence of the handler. This includes the handler's knowledge of animal behaviour and experience in handling cattle.
- Age. Younger handlers are less likely to have extensive experience in cattle handling, whilst older people are more likely to have slower reflexes and be less agile.

Environment:

- Cattle handling facilities.

Some design features of cattle yards increase the risk of injury to cattle handlers. These include:

- the lack of escape routes like man ways and foot holes.
- poor crush design, levers on head bails.
- materials of insufficient strength.
- protrusions; gate latches and poorly swung gates.
- slippery surfaces
- missing rails.

Poorly designed or maintained cattle handling facilities (yards) can lead to stock baulking, turning back, rushing and milling, escaping through and over fences and charging handler. Any of the following items may cause cattle to baulk:

- sparkling reflections on puddles.
- reflections on smooth metal.
- chains that jiggle.
- metal clanging or banging.
- clothing hung on a fence.
- a piece of plastic that is moving.
- seeing people moving up ahead.

- changes in flooring and texture
- dark race entrances. Animals move from darker places to lighter places.
- Time of day – light & wind factors can affect the way stock behave.



Have the students conduct a risk assessment on the yards being used. Explain that handlers must assess the risks whenever they are working with stock.

2. SAFE CATTLE HANDLING

When handling cattle you are responsible for the safety of

- yourself
- others
- the stock

Explain to the students that the following concepts of animal behaviour will help to both safely and effectively handle cattle.



Principle of 'flight' zone *Diagram or Demo*

The flight zone is an imaginary space that surrounds an animal. When the flight zone is encroached by the handler, it elicits either a “flight or fight” response from the animal. It attacks or runs. The size of the flight zone varies depending upon how tame or experienced to handling the animal is. Animals handled gently or intensively reared tend to have smaller flight zones.



Use the analogy of invading a person's personal space to an animals' flight zone.



Point of balance *Diagram or Demo*

This imaginary line runs at a right angle to the front shoulder of a beast. The position of a handler relative to the beast's point of balance and flight zone will determine the response from the animal. To move a beast forward the handler should stand at the edge of the flight zone between 45 - 60 degrees back from the point of balance. To stop the beast a handler must move out of the beast's flight zone.

Cattle have the tendency to move in the opposite direction to a handler that is in their flight zone. By moving ahead of cattle outside of their flight zone and then moving behind them from inside their flight zone will elicit forward movement. The most effective and safest place for a cattle handler to work from is at the fringe of the flight zone.



If the module is being taught with cattle in a yard, the flight zone and the point of balance may be demonstrated by moving an animal around a yard utilising the above principles. If not use the Overheads OH 1 and 2.

Mob movement

Mobs of cattle possess a collective flight zone and point of balance. The same principles therefore apply to moving mobs taking the point of balance to be the front of the mob. Remember though that there are still individuals within a mob who may behave differently and unexpectedly.



Overhead 3

Explain to the students that an animal's flight zone is bigger when it is excited or if you approach it head on. If cattle get excited, it is best to allow them to calm down before continuing handling. It takes approximately 20-30 minutes for cattle to calm down. Explain the signs of fear and aggression to the students. These may include the positioning of the head, tail, ears and nostrils, rolling eyes, pawing at the ground or snorting.

Explain that by using these principles, cattle can be handled from a safe distance in both yards and when mustering.

Mustering

When mustering the use of a horse instead of a motorcycle will decrease the risk of having a beast charge you. Also, ensure that mustering is planned taking into account wind speed, location of water and adequate time. If stock are rushed they are more likely to become stressed increasing the likelihood of injury to them or you.

Yard handling

To minimise the risk of limb injuries when working in yards, 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.

Explain that in cattle yards the high-risk areas are the drafting yards, loading ramps, races and crushes.

Races



Explain/demonstrate.

- Always handle animals from outside the race when possible. Use animals flight zone and point of balance to move them.
- Avoid handling cattle through the gaps in yard rails. This increases the likelihood of crushing hands and arms. Use handling tools to prompt them.



Overhead 4

Crushes



Explain/demonstrate:

- Crushes with solid sides or barriers around cattle, prevent them from seeing people deep inside their flight zones. This allows people to perform veterinary tasks whilst managing the stress on the stock.
- Whilst in crushes the animals escape pathway should be physically blocked, until properly restrained. This helps to prevent the animal lunging at the headgate.
- If pressure is applied gently, cattle are less likely to struggle. Sudden jerky motions will excite.
- Sufficient pressure should be applied to restrain the animal, but the use of excessive pressure that causes pain and discomfort must be avoided.
- The entrance to restraint devices 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.
- Always restrain livestock in an upright position.
- Reinforce that care must be taken when handling an animal restrained in a head bail as they are still able to quickly move forwards and backwards. It is essential that bail catches and locks work effectively as they may cause injury to handlers and the beast may escape during handling.

Drafting or separating animals



Explain/demonstrate:

- always allow cattle to see an escape route.
- only half fill the drafting yards. Allow them room to move.
- have the right amount of handlers in the yard for the job at hand.
- draft cattle big from small and quiet from excitable.
- do not leave single animals on their own, particularly *Bos indicus* breeds.

Reiterate to the students that a good cattle handler is;

- **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 ability to control animals and know where to stand in relation to animals.

3. PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING

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.

4. CONCLUSION

Use any remaining time to recap important points, answer questions from the students and to ask them questions based on the student assessment guide.

Assessment Task and Guidance Material:

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

Reference:

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

Further Information:

URL ~ <http://www.workcover.nsw.gov.au> - contains links to on-line 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*,

Hurst R (2001) *Handling Cattle*, Agfact A0.1.2, NSW Agriculture. URL ~ <http://www.agric.nsw.gov.au/reader/7127> accessed 06/01

Contacts: See also Module 1 - Contacts

NSW Agriculture

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

Facsimile: 02 9463 9393

MODULE J

SAFE HANDLING OF CATTLE

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AG1500BC A Carry out basic beef cattle handling duties

Aim:

To raise awareness of hazards and risks involved in the handling of cattle and to provide the underpinning 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.

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

Assessment

Students have been given an assessment task related to the Safe Cattle Handling module that they attended at the Future Farmers Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia, provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

Specific cattle handling training is available from:

TAFE NSW &

Total - CB Alexander Agricultural College

Patterson NSW 2421

Phone: 1800 025520

<http://www.agric.nsw.gov.au/reader/425>

and Murrumbidgee College of Agriculture

Narrandera Rd

Yanco NSW 2703

Phone: 1800 638 422

Facsimile: 02 6955 7580

<http://www.agric.nsw.gov.au/reader/424>

Source:

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

Further Information:

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

URL ~ <http://www.workcover.nsw.gov.au> - contains links to on-line 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*,

Hurst R (2001) *Handling Cattle*, Agfact A0.1.2, NSW Agriculture. URL ~ <http://www.agric.nsw.gov.au/reader/7127> accessed 06/01

Contacts: See also Module 1 - Contacts

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Livestock Officer (Beef Products)

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MODULE J

SAFE HANDLING OF CATTLE

SECTION 4: Resource Package

Attached Resources

Student Assessment Task

Assessment Answer Sheet

Overhead 1 – Flight zone and point of balance

Overhead 2 – Using point of balance to predict movement

Overhead 3 – Mob movement

Overhead 4 – Movement in races

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

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?

SAFE HANDLING OF CATTLE ASSESSMENT 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

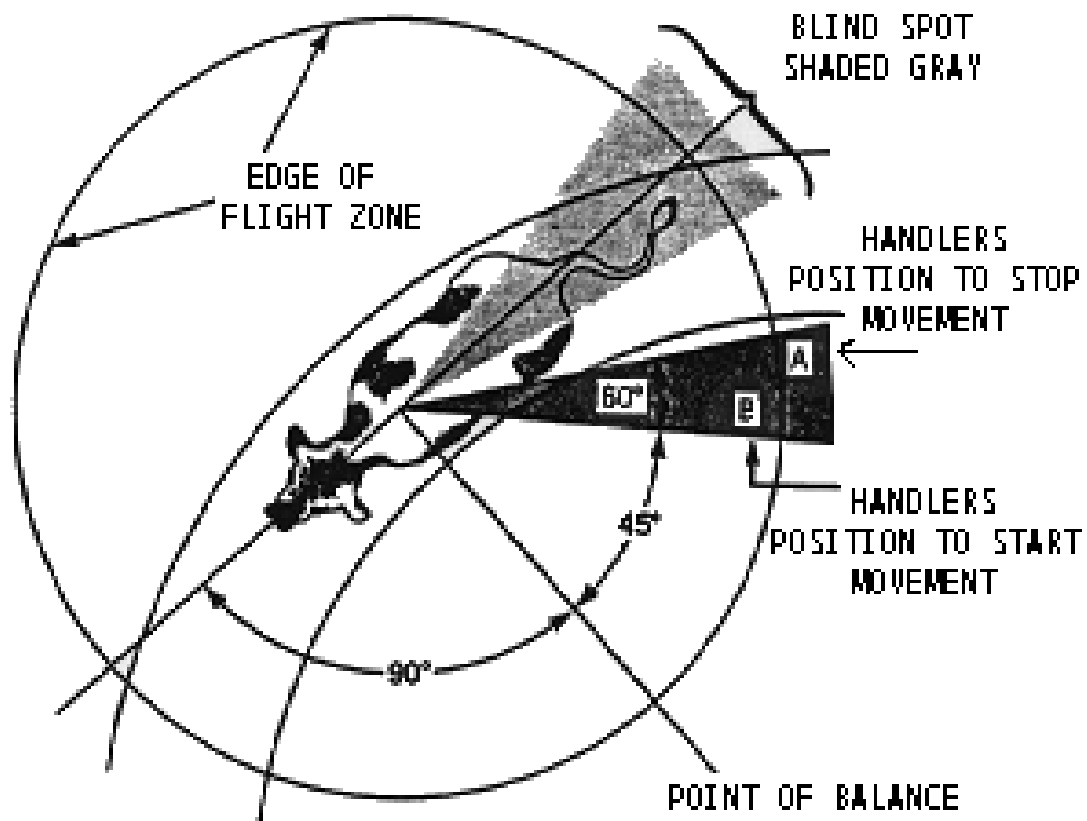
4. What are 2 of the signs that cattle may give that indicate aggression or fear?

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

5. What clothing should be worn when handling cattle?

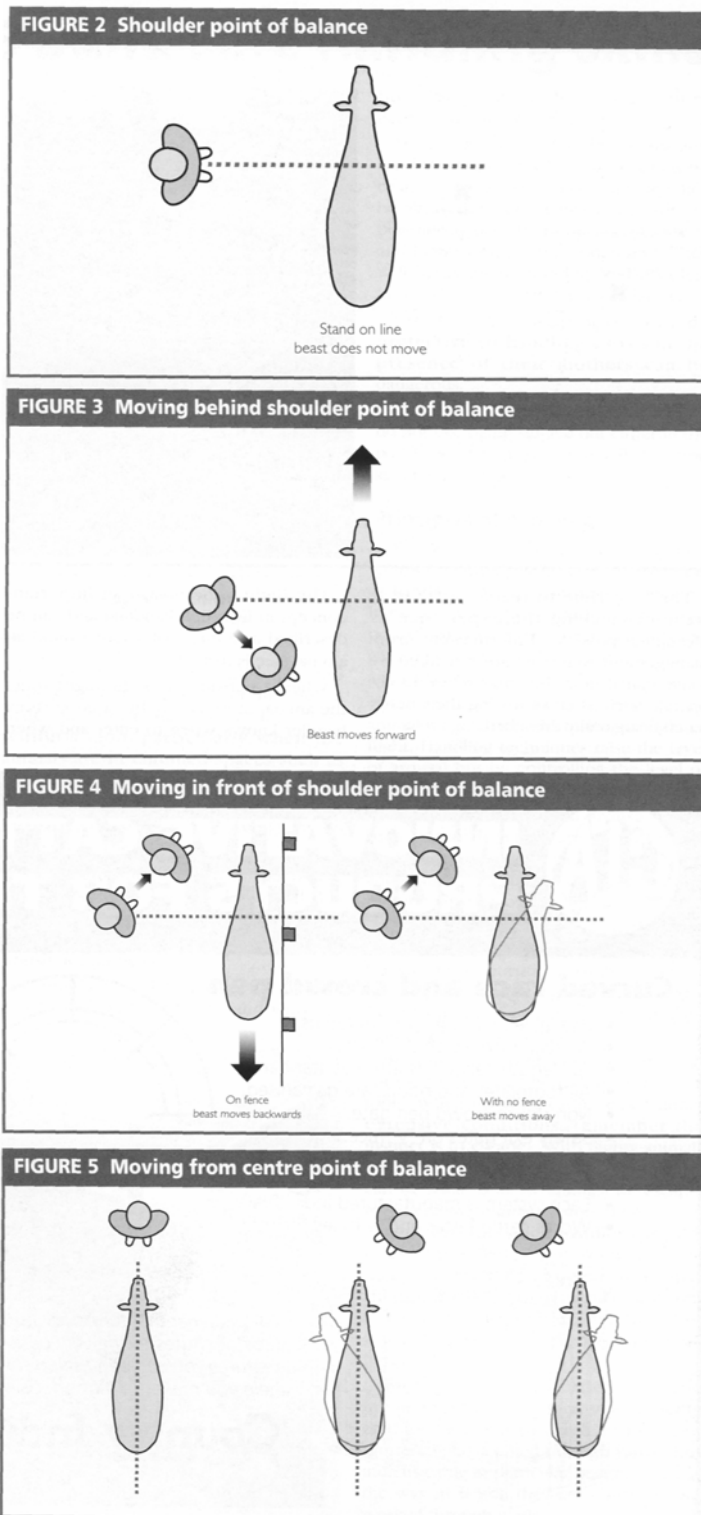
Snug fitting clothing, sturdy boots with a reinforced toe or steel capped and a non-slip sole, leather gloves to reduce rope burns and lacerations to the hands

OH 1 – Flight zone and point of balance



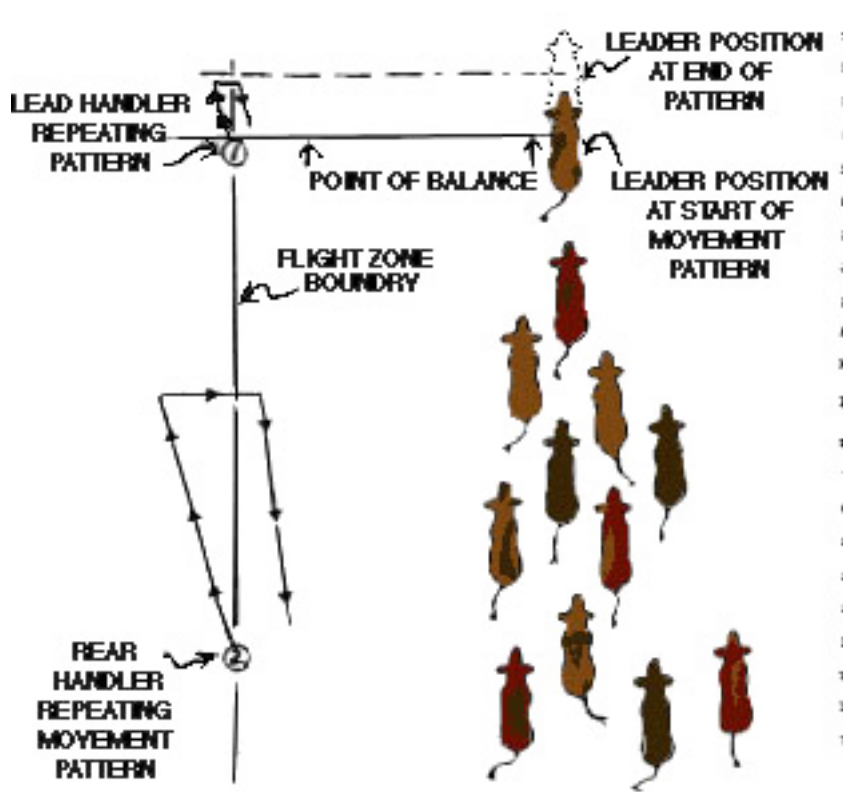
T.Grandin <http://grandin.com> accessed 06/01

OH 2 – Using point of balance to predict movement



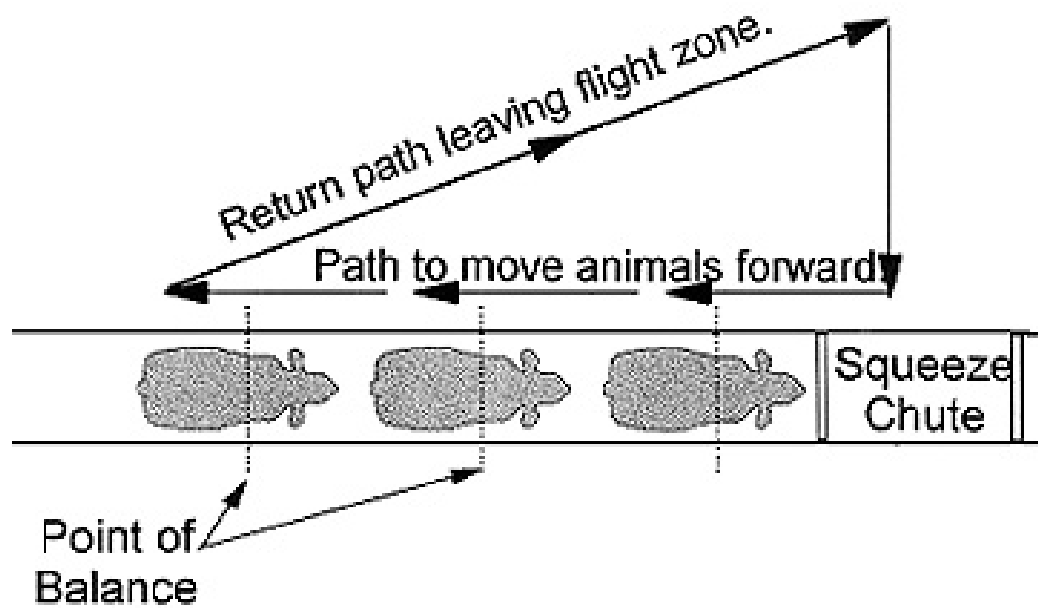
Evans M (ed) (1998) *Handling the herd*, Kondinin, Cloverdale

OH3 - Mob Movement



T.Grandin <http://grandin.com> accessed 06/01

OH4 - Animals in Race



SAFE HANDLING OF CATTLE

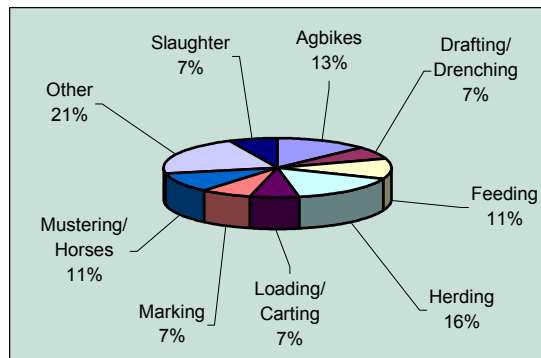
A study of farm related deaths during the period 1989-1992 found that over 16% of Australian farm related deaths occurred on meat cattle properties. This represented the single largest proportion of deaths on Australian farms by enterprise type.

The hazards involved with handling cattle are:

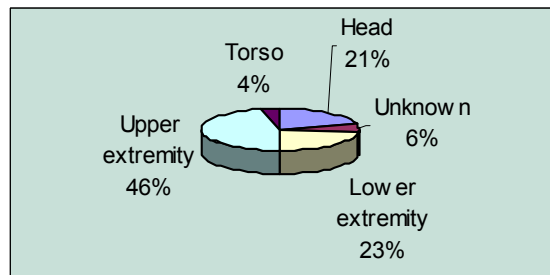
➤ Injury – kicking or charging when being handling or mustering and, crushing against handling facilities.

➤ Illness – zoonotic disease that may be passed to humans

Cattle activities resulting in injury



Body part injured in cattle related injury



Victorian Injury Surveillance System 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 – 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 & washing will reduce the risk of disease.

➤ If applying chemicals the appropriate PPE as recommended on the label or the MSDS should be worn

OH 1 – SAFE Principle

SAFE Principle

S	pot the hazard
A	ssess the risks
F	ix and control the identified hazard
E	valuate the control

OH 2 – Farm Plant at Risk of Power Line Contact

Farm Plant at Risk of Power Line Contact

NOTE: These heights may vary depending on other factors.

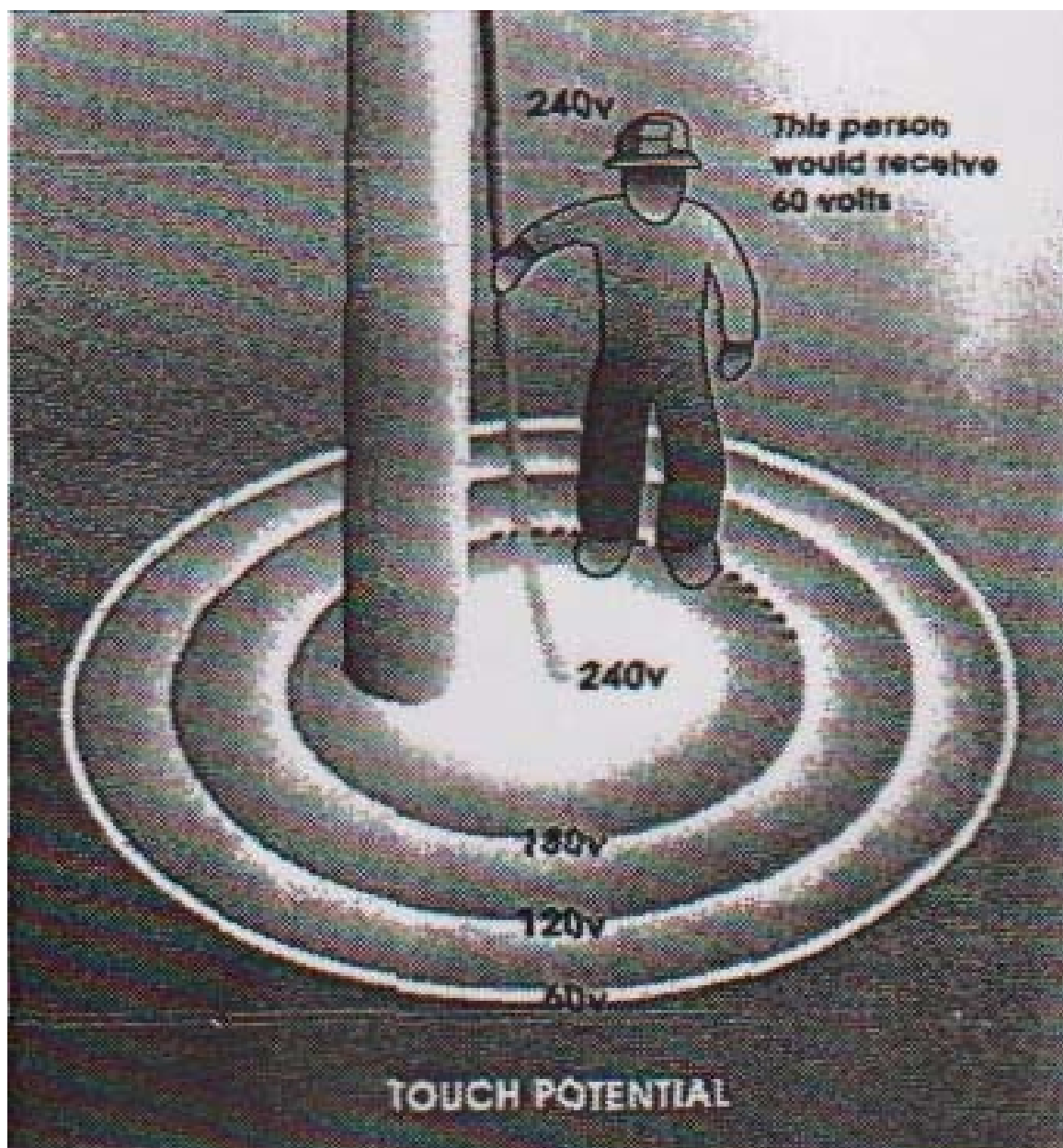
Plant	Indicative Height
Four wheel drive tractor 425 horse power	3.8 m to top of exhaust
Cotton Pickers standard basket extended basket	operating 4.86 m, dumping 6.12 m, operating 5.33 m, dumping 6.42 m,
Cotton module builder boom retracted boom extended	5 m 8 m
Grain Harvesters	4.1 m operating 5.3 m 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

OH 3 – Safe Operating Distances

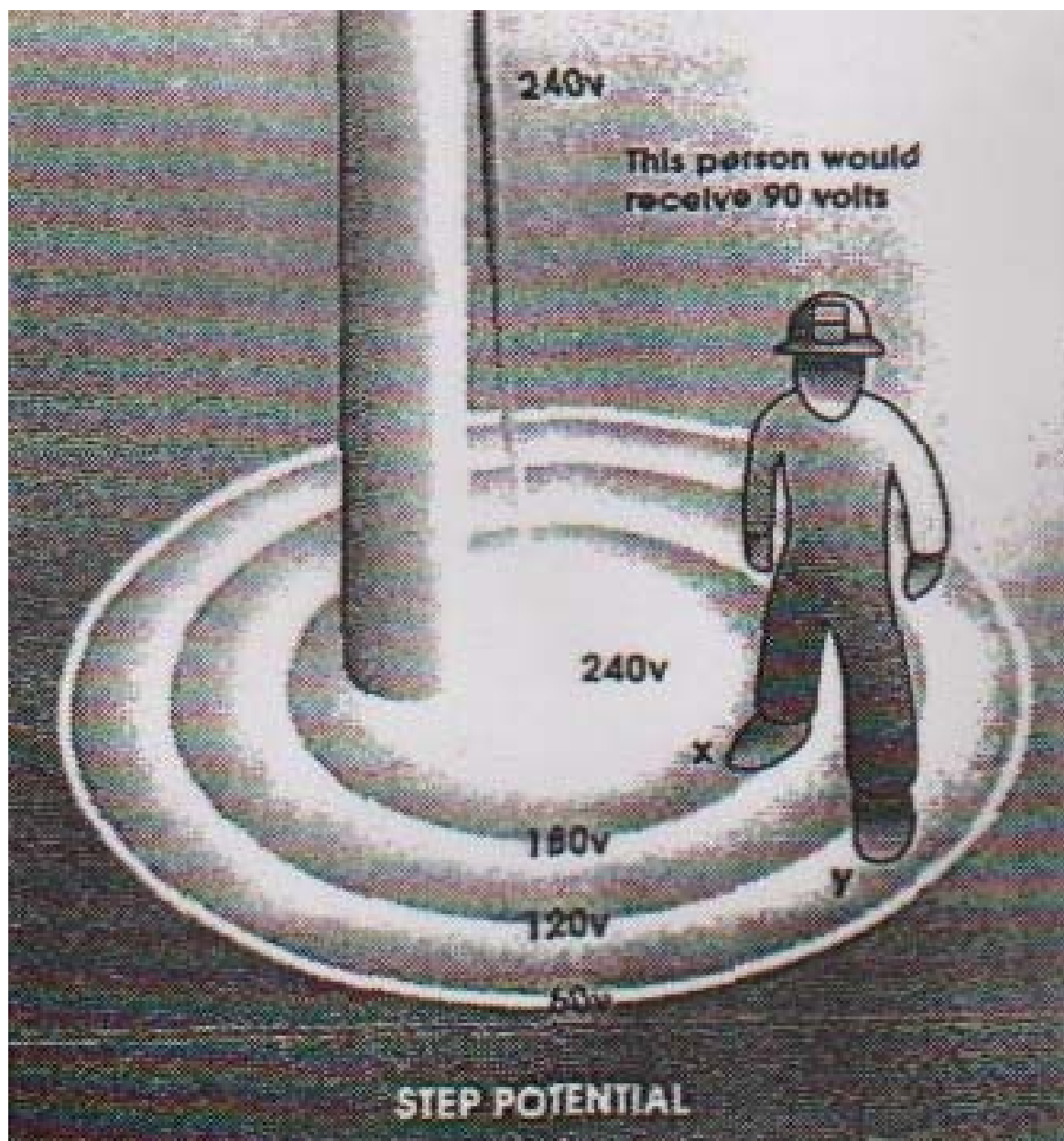
Safe Operating Distances with Overhead Power Lines

Power Line Type	Voltages	Identify	Safe Operating Distance
Low voltage and high voltage distribution and sub-transmission lines	Up to 132 000 volts	Usually on poles	3m
Sub-transmission and transmission lines	Between 132 000 and 330 000 volts	On either poles or towers	6m
Transmission lines	More than 330 000 volts	Usually on towers	8m

OH 4 – Touch potential



OH 5 – Step Potential



MODULE K

HORSE SAFETY ON FARMS

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures.

CORE 2.2 Follow farm procedures for hazard identification and risk control “Risks associated with animals include: ...horse handling...”

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).

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area e.g. an experienced livestock handler.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

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.

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

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

MODULE K

HORSE SAFETY ON FARMS

SECTION 2: PRESENTER GUIDELINES

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).

Resources Required:

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

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.

Presentation Guidelines:

1. INTRODUCTION



Introduce yourself to the students.

Explain that the module will seek to look at the major dangers associated with riding or handling horses on farms, and strategies to minimise the risk of such injury.

2. FARM HORSES



Ask the students what the major uses of horses are on farms.



Mustering stock & Recreation



Ask the students how they think people are injured on horses?



Riding accidents

Falls from a horse

Being crushed by a falling horse

Getting entangled in a stirrup and being dragged along the ground

Hitting an object while riding. Eg a tree.



Overhead 1



Handling accidents

Having a hand entangled in a lead rope

A blow from a horse's head

Stepped on by a horse

Bitten by a horse

Crushed between a horse and yard or fence

Kicked by a horse



Overhead 2

Horse injuries are a major component of rural injuries with studies showing that horse injuries account for 2-11% of injury at rural hospital Accident and Emergency Units.

Approximately 20% of all horse injuries presented to rural hospitals require admission to hospital, and 40% require more than 5 days absence from work.

75% of injuries from horses are sustained whilst riding horses with the remaining 25% occurring when handling horses from the ground.

Falls from horses accounts for 90% of rider injury. Falls are often associated with head injury (concussion, skull fractures, facial fractures/lacerations).

The age group that is most likely to suffer from a horse related injury is 10-19 year age range.

3. IDENTIFYING HAZARDS



Explain to the students the factors that may bring about a horse related injury on farms.

Characteristics of the rider

- Young riders often lack the strength to control a horse. Their riding skills are under-developed. On the ground, they are at increased risk of being kicked or trampled. Older children tend to be over confident in their riding abilities.
- Older riders are more experienced, however, with age bodies tend to sustain more damage from falls from horses.
- People who have not had instruction in effective safe techniques in handling and riding horses are at increased risk of injury. This could be either formal riding training, or through a knowledgeable horseperson.

Characteristics of the horse

- Older horses tend to be quieter and best for inexperienced riders. An inexperienced rider on a young horse increases the risk of injury.

- The breed of horse may affect its temperament. Eg, thoroughbreds are more likely to be flighty than Quarter horses.
- Horses that have been well educated are easier to ride.
- All horses have an instinctive reaction to flee danger, which is often displayed when a horse becomes scared or hurt.
- Horses have poor eye sight and react instinctively to motion.

Characteristics of the environment

- The terrain on which the horse is ridden. Steep slopes, pot holes, rocks and gullies. 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
- If the horse is kept in yards or stables the design of these areas may contribute to the risk of injury, eg narrow doorways increase the chance of being crushed by the horse when leading it out.
- The setting of riding. There is greater risk of injury when the horse is used for any activity that requires speed or jumping heights.

4. SAFE HORSE HANDLING



Explain to the students safe methods of handling horses.

Discussion should include.



Overhead 3

When approaching a horse remember that a horse's field of vision is poor with blind spots both directly in front and behind. Always approach a horse on an angle, preferably from the near side. Talk quietly to the horse

When handling horses avoid having distractions around such as dogs.

When leading a horse never wrap the lead around your hand or fingers. This can lead to amputation of fingers if the horse bolts.

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. If it is unavoidable walk as close to the hind legs as possible. By keeping a hand on the horse's rump the horse will be more aware of your presence and less likely to kick.

Never lose your temper with the horse but be firm

5. SAFE HORSE RIDING



Explain/demonstrate techniques for safe riding of horses

Discussion should include the following..

Check that tack is in good repair before saddling up. Ensure that there are no foreign objects on the horse's back. Stirrup leathers should be run up and not thrown over.

Check the correct tightness of the girth

Check tightness of the girth at 3 times – after saddling, after walking a few steps and after having ridden a short distance

When riding up and down hills keep a slow pace. If riding through rough terrain such as rocks, potholes and water, ride slowly or get off and lead the horse.

When riding with other horses keep a safe distance behind - at least a horse's length.

Never rush past a slower horse as this may startle the horse and rider – overtake cautiously

When riding horses in the presence of vehicles or dogs be aware that these could frighten your horse and take the appropriate precautions.

Never race a horse back to home – this encourages the horse to always try to gallop when heading for home

Skylarking should never be permitted whilst riding

Maintain awareness of the state of the horse, your surroundings and what other horses around you are doing

Never ride a sick or injured horse

6. TACK AND PPE



Explain/demonstrate what tack and PPE should be used when riding horses to ensure safety.

Discussion should include:

Tack should be 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 rider's foot.



If safety stirrups are present demonstrate how they work

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.

7. CONCLUSION

Use any remaining time to emphasize important points, field questions from the students, and ask students questions based on the student assessment task.

Assessment Task and Guidance Material

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

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:

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*,

Contacts: See also Module 1 - Contacts

Australian Pony Club Association

PO Box 4317

Sydney NSW 2001

Phone: 02 3960 2536

Facsimile: 02 9360 2719

Australian Stock Horse Society

92 Kelly St

Scone NSW 2337

Phone: 02 6545 1122

Facsimile: 02 6545 2165

MODULE K

HORSE SAFETY ON FARMS

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures.

CORE 2.2 Follow farm procedures for hazard identification and risk control "Risks associated with animals include: ...horse handling..."

Aim:

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

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).

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

Horse riding safety is an important component of on farm occupational health and safety, with a high potential for serious injury and death. The cost of horse related injury has been established as one of the highest for farm injuries. Moreover the importance of alerting the hazards of horse riding to students is highlighted by the estimation that over a third of all horse related injuries requiring medical treatment involve individuals aged between 10 and 19 years.

Students have been given an assessment task related to the horse safety on farms module that they attended at the Future Farmer Farm Safety Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

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/425>

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:

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called Safety First or Expect the Worst. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~

<http://www.workcover.cadre.com.au>

- contains interactive Occupational Health and Safety tutorials for young people.

<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.

Contacts: See also Module 1 - Contacts

Australian Pony Club Association

PO Box 4317

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92 Kelly St

Scone NSW 2337

Phone: 02 6545 1122

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MODULE K

HORSE SAFETY ON FARMS

SECTION 4: Resource Package

Attached Resources

- Student Assessment Task
- Teacher Answer Sheet
- Overhead 1 – Horse-riding injury
- Overhead 2 – Horse handling injury
- Overhead 3 – Horse blind spots

Other Resources

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

Name:	
Class	

2. Should inexperienced riders be given young inexperienced horses to ride and handle? (circle one)

YES NO

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

Riding i) ii)

Handling	i)	ii)
1. Preparation of the sample	1. Preparation of the sample	1. Preparation of the sample
2. Measurement of the initial concentration	2. Measurement of the initial concentration	2. Measurement of the initial concentration
3. Measurement of the final concentration	3. Measurement of the final concentration	3. Measurement of the final concentration
4. Calculation of the concentration difference	4. Calculation of the concentration difference	4. Calculation of the concentration difference
5. Calculation of the rate of change of concentration	5. Calculation of the rate of change of concentration	5. Calculation of the rate of change of concentration
6. Calculation of the rate of change of concentration per unit area	6. Calculation of the rate of change of concentration per unit area	6. Calculation of the rate of change of concentration per unit area
7. Calculation of the rate of change of concentration per unit volume	7. Calculation of the rate of change of concentration per unit volume	7. Calculation of the rate of change of concentration per unit volume
8. Calculation of the rate of change of concentration per unit mass	8. Calculation of the rate of change of concentration per unit mass	8. Calculation of the rate of change of concentration per unit mass
9. Calculation of the rate of change of concentration per unit length	9. Calculation of the rate of change of concentration per unit length	9. Calculation of the rate of change of concentration per unit length
10. Calculation of the rate of change of concentration per unit time	10. Calculation of the rate of change of concentration per unit time	10. Calculation of the rate of change of concentration per unit time

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

i)

ii)

iii)

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

(circle one) YES NO

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

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

HORSE SAFETY ON FARMS ASSESSMENT 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?

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?

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

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

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?

NO

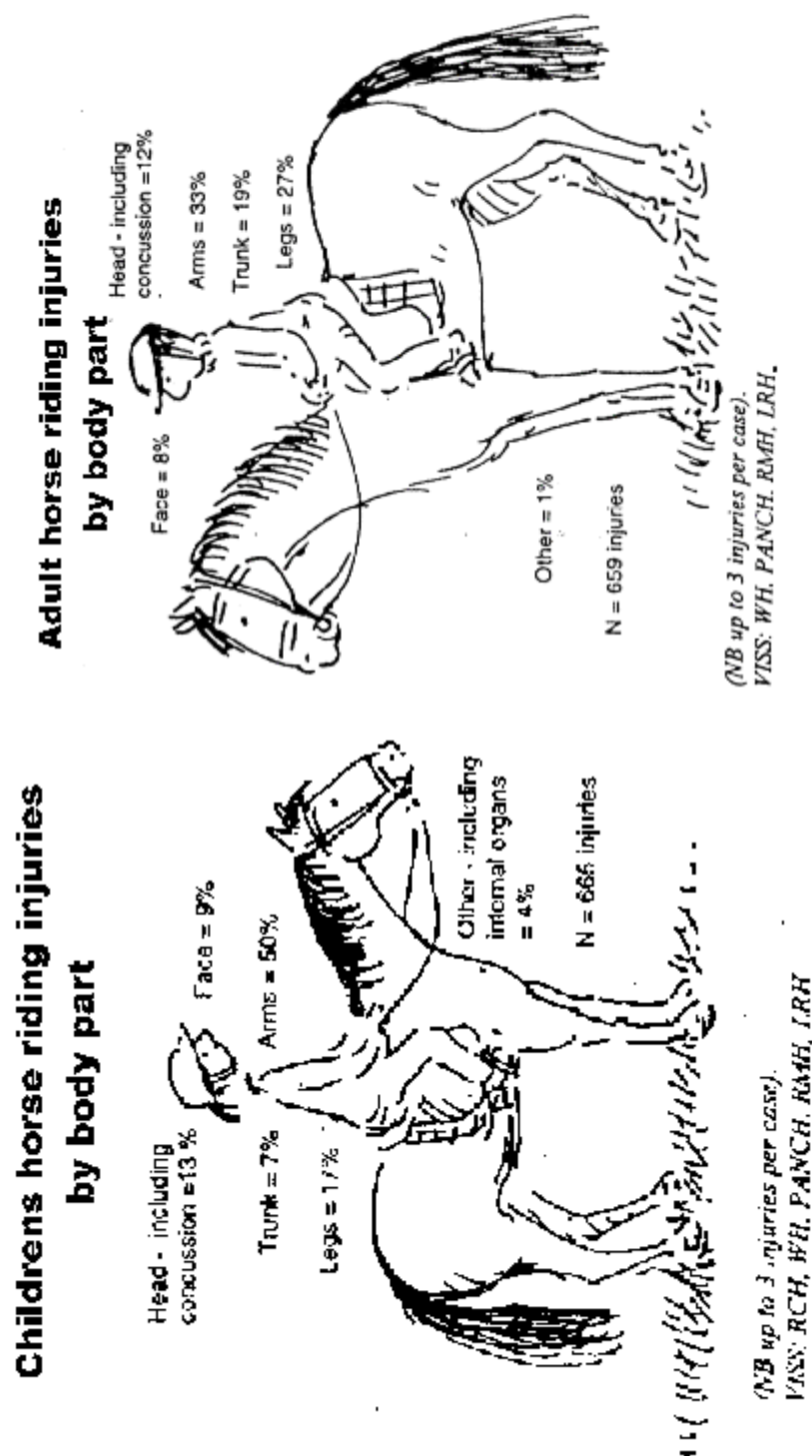
6. What sort of boots should you wear when riding or handling horses. What are the advantages?

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

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

An equestrian helmet meeting AS 2063.3

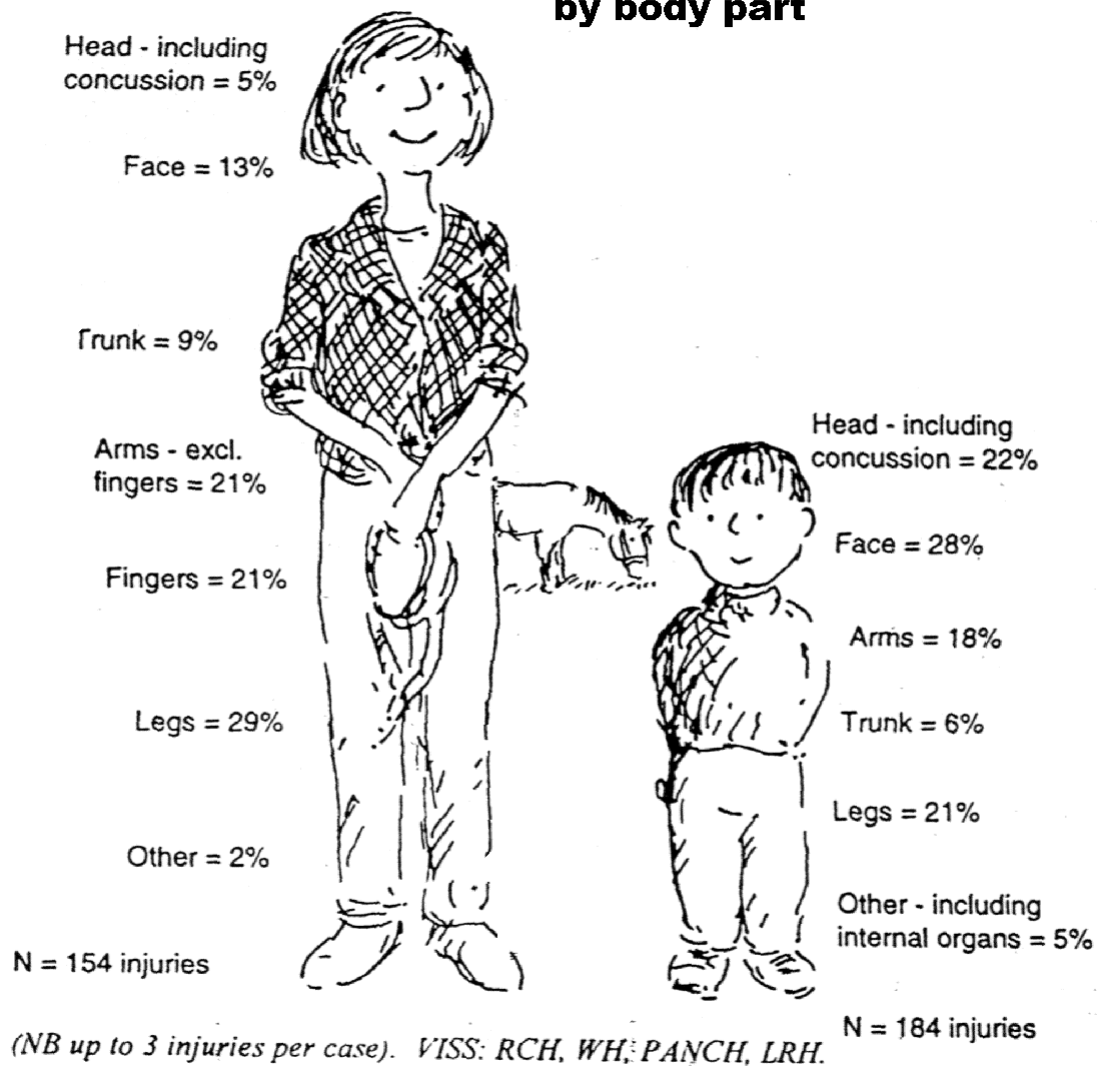
OH 1 – Horse riding injuries



Source: Victorian Injury Surveillance System – Hazard No. 23 – 1995

OH 2 - Horse handling injury

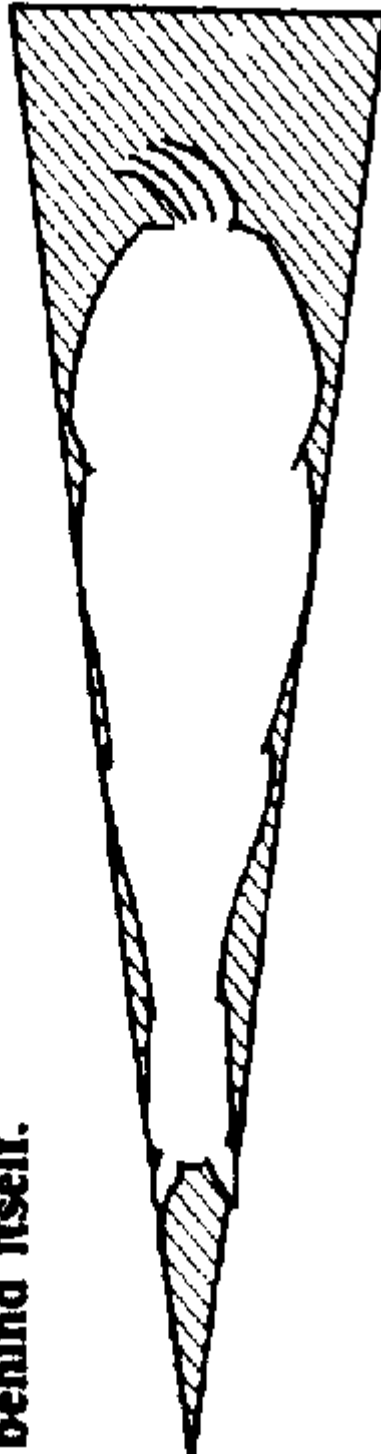
Non-riding horse injuries by body part



Source: Victorian Injury Surveillance System – Hazard No. 23 – 1995

OH 3 – Horse blind spots

Blind spots for a horse. When a horse has its head down grazing, it cannot see directly in front of or behind itself.



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

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 could 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: 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.

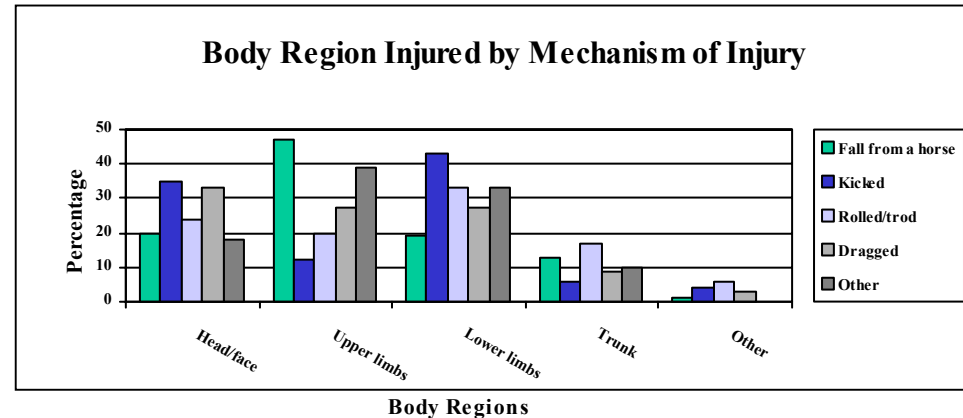
The Horse:

- 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 thoroughbreds 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.

Australian Centre of Agricultural Health and Safety Horses on Farms Guidance Note

The Environment:

- Riding over steep slopes, potholes, 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.

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.
- 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 rider's boots to allow the foot to release in the event of a fall.
- Use an Equestrian helmet meeting Australian Standard AS 2063.3
- Wear smooth soled boots with a heel
- Clothes should be close fitting so as not to catch objects, or flap and scare the horse.

OH 1 – SAFE Principle

SAFE Principle

S	pot the hazard
A	ssess the risks
F	ix and control the identified hazard
E	valuate the control

OH 2 – Farm Plant at Risk of Power Line Contact

Farm Plant at Risk of Power Line Contact

NOTE: These heights may vary depending on other factors.

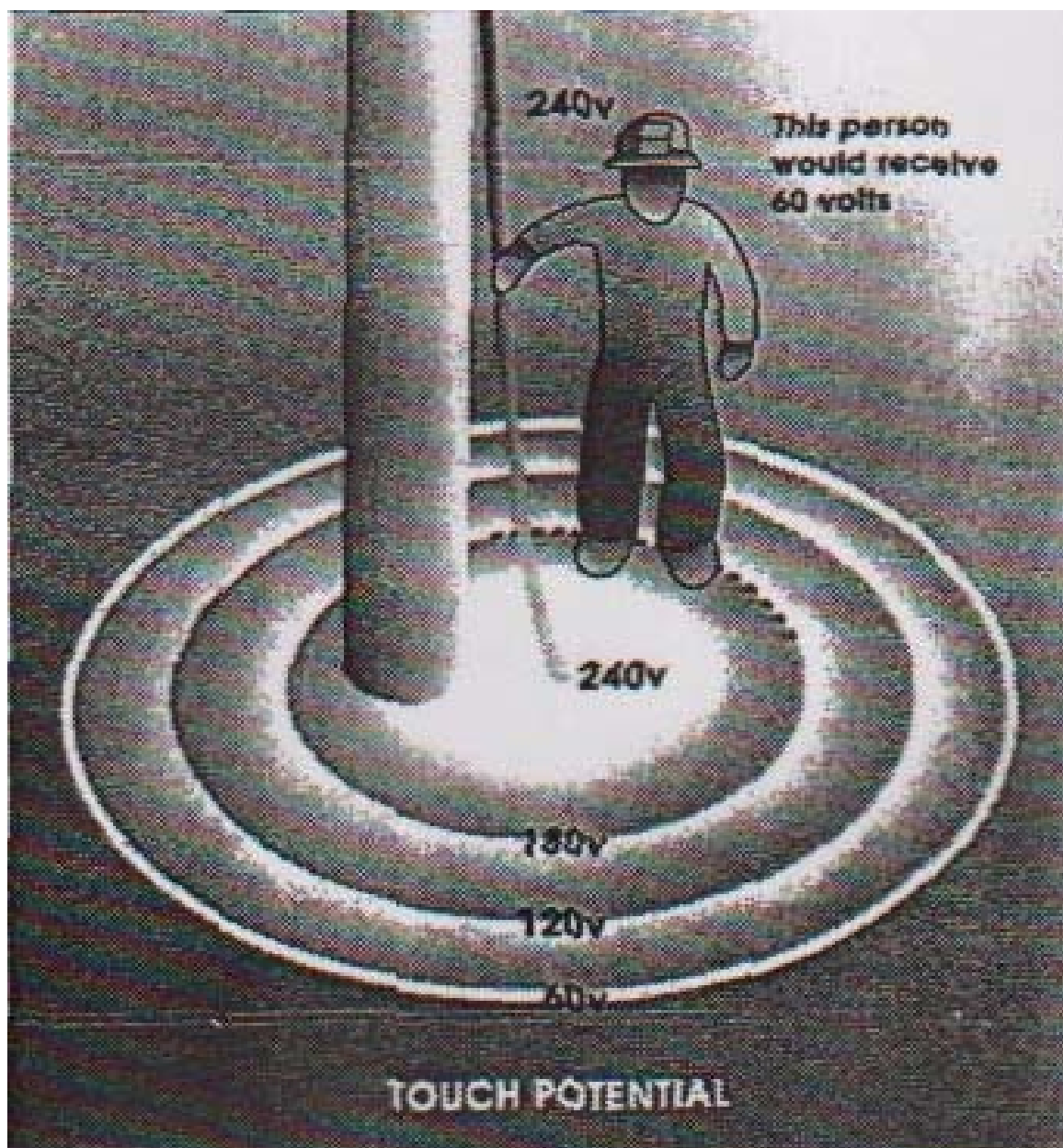
Plant	Indicative Height
Four wheel drive tractor 425 horse power	3.8 m to top of exhaust
Cotton Pickers standard basket extended basket	operating 4.86 m, dumping 6.12 m, operating 5.33 m, dumping 6.42 m,
Cotton module builder boom retracted boom extended	5 m 8 m
Grain Harvesters	4.1 m operating 5.3 m 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

OH 3 – Safe Operating Distances

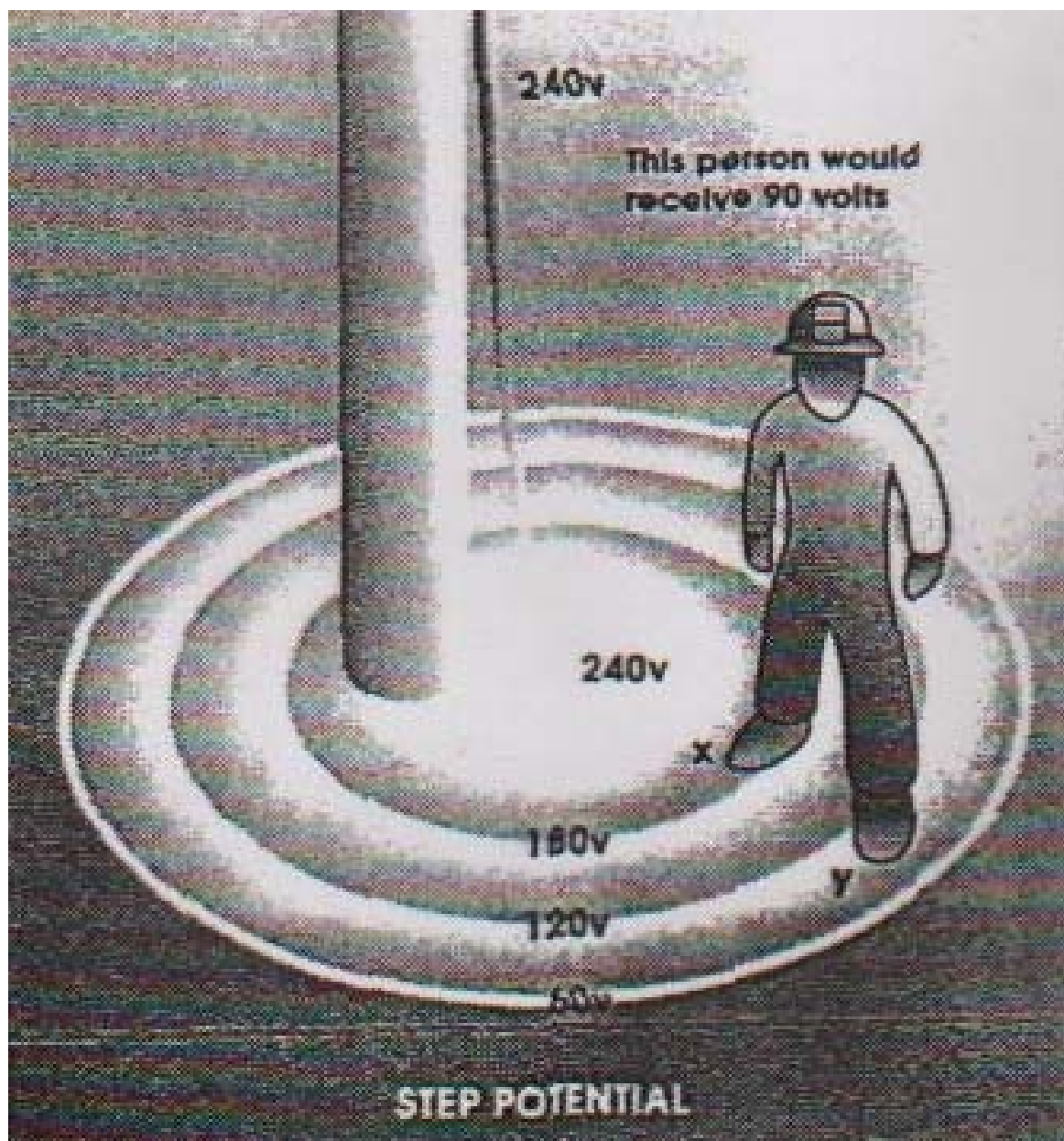
Safe Operating Distances with Overhead Power Lines

Power Line Type	Voltages	Identify	Safe Operating Distance
Low voltage and high voltage distribution and sub-transmission lines	Up to 132 000 volts	Usually on poles	3m
Sub-transmission and transmission lines	Between 132 000 and 330 000 volts	On either poles or towers	6m
Transmission lines	More than 330 000 volts	Usually on towers	8m

OH 4 – Touch potential



OH 5 – Step Potential



MODULE L

ON FARM EMERGENCY RESPONSE

SECTION 1: MODULE OUTLINE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures
CORE2.3 Render appropriate emergency procedures “OHS emergencies on rural workplaces include: electrocution, fire, flood, chemical spills, storms and cyclones, gases in confined spaces, gas leaks, serious injury associated with tractors, machines, animals, vehicles, firearms, grain suffocation”

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.

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area .

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

Suggested Time:

20 minutes minimum presentation

Method of Delivery:

- Practical demonstration
- Interactive guided discussion

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

Acknowledgment:

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

References:

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

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

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

Contacts: See also Module 1 - Contacts

St John Ambulance Australia

St John House

6 Hunt Street

Surrey Hills NSW 2010

Phone: 02 9212 1088

Facsimile: 02 9281 6923

Training: 1300 360 455

First Aid Kits: 1800 451 391

<http://www.stjohn.org.au>

MODULE L

ON FARM EMERGENCY RESPONSE

SECTION 2: INSTRUCTOR GUIDELINES

Learning Outcomes:

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

- develop on-farm emergency procedures.
- implement on-farm emergency procedures.

Resources Required:

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

Presentation Guidelines:

1. INTRODUCTION

Introduce yourself to the students.



Explain the purpose of the module and how it seeks to help them put in place procedures to be followed in the event of an on-farm emergency.

2. ON-FARM EMERGENCIES



Ask what they consider on farm emergencies to be?



On-farm emergencies include:

- 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

Any other emergencies that students may come up with.



Ask how they would respond to each of the emergencies that they thought of?



Did they include contacting emergency services, the use of first aid?

3. EMERGENCY RESPONSE PLANS



Ask the students why it might be appropriate for farms to develop emergency response plans?



- Decreases response time.
- Increases rescue efficiency.
- Decreases the chance of a further injury to victim and rescuers.
- Law requires it.



What should be included in an on-farm emergency plan?



- Identification of possible emergencies that could occur on the farm, eg a fire in the woolshed, a chemical spill or a tractor rollover.
- Actions to be taken in the case of any of any emergency. These should include
 - The communications that are to be used in the event of an emergency. Eg telephone, mobile telephones, UHF radios.
 - The emergency services that require notification for different emergencies.
 - A set of concise directions to the property to give to the emergency services.

The provision of first aid kits and other emergency equipment such as fire extinguishers.

4. EMERGENCY RESPONSE FOR INJURY



Explain that the next section of the module will examine emergency response in the case of finding an accident on a farm.

When discovering a farm accident your main concerns should be focused on ensuring that the victim and yourself are not subject to further **danger** contacting the **emergency services** and providing **first aid** to the victim.

Emphasise that the needs of these three concerns need to be assessed when choosing the priority of action to be taken. That is, the priority of emergency response depends on the individual circumstances of the accident.



Give the students an example of an on farm injury such as a tractor rollover. Ask them how they would assess the needs of the circumstances?



There are three major actions to be taken when finding a farm accident site.

Stabilising the scene

This phrase describes controlling any hazards at the accident site that could either harm you or cause further harm to the victim. The hazards that may be present at these sights include uncontrolled movement of machinery, fire and explosions, spills of hot liquid or chemicals, exposed electrical current and toxic fumes.

This stage requires an assessment of the injury to the victim and any apparent risks to both your safety and that of the victim. **Your safety is the most important priority**, if you are injured then it may be unlikely that anyone else will be able to contact the emergency services.

If the scene cannot be stabilised, but the victim may be safely approached they should be moved to a safer area. If there is a chance that the victim may be suffering from a spinal injury they should not be moved unless they remain in immediate danger of further injury. Accidents that may cause spinal injury include entanglement in farm machinery, entrapment under farm machinery, being thrown from equipment or falling a long distance.

Contact the emergency services

The first decision to be made on discovering an accident site is whether to remain at the site or leave to contact the emergency services. This decision has to be made depending on whether the scene of the accident can be stabilised and the victim can be safely approached. If you cannot safely approach the victim then the first action to be taken should be to contact the emergency services.

Provide first aid

When it is safe to approach a victim to provide first aid, assess the degree of lifesaving care that you are able to provide. Part of this decision will depend on whether the emergency services have been contacted.

The first aid may be learned through doing a first aid course.



Use the first aid decision-making tree in the resource pack to show that first aid that should be delivered should look to maintain the victims breathing and pulse and to control any bleeding.

5. CONTACTING EMERGENCY SERVICES



Role Play (if time permits) Select two students from the group. Have them perform the role play in the resource pack, presenter to act as the emergency service dispatcher



Ask the students which caller would receive the quickest response time.



Ask the students what number they should call in the event of an emergency.



Explain to the students that in Australia the emergency number to call is 000. From some mobile phones 112 is the number to ring as 000 may be used for a function on the mobile. **Reinforce** that the emergency number is not 911 like it appears in American movies.

Explain to the students that it is different for emergency service unit to respond to a farm emergency compared to a town emergency.



Ask if they can identify why it is different?



- 000 calls are taken at 6 locations in NSW. Whilst these centres can track the destination of a call, without accurate reporting of accidents locations and situations difficulties may be encountered in locating and treating the emergency.

- No set address - property names will not aid emergency response teams to find the location.

- Large areas - on farms the emergency response team might find the entrance to the farm, but still have to locate the accident.



Ask how these uncertainties may be removed?



By ensuring that when you contact the emergency services that you provide enough detail to minimise the response time. When reporting an accident or emergency be clear and concise and never hang up the phone until you are told to by the dispatcher.

The information that you should give to the emergency service dispatcher should include:

- A precise description of the location of the accident. Provide accurate distances in kilometres and roads, if you mention landmarks ensure that they are clear and visible year round and day and night. Give left and right directions for turns onto roads. If your district has a rural addressing system give your rural address (ensure that students understand the rural addressing system).
- Your name and the phone number from where you are calling.
- The nature of the accident you are reporting (PTO entrapment, auger amputation). If the accident is a poisoning and the source (chemical type) is known tell this to the dispatcher.
- Number of victims.
- Condition of victim (bleeding, heart attack, amputation, and consciousness).
- Type of aid that has been given to the victim (CPR, bandaging).
- Time first aid commenced, and how the victim responded.
- Whether someone will meet the emergency services at the entrance to the remote location.
- Any special conditions that will hinder rescue efforts
- Any other information you deem necessary

Explain to the students that Farm Emergency Cards can be an important part of an on-farm emergency response plan. These cards can contain whatever information farmers see as necessary to provide for an emergency, but should list emergency numbers such as the ambulance, police and fire brigade, and a set of detailed directions to the property.

Explain to the students that a template farm emergency card has been included in their resource folder. This particular card has spaces allowing farm residents to write the details of their farm including directions, as well as their neighbours. Students may wish to add more information as they see necessary for their individual farms. Encourage them to duplicate it, fill it out and keep it near all phones and in vehicles used on their property if relevant.

6 FIRST AID KITS

Explain to the students that first aid kits should be made available in different places on farms, and that where these are placed depends on where farmers think that they may be needed.

Explain that there are different sorts of first aid kits that are available that are suited to different places on farms. St Johns Ambulance has developed a range of first aid kits for use on farms.



Display the contents of the first aid kit, give a brief description of the uses.

Explain that first aid kits should be kept where they are clearly visible and marked. The first aid kit should contain some emergency information such as who is trained in first aid and some basic first aid instruction.



Reinforce to the students that the possession of a first aid kit is not a substitute for first aid knowledge and that first aid training is available through several organisations.

7. CONCLUSION

Use any remaining time to recap important points, answer questions from the students.

Assessment Task and Guidance Material:

The students will have a resource folder with them. These resource folders will contain both an assessment task and guidance material for each module. Explain that the students are to complete the assessment tasks, and they are then to hand them into their agriculture teachers, and that these are based on the materials that have been presented and are contained in the guidance material.

References:

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

Murphy D, et al (1989) *First on the Scene*, North-east Regional Agricultural Engineering Service, Ithaca NY

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

Further Information:

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

NOHSC *First Aid*, available on-line URL ~

<http://www.nohsc.gov.au/OHSInformation/NOHSCPUBLICATIONS/factsheets/frsta1.htm>

St John Ambulance Australia, *A Guide to First Aid*.

Contacts: See also Module 1 - Contacts

St John Ambulance Australia

St John House

6 Hunt Street

Surrey Hills NSW 2010

Phone: 02 9212 1088

Facsimile: 02 9281 6923

Training: 1300 360 455

First Aid Kits: 1800 451 391

<http://www.stjohn.org.au>

MODULE L

ON FARM EMERGENCY RESPONSE

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standard:

RUA AGCORE2 A Follow enterprise occupational health and safety (OHS) procedures

CORE2.3 Render appropriate emergency procedures

RANGE OF VARIABLES

OHS emergencies on rural workplaces include: electrocution, fire, flood, chemical spills, storms and cyclones, gases in confined spaces, gas leaks, serious injury associated with tractors, machines, animals, vehicles, firearms, grain suffocation

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.

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

Students have been given an assessment task related to the On-Farm Emergency Response module that they attended at the Future Farmers Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia, provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

Specialised first aid training is available from St John Ambulance Australia.

References:

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

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

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

Further Information:

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

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

NOHSC *First Aid*, available on-line URL ~

<http://www.nohsc.gov.au/OHSInformation/NOHSCPublications/factsheets/frsta1.htm>

St John Ambulance Australia, *A Guide to First Aid*.

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<http://www.stjohn.org.au>

MODULE L

ON FARM EMERGENCY RESPONSE

SECTION 4: Resource Package

Attached Resources

- Role Play
- Student Assessment Task
- Assessment Answer Sheet
- On-Farm Emergency Card
- Slide 1 – General Response to Farm Accidents, Decision flow-chart
- Slide 2 – Provision of First Aid, Decision flow-chart

Other Resources

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

Future Farmers – On-Farm Emergency Response

Emergency response Role Play

Select two students from the group and have them assume the roles of Martin, who has just found his father trapped under a tractor that rolled over. Martin is ringing 000 to alert the ambulance.

Role Play 1 – poor accident reporting

Dispatcher: “000, can I have your name and the phone number you are calling from”

Student 1: “My name is Martin”

Dispatcher: “Can you tell me what has happened”

Student 1: “My father is trapped under a tractor”

Dispatcher: “Can you tell me where the accident occurred?”

Student 1: “Hurry please and get someone here. We live just past the first dip on the Wongabindi lane, the entrance is half way between the bus shelter and the grid”

Dispatcher: “Can you give me further directions and tell me more about the accident site?”

Student 1: Hangs up without waiting for further instructions



Ask the students what chance they thought the ambulance would have of reaching the accident site in a good response time.

Role Play 2 – Good Accident Reporting

Dispatcher “000, can I have your name and the phone number you are calling from”

Student 2 “my name is Martin Rotsky, my phone number is 6754 3210 and the nearest town is Moree”

Dispatcher “Can you tell me what has happened”

Student 2 “My father is trapped under a 6 tonne tractor with a front-end loader on it. The tractor is in an empty irrigation channel. He’s unconscious but I know he’s breathing. The accident happened a few hundred metres away from the driveway to our house”

Dispatcher “Can you tell me where the accident occurred?”

Student 2 “Take the Boggabilla rd north out of Moree almost 30 kms and take the sign posted right onto the Croppa Creek rd. Go along the Croppa Creek road for 15 kms, there will be a white tin bus stop on the right. The road will be sign posted Wongabindi lane. Turn right into Wongabindi rd travel a km and the property will be sign posted “Postcard Station” the drive way will be on the right, I’ll meet you at the wagon wheel post box in a red Ford Courier.

Dispatcher “Can you tell me anything more about the accident site”

Student 2 “The tractor isn’t running and I could smell diesel, but I couldn’t see it dripping or spilling. The tractor turned downhill into an irrigation channel and will be hard to get at.”



Ask the students how this would make a difference compared to the first Role Play.

ON-FARM EMERGENCY 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.
(over)

EMERGENCY INFORMATION

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 _____

ON-FARM EMERGENCY ASSESSMENT ANSWERS

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*

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*

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

Your own safety

OH 1 – General Response to Farm Accidents, Decision flow-chart

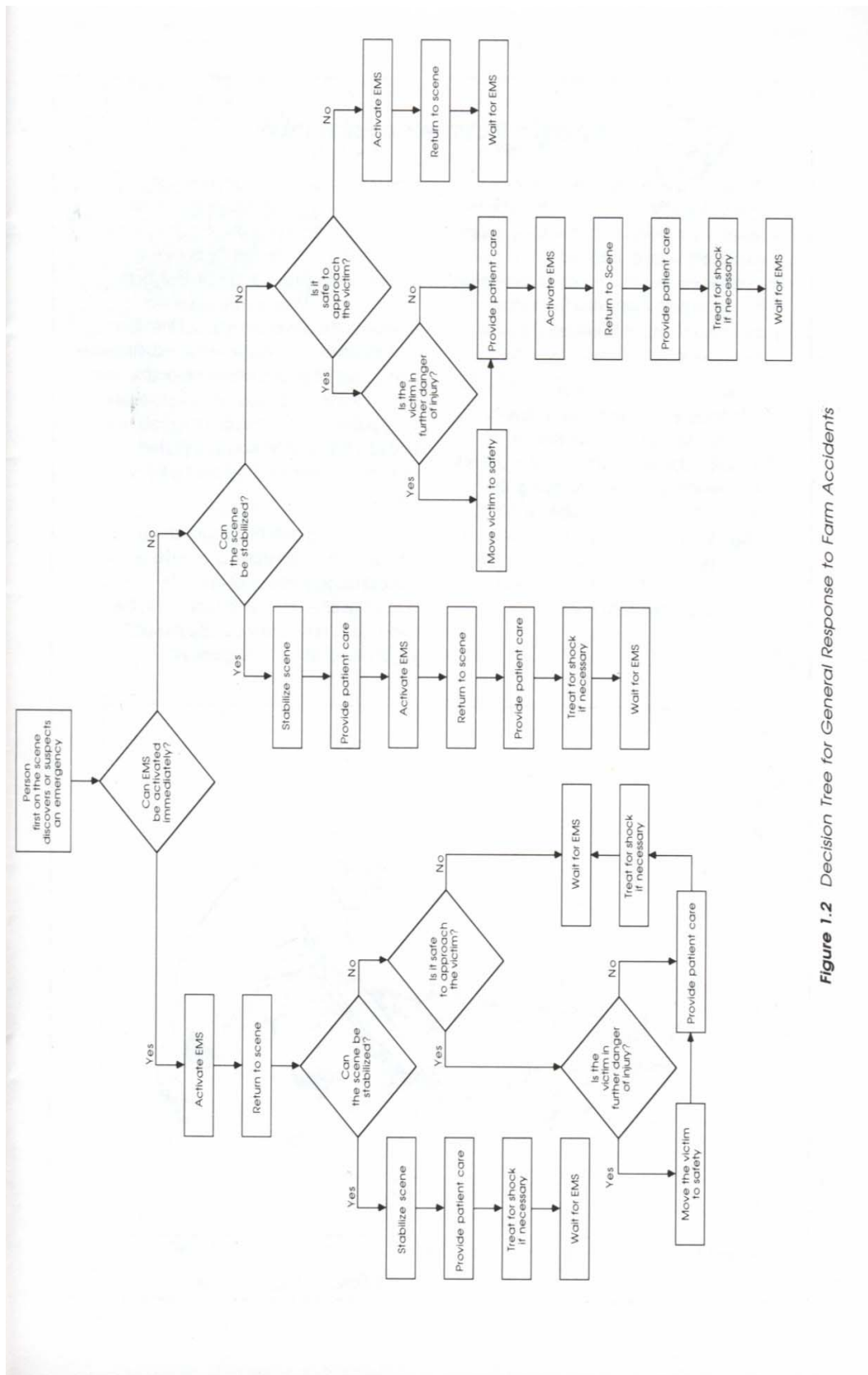
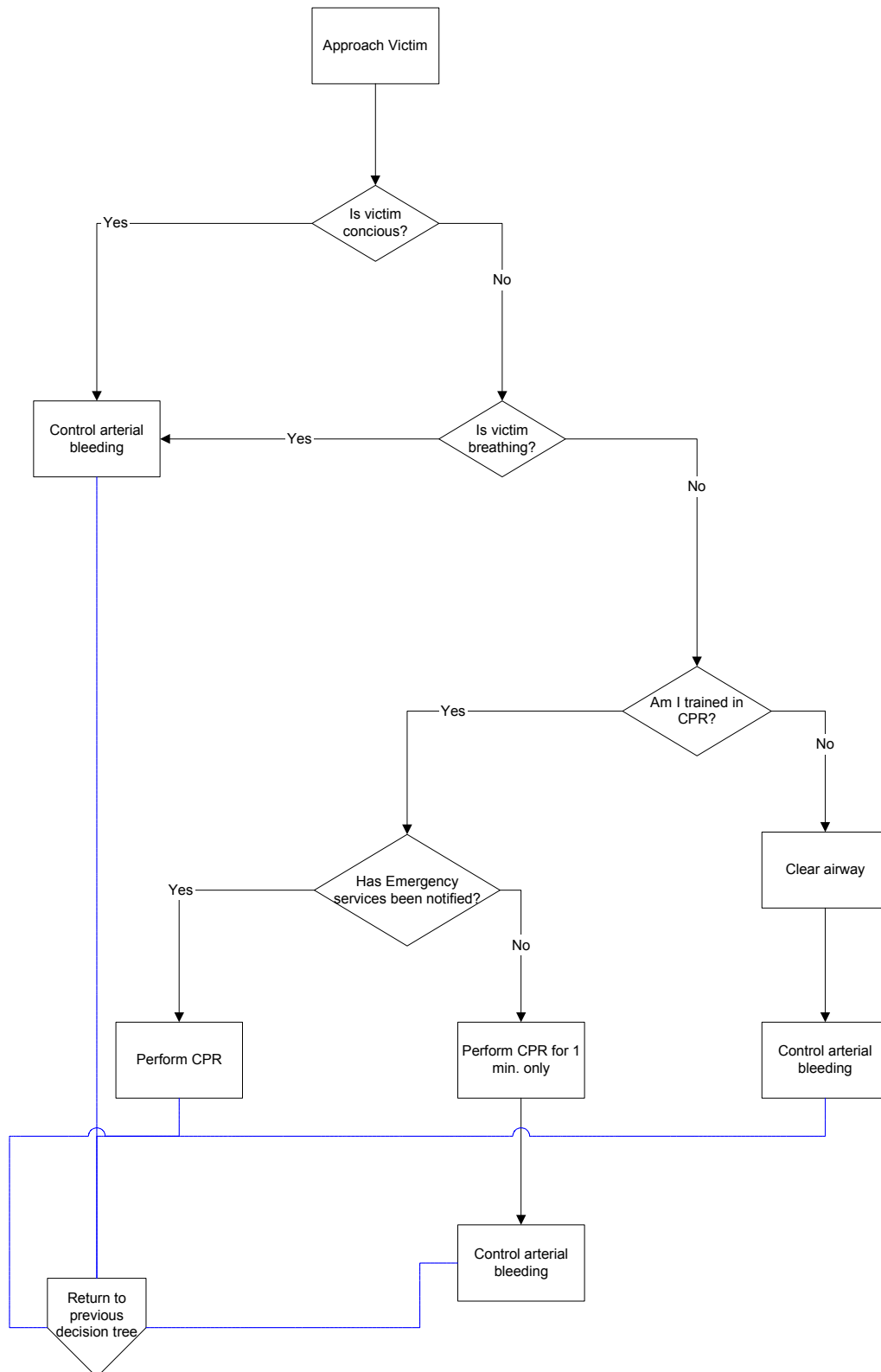


Figure 1.2 Decision Tree for General Response to Farm Accidents

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

OH 2 – Provision of First Aid, Decision flow-chart



Adapted from: Murphy D et al (1989) First on the Scene, North-east Regional Agricultural Engineering Service, Ithica, NY

ON FARM EMERGENCY RESPONSE

On-farm emergencies include:

- 🚒 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

How should you respond to emergencies?

- 🚒 contacting emergency services
- 🚒 the use of first aid
- 🚒 invoke the emergency response plan

EMERGENCY RESPONSE PLANS

What should be included in an on-farm emergency plan?

- 🚒 Identification of possible emergencies that could occur on the farm,
- 🚒 Actions to be taken in the case of any of any emergency.
- 🚒 The provision of first aid kits and other emergency equipment such as fire extinguishers.



EMERGENCY RESPONSE FOR INJURY

When discovering a farm accident your main concerns should be focused on ensuring that the victim and yourself are not subject to further **danger** contacting the **emergency services** and providing **first aid** to the victim.

CONTACTING EMERGENCY SERVICES

The emergency number to call is **000**. From some mobile phones it is 112. The number is 911 **ONLY** in America.

The information that you should give to the emergency service dispatcher should include:

- A precise description of the location of the accident.
- Your name and the phone number from where you are calling.
- The nature of the accident you are reporting
- Number of victims.
- Condition of victim
- Type of aid that has been given to the victim
- Time first aid commenced, and how the victim responded.
- Whether someone will meet the emergency services at the entrance to the remote location.
- Any special conditions that will hinder rescue efforts

FIRST AID KITS

First aid kits should be made available in different places on farms and someone trained in their use.

OH 1 – SAFE Principle

SAFE Principle

S	pot the hazard
A	ssess the risks
F	ix and control the identified hazard
E	valuate the control

OH 2 – Farm Plant at Risk of Power Line Contact

Farm Plant at Risk of Power Line Contact

NOTE: These heights may vary depending on other factors.

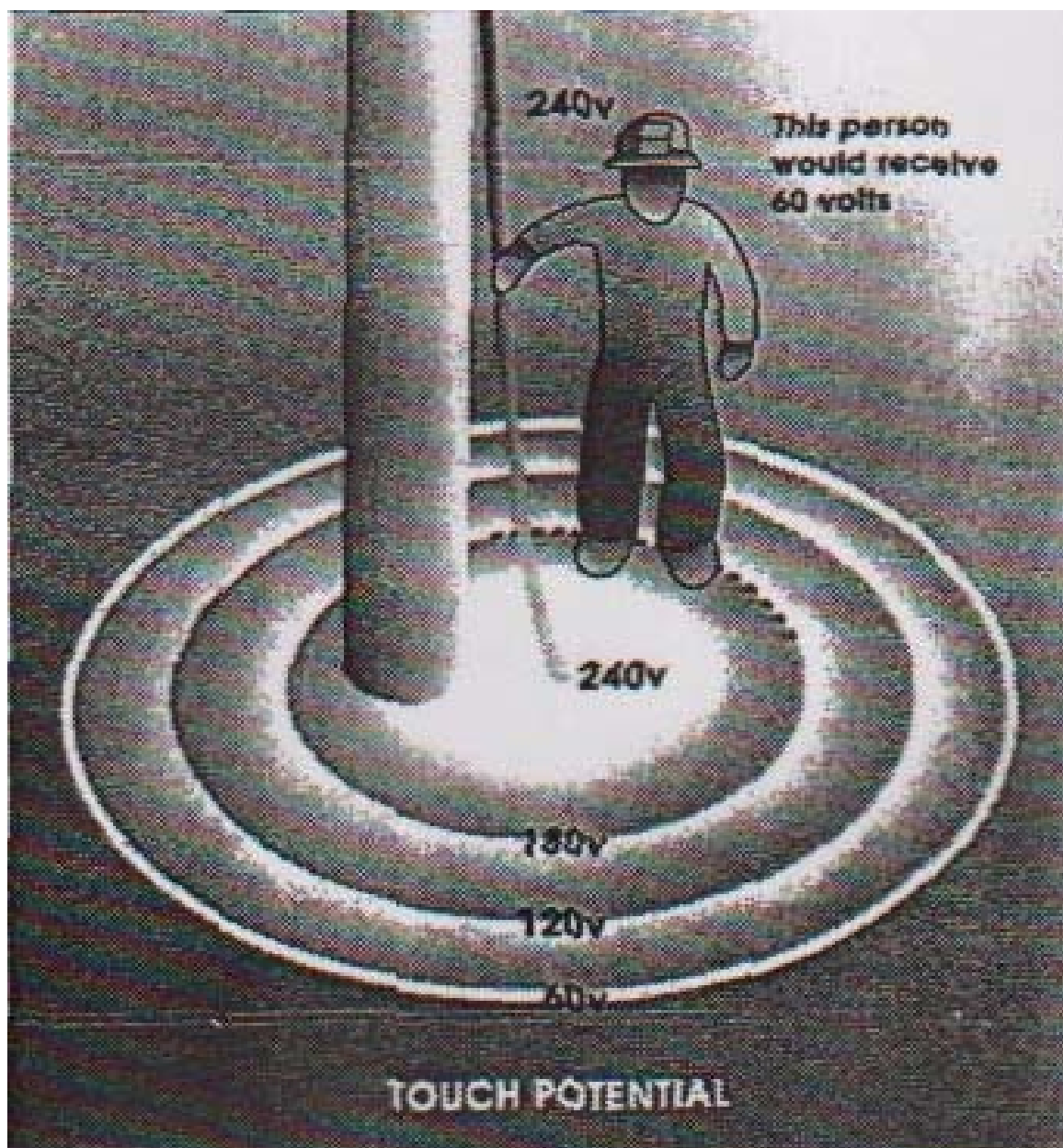
Plant	Indicative Height
Four wheel drive tractor 425 horse power	3.8 m to top of exhaust
Cotton Pickers standard basket extended basket	operating 4.86 m, dumping 6.12 m, operating 5.33 m, dumping 6.42 m,
Cotton module builder boom retracted boom extended	5 m 8 m
Grain Harvesters	4.1 m operating 5.3 m 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

OH 3 – Safe Operating Distances

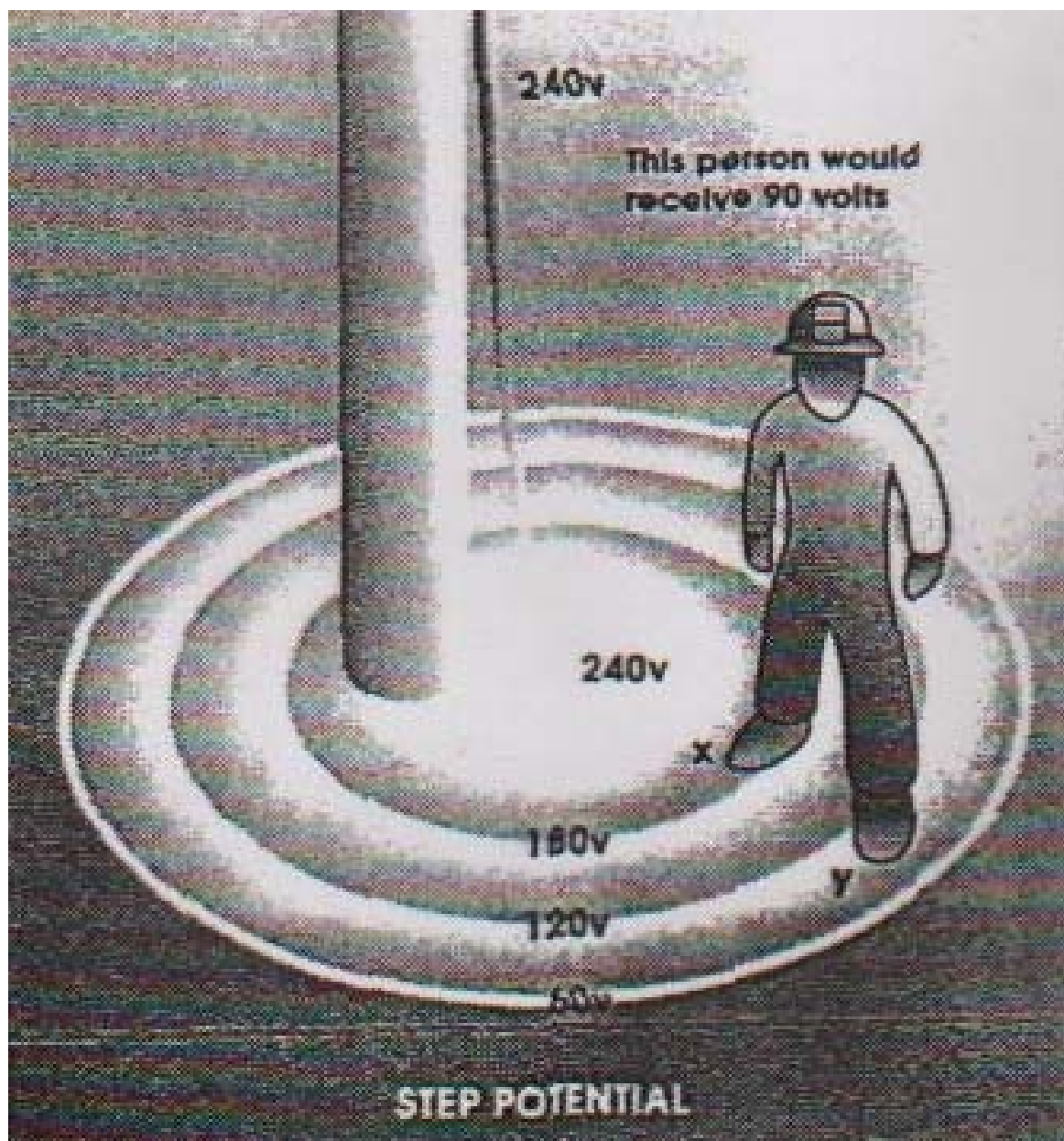
Safe Operating Distances with Overhead Power Lines

Power Line Type	Voltages	Identify	Safe Operating Distance
Low voltage and high voltage distribution and sub-transmission lines	Up to 132 000 volts	Usually on poles	3m
Sub-transmission and transmission lines	Between 132 000 and 330 000 volts	On either poles or towers	6m
Transmission lines	More than 330 000 volts	Usually on towers	8m

OH 4 – Touch potential



OH 5 – Step Potential



MODULE M

SAFE HANDLING OF SHEEP

Section 1: Module Outline

Relevant Competency Standards:

RUAAG2401SWA	Muster and move sheep
RUAAG2402SWA	Handle sheep in yards
RUAAG2432VMA	Pen up sheep

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

Minimum Presenter Qualification:

Essential: Evidence of adequate knowledge in content area e.g. an experienced livestock handler.

Evidence of adequate experience in providing training in the content area.

Desirable: Certificate IV in workplace training and assessment - Training Small Groups VETAB code BSZ 404A (Train the Trainer), or equivalent.

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.

Assessment of Achievement of Learning Outcomes:

Assessment task attached.

Evaluation Method:

- Student Field Day Evaluation Form
- Module specific assessment task

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

MODULE J

SAFE HANDLING OF SHEEP

Section 2: Presenter Guidelines

Learning Outcomes:

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

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

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.

Whilst this module was designed to be delivered using live sheep in suitable facilities by an experienced 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.

Presentation Guidelines:

Introduction

Introduce yourself to the students.



Explain the purpose of the module and how it will look at the major hazards involved in handling sheep and how handling sheep can be done safely through using correct techniques and equipment.

The Hazard



Explain that working with sheep is a dangerous occupation. WorkCover NSW Statistics¹ suggest over 45% of agricultural employment injuries occur in shearing and sheep and beef cattle farming. Explain that the sources of accident, injury and illness arise from a combination of factors. These include; lack of experience and confidence, animal stress due to poor facilities and poor work practices and a lack of understanding of sheep behaviour.



What sort of injuries can you get from sheep handling?



Make sure all the following are covered:

- Mechanical - the sheep butting or crushing the handler's limb against fences or the ground.
- Manual handling - injuries caused by lifting, dragging or catching sheep e.g. shearing.
- Zoonotic disease - disease that can be transferred from sheep or working dog to human.

¹ 1989/90 Workers Compensation Statistical Analysis System

- Chemical hazards associated with parasite control - both when applying chemicals and residues in the wool.
- Noise - noise induced hearing loss can be a problem, particularly in the shearing shed.

HAZARD IDENTIFICATION



The identification of the hazards involved in the handling of sheep involves examining the features of the sheep being handled, the attributes of the handler, the working environment and the work itself.

Features of the sheep

The breed and size of the animals being handled.

Physical attributes that may cause injury e.g. horns.

Gender of the animal. Rams tend to be more aggressive than ewes.

Physiological state. Are the sheep breeding, feeding lambs, separated from the mob or familiar with handling from humans?

The sources of disease (zoonoses).

Attributes of the handler

Competence of the handler. This includes the handler's knowledge of animal behaviour and experience in handling sheep.

Age. Younger handlers are less likely to have extensive experience in sheep handling, whilst older people are more likely to have slower reflexes and be less agile.

Working environment:



Ask the students to conduct a risk assessment of the yards being used if available.



Explain that handlers must assess the risks whenever they are working with stock.

Some design features of sheep yards increase the risk of injury to sheep handlers. These include:

- poor race design
- protrusions; gate latches and poorly swung gates
- slippery or rough surfaces
- Poorly designed or maintained sheep yards can lead to sheep baulking, turning back, rushing and milling, escaping through and over fences and colliding with the handler.



Ask the students what sheep operations can be dangerous



All of them - make sure the following are raised

THE RISKS

Animal behaviour

Sheep are not generally aggressive but some breeds are considered more 'flighty' than others. Sheep with horns can be dangerous, especially to inexperienced people. Rams may charge and ewes may be protective of lambs. Rarely do sheep react to handling by biting, unless you happen to have your fingers in their mouth e.g. while drenching. They will struggle if improperly handled and may injure handlers by striking with hooves or head.

Sheep tend to be timid, nervous and easily frightened. Having little natural means of defence, they instinctively join in a group to run from perceived danger. All members of the flock will follow any member of the flock that happens to lead. Whenever one animal is separated, it will frantically try to rejoin the flock, going "through" the handler if necessary.

Mustering

If the route taken when mustering is not properly planned, there is an increased risk of injury both to the sheep and the handler. If sheep are pushed too fast or forced against fence lines, their stress level will increase, improving the chances of unpredictable behaviour.

Injury occurs during mustering from falls from horse or motorbikes/ATV's

If the sheep are driven along public roads/stock routes, there is a risk of injury to other people who use the road if sheep are not adequately controlled.



Show OH 1 – Mustering on the road

Yarding



Explain that in sheep yards the high-risk areas are the drafting yards, loading ramps and races.

Yards that are poorly designed, reduce sheep flow and cause sheep to mill around, increasing the chances of sheep behaving unpredictably.

Stressed sheep may jump or attempt to run through fences and gates, risking injury to themselves and the handlers.

Poorly trained dogs, that nip or bark excessively, may cause or add to such stress.

Drafting and using races and ramps

Sheep tend to jump, through narrow openings or at a change of surfaces like a step or lip, increasing the chances of collision with a handler.

If footing is uneven or slippery, the risk of injury is increased for animals and their handlers.

If races and ramps are poorly designed as to reduce free flow of sheep, the risks are also increased.

Handling individual 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.

Horned animals increase the risk of injury if they are not caught with care.

Veterinary and husbandry practices

Stock do remember stressful situations, so stock that are handled frequently and with minimal stress are less likely to place the handler at risk during subsequent operations.

Exposure to veterinary chemicals and needle stick injuries while dipping, jetting vaccinating and back-lining sheep increases the risk of chemical toxicity.

There are hazards to the handler arising from using knives and other tools eg ear-tagging pliers on the sheep/lambs.

Slaughter

Cuts and injuries from knives, saws and mincers during home slaughter and butchery of sheep is a frequent injury in Australia.

There is also a risk of zoonotic disease from contact with animal body fluids.

Feeding offal to dogs increases the risk of hydatid disease.

Zoonoses

Zoonoses or zoonotic diseases refer to animal diseases that can cause illness in people. Often animal carriers are not obviously ill, yet people in contact with them can become infected and seriously ill.

Farm animals are a common source of infection, and people most at risk are abattoir workers, farmers, veterinarians, livestock handlers and animal laboratory workers. The zoonoses of most concern in Australia are Leptospirosis, Q Fever, Hydatid Disease and Orf/Scabby Mouth

CONTROL MEASURES

Animal behaviour

Consideration of the state of an animal such as whether it is sick or injured, whether it is the breeding season, whether it has young and whether it is isolated from the group help predict its likely behaviour; therefore, reducing the risk of injury. 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.

Animals are handled more efficiently when their stress levels are appropriate for the task. For instance, when moving lead animals through gates stress levels need to be slightly raised, which may be achieved through the appropriate use of dogs or noise. Once confined, excitement levels need to be low so that stress is low for both handler and animal. Keeping sheep in a tight group reduces the risk of injury by lowering their arousal level. The most effective way of maintaining appropriate arousal levels is to keep the work environment quiet.

Using rules of position and movement (point of balance and flight distance) and dogs to move sheep is the most effective and least stressful way for everybody. This requires knowledge of the angle at which a handler should stand and how to work the dog in order to move the animal and to move it in a certain direction.



Demonstrate moving stock if available

Mustering

Mustering needs to be planned to take account of wind direction, location of water and paddock and lane design. Always allow plenty of time to bring stock in. Stock that are rushed will be stressed and injury is more likely.

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.

Using a regularly worked and well-trained dog reduces the risk of injury through increased control of a mob

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.

To minimise the risk of limb injuries when working in yards, 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.



Show OH2- Working Outside the race

Races with solid sides or barriers around sheep, prevent them from seeing people deep inside their flight zones.

Handling individual sheep

An increasing range of mechanical systems for handling sheep is available. These include 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. The VE machine can also be used as a means of forcing sheep into a plunge dip, greatly reducing the human physical effort associated with that job.

A number of more specialised systems are available for jobs such as crutching, lamb marking and mulesing. These can similarly 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.

CATCHING A SHEEP

Sheep can be most easily caught in a pen where there is enough room for you to move freely, but not enough for the sheep to do so. Sheep can readily be caught if you come up quickly through the “blind area” directly behind them. Hold the animal under the chin by cupping your hand. Catch animals with developed horns by grabbing them by the horns but care must be taken to avoid injury by the horns.

HOLDING A STANDING SHEEP



Show OH3 – Standing a sheep

Keep a sheep still by standing it against the rails, holding it there with your knees and a hand under the chin. In the open, if the sheep is not too big, it is best to stand astride the sheep's shoulders with your hand under the chin. Keep your back straight and stand back as far as possible. In the case of a bigger sheep, stand to one side of it, and hold and move the sheep with one hand in front of the neck and the other on the tail region.

SITTING UP



Show OH4 – Sitting a sheep

The easiest and best method is to turn the sheep's head onto its shoulder, hold the sheep against your braced knees, one hand under the chin and the other on the rump, turn the head to face backwards and with the other hand, force the hindquarters down against

your leg. When the sheep is no longer standing on its hind-legs, you can lift the front end and sit the sheep securely on its rump. Always lift with the back straight. The sheep is held more easily if you turn in the toes and bring the knees closer together.

If there is not much room, lift up the front end of the sheep with the sheep on its hind-legs, hold both forelegs and keep it against your chest. By pressing your knees forward into the sheep's back, push its legs forward from under it. It will then be sitting on its rump.

LIFTING

Lifting Sheep

If sheep need to be lifted, get assistance where possible.

When lifting alone, sit the sheep on its rump, squat down, take a firm hold of its back legs whilst keeping the sheep's head up to restrict movement. Pull the animal firmly against the body and lift **using your legs, not your back**.



Demonstrate if sheep are available.

If lifting over a fence do not attempt to drag the sheep over the fence, rather work from the same side as the animal. To save lifting put a drafting gate at the end of the handling race.

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.

Systems for applying chemical should be considered in terms of efficiency to reduce effort as well as 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.

Use positive air supply hoods. If headaches or any other discomfort are suffered after handling chemicals seek medical advice and have appropriate tests performed. Avoid using these chemicals if possible in future.

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.

Training and supervision must be provided to workers.

Zoonoses

Animals carry diseases that are transferable to humans - be familiar with the symptoms so that you can determine if these diseases may exist in the flock.



Show OH5 – Scabby Mouth

Diseases are transferred by urine, blood and saliva and through open wounds (e.g. scabby mouth). Keep open wounds covered and wash well with soap, water and antiseptic if contact is made with urine, blood or saliva from diseased animals.

Zoonotic disease can be reduced by keeping animal handling facilities clean, testing and immunising animals. Follow hygienic practices such as hand washing when handling animals and their products and 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.

CONCLUSION



Reiterate to the students that a good sheep handler is;

- 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.

Further Information: See also Module 1 - Contacts

- 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>

MODULE J

SAFE HANDLING OF SHEEP

SECTION 3: GUIDELINES FOR TEACHERS OF AGRICULTURE

Relevant Competency Standards

RUAAG2401SWA	Muster and move sheep
RUAAG2402SWA	Handle sheep in yards
RUAAG2432WHA	Pen up sheep

Aim:

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

Resources:

- Student assessment task
- Answer sheet for assessment task
- Student guidance material

Assessment:

Students have been given an assessment task related to the Safe Sheep Handling module that they attended at the Future Farmers Field Day. Teachers are encouraged to collect and mark these assessment tasks to provide students with feedback, as well as providing follow up to this module to ensure that students have achieved stated learning outcomes.

Recommended:

Farmsafe Australia, provides training in farm occupational health and safety known as the Managing Farm Safety two day accredited course. It is recommended that on-school farm managers attend the Managing Farm Safety course or equivalent. It is also recommended that managers of farms used for school visits, or who take students placements for work experience have completed the Managing Farm Safety course or equivalent.

Contact the Australian Centre for Agricultural Health and Safety for a detailed on-farm occupational health and safety workplace assessment or WorkCover NSW for further advice.

Specific sheep handling training is available from:

TAFE NSW

Information Centre at 47 York Street, Sydney 131 601.

NSW Agriculture

Total - CB Alexander Agricultural College

Patterson NSW 2421 Phone: 1800 025520 <http://www.agric.nsw.gov.au/reader/425>

and Murrumbidgee College of Agriculture

Narrandera Rd Yanco NSW 2703 Phone: 1800 638 422 Facsimile: 02 6955 7580

<http://www.agric.nsw.gov.au/reader/424>

Further Information: See also Module 1 - Contacts

- 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>

The Labour Council of NSW has produced in association with WorkCover NSW an on-line teaching resource for Occupational Health and Safety called *Safety First or Expect the Worst*. This resource is located at:

http://www.ohs.labor.net.au/youthsafe/safety_first/index.html

The WorkCover NSW Safety Zone URL ~ <http://www.workcover.cadre.com.au> contains interactive Occupational Health and Safety tutorials for young people.

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

Contacts: See also Module 1 - Contacts

Meat and Livestock Australia

Locked Bag 991

North Sydney NSW 2059

Phone: 1800 023 100

Facsimile: 02 9463 9393

NSW Agriculture

Sheep Industry Development Centre

Orange Agricultural Institute

Forest Road

ORANGE NSW 2800

Phone 02 6391 3800

Fax: 02 6391 3899

<http://www.agric.nsw.gov.au/reader/258>

MODULE J

SAFE HANDLING OF SHEEP

SECTION 4: 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.

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?

SAFE HANDLING OF SHEEP

ASSESSMENT 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.

OH 1 - Mustering on the road



Photo : NSW Agriculture

OH 2 – Working outside the race



Photo : NSW Agriculture

OH 3 – Standing a sheep



Photo : NSW Agriculture

OH 4 – “Sitting” a sheep



Photo : NSW Agriculture

OH 5 – Scabby Mouth (Orf)



Photo : NSW Agriculture

Safe Handling of Sheep

Working with sheep is a dangerous occupation.

Injuries from sheep handling

Mechanical - the sheep butting or crushing the handler's limb against fences or the ground.

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 - noise induced hearing loss can be a problem.

Hazard Identification

The identification of the hazards involved in the handling of sheep involves examining the features of the sheep being handled, the attributes of the handler, the working environment and the work itself.

The Risks

- ❖ *Animal behaviour*
- ❖ *Mustering*
- ❖ *Yarding*
- ❖ *Drafting and using races and ramps*
- ❖ *Slaughter*
- ❖ *Zoonoses*

Handling individual 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.

Control

Eliminate the hazard – eg change enterprises

Substitute for a lesser hazard – eg drench less often or with a different chemical

Engineering/design options – eg modify yards so sheep run better

Safer work practices – learn how animals will behave in any given situation

Learn how to manually handle individual sheep safely

Personal Protective Equipment – Wear clothing & safety gear appropriate to the task, particularly when using motorbikes, horses and chemicals.

A good sheep handler is:

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



OH 1 - Mustering on the road



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Photo : NSW Agriculture