



final report

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Cross-industry project for the research and development of applicable training materials for the handling of bobby calves in meat processing plants

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1 Final Milestone requirements

Interactive CD trainer and trainee notes circulated for comment by all stakeholder groups

- Pilots completed and feedback incorporated
- Materials prepared for roll out through the networks and professional development workshops on calf handling
- Promotional plans completed
- Project evaluation and recommendations for future development if required

2 Background

This project is aimed at producing a training and assessment kit for personnel involved with the transport and processing of bobby calves. In conjunction with a Dairy Australia funded project this exercise will produce a uniform set of animal handling training and assessment materials that cover every sector in the supply chain of the bobby calf industry.

The cost will include the development of an interactive training CD, trainer and trainee notes and detailed competency assessment tools for the processing and transport sectors.

Over one million bobby calves from dairy farms are slaughtered each year in Australia. These calves are integral part of the dairy industry and also a significant part of the small stock processing industry particularly in Victoria. This industry is coming under increasing pressure from animal rights and welfare groups to improve the standard of handling received by the calves prior to slaughter. These organisations are focused on the animals handling on farm, in transport and in lairage at the processing plants prior to slaughter. Quite disturbing footage of calf handling at a plant allegedly in Victoria has recently appeared on YouTube (Bobby Calves journey) www.youtube.com Dairy Australia has recently completed a stock take of the training being delivered across the whole of the supply chain and the overall observation can be made that there is at best a piece meal approach taken to the training of calf handlers.

The processing sector comes out of the report as being proactive when it comes to skilling up animal handlers. While MINTRAC has developed some training materials covering bobby calf handling and slaughter this material has not been consolidated. There is only limited specific material dealing with the treatment of calves in transit, in lairage and moving to the knocking box. The Animal Welfare Science Centre at Melbourne University is conducting independent research into the impact of transporting bobby calves on the calves' stress levels and the outcomes of this research will have to be addressed. The peak bodies in the processing sector all believe there is a need to demonstrate that the industry is taking this issue seriously and that the personnel handling this category of stock have received specific training. Furthermore if the industry is to demonstrate that it is concerned about this issue it is vital that it can be demonstrated that it has taken a very professional approach to the training of those responsible for handling bobby calves.

3 Final Milestone requirement 1

Interactive CD trainer and trainee notes circulated for comment by all stakeholder groups

The interactive CD and training notes were circulated to a wide range of stakeholders for comment. MINTRAC was responsible for seeking and incorporated the responses on the transport and processing sections from the following organisations;

- Animal Health Australia
- Dairy Australia
- AQIS
- CRF at Colac in Victoria
- Midfields in Victoria
- ALTA
- SA Meat hygiene Unit
- GO TAFE
- Training Solutions WA
- National Centre for Dairy Education (NCDE)
- SW Institute of TAFE
- Victorian DPI
- Bio Security Queensland, Dept of Employment, Economic Development and Innovation
- Animal Industries, Queensland Agriculture, Food and Tourism
- Symbio Alliance
- Safefood Queensland
- FGM Consulting

This CD was piloted by two RTOs in Victoria and demonstrated at training manager network meetings around Australia. The CD was also demonstrated at a Dairy Australia industry conference. Feedback from all these parties has been incorporated into the materials and interactive CD.

4 Final milestone requirement 2

Material prepared for roll out

Attached to this report is a copy of the interactive training CD that will be utilised across the bobby calf supply chain. Trainer/trainee notes are also included in the kit for the processing sector. The materials will now be released to all meat industry Registered Training Organisations for the meat processing and transport sectors.

As the assessment materials are prepared by NCDE for the Saleyards and producers the training will be implemented in industry workshops.

5 Final milestone requirement 3

Promotional plans complete

In the processing sector MINTRAC will release the materials and run workshops for trainers in conjunction with the Training Managers Network in Victoria/Tasmania and NSW. These workshops will introduce the materials and incorporate a technical expert who will discuss in detail the welfare issues associated with calf handling and slaughter.

This kit will also be promoted in the MINTRACKER and demonstrated at the QA Manager Network meetings, again supported by technical experts to explain the regulations relating to the handling and slaughter of young calves. For the saleyard sectors MINTRAC will run workshops in conjunction with the industry associations to promote both the kit and the training of staff to help ensure the best possible welfare outcomes at saleyards. The first of these workshops is to be held at Colac in Victoria on the 7 July 2010. In conjunction with ALTA and meat processors MINTRAC will be promoting this training for calf transporters and buyers.

6 Final milestone requirement 4

Project evaluation and recommendations for future development if required

The need for training programmes that span the various sectors in the supply chain is becoming increasingly important as industry's corporate customers concern themselves with issues such as animal welfare and environmental sustainability. There is a growing expectation that meat processors will exercise some control over transporters and producers to ensure minimum levels of animal welfare are achieved through the whole of the supply chain.

A common animal welfare message is also necessary for the whole of the industry as animal welfare and rights groups focus on the young calf trade. The industry's reputation is only as good as the poorest performing sector. What is making this doubly important that with modern technology and communication these industry sectors are increasingly open to the public's view. In Tasmania the DPI has focused on the transport and the eligibility of calves for the meat processing industry. In some cases "on the spot" fines have been issued to buyers who have bought calves either not healthy enough or old enough for slaughter.

The research for this project has also clearly demonstrated the need for targeted training at the processing plant level as well as up and down the supply chain. MINTRAC will continue to monitor the use of the kits in the processing, transport and saleyard sectors and where necessary undertake modifications as and when required. The beauty of this material is that MINTRAC staff can easily modify the interactive CD and / or add material to trainers/trainees notes.

7 Attachments

7.1 Attachment 1

Story Board Attachment 1

Menu heading	Images	sounds	videos, flash
<p><u>Main Menu (opening screen)</u> Bobby calf handling Interactive CD for bobby calf handling.</p> <p>Click on a menu item to start this training module.</p> <p>Content version 1.0.1</p>			
<p><u>1. How to use this CD</u> Proceeding through a section Click on a menu item within the list to start a new section. This manual method of moving from section to section has been designed to provide flexibility for trainers and trainees so they can easily review relevant points and ask and discuss any questions.</p> <p>You can return to a previous section at any time by clicking on the "Back to previous menu" menu item. The "Back to previous menu" menu item is always the last item in the list within a submenu.</p> <p>You can also go to another section at any time by clicking the relevant menu item within the list. This will stop the current screen and take you to the selected section.</p>	<p>Screenshot of back to previous menu = <code>menu_itm_backprev.jpg</code> (<code></code> root folder)</p>	<p><code>section1.mp3</code> (<code><mem_m></code> root folder)</p>	
<p>Exiting the program If you wish to exit the program click on the "Exit" button at the bottom right hand corner of the screen. You can click on this button and leave the program at any time.</p>	<p>Screenshot of exit btn = <code>btn_exit.jpg</code> (<code></code> root folder)</p>		
<p><u>2. About bobby calf handling</u></p>			
<p><u>3. On farm</u> • ID & traceability</p>	<p>Calves feeding</p>		

<ul style="list-style-type: none"> • Colostrum/feeding/water • Health management • Environment • Stock handling • Residue management • Preparation for sale 	Yard and farm shots		
<p>3.1 ID & traceability</p> <ul style="list-style-type: none"> • Record the date, dam & sex of every calf born in addition to any health issues of concern • Provide a unique and traceable identification for each calf 	RFID in ear and NVD		
<p>3.2 Colostrum/feeding/water</p> <ul style="list-style-type: none"> • Ensure each calf receives at least 2 litres of good quality colostrum in the first 12 hours and another 2 litres within 24 hours of birth • Fresh, clean water should be available to calves from birth • Calves need to be consistently fed an adequate volume of milk or milk replacer daily 	Calves feeding and truck collection		
<p>3.3 Health management</p> <ul style="list-style-type: none"> • Treatment protocols for common calf diseases and problems should be developed in consultation with a veterinarian • Isolate sick animals so to minimise the risk of disease • Implement the 3 Step Calf Plan • Humane slaughter is an alternative treatment option • Calves should be protected from pests and wildlife 	Injection shots Segregation pen		
<p>3.4 Environment</p> <ul style="list-style-type: none"> • Adequate protection should be provided to limit exposure of calves to adverse weather conditions • Calf rearing facilities should maximise calf welfare and comfort including consideration of ventilation, waste management, the type of bedding or flooring and ease of handling • A clean environment should be provided throughout the calf rearing period 	Shelter shed		
<p>3.5 Stock handling</p>	Calves being moved around pens and		

<ul style="list-style-type: none"> • Farm personnel should be properly instructed in and knowledgeable of the basic facts of animal welfare and should be skilful in handling calves under varying conditions • Calves should be handled in a manner which will avoid injury or unnecessary suffering • Calves must not: <ol style="list-style-type: none"> 1. be thrown or dropped 2. be struck in an unreasonable manner, punched or kicked 3. have electric prodders used on them 4. be moved by dogs • Flappers and rattles may be used but overuse of them may hind stock movement • Calves should be handled with patience and care as they have not developed following behaviours and may also become easily fatigued 	<p>onto trucks and utes</p>		
<p><u>3.6 Residue management</u></p> <ul style="list-style-type: none"> • Antibiotic usage should only be under the direction of a veterinarian • Alternatives treatments to disease such as electrolytes in the treatment of scours should be considered to minimise antibiotic usage • Full details including disease suspected, medication used and dose, calf identification and withholding periods must be recorded for each treatment • Cleanliness of equipment used to treat calves is critical particularly items which are non-disposable and used repeatedly throughout the calf rearing period • Any calf treated with antibiotics should be segregated from other non-treated calves 	<p>Injections, medicine cartons and bottles</p>		
<p><u>3.7 Preparation for sale</u></p> <ul style="list-style-type: none"> • Calves should be fit for the purpose that they are intended and must meet the Australian Standards for Land Transport of 	<p>Calves in pens, calves hooves and cords</p>		

<p>Livestock</p> <ul style="list-style-type: none"> • Calves between 5 and 30 days must be: <ol style="list-style-type: none"> 1. protected from cold and heat 2. be in good health, alert and able to rise from a lying position 3. have been adequately fed milk or milk replacer on farm within 6 hours of transport 4. have an auditable and accessible record system that identifies the calves were last fed within 6 hours of transport unless the journey is between rearing properties and is less than 6 hours' duration • Calves between 5 and 30 days should: <ol style="list-style-type: none"> 1. have dry & withered naval cords 2. hooves that are not soft and bulbous • Whilst awaiting collection, calves should be provided appropriate shelter to maximise health and welfare 			
<p>4. Collection and transport of bobby calves from the farm</p> <ul style="list-style-type: none"> • Collection of bobby calves from the farm • Transport of bobby calves from the farm 	Loading and truck shots		
<p>4.1 Collection of bobby calves from the farm</p>			
<p>4.2 Transport of bobby calves from the farm</p>			
<p>5. Managing the bobby calves at the abattoir</p> <ul style="list-style-type: none"> • Why is it important to handle calves humanely in lairage? • What facilities are required? • What are the characteristics of bobby calves that affect their handling? • How are calves to be unloaded? • What calves are eligible for slaughter? • Managing calves in lairage • What are the OH&S requirements for handling calves in lairage? 	<p>Shelter sheds and calves in pens and yards under cover Pictures of ramps and sheltered yards Calves standing in groups and not moving when pushed Pictures of withered cords Unloading from trucks and utes People moving calves around pens</p>		
<p>5.1 Why is it important to handle calves humanely in lairage?</p>			

<ul style="list-style-type: none"> • Legislation and standards • Ethical • Customer and community expectation • Quality and eating qualities 	Cover of animal welfare standards Picture of people moving quietly through stock Copies of logos Pictures of bruising requiring trimming		
<u>5.1.1 Legislation and standards</u>			
<u>5.1.2 Ethical</u>			
<u>5.1.3 Customer and community expectation</u>			
<u>5.1.4 Quality and eating qualities</u>	section4_1_4.jpg		
<u>5.2 What facilities are required?</u> <ul style="list-style-type: none"> • Adjustable ramp and slope of the ramp • Flooring of the yards • Gates and catches • Suspect pens • Lighting 	Photos of unloading ramps and pens and yards		
<u>5.2.1 Adjustable ramp and slope of the ramp</u>	Ramp being adjusted		MT_BC_big_truck_at_night.flv
<u>5.2.2 Flooring of the yards</u>	section4_2_2.jpg		
<u>5.2.3 Gates and catches</u>	Gates and covered latches		
<u>5.2.4 Suspect pens</u>	section4_2_4.jpg		
<u>5.2.5 Lighting</u>	Overhead lighting		
<u>5.3 What are the characteristics of bobby calves that affect their handling?</u>			

<p><u>5.4 How are calves to be unloaded?</u></p> <ul style="list-style-type: none"> • Adjusting the ramp • Moving calves to yards • Weighting • Documentation • Inspection for suspects 	<p>unloading facilities moving cattle in the yard weighing scales NVDs Ante mortem in suspect pen</p>		
<p><u>5.4.1 Adjusting the ramp</u></p>			<p>MT_BC_little_truck.flv</p>
<p><u>5.4.2 Moving calves to yards</u></p>	<p>section4_4_2.jpg</p>		
<p><u>5.4.3 Weighting</u></p>			<p>MT_BC_big_truck.flv</p>
<p><u>5.4.4 Documentation</u></p>	<p>section4_4_4.jpg</p>		
<p><u>5.4.5 Inspection for suspects</u></p>			
<p><u>5.5 What calves are eligible for slaughter?</u></p> <ul style="list-style-type: none"> • Age • Residue • Times off feed and water • Ante mortem disposition 	<p>NVDs pens Feeding calves ante mortem cards</p>		
<p><u>5.5.1 Age</u></p>	<p>section4_5_1.jpg</p>		
<p><u>5.5.2 Residue</u></p>			
<p><u>5.5.3 Times off feed and water</u></p>			
<p><u>5.5.4 Ante mortem disposition</u></p>	<p>section4_5_4.jpg</p>		
<p><u>5.6 Managing calves in lairage</u></p> <ul style="list-style-type: none"> • Moving calves • Holding calves from water and feed 			

<ul style="list-style-type: none"> • Suspect pen • Emergency slaughter 			
5.6.1 Moving calves	section4_6_1.jpg		
5.6.2 Holding calves from water and feed	section4_6_2.jpg		
5.6.3 Suspect pen	section4_2_4.jpg		
5.6.4 Emergency slaughter			
5.7 What are the OH&S requirements for handling calves in lairage?			
6. Humane slaughter <ul style="list-style-type: none"> • How are calves restrained? • How are calves stunned? • How are calves humanely slaughtered? • What are the OH&S requirements for stunning a slaughter? 	V belt restrainer Electric stunner and captive bolt Transverse and thoracic stick		
6.1 How are calves restrained? <ul style="list-style-type: none"> • Calf in restrainer • Electrical stunning 	V belt restrainer		
6.1.1 Calf in restrainer	section5_1_1.jpg		
6.1.2 Electrical stunning	section5_1_2.jpg		
6.2 How are calves stunned?	Electric stunner and captive bolt		
6.3 How are calves humanely slaughtered? <ul style="list-style-type: none"> • Checking for an effect • Transverse stick • Thoracic stick • Bleed out rail 	Transverse and thoracic stick		

<u>6.3.1 Checking for an effect</u>			
<u>6.3.2 Transverse stick</u>			
<u>6.3.3 Thoracic stick</u>	section5_3_3.jpg		
<u>6.3.4 Bleed out rail</u>	section5_3_4.jpg		
<u>6.4 What are the OH&S requirements for stunning a slaughter?</u>			

7.2 Attachment 2

SCRIPT

Voice over	Text	Images, sounds, videos, flash
<p><u>Main Menu (opening screen)</u> Bobby calf handling Interactive CD for bobby calf handling. Click on a menu item to start this training module. Content version 1.0.3</p>	<p><u>Main Menu (opening screen)</u> Bobby calf handling Interactive CD for bobby calf handling. Click on a menu item to start this training module. Content version 1.0.3</p>	
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<p><u>Exiting the program</u> If you wish to exit the program click on the "Exit" button at the bottom right hand corner of the screen. You can click on this button and leave the program at any time.</p>	<p><u>Exiting the program</u> If you wish to exit the program click on the "Exit" button at the bottom right hand corner of the screen. You can click on this button and leave the program at any time.</p>	<p>Screenshot of exit btn= btn_exit.gif (root folder)</p>
<p><u>2. About bobby calf handling</u></p>	<p><u>2. About bobby calf handling</u></p>	
<p><u>3. On farm</u> • ID & traceability</p>	<p><u>3. On farm</u> • ID & traceability</p>	

<ul style="list-style-type: none"> • Colostrum/feeding/water • Health management • Environment • Stock handling • Residue management • Preparation for sale 	<ul style="list-style-type: none"> • Colostrum/feeding/water • Health management • Environment • Stock handling • Residue management • Preparation for sale 	
<p>3.1 ID & traceability</p> <ul style="list-style-type: none"> • Record the date, dam & sex of every calf born in addition to any health issues of concern • Provide a unique and traceable identification for each calf 	<p>3.1 ID & traceability</p> <ul style="list-style-type: none"> • Record the date, dam & sex of every calf born in addition to any health issues of concern • Provide a unique and traceable identification for each calf 	
<p>3.2 Colostrum/feeding/water</p> <ul style="list-style-type: none"> • Ensure each calf receives at least 2 litres of good quality colostrum in the first 12 hours and another 2 litres within 24 hours of birth • Fresh, clean water should be available to calves from birth • Calves need to be consistently fed an adequate volume of milk or milk replacer daily 	<p>3.2 Colostrum/feeding/water</p> <ul style="list-style-type: none"> • Ensure each calf receives at least 2 litres of good quality colostrum in the first 12 hours and another 2 litres within 24 hours of birth • Fresh, clean water should be available to calves from birth • Calves need to be consistently fed an adequate volume of milk or milk replacer daily 	<p>MT_BC_colostrum.flv</p>
<p>3.3 Health management</p> <ul style="list-style-type: none"> • Treatment protocols for common calf diseases and problems should be developed in consultation with a veterinarian • Isolate sick animals so to minimise the risk of disease • Implement the 3 Step Calf Plan • Humane slaughter is an alternative treatment option • Calves should be protected from pests and wildlife 	<p>3.3 Health management</p> <ul style="list-style-type: none"> • Treatment protocols for common calf diseases and problems should be developed in consultation with a veterinarian • Isolate sick animals so to minimise the risk of disease • Implement the 3 Step Calf Plan • Humane slaughter is an alternative treatment option • Calves should be protected from pests and wildlife 	<p>MT_BC_bullcalf_management.flv</p>
<p>3.4 Environment</p> <ul style="list-style-type: none"> • Adequate protection should be provided to limit exposure of calves to adverse weather conditions • Calf rearing facilities should maximise calf welfare and comfort including consideration of ventilation, waste management, the type of bedding or flooring and ease of handling • A clean environment should be provided throughout the calf 	<p>3.4 Environment</p> <ul style="list-style-type: none"> • Adequate protection should be provided to limit exposure of calves to adverse weather conditions • Calf rearing facilities should maximise calf welfare and comfort including consideration of ventilation, waste management, the type of bedding or flooring and ease of handling • A clean environment should be provided throughout the calf rearing period 	<p>MT_BC_calf_housing.flv</p>

rearing period		
<p>3.5 Stock handling</p> <ul style="list-style-type: none"> • Farm personnel should be properly instructed in and knowledgeable of the basic facts of animal welfare and should be skilful in handling calves under varying conditions • Calves should be handled in a manner which will avoid injury or unnecessary suffering • Calves must not: <ol style="list-style-type: none"> 1. be thrown or dropped 2. be struck in an unreasonable manner, punched or kicked 3. have electric prodders used on them 4. be moved by dogs • Flappers and rattles may be used but overuse of them may hind stock movement • Calves should be handled with patience and care as they have not developed following behaviours and may also become easily fatigued 	<p>3.5 Stock handling</p> <ul style="list-style-type: none"> • Farm personnel should be properly instructed in and knowledgeable of the basic facts of animal welfare and should be skilful in handling calves under varying conditions • Calves should be handled in a manner which will avoid injury or unnecessary suffering • Calves must not: <ol style="list-style-type: none"> 1. be thrown or dropped 2. be struck in an unreasonable manner, punched or kicked 3. have electric prodders used on them 4. be moved by dogs • Flappers and rattles may be used but overuse of them may hind stock movement • Calves should be handled with patience and care as they have not developed following behaviours and may also become easily fatigued 	<p>MT_BC_staff_training.flv</p>
<p>3.6 Residue management</p> <ul style="list-style-type: none"> • Antibiotic usage should only be under the direction of a veterinarian • Alternatives treatments to disease such as electrolytes in the treatment of scours should be considered to minimise antibiotic usage • Full details including disease suspected, medication used and dose, calf identification and withholding periods must be recorded for each treatment • Cleanliness of equipment used to treat calves is critical particularly items which are non-disposable and used repeatedly throughout the calf rearing period • Any calf treated with antibiotics should be segregated from other non-treated calves 	<p>3.6 Residue management</p> <ul style="list-style-type: none"> • Antibiotic usage should only be under the direction of a veterinarian • Alternatives treatments to disease such as electrolytes in the treatment of scours should be considered to minimise antibiotic usage • Full details including disease suspected, medication used and dose, calf identification and withholding periods must be recorded for each treatment • Cleanliness of equipment used to treat calves is critical particularly items which are non-disposable and used repeatedly throughout the calf rearing period • Any calf treated with antibiotics should be segregated from other non-treated calves 	<p>MT_BC_bullcalf_antibiotic.flv</p>
<p>3.7 Preparation for sale</p>	<p>3.7 Preparation for sale</p>	<p>MT_BC_sale_preparation.flv</p>

<ul style="list-style-type: none"> • Calves should be fit for the purpose that they are intended and must meet the Australian Standards for Land Transport of Livestock • Calves between 5 and 30 days must be: <ol style="list-style-type: none"> 1. protected from cold and heat 2. be in good health, alert and able to rise from a lying position 3. have been adequately fed milk or milk replacer on farm within 6 hours of transport 4. have an auditable and accessible record system that identifies the calves were last fed within 6 hours of transport unless the journey is between rearing properties and is less than 6 hours' duration • Calves between 5 and 30 days should: <ol style="list-style-type: none"> 1. have dry & withered naval cords 2. hooves that are not soft and bulbous • Whilst awaiting collection, calves should be provided appropriate shelter to maximise health and welfare 	<ul style="list-style-type: none"> • Calves should be fit for the purpose that they are intended and must meet the Australian Standards for Land Transport of Livestock • Calves between 5 and 30 days must be: <ol style="list-style-type: none"> 1. protected from cold and heat 2. be in good health, alert and able to rise from a lying position 3. have been adequately fed milk or milk replacer on farm within 6 hours of transport 4. have an auditable and accessible record system that identifies the calves were last fed within 6 hours of transport unless the journey is between rearing properties and is less than 6 hours' duration • Calves between 5 and 30 days should: <ol style="list-style-type: none"> 1. have dry & withered naval cords 2. hooves that are not soft and bulbous • Whilst awaiting collection, calves should be provided appropriate shelter to maximise health and welfare 	
<p><u>4. Collection and transport of bobby calves from the farm</u></p> <ul style="list-style-type: none"> • Collection of bobby calves from the farm • Transport of bobby calves from the farm 	<p><u>4. Collection and transport of bobby calves from the farm</u></p> <ul style="list-style-type: none"> • Collection of bobby calves from the farm • Transport of bobby calves from the farm 	
<p><u>4.1 Collection of bobby calves from the farm</u></p>	<p><u>4.1 Collection of bobby calves from the farm</u></p>	
<p><u>4.2 Transport of bobby calves from the farm</u></p>	<p><u>4.2 Transport of bobby calves from the farm</u></p>	
<p><u>5. Bobby calves at the abattoir</u> This section covers the processing of bobby calves and covers:</p> <ul style="list-style-type: none"> • the importance of animal welfare • the nature of young calves • unloading bobby calves • handling and managing bobby calves in lairage • emergency slaughter procedures 	<p><u>5. Bobby calves at the abattoir</u> This section covers the processing of bobby calves and covers:</p> <ul style="list-style-type: none"> • the importance of animal welfare • the nature of young calves • unloading bobby calves • handling and managing bobby calves in lairage • emergency slaughter procedures 	

<ul style="list-style-type: none"> • restraining and stunning. <p>5.1 The importance of animal welfare Animal welfare and bobby calves There are four major reasons why animal welfare is important when bobby calves are being transported and processed. These reasons are the animal welfare laws, customers' and society's expectations, commercial considerations and ethical concerns.</p>	<ul style="list-style-type: none"> • restraining and stunning. <p>5.1 The importance of animal welfare Animal welfare and bobby calves There are four major reasons why animal welfare is important:</p> <ul style="list-style-type: none"> • the animal welfare laws • customers' and society's expectations • commercial considerations • ethical concerns. 	
<p>5.1.1 Animal welfare laws and standards There are laws that require animals to be transported and processed humanely. In each State there are animal welfare laws that make it illegal to treat animals cruelly or to neglect them. Failure to look after the welfare of animals in a person's care or control can lead to fines or even imprisonment.</p> <p>Abattoirs are also required to have Approved Arrangements with the Government before they can operate and these arrangements cover both food safety and animal welfare. Failure to meet these animal welfare requirements could cost a company its' licence to process animals.</p>	<p>5.1.1 Animal welfare laws and standards <ul style="list-style-type: none"> • There are laws that require animals to be transported and processed humanely. • Abattoirs are also required to have Approved Arrangements with the Government which cover both food safety and animal welfare. • Failure to meet animal welfare requirements could cost a company its' licence to operate. </p>	
<p>5.1.2 Society and customer requirements for animal welfare Society, on the whole, expects animals to be transported and processed humanely and so do the industry's large customers. Customers like supermarkets and fast food chains have animal welfare standards that they require meat processors to achieve and these are becoming more detailed. These customers have processors audited to ensure that the animal welfare standards are being met. Processors have lost contracts with major customers because animal welfare requirements were not met.</p>	<p>5.1.2 Society and customer requirements for animal welfare <ul style="list-style-type: none"> • Society expects animals to be processed humanely. • Customers like supermarkets and fast food chains have animal welfare standards that they require meat processors to achieve. • Customers audit processors to ensure that the animal welfare standards are met. • Processors have lost contracts because animal welfare requirements were not met. </p>	
<p>5.1.3 Commercial reasons Stress and poor handling can greatly reduce both eating quality and the yield achieved when processing animals. Stressed animals can produce "dark cutters" and tough meat which has a</p>	<p>5.1.3 Commercial reasons Stress and poor handling can:</p> <ul style="list-style-type: none"> • greatly reduce eating quality • decrease the yield achieved when processing animals. 	

<p>greatly reduced market value. Likewise, animals that are handled poorly will more likely be bruised or injured. Injuries and bruises have to be trimmed and this decreases the value of the carcass and the yield achieved. All of this amounts to increased costs and decreased profits for the company.</p>		
<p>5.1.4 Ethical considerations In general our society believes that treating animals inhumanely is wrong and that companies that allow such things to happen are not good organisations. When companies allow animals to be treated poorly they get a bad reputation in the community. This can lead to people not buying the company's products, not wanting to work for the company and not wanting them operating in their town or district. Meat processing companies want to be good corporate citizens, want to be regarded as ethical businesses and part of the community. These aspirations are undermined if animals are treated inhumanely at a processing plant.</p>	<p>5.1.4 Ethical considerations</p> <ul style="list-style-type: none"> • Our society believes that treating animals inhumanely is wrong. • Meat processing companies want to be good corporate citizens and treat animals humanely. 	
<p>5.2 The nature of bobby calves For the purposes of these training materials, bobby calves are bovine animals under 6 weeks of age, weighing less than 80kg and are a dairy bred or dairy cross bred calf. These animals are considered a bi-product of the dairy industry and it is not considered economical to rear and grow them out.</p>	<p>5.2 The nature of bobby calves Bobby calves are:</p> <ul style="list-style-type: none"> • bovine animals under 6 weeks of age • weighing less than 80kg • a dairy bred or cross bred calf • not considered economical to rear and grow them out. 	<p>section5_2.jpg (<file_m2> data folder)</p>
<p>5.2.1 Calves eligible for slaughter Calves presented for slaughter must be in their fifth day of life or older and should have been fed within six hours of loading. The calves should also be at least 23 kg in live weight. The calves must have fed in at least the last 30 hours and slaughtered first in line at the processing plant. The National Vendor Declaration that accompanies the calves is used to document the drug residue status of each animal and to meet the animal welfare requirements for bobby calves</p>	<p>5.2.1 Calves eligible for slaughter Calves presented for slaughter must be in their fifth day of life or older and should have been fed within six hours of loading. The calves should also be at least 23 kg in live weight. The calves must have fed in at least the last 30 hours and slaughtered first in line at the processing plant. The National Vendor Declaration that accompanies the calves is used to document the drug residue status of each animal and to meet the animal welfare requirements for bobby calves consigned for sale or slaughter. Bobby calves must be tagged prior to sale for reasons of trace back,</p>	

<p>consigned for sale or slaughter. Bobby calves must be tagged prior to sale for reasons of trace back, disease control and meat quality.</p>	<p>disease control and meat quality.</p>	
<p><u>5.2.2 The characteristics of bobby calves that affect their handling</u> Bobby calves have not developed following behaviour by the time they are sent for slaughter, therefore, they can often be difficult to move in groups. Calves are often hard to shift and tend to stand in groups rather than move. Dealing with calves is often time consuming and frustrating for the personnel involved. Stock handlers unloading and moving calves need to be patient, as forcing calves to move quickly can often lead to calves falling and slipping, or simply not responding to the handler trying to move them. The handling characteristics of calves, increases the importance of correct handling procedures, especially in situations that involve restraint, movement or re-grouping.</p>	<p><u>5.2.2 The characteristics of bobby calves that affect their handling</u> Bobby calves have not developed following behaviour by the time they are sent for slaughter, therefore, they can often be difficult to move in groups. Calves are often hard to shift and tend to stand in groups rather than move. Dealing with calves is often time consuming and frustrating for the personnel involved. Stock handlers unloading and moving calves need to be patient, as forcing calves to move quickly can often lead to calves falling and slipping, or simply not responding to the handler trying to move them. The handling characteristics of calves, increases the importance of correct handling procedures, especially in situations that involve restraint, movement or re-grouping.</p>	
<p><u>5.3 The facilities required at a processing plant for handling bobby calves</u> The structural and operational requirements for calf handling facilities include suitable ramps, yards and raceways. Ramps should be designed to allow for the easy unloading of the calves and in general the angle of the ramp should be kept as flat as possible to avoid calves slipping and falling. The pens should be suitable for the number of calves to be held and the flooring should be designed to limit slipping, falls and injury. Calves need to be protected from climatic extremes and need shelter from cold and hot conditions, which can stress them. In the unloading and lairage areas the lighting should be uniform and effective to allow for ease of handling. There should also be pens available to allow for the segregation of sick and injured stock until a disposition has been made.</p>	<p><u>5.3 The facilities required at a processing plant for handling bobby calves</u> The structural and operational requirements for calf handling facilities include suitable:</p> <ul style="list-style-type: none"> • ramps • pens and yards • raceways • shelter from the elements • uniform lighting • a segregation pen. 	<p>section5_3.jpg (<file_m2> data folder)</p>

<p>5.3.1 Monitoring facilities used for handling bobby calves</p> <p>In addition these handling facilities have to be continually monitored by staff to ensure that they do not affect the welfare of animals.</p> <p>Stock handlers at a processing plant should ensure that:</p> <ul style="list-style-type: none"> • there are no gaps between the truck and the unloading ramp • gates are fully open and latches are not able to cause injury • there are no sharp protrusions that could cause injury to calves • all items that could cause baulking such as hoses are removed. 	<p>5.3.1 Monitoring facilities used for handling bobby calves</p> <p>Stock handlers at a processing plant should ensure that:</p> <ul style="list-style-type: none"> • there are no gaps between the truck and the unloading ramp • gates are fully open and latches are not able to cause injury • there are no sharp protrusions that could cause injury to calves • all items that could cause baulking are removed. 	
<p>5.4 Unloading and receiving bobby calves at a meat processing plant</p> <p>Procedures for unloading stock</p> <p>Each plant has a Standard Operating Procedure for unloading stock and this includes making sure that the calves are unloaded as soon as they arrive. Transport operators are also given details of the "on-call" personnel, from the plant, who can be contacted out of hours. The on call personnel should be competent in humane destruction and providing veterinary assistance. The processing plant will also have arrangements for obtaining feed and water or procedures for dealing with emergencies.</p> <p>When unloading bobby calves the stock handler has to ensure that there are no gaps between the truck and the unloading ramp, that the ramp is set at a suitable angle and that all the gates are fully open.</p> <p>The important thing for all stock handlers when unloading calves is to move calves calmly and quietly. Stock handlers must never use implements such as electric goads to move calves and likewise, they are not permitted to use dogs on calves.</p> <p>The paper work associated with the stock has to be checked</p>	<p>5.4 Unloading and receiving bobby calves at a meat processing plant</p> <p>Procedures for unloading stock</p> <p>Each plant has a Standard Operating Procedure for unloading stock. and this will cover:</p> <ul style="list-style-type: none"> • unloading procedures • the "on-call" personnel who can be contacted out of hours • procedures for humane destruction • arrangements for obtaining feed and water. <p>The important thing for all stock handlers when unloading calves is to:</p> <ul style="list-style-type: none"> • move calves calmly and quietly • never use electric goads • never use dogs • never throw or drop calves • never strike, punch or kick calves. 	

<p>and signed off with every delivery. Calves have to be checked against the National Vendor Declarations accompanying them. In some cases the calves will need to be weighed before they are put into the pens.</p>		
<p><u>5.4.1 Inspecting stock on unloading</u> All bobby calves need to be inspected at arrival to identify sick, injured or stressed stock. Calves should only have been loaded and brought to the processing plant if they were fit to load. In general this means that the calves were:</p> <ul style="list-style-type: none"> • able to walk on their own, bearing weight on all legs; • not emaciated, dehydrated or showing signs of severe injury or distress • not suffering any condition likely to cause increased pain or distress during transport • able to meet the specifications relevant for the consignment eg. NVD requirements <p>Failure to deliver stock that meet these requirements must be documented and reported to the supplier and plant management for corrective action.</p>	<p><u>5.4.1 Inspecting stock on unloading</u> All bobby calves need to be inspected at arrival. Only calves that are “fit to load” should be delivered. These calves should:</p> <ul style="list-style-type: none"> • be able to walk on their own, bearing weight on all legs • not be emaciated, dehydrated or showing signs of severe injury or distress • not be suffering any condition likely to cause increased pain or distress during transport • be able to meet the specifications relevant for the consignment e.g. NVD requirements. <p>If calves can not meet these requirements then this must be documented and reported.</p>	<p>section5_4.jpg (<mem_b_f> data folder)</p>
<p><u>5.4.2 Segregating sick or injured stock</u> Bobby calves that are sick or injured will need to be segregated until a decision is made, by a competent person, as to how they are to be dealt with. These weak, ill or injured calves should be assessed as soon as possible, by a competent person, and the appropriate action should be taken such as rest/recovery, scheduled for emergency slaughter, or humane destruction. The remaining calves should be penned where possible out of the elements.</p>	<p><u>5.4.2 Segregating sick or injured stock</u></p> <ul style="list-style-type: none"> • Bobby calves that are sick or injured will need to be segregated. • Weak, ill or injured calves should be assessed as soon as possible. • The appropriate action should be taken such as rest/recovery, scheduled for emergency slaughter, or humane destruction. <p>All calves should be penned where possible out of the elements.</p>	<p>section5_4_2.jpg (<mem_b_f> data folder)</p>
<p><u>5.5 Managing calves in lairage</u> Calves are managed in lairage to maximize their welfare prior to slaughter. This involves ensuring that the animals are protected from the elements and are handled properly.</p>	<p><u>5.5 Managing calves in lairage</u> Calves are managed in lairage to maximize their welfare prior to slaughter. This involves ensuring that:</p> <ul style="list-style-type: none"> • calves are protected from the elements 	<p>section5_5.jpg (<file_m2> data folder)</p>

<p>Managing ill or injured calves All livestock handlers should monitor calves in the pens to ensure that any bobby calf that is weak, ill or injured is identified and action is taken. Livestock that become weak, ill or injured should be penned separately. If the animal becomes moribund with little chance of recovery it must be humanely destroyed on the spot and without delay. The approved methods of humane destruction will be set out in the plant's work instructions and can only be undertaken by a trained person.</p>	<ul style="list-style-type: none"> • handled properly by stock persons • livestock handlers regularly monitor the condition of the calves in the pens • livestock that become weak, ill or injured are penned separately • moribund animals are humanely destroyed on the spot and without delay. 	
<p>5.5.1 Scheduling calves for slaughter Good management practices are put in place in processing plants to minimize the time off feed for calves prior to slaughter. This means that calves have to be slaughtered as soon as possible after they are unloaded at the plant. As a minimum, calves must be slaughtered within 30 hours of their last feed, otherwise the calves must be fed. Calves not slaughtered in the first shift after their unloading at the plant must be scheduled for slaughter as soon as possible and fed in accordance with the targets set out in the company's SOPs.</p>	<p>5.5.1 Scheduling calves for slaughter Good management practices ensure that:</p> <ul style="list-style-type: none"> • the time off feed for calves prior to slaughter is minimized • calves are slaughtered as soon as possible after they are unloaded at the plant • calves must be slaughtered within 30 hours of their last feed • calves are fed after 30 hours off feed. 	
<p>5.5.2 Good handling of bobby calves By following workplace procedures and applying good handling practices stock handlers can ensure that the welfare requirements of the bobby calves are met. When you are handling calves, you need to understand their natural behaviour and instincts. In this footage the handler is moving a small group of calves and making sure that the calf at the front is kept moving. The handler remains calm and patient. Excessive shouting, waving, hitting or poking will not make calves move any faster and in fact may slow their movements. Poor handling of animals can also cause stress and/or injury to animals. Stress or injury to animals will significantly affect the quality of the end product. Stress will affect the meat quality in a number of ways:</p>	<p>5.5.2 Good handling of bobby calves When you are handling calves, you need to understand their natural behaviour. Stress or injury to animals will significantly affect the quality of the end product. Stress will affect the meat quality in a number of ways:</p> <ul style="list-style-type: none"> • meat becomes darker • meat becomes tougher • meat will lose flavour • the time the product can be kept for will be shorter. <p>Millions of dollars are lost to the industry every year as a result of injury to animals.</p>	

<ul style="list-style-type: none"> • meat becomes darker • meat becomes tougher • meat will lose flavour • the time the product can be kept for will be shorter. <p>Injury to animals can occur during transit, when being moved around at the abattoir. The types of injury that can result include bruising, fractures and wounds.</p> <p>After the injured animal has been slaughtered, the affected area must be trimmed before any boning and slicing can take place. Millions of dollars are lost to the industry every year as a result of injury to animals. This is because injury can reduce yield from carcasses and extra time needs to be spent trimming the carcasse.</p>		
<p><u>5.5.3 Ante-mortem inspection</u></p> <p>Stock handlers must also make sure that the calves have undergone ante-mortem inspection prior to slaughter. By law, no animals are allowed to be submitted for slaughter unless they have undergone an ante-mortem inspection in the 24 hours before slaughter.</p> <p>It is part of a stock handler's job of preparing animals for slaughter to work closely with veterinary officers and or meat inspectors to conduct ante-mortem inspections to ensure animals are fit for slaughter.</p>	<p><u>5.5.3 Ante-mortem inspection</u></p> <p>Stock handlers must also make sure that the calves have undergone ante-mortem inspection prior to slaughter.</p> <ul style="list-style-type: none"> • No animals are allowed to slaughtered unless they have undergone an ante-mortem inspection. 	<p>section5_5_3.jpg (<mem_b_f> data folder)</p>
<p><u>5.6 Emergency kill of bobby calves</u></p> <p>Identifying animals for humane destruction or emergency slaughter</p> <p>Injured or disabled animals showing obvious signs of distress or suffering must be humanely destroyed immediately or be put up for emergency slaughter if the injury or stress is not severe.</p> <p>There are many diseases or conditions that require animals to be immediately destroyed humanely and condemned, such as animals that are obviously in pain, severely injured, severely ill or comatose or moribund.</p>	<p><u>5.6 Emergency kill of bobby calves</u></p> <p>Identifying animals for humane destruction or emergency slaughter</p> <p>Some other conditions that require attention include:</p> <ul style="list-style-type: none"> • lame calves that move with a limp • dehydrated, weak or moribund calves that have a hanging head, a depressed state, lack of interest in surroundings • animals with discharges from the eyes, nose or other body openings • animals with coughs, wheezes, snorting or rapid heavy breathing. 	

<p>Animals that are unable to rise (downers) are of particular concern. The cause of them being down may be due to a range of conditions including diseases such as bruising, heat stroke, exhaustion, starvation or injury.</p> <p>The animal can sometimes be salvaged for some of these conditions, but only a qualified person such as a veterinarian or a meat safety inspector can make this decision.</p> <p>Some other conditions that require attention include:</p> <ul style="list-style-type: none"> • lame calves that move with a limp. • dehydrated, weak or moribund calves that have a hanging head, a depressed state, lack of interest in surroundings • animals with discharges from the eyes, nose or other body openings • animals with coughs, wheezes, snorting or rapid heavy breathing <p>These calves should be identified, segregated if possible and placed in the suspect pen if this can be done without inflicting additional pain to the animal.</p> <p>The appropriate person should then be advised.</p>		
<p>5.6.1 Responsibility for an emergency kill at a slaughtering plant</p> <p>All people involved in the handling of animals have an obligation to ensure that animals are not mistreated or placed under stress. This includes the truck drivers, stockmen and slaughtering personnel involved in stunning and sticking.</p> <p>Everyone working in the lairages is responsible for identifying sick or injured animals.</p> <p>These animals must be isolated and assessed promptly.</p> <p>The head stockman or other suitably trained person can do the initial assessment of the sick or injured animal.</p> <p>If a sick or injured animal is detected out of normal working hours and is obviously suffering, the immediate humane destruction of the animal should be undertaken.</p>	<p>5.6.1 Responsibility for an emergency kill at a slaughtering plant</p> <p>Sick or injured animals must be isolated and assessed promptly.</p> <p>Out of work hours suffering sick or injured animals must be immediately destroyed humanely.</p> <p>During working hours, a veterinarian or a meat safety inspector should assess the suspect animals.</p> <p>Suffering animals should be killed humanely by use of a captive bolt or firearm.</p> <p>Only those trained and competent should perform emergency kills.</p>	

<p>During working hours, a veterinarian or a meat safety inspector should do the assessment of the animal. They are the only people who can determine if the animal may be salvaged for human consumption.</p> <p>If the animal is assessed to be suitable for slaughter, the animal should be killed and immediately introduced onto the slaughter floor, even if it disrupts the sequence of slaughter.</p> <p>If the animal is not suitable for processing or if the animal is detected out of working hours, arrangements should be made for immediate destruction of the animal. In those circumstances the animal should be killed humanely by use of a captive bolt or firearm.</p> <p>A suitable captive bolt or firearm should always be readily available but kept under lock up security.</p> <p>Only suitable trained and qualified persons should use captive bolts and firearms.</p> <p>Every person who handles stock before slaughter has an obligation by law and an ethical responsibility to handle them in a way that avoids injury or stress.</p>		
<p><u>5.6.2 Documentation for emergency kills</u></p> <p>Your work instructions will detail the documentation that may need to be completed.</p> <p>Typical documentation includes:</p> <ul style="list-style-type: none"> • kill sheet • ante-mortem cards • emergency kill tag • condemn sheets • documentation accompanying stock e.g. vendor declarations. <p>The kill sheet will need to be amended if an animal has been emergency slaughtered and is processed out of sequence from the lot that it came with, or if an animal has been destroyed in the holding yards.</p> <p>If an animal has been destroyed or the carcase condemned,</p>	<p><u>5.6.2 Documentation for emergency kills</u></p> <p>Your work instructions will detail the documentation that may need to be completed. Typical documentation includes:</p> <ul style="list-style-type: none"> • kill sheet • ante-mortem cards • emergency kill tag • condemn sheets • documentation accompanying stock e.g. vendor declarations. 	

<p>relevant documentation may need to be provided such as a condemnation certificate.</p>		
<p>5.7 The OH&S requirements for handling calves in lairage Many people have been injured while handling stock in lairage at abattoirs. Calves represent unique OH&S risks for stock handlers because they often require more physical contact to unload them and move them around the yards and pens. These risks include those associated with manual handling, zoonotic diseases, personal hygiene as well as slips and falls. Calves often scour and their hides become contaminated with faeces. When stock personnel are handling calves their hands and clothing can easily become contaminated. This contamination can represent a health risk if stock handlers do not wash their hands thoroughly at breaks before eating or smoking. Stock handlers must be conscious of the hazards in the yards at all times and follow their required workplace procedures. If they do this, stock handlers will limit the OH&S risks associated with handling animals.</p>	<p>5.7 The OH&S requirements for handling calves in lairage OH&S hazards include: <ul style="list-style-type: none"> • manual handling • zoonotic diseases • personal hygiene • slips and falls. Stock handlers must follow workplace procedures to limit the OH&S risks associated with handling animals.</p>	
<p>6. Humane slaughter</p> <ul style="list-style-type: none"> • How are calves restrained? • How are calves stunned? • How are calves humanely slaughtered? • What are the OH&S requirements for stunning a slaughter? 	<p>6. Humane slaughter</p> <ul style="list-style-type: none"> • How are calves restrained? • How are calves stunned? • How are calves humanely slaughtered? • What are the OH&S requirements for stunning a slaughter? 	
<p>6.1 How are calves restrained?</p> <ul style="list-style-type: none"> • Calf in restrainer • Electrical stunning 	<p>6.1 How are calves restrained?</p> <ul style="list-style-type: none"> • Calf in restrainer • Electrical stunning 	<p>section6_1_2.jpg (<file_m2> data folder)</p>
<p>6.1.1 Calf in restrainer Animals are restrained prior to stunning in order to ensure that an effective and humane stun can be achieved and that the risk of injury to workers is reduced. Restrainers for bobby calves can take the form of V belt restrainers or knocking boxes. Regardless of the type of</p>	<p>6.1.1 Calf in restrainer Animals are restrained prior to stunning in order to ensure:</p> <ul style="list-style-type: none"> • that an effective and humane stun can be achieved • that the risk of injury to workers will be reduced. 	<p>section6_1_1.jpg (<mem_b_f> data folder)</p>

<p>restrainer used at a plant animal welfare outcomes can be maximised by moving the calves into the restrainer with the minimum of excitement. When in operation the restrainer should allow animals to enter the restrainer easily and the animals to be effectively restrained. This allows the operator to accurately place the stunning equipment and helps get an effective stun every time. Mechanical restrainers require frequent monitoring to make adjustments when necessary such as changing from a run of sucker lambs to calves. When this happens the restrainer must be adjusted so that calves do not escape over the top. When you use mechanical restrainers, make sure that animals are not placed into the restrainer on top of one another, as this may cause stress and/or injury to the animals. Likewise only one animal should be in a knocking box at a time.</p>	<p>Restrainers need to be checked and monitored regularly.</p>	
<p>6.1.2 Electrical stunning The equipment used to stun calves Calves are stunned using either a captive bolt gun or an electrical stun. The vast majority of bobby calves are stunned using an electrical head only stunning system. Electric stunning During electrical stunning an alternating current is passed through the animal's brain, causing loss of consciousness. With head only stunning, one electrode is placed either side of the head in order to span the brain. This type of stun causes the animal to loose consciousness and is reversible. Electric stunning induces a 'grand mal' fit similar to that experienced by an epileptic person. This causes instantaneous unconsciousness before any pain can be registered by the brain. The time the current is applied is critical and varies according to the size of the animal. The Australian Animal Welfare Standard recommends the a minimum current levels of 1 Amp and a</p>	<p>6.1.2 Electrical stunning Calves are stunned using either: <ul style="list-style-type: none"> • a captive bolt gun • or an electrical stun. During electrical stunning an alternating current is passed through the animal's brain, causing loss of consciousness. Head only electrical stunning causes the animal to loose consciousness and is reversible. The Australian Animal Welfare Standard recommends the minimum current levels of 1 Amp and a minimum stun duration of two seconds. In order to achieve an effective stun: <ul style="list-style-type: none"> • the bobby calf must be effectively restrained • the electrodes accurately positioned. </p>	

<p>minimum stun duration of two seconds as necessary to cause an effective head only reversible stun. In order to achieve an effective stun the bobby calf must be effectively restrained and the electrodes accurately positioned. A proper maintenance program as well as daily testing and cleaning of the equipment is essential.</p>	<p>A proper maintenance program as well as daily testing and cleaning of the equipment is essential.</p>	
<p>6.2 How are calves stunned? Animals are stunned so that they are unconscious prior to the start of the slaughter process. This is to ensure that the pain and stress inflicted on animals is minimized. This is a requirement of the Australian Meat Processing Standard and the ANIMAL WELFARE STANDARDS FOR LIVESTOCK PROCESSING. The stunning of animals prior to slaughter is normally a mandatory requirement. Stunning animals also reduces the risk of injury to workers.</p>	<p>6.2 How are calves stunned? Animals are stunned so that:</p> <ul style="list-style-type: none"> • they are unconscious prior to the start of the slaughter process • that the pain and stress inflicted on animals is minimized • the risk of injury to workers is reduced. <p>This is a requirement of the:</p> <ul style="list-style-type: none"> • Australian Meat Processing Standard • ANIMAL WELFARE STANDARDS FOR LIVESTOCK PROCESSING. <p>The stunning of animals prior to slaughter is normally a mandatory requirement.</p>	
<p>6.3 How are calves humanely slaughtered? When calves are electrically stunned using a reversible head only stunning process they are NOT killed by the stun. It is the sticking or bleeding process that kills the calf. For humane reasons, it is therefore vital that the stun/stick interval is as short as possible to avoid any chance of the animal regaining consciousness before it dies of loss of blood. Likewise no further dressing should occur until the bleeding process is completed. The main purpose of bleeding is to ensure the death of the animal before it recovers from the stun. The two common methods of bleeding or 'sticking' are the transverse stick and the thoracic stick.</p>	<p>6.3 How are calves humanely slaughtered?</p> <ul style="list-style-type: none"> • Reversible head only electrical stunning does not kill the animal. • The sticking or bleeding process kills the calf. • It is vital that the stun/stick interval is as short as possible. • No further dressing should occur until the bleeding process is completed. <p>The two common methods of bleeding or 'sticking' are:</p> <ul style="list-style-type: none"> • the transverse stick • the thoracic stick. 	
<p>6.3.1 The signs of an effective electrical stun An effective reversible electric stun is characterised by three</p>	<p>6.3.1 The signs of an effective electrical stun An effective reversible electric stun is characterised by three distinct</p>	

<p>distinct phases. Immediately the stun begins the calf should collapse and then become rigid with its legs flexed. This "tonic" phase generally lasts for 10-20 seconds and it is best to stick the animal when in this phase, before any kicking might occur. This stage is followed by a "clonic phase" where kicking and paddling movements occur for between 15 and 45 seconds. The presence of the tonic and clonic phases indicate that the stun has been successful. If the animal was not bleed at this point then the animal would enter a quiet phase before the first signs of recovery would appear. Eye reflexes or movements cannot be used at to assess the effectiveness of the stun because eye movements are part of the epileptic fit.</p>	<p>phases.</p> <ul style="list-style-type: none"> • The "tonic" phase when the legs go rigid. • A "clonic phase" where kicking and paddling movements occur. • If the animal is not bleed the animal will enter a quiet phase before recovering. <p>Eye reflexes cannot be used at to assess the effectiveness of the stun.</p>	
<p>6.3.2 Transverse stick The transverse stick is when a knife is drawn across the throat. This should be done just behind the angle of the jawbone, severing all blood vessels, the weasand and windpipe (trachea). It is important that the tissues lower down the neck are not cut after reversible (head only) electrical stunning. This is because, when the cut is made lower down the neck, the arteries could retract into the neck wound and clot. If this happens the process of bleeding is slower. This is a particular problem in calves where blood flow through the vertebral arteries will increase, providing an alternative source of blood to the brain. If this happens calves may recover sensibility. For this reason, transverse sticks without a follow up thoracic stick are not considered humane in calves. In cattle the transverse is used for religious slaughter and is invariably followed up with a thoracic stick.</p>	<p>6.3.2 Transverse stick The transverse stick is when a knife is drawn across the throat:</p> <ul style="list-style-type: none"> • this should be done just behind the angle of the jawbone • all blood vessels, the weasand and windpipe (trachea) should be severed. <p>Transverse sticks without a follow up thoracic stick are not considered humane in calves.</p>	
<p>6.3.3 Thoracic stick</p>	<p>6.3.3 Thoracic stick</p>	<p>section6_3_3.jpg (<mem_b_f></p>

<p>Thoracic sticking involves making an incision or cut into the thoracic inlet. This severs the major blood vessels just in front of the heart. These vessels supply blood to the head, neck and forelegs. This stops the blood flow to the brain through the vertebral artery, thus preventing the animal from regaining consciousness. The maximum blood flow is achieved by using a sharp knife and, after the initial stab incision, curving the knife downward and across the thoracic inlet.</p> <p>If reversible stunning is used in cattle and calves such as 'head only' electrical stunner or 'mushroom head stunning', then a thoracic stick is recommended after the Halal cut is made.</p> <p>Regardless of the bleeding method employed the operator must check for an effective stun before any cut is made</p>	<p>Thoracic sticking involves:</p> <ul style="list-style-type: none"> • making an incision or cut into the thoracic inlet • severing the major blood vessels just in front of the heart. <p>Regardless of the bleeding method employed the operator must check for an effective stun before any cut is made.</p>	<p>data folder)</p>
<p><u>6.3.4 Bleed out rail</u></p> <p>The effectiveness of the bleeding process is regularly monitored by checking for signs of sensibility on the bleed out rail. It is important to remember that with reversible stunning it is not the stunning that is being checked on the bleed rail but the effectiveness of the bleeding process.</p>	<p><u>6.3.4 Bleed out rail</u></p> <p>The effectiveness of the bleeding process is regularly monitored by checking for signs of sensibility on the bleed out rail.</p>	<p>section6_3_4.jpg (<mem_b_f> data folder)</p>
<p><u>6.4 What are the OH&S requirements for stunning and slaughter?</u></p> <p>Common OH&S issues</p> <p>There are range of OH&S hazards that operators may come across during the stunning and sticking of bobby calves. These hazards include:</p> <ul style="list-style-type: none"> • noise • physical injuries from escaped or partially stunned animals • sprains and strains through 'overuse syndrome' from repetitive movements such as cutting, pushing, pulling, lifting, twisting and bending • zoonotic diseases, e.g. Q fever • slips, trips and falls • injury by using equipment such as electric or powered 	<p><u>6.4 What are the OH&S requirements for stunning and slaughter?</u></p> <p>Common OH&S issues</p> <p>The range of OH&S hazards that operators may come across during the stunning and sticking of bobby calves. These hazards include:</p> <ul style="list-style-type: none"> • noise • physical injuries from escaped or partially stunned animals • sprains and strains • zoonotic diseases, e.g. Q fever • slips, trips and falls • injury by using equipment such as electric or powered stunners • burns and scalds from sterilising equipment • knife cuts and accidental stab wounds 	

<p>stunners</p> <ul style="list-style-type: none"> • burns and scalds from sterilising equipment • knife cuts and accidental stab wounds • injury from kicking and falling animals or shackles. 	<ul style="list-style-type: none"> • injury from kicking and falling animals or shackles. 	
<p>6.5 Minimising the risk</p> <p>As well as the employer having a responsibility to make sure that workers have a safe workplace to work in, employees also have a responsibility for their own and other's safety and wellbeing.</p> <p>Workers must know and follow their workplace OH&S policies and procedures. By following their workplace OH&S policies and procedures, and by actively taking part in accident and injury prevention, workers can reduce the very common injuries in the meat industry, i.e. knife wounds, sprains and strains.</p> <p>Some examples of workplace OH&S policies and procedures that you should be aware of and apply are:</p> <ul style="list-style-type: none"> • accident prevention • emergency procedures in case of injury • wearing of personal protective equipment (PPE) • reporting equipment malfunction • reporting an electrical fault • emergency evacuation procedures • confined spaces policy and procedures. <p>The relevant workplace procedures will include a range of work practices that relate to the stunning equipment and could include:</p> <ul style="list-style-type: none"> • operation of stunners by trained workers only • handling and storing stunners correctly • reporting faulty equipment to the appropriate person immediately • using mechanical aids or correct techniques for pushing, pulling or lifting stunned animals, chains or gates. 	<p>6.5 Minimising the risk</p> <p>Workers must know and follow their workplace policies and procedures to minimise OH&S risks.</p> <p>Examples of relevant workplace OH&S policies and procedures include:</p> <ul style="list-style-type: none"> • accident prevention • emergency procedures in case of injury • wearing of personal protective equipment (PPE) • reporting equipment malfunction • reporting an electrical fault • emergency evacuation procedures • confined spaces policy and procedures. <p>The relevant workplace procedures will include:</p> <ul style="list-style-type: none"> • operation of stunners by trained workers only • handling and storing stunners correctly • reporting faulty equipment • using mechanical aids correctly. <p>Emergency procedures</p> <p>If the animal escapes:</p> <ul style="list-style-type: none"> • there will be emergency evacuation procedures • the safety of other workers may depend on your attentiveness and quick action. 	

<p>Likewise, the animals to be stunned also represent an OH&S hazard and workplace procedures will include such requirements as:</p> <ul style="list-style-type: none"> • ensuring animals are effectively stunned the first time • ensuring animals do not escape before or during the stunning process • using protective barriers when and if necessary • handling live animals according to workplace procedures, e.g. not entering the race or knocking box with live animals. <p>Emergency procedures If the animal escapes, there may be an alarm system to warn other workers, emergency evacuation procedures and/or safety areas for staff. If you are stunning or sticking animals the safety of other workers may depend on your attentiveness and quick action.</p>		
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7.3 Attachment 3

Draft Training Materials Overview of Animal Welfare Issues when Processing Bobby Calves

Optional training material Australian Meat Industry
Certificate II Meat Processing (Abattoirs)

Managing Agent

National Meat Industry Training Advisory Council (MINTRAC)

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Using this training material
What are the materials for?

The training materials are for the Training Package for the Australian Meat Industry: MTM00.

How can they be used?

The training materials can be used by trainers to:

- plan and deliver training
- give additional information to trainees
- keep a record of the training they have delivered.

The training materials can be used by assessors to:

- plan assessment – after training and for recognition of current competence/prior learning
- show trainees the areas they need to work on to be competent
- keep a record of the evidence used in assessment.

The training materials can be used by trainees:

- as a resource during training
- to review knowledge, understanding and learning
- to prepare for assessment.

How are the materials organised?

Each booklet covers one unit of competence from the Training Package. The unit title identifies which unit the materials support. Topic headings are used to break the material into sections.

The questions and answers cover the underpinning knowledge that trainees need to know for the particular unit. Trainers need to understand this information before the training starts. Assessors also need to understand this material before they assess anyone for this unit. The questions and answers can be copied and given to the trainees as training notes.

The Ideas for training section includes on and off the floor activities that trainers can use to help the trainees understand the information. It lists:

- materials and equipment the trainer needs to deliver the training
- the method, or how to run the training session
- activities for the trainees to help them understand the training.

Trainers can also develop their own ideas for training, to suit the trainees.

The Training record sheet is for trainers to keep a record of the training activities they have completed. The Assessment sheet lists what the trainee has to know and do to be competent. It can be copied and given to the trainee. The assessor can use the assessment sheet to make sure that the assessment covers all the requirements for competence. It can also be a record of the three pieces of evidence used to show that the trainee is competent.

The Resources section has a list of other resources the trainer can use in the training.

The Bibliography lists the books and other sources of information that were used to write the training materials.

How is the training and assessment customised?

Every meat processing company is different. The training and assessment should match the operations of the company and the requirements of the units of competence. The material in this booklet must be customised to the company's and trainee's needs. These training materials must be updated for any changes in relevant legislation, regulations, guidelines and codes of practice.

Handling calves humanely while unloading and in lairage

Animal Welfare

Why is animal welfare important when handling stock at a meat processing plant?

There are four major reasons why animal welfare is important when bobby calves are being transported and processed. These reasons are the animal welfare laws, customers' and society's expectations, commercial considerations and ethical concerns.

What standards and legislative requirements apply to calves?

The *Australian Standard for the Hygienic Production and Transportation of Meat and Meat Products for Human Consumption* applies to all abattoirs export or domestic. The following clauses of the standard detail the outcome required for calves unloading at abattoirs:

Clause 7: The minimisation of the risk of injury, pain and suffering and the least practical disturbance to animals.

Clause 19: Premises and equipment minimise risk of injury, pain and suffering and causes the least practicable disturbance to animals.

Clause 19.15: Raceways and holding pens if used for small calves areas are paved or have mesh or slatted floors and in any other case are paved.

Clause 19.16: Dead calves handling areas and areas where animals are inspected or cleaned are paved and can be effectively cleaned.

Clause 19.17: Pens for holding animals affected by or suspected of being affected by a disease or other abnormality are constructed so as to minimise the risk of spread of contamination from the pens to other areas and are drained.

The National Animal Welfare Standards for establishments processing animals for human consumption is the main guideline document for animal welfare at abattoirs.

Your work instructions and animal handling procedures will be based on the performance indicators in this standard.

These standards are based on a range of codes of practice for animal welfare that have been developed over the years.

On export registered establishments the *Approved Arrangement Guidelines* call up this standard as a compulsory reference document for animal welfare.

The following structural and operational requirements for unloading handling facilities should be continually monitored to ensure that they do not adversely affect the welfare of animals:

- ensure that there are no gaps between the truck and the unloading ramp
- ensure all gates are fully open and latches are not able to cause injury
- ensure that there are no sharp protrusions that could cause injury to calves
- ensure that the facilities are suitable for the species, age and class of calves to be held
- flooring should be designed to limit slipping, falls and injury
- facilities must be available to care for and segregate weak, ill or injured animals (suspect pen)
- ensure that lighting is uniform and effective
- ensure that all items that could cause baulking are removed such as hoses, flapping items and other objects in the lairages
- ensure that walkways and flooring are clear of objects.

The *Construction and Equipment Guidelines for Export Meat* and the *National Animal Welfare Standards for meat processing establishments preparing meat for human consumption* offers more information on what is required and how the performance indicators for structure and facilities can be implemented.

What are the expectations of society and our customers when it comes to animal welfare?

Society, on the whole, expects animals to be transported and processed humanely and so do the industry's large customers.

Customers like supermarkets and fast food chains have animal welfare standards that they require meat processors to achieve and these are becoming more detailed. These customers have processors audited to ensure that the animal welfare standards are being met. Processors have lost contracts with major customers because animal welfare requirements were not met.

What are the commercial reasons why animal welfare is important?

Stress and poor handling can greatly reduce both eating quality and the yield achieved when processing animals. Stressed animals can produce "dark cutters" and tough meat which has a greatly reduced market value.

Likewise, animals that are handled poorly will more likely be bruised or injured. Injuries and bruises have to be trimmed and this decreases the value of the carcass and the yield achieved. All of this amounts to increased costs and decreased profits for the company.

What are the ethical considerations that make animal welfare important?

In general our society believes that treating animals inhumanely is wrong and that companies that allow such things to happen are not good organisations. When companies allow animals to be treated poorly they get a bad reputation in the community. This can lead to people not buying the company's products, not wanting to work for the company and not wanting them operating in their town or district. Meat processing companies want to be good corporate citizens, want to be regarded as ethical businesses and part of the community. These aspirations are undermined if animals are treated inhumanely at a processing plant.

The nature of bobby calves

What are bobby calves?

For the purposes of these training materials, bobby calves are bovine animals under 6 weeks of age, weighing less than 80kg and are a dairy bred or dairy cross bred calf. These animals are considered a bi-product of the dairy industry and it is not considered economical to rear and grow them out.

What calves are eligible for slaughter?

Calves presented for slaughter must be in their fifth day of life or older and should have been fed within six hours of loading. The calves should also be at least 23 kg in live weight. The calves must have fed in at least the last 30 hours and slaughtered first in line at the processing plant.

The National Vendor Declaration that accompanies the calves is used to document the drug residue status of each animal and to meet the animal welfare requirements for bobby calves consigned for sale or slaughter. Bobby calves must be tagged prior to sale for reasons of trace back, disease control and meat quality.

What are the characteristics of bobby calves that affect their handling?

Bobby calves have not developed following behaviour by the time they are sent for slaughter, therefore, they can often be difficult to move in groups. Calves are often hard to shift and tend to stand in groups rather than move. Dealing with calves is often time consuming and frustrating for the personnel involved. Stock handlers unloading and moving calves need to be patient, as forcing calves to move quickly can often lead to calves falling and slipping, or simply not responding to the handler trying to move them.

The handling characteristics of calves, increases the importance of correct handling procedures, especially in situations that involve restraint, movement or re-grouping.

Facilities for handling bobby calves

What are the facilities required at a processing plant for handling bobby calves?

The structural and operational requirements for calf handling facilities include suitable ramps, yards and raceways.

Ramps should be designed to allow for the easy unloading of the calves and in general the angle of the ramp should be kept as flat as possible to avoid calves slipping and falling.

The pens should be suitable for the number of calves to be held and the flooring should be designed to limit slipping, falls and injury. Calves need to be protected from climatic extremes and need shelter from cold and hot conditions, which can stress them.

In the unloading and lairage areas the lighting should be uniform and effective to allow for ease of handling. There should also be pens available to allow for the segregation of sick and injured stock until a disposition has been made.

What monitoring of the facilities used for handling bobby calves has to happen?

In addition these handling facilities have to be continually monitored by staff to ensure that they do not affect the welfare of animals.

Stock handlers at a processing plant should ensure that:

- there are no gaps between the truck and the unloading ramp
- gates are fully open and latches are not able to cause injury
- there are no sharp protrusions that could cause injury to calves
- all items that could cause baulking such as hoses are removed.

Unloading animals

What are the procedures for receiving calves into the lairages?

There are many things the animal handler will have to think about and act on when receiving calves into the lairages. Some of these are:

- unloading the calves as soon as possible after arriving
- availability of personnel or other arrangements to unload calves out of hours
- understanding the behaviour patterns of the animals being handled and handling calves appropriately
- understanding the appropriate methods to move calves without causing stress
- being aware of possible dangers to yourself.

You must know the procedures in your own workplace, so that you handle calves correctly and safely. Some of these procedures may include:

- ensuring delivery documents such as National Vendor Declarations (NVDs) are correctly completed
- matching the correct calves – numbers and type – to the correct customer
- inspecting the calves and identifying any weak, ill or injured calves or calves exhibiting unusual behaviour, sounds or appearance
- segregating diseased or injured animals for rest, recovery or treatment including provision of feed and water or humane destruction
- dealing with dirty calves in accordance with workplace procedures
- recording dead calves or calves identified for humane destruction

In addition the following procedures will help ensure that animals are handled humanely.

- Calves should be inspected on unloading to identify any animals that have become weak injured or ill during transport.
- These weak, ill or injured calves should be assessed immediately by a competent person and appropriate action should be taken such as rest/recovery, placement for casualty (emergency) slaughter, provision of treatment, feed, water or humane slaughter.
- Humane destruction should be arranged immediately for any animals that require it.
- Ill, weak or injured animals that do not require to be humanely destroyed should be separated out for rest, recovery or treatment.
- The remaining calves should be penned where possible out of the elements.
- Always move calves calmly and quietly.
- Never use implements such as goads and never use dogs on calves.
- Check that water is available for all calves and that they can easily access it.

How are and why are calves inspected at unloading?

All bobby calves need to be inspected at arrival to identify sick, injured or stressed stock.

Calves should only have been loaded and brought to the processing plant if they were fit to load.

In general this means that the calves were:

- able to walk on their own, bearing weight on all legs;
- not emaciated, dehydrated or showing signs of severe injury or distress
- not suffering any condition likely to cause increased pain or distress during transport
- able to meet the specifications relevant for the consignment eg. NVD requirements

Failure to deliver stock that meet these requirements must be documented and reported to the supplier and plant management for corrective action. Bobby calves that are sick or injured will need to be segregated until a decision is made, by a competent person, as to how they are to be dealt with. These weak, ill or injured calves should be assessed as soon as possible, by a competent person, and the appropriate action should be taken such as rest/recovery, scheduled for emergency slaughter, or humane destruction.

The remaining calves should be penned where possible out of the elements.

Managing calves in Lairage

Calves are managed in lairage to maximize their welfare prior to slaughter. This involves ensuring that the animals are protected from the elements and are handled properly.

All livestock handlers should monitor calves in the pens to ensure that any bobby calf that is weak, ill or injured is identified and action is taken. Livestock that become weak, ill or injured should be penned separately. If the animal becomes moribund with little chance of recovery it must be humanely destroyed on the spot and without delay. The approved methods of humane destruction will be set out in the plant's work instructions and can only be undertaken by a trained person.

When are calves scheduled for slaughter?

Good management practices are put in place in processing plants to minimize the time off feed for calves prior to slaughter. This means that calves have to be slaughtered as soon as possible after they are unloaded at the plant.

As a minimum, calves must be slaughtered within 30 hours of their last feed, otherwise the calves must be fed. Calves not slaughtered in the first shift after their unloading at the plant must be scheduled for slaughter as soon as possible and fed in accordance with the targets set out in the company's SOPs.

What is good handling of bobby calves?

By following workplace procedures and applying good handling practices stock handlers can ensure that the welfare requirements of the bobby calves are met. When you are handling calves, you need to understand their natural behaviour and instincts. In this footage the handler is moving a small group of calves and making sure that the calf at the front is kept moving. The handler remains calm and patient. Excessive shouting, waving, hitting or poking will not make calves move any faster and in fact may slow their movements.

How can poor handling affect meat quality?

By following workplace procedures you will:

- make sure animals are handled humanely and safely
- prevent injury and stress
- make sure welfare requirements are covered.

When you are handling animals, you need to understand their natural behaviour and instincts, e.g. using a Judas sheep works because sheep will follow.

You can use this knowledge about their natural behaviour to get them to move up the race.

Good handling helps to produce a quality product. Poor handling of animals can cause stress and/or injury to animals. Stress or injury to animals will significantly affect the quality of the end product. Poor handling of animals can also cause stress and/or injury to animals. Stress or injury to animals will significantly affect the quality of the end product.

Stress will affect the meat quality in a number of ways:

- meat becomes darker
- meat becomes tougher
- meat will lose flavour
- the time the product can be kept for will be shorter.

Injury to animals can occur during transit, when being moved around at the abattoir.

The types of injury that can result include bruising, fractures and wounds.

After the injured animal has been slaughtered, the affected area must be trimmed before any boning and slicing can take place.

Millions of dollars are lost to the industry every year as a result of injury to animals.

This is because injury can reduce yield from carcasses and extra time needs to be spent trimming the carcass.

Why is good record-keeping essential when handling livestock?

Good record-keeping is essential to meet workplace procedures, customer specifications, legal requirements and assist with the movement of stock.

Locating stock by pen numbers and blackboard records is a common feature of stock work in an abattoir.

In addition, the types of documents used in your workplace may include:

- transport docket – name of transport company, place of origin, number and type of stock, date of arrival, 'dead on arrivals' and pen number
- QA sheets – number and type of stock, number of defects in stock and corrective action taken
- stock book – stock movement, place of origin, number and types of animals, pen and lot numbers, dead on arrivals
- kill sheets – number and types of animals per day, what sequence and date

- ante-mortem cards – number and types of animals, date stock inspected, inspector, type of inspection, place of origin and results including ‘suspects’.

What must you look for when preparing animals for slaughter?

When animals are prepared for slaughter, stock handlers must look to check that they meet the required product specifications. These instructions will be in your workplace procedures.

The types of conditions you are looking for include:

- dirty stock – these must be dealt with before slaughter, as they will cause major contamination hazards during the slaughtering process
- product – that does not meet specification in for age product
- diseased animals, injured animals or ‘downers’ – may be dealt with in a number of ways including:
 - notifying the responsible person
 - segregating stock in a suspect pen
 - emergency slaughter
 - conveying animal to stock pen
- dead animals – record and/or notify the responsible person, dealing with the animal promptly and safely as required in the workplace procedures.

What is ante-mortem inspection ?

You must also make sure that the stock has undergone ante-mortem inspection. By law, no animals are allowed to be submitted for slaughter unless they have undergone an ante-mortem inspection in the 24 hours before slaughter.

As part of your job of preparing animals for slaughter you will need to work closely with livestock handlers and meat inspectors to determine if an animal is fit for slaughter.

An ante-mortem inspection is performed by veterinary officer, an inspector or in domestic works by an experienced and competent livestock handler. It is a check to see if animals are diseased or injured, and to make sure animals are fit for slaughter.

How are calves identified for humane destruction or emergency slaughter?

Injured or disabled animals showing obvious signs of distress or suffering must be humanely destroyed immediately or be put up for emergency slaughter if the injury or stress is not severe.

There are many diseases or conditions that require animals to be immediately destroyed humanely and condemned, such as animals that are obviously in pain, severely injured, severely ill or comatose or moribund.

Animals that are unable to rise (downers) are of particular concern. The cause of them being down may be due to a range of conditions including diseases such as bruising, heat stroke, exhaustion, starvation or injury. The animal can sometimes be salvaged for some of these conditions, but only a qualified person such as a veterinarian or a meat safety inspector can make this decision.

Some other conditions that require attention include:

- lame calves that move with a limp.
- dehydrated, weak or moribund calves that have a hanging head, a depressed state, lack of interest in surroundings
- animals with discharges from the eyes, nose or other body openings
- animals with coughs, wheezes, snorting or rapid heavy breathing

These calves should be identified, segregated if possible and placed in the suspect pen if this can be done without inflicting additional pain to the animal.

The appropriate person should then be advised.

Who has responsibility for an emergency kill at a slaughtering plant?

All those involved in the handling of animals have an obligation to ensure that animals are not mistreated or placed under stress. This includes the truck drivers, stockmen and slaughtering personnel involved in stunning and sticking. Everyone working in the lairages is responsible for identifying sick or injured animals. These animals must be isolated and assessed promptly. The head stockman or other suitably trained person can do the initial assessment of the sick or injured animal. If a sick or injured animal is detected out of normal working hours and is obviously suffering, the immediate humane destruction of the animal should be undertaken. During working hours, a veterinarian or a meat safety inspector should do the assessment of the animal. They are the only people who can determine if the animal may be salvaged for human consumption. If the animal is assessed to be suitable for slaughter, the animal should be killed and immediately introduced onto the slaughter floor, even if it disrupts the sequence of slaughter.

If the animal is not suitable for processing or if the animal is detected out of working hours, arrangements should be made for the immediate destruction of the animal. In those circumstances the animal should be killed humanely by use of a captive bolt or firearm.

A suitable captive bolt or firearm should always be readily available but kept under lock up security. Only suitable trained and qualified persons should use captive bolts and firearms.

Every person who handles stock before slaughter has an obligation by law and an ethical responsibility to handle them in a way that avoids injury or stress.

What separation of stock is needed at the race?

Mobs must not be mixed e.g. when one mob finishes going up the race, it must be kept separate from the next. This is to maintain separation of product and in service works to aid identification of ownership of stock being killed.

Animals are restrained prior to stunning in order to ensure that:

- an effective and humane stun can be achieved
- product quality is maintained
- relevant state and national regulations and workplace procedures are met
- the risk of injury to workers will be reduced.

The relevant regulations should be included in workplace procedures for each individual site.

What are the OH&S issues and requirements when unloading and handling calves in lairage?

Occupational health and safety hazards when unloading calves include:

- zoonotic diseases, i.e. diseases transmissible from animals to humans
- slips, trips and falls, in particular falls from heights e.g. from the back of a truck
- injury from animals
- severe weather - extremes of heat and cold

A way of preventing or controlling these hazards is to follow the workplace OH&S policies and procedures at all times. Some examples of these may be:

- wearing specifically designed clothing e.g. one-piece coveralls to prevent clothing flopping and then catching on surfaces and structures
- vaccination against zoonotic diseases
- wearing appropriate footwear

- using walkways where provided
- wearing gloves to prevent the spread of disease from animal to man if the animal is suspected of having an infectious disease
- wearing PPE provided to protect against cold
- maintaining fluid intake during hot weather
- observing good personal hygiene after handling calves

Humane Slaughter of bobby calves

Restraining calves prior to slaughter

Why are calves restrained prior to slaughter?

Animals are restrained prior to stunning in order to ensure that an effective and humane stun can be achieved and that the risk of injury to workers is reduced. Restrainers for bobby calves can take the form of V belt restrainers or knocking boxes. Regardless of the type of restrainer used at a plant animal welfare outcomes can be maximised by moving the calves into the restrainer with the minimum of excitement.

When in operation the restrainer should allow animals to enter the restrainer easily and the animals to be effectively restrained. This allows the operator to accurately place the stunning equipment and helps get an effective stun every time. Mechanical restrainers require frequent monitoring to make adjustments when necessary such as changing from a run of sucker lambs to calves. When this happens the restrainer must be adjusted so that calves do not escape over the top.

When you use mechanical restrainers, make sure that animals are not placed into the restrainer on top of one another, as this may cause stress and/or injury to the animals. Likewise only one animal should be in a knocking box at a time.

What are the main animal welfare issues when restraining calves?

Livestock should be handled in a manner that reduces stress. This may be achieved by:

- moving them into the restraint with minimum excitement
- exploiting natural behaviour as much as possible
- using goads as little as possible – battery operated as opposed to mains operated are preferred
- never using sticks, metal pipes, clubs or pointed objects
- locating lighting so as to encourage animals to move forward
- never forcing lame animals up the race into the restraint
- using restraints appropriate to the species being slaughtered
- having one animal at a time in the knocking box
- installing head restraints in knocking boxes.

When in operation the restrainer should allow:

- animals to enter the restrainer easily
- animals to be effectively restrained, without slipping or falling or losing balance
- effective placement of the stunning apparatus, and access by the stun operator.

You must always operate mechanical restrainers according to workplace procedures. Mechanical restrainers require frequent monitoring as you may need to make adjustments. When you use mechanical restrainers, make sure that:

- restrainers are adjusted to suit the size of the animal being handled
- when changing from a run of sucker lambs to calves, the restrainer is adjusted so that calves do not escape over the top
- animals are not placed into the restrainer on top of one another, as this may cause stress and/or injury (bruising) to animals.

Why do we stun?

The concern for animal welfare is a major consideration when stunning animals for meat production.

Animals are stunned so that they are unconscious prior to the start of the slaughter process. This is to ensure that the pain inflicted on animals is minimised, and the requirements of the *National Animal Welfare Standard, Codes of Practice* and relevant legislation are met.

Stunning animals reduces the risk of injury to workers. Stunning also minimises stress on animals at the point of slaughter. This aids in maximising meat quality. The stunning of animals prior to slaughter is normally a mandatory requirement. However, in limited circumstances, i.e. ritual slaughter sticking without prior stunning may be permitted.

What equipment can be used to stun calves?

Calves are stunned using either a captive bolt gun or an electrical stun. The vast majority of bobby calves are stunned using an electrical head only stunning system.

What is electric stunning?

During electrical stunning an alternating current is passed through the animal's brain, causing loss of consciousness. With head only stunning, one electrode is placed either side of the head in order to span the brain. This type of stun causes the animal to lose consciousness and is reversible. Electric stunning induces a 'grand mal' fit similar to that experienced by an epileptic person. This causes instantaneous unconsciousness before any pain can be registered by the brain.

The time the current is applied is critical and varies according to the size of the animal. The Australian Animal Welfare Standard recommends the a minimum current levels of 1 Amp and a minimum stun duration of two seconds as necessary to cause an effective head only reversible stun.

In order to achieve an effective stun the bobby calf must be effectively restrained and the electrodes accurately positioned. A proper maintenance program as well as daily testing and cleaning of the equipment is essential.

What are the signs of an effective electrical stun?

An effective reversible electric stun is characterised by three distinct phases.

Immediately the stun begins the calf should collapse and then become rigid with its legs flexed. This "tonic" phase generally lasts for 10-20 seconds and it is best to stick the animal when in this phase, before any kicking might occur.

This stage is followed by a "clonic phase" where kicking and paddling movements occur for between 15 and 45 seconds. The presence of the tonic and clonic phases indicate that the stun has been successful.

If the animal was not bled at this point then the animal would enter a quiet phase before the first signs of recovery would appear.

Eye reflexes or movements cannot be used at to assess the effectiveness of the stun because eye movements are part of the epileptic fit.

What is the function of sticking or bleeding?

When calves are electrically stunned using a reversible head only stunning process they are NOT killed by the stun. It is the sticking or bleeding process that kills the calf. For humane reasons, it is therefore vital that the stun/stick interval is as short as possible to avoid any chance of the animal regaining consciousness before it dies of loss of blood. Likewise no further dressing should occur until the bleeding process is completed.

The main purpose of bleeding is to ensure the death of the animal before it recovers from the stun.

The two common methods of bleeding or 'sticking' are the transverse stick and the thoracic stick.

What is a transverse stick?

The transverse stick is when a knife is drawn across the throat. This should be done just behind the angle of the jawbone, severing all blood vessels, the weasand and windpipe (trachea).

It is important that the tissues lower down the neck are not cut after reversible (head only) electrical stunning. This is because, when the cut is made lower down the neck, the arteries could retract into the neck wound and clot. If this happens the process of bleeding is slower. This is a particular problem in calves where blood flow through the vertebral arteries will increase, providing an alternative source of blood to the brain. If this happens calves may recover sensibility.

For this reason, transverse sticks without a follow up thoracic stick are not considered humane in calves. In cattle the transverse is used for religious slaughter and is invariably followed up with a thoracic stick.

What is a thoracic stick?

Before any cut is made, the operator must check for an effective stun. The signs of an effective stun are discussed later in these materials.

Thoracic sticking involves making an incision or cut into the thoracic inlet. This severs the major blood vessels just in front of the heart. The maximum blood flow is achieved by using a sharp knife and, after the initial stab incision, curving the knife downward and across the thoracic inlet. This stops the flow of blood to the brain through the vertebral artery.

This method is used routinely when cattle are irreversibly stunned using a penetrating captive bolt. Irreversible stunning means permanent damage has been caused to the animal's brain or heart so total brain death occurs quickly. Thoracic stick is used routinely in cattle as an adjunct to the transverse stick in order to improve bleed out, as the vertebral artery is also severed and the blood in the anterior vena cava is also released.

What is monitored on the bleed out rail?

The effectiveness of the bleeding process is regularly monitored by checking for signs of sensibility on the bleed out rail. It is important to remember that with reversible stunning it is not the stunning that is being checked on the bleed rail but the effectiveness of the bleeding process.

What are the OH&S requirements for stunning and slaughter?

There are range of OH&S hazards that operators may come across during the stunning and sticking of bobby calves. These hazards include:

- noise
- physical injuries from escaped or partially stunned animals
- sprains and strains through 'overuse syndrome' from repetitive movements such as cutting, pushing, pulling, lifting, twisting and bending
- zoonotic diseases, e.g. Q fever
- slips, trips and falls
- injury by using equipment such as electric or powered stunners

- burns and scalds from sterilising equipment
- knife cuts and accidental stab wounds
- injury from kicking and falling animals or shackles.

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How is the OH&S risk minimised?

As well as the employer having a responsibility to make sure that workers have a safe workplace to work in, employees also have a responsibility for their own and other's safety and wellbeing. Workers must know and follow their workplace OH&S policies and procedures. By following their workplace OH&S policies and procedures, and by actively taking part in accident and injury prevention, workers can reduce the very common injuries in the meat industry, i.e. knife wounds, sprains and strains.

Some examples of workplace OH&S policies and procedures that you should be aware of and apply are:

- accident prevention
- emergency procedures in case of injury
- wearing of personal protective equipment (PPE)
- reporting equipment malfunction
- reporting an electrical fault
- emergency evacuation procedures
- confined spaces policy and procedures.

The relevant workplace procedures will include a range of work practices that relate to the stunning equipment and could include:

- operation of stunners by trained workers only
- handling and storing stunners correctly
- reporting faulty equipment to the appropriate person immediately
- using mechanical aids or correct techniques for pushing, pulling or lifting stunned animals, chains or gates.

Likewise, the animals to be stunned also represent an OH&S hazard and workplace procedures will include such requirements as:

- ensuring animals are effectively stunned the first time
- ensuring animals do not escape before or during the stunning process
- using protective barriers when and if necessary
- handling live animals according to workplace procedures, e.g. not entering the race or knocking box with live animals.

Emergency procedures

If a calf escapes, there may be an alarm system to warn other workers, emergency evacuation procedures and/or safety areas for staff. If you are stunning or sticking animals the safety of other workers may depend on your attentiveness and quick action.