



final report

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Development of Operational Industry Standard and Guidelines for Meat Lumping

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Abstract

The Occupational Health and Safety Regulators across Australia have been focussing on manual handling issues relating to the lumping of meat (carcass), particularly in the store delivery area.

The information provided by the AMPC is that the Regulators are increasingly viewing the lumping of meat as a hazardous manual handling task for workers involved in the unloading of the trucks and carrying (lumping) the carcass meat into the retail outlets.

There are interstate differences in the way that retail butchers order their meat. For example, some retailers in Victoria have a strong preference for carcass meat over boxed meat. Consequently, the meat processors are geared for carcass meat delivery as well as cartoned meat delivery in these regions.

The initial feedback from the meat processors indicated that a change from carcass meat delivery to totally cartoned meat would involve considerable capital expenditure, additional labour as well as increased processing costs at the meat work. It would also reduce the profitability margin for the mainly smaller retail suburban butchers.

Across Australia, there are a range of different systems of work and utilisation of technology available in the meat lumping activities. The development of these Guidelines would enable sharing of the effective solutions and the identification of agreed best practices between the industry stakeholders responsible for meat handling and meat lumping.

These Guidelines on meat lumping would then provide meat industry and the OHS Regulators with a consolidated reference on industry best practices. This will ensure a commonality of purpose, process and outcomes with respect to risk mitigation in relation to meat handling and lumping.

Executive Summary

Subsequent to a briefing on requirements, a literature review was conducted on relevant materials. A number of site visits were also made to allow observation and an analysis of tasks. Also, an analysis of injuries was made based on publicly available Worksafe Victoria data. An ergonomic review was made, and a review of the relevant practises and technologies available.

A preliminary report was submitted to the AMPC to include the key content for the proposed Guideline on meat lumping. An appendix was provided including photographs and measurements that were taken during the site work to highlight the particular work method, or technology. These have been provided separately to maintain confidentiality for the work sites and approval from the respective meat processors would need to be obtained before they could be included within any proposed meat lumping Guideline. These tables which include OHS risk factors, and recommended risk controls, were used as draft recommendations towards the final guidelines.

Subsequent to a review of the proposed guidelines, final recommendations were provided for the Guidelines. These recommendations are initiatives that have actually been observed during the course of this project and/or referred to in the literature relating to manual handling and meat lumping. The supplied table outlines the industry Guidelines for the three “systems of work” at the meat processor where the carcass meat is loaded onto the delivery truck, moved within the truck and then delivered to the retail outlet.

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1 Project Objectives

The objectives of this project are to:

1. Develop an industry best practice guide that summarises the available technologies, systems, practices, and the use of these in relation to manual handling of meat and meat lumping. The best practice guide will also summarise the application of these systems and practices, the specifications and advise for the processor, product handler, transporter, and/or the butcher. The guide would include reference to OHS best practices and relevant reference or literature.
2. Develop a checklist and/or industry guidelines to assess which of the available technologies, processes, or systems detailed in the best practice guide would apply to specific tasks. For example, a decision model or table matrix to reference the best handling practice for each task would be documented.
3. Provided advice and background on implementing changes to work practice through a literature review and analysis of the OHS challenges for the various tasks.
4. Provide advice and background on the design and implementation of the engineered solutions that either mitigate or eliminate the risks.

2 Project Methodology

The following methodology was adopted in this project to develop the content areas for the proposed guideline in relation to meat lumping.

1. Briefing Meeting

An initial meeting was convened in Sydney at the AMPC to discuss the background to this project.

This provided an opportunity to discuss the background to the activities undertaken by the OHS Regulators in assessing meat lumping as a hazardous manual handling task. It also identified a range of initiatives that have already been undertaken within Australia to reduce manual handling risks in relation to this work area.

Meat processing sites across Australia were then identified for inclusion in the task analysis component of this study. These were selected mainly due to the location of the meat works in Victoria and also their long term involvement in supplying meat to retail butchers using whole or part carcasses.

2. Literature Review

A review of literature was undertaken using resources available to the AMPC including previous projects and publications. Contacts were made at an international level to discuss relevant literature in New Zealand, Sweden and the UK.

Literature was also review in industry sectors where similar tasks are involved such as handling large bunches of bananas to determine if there were any opportunities for transfer of technologies or systems of work.

3. Analysis of Manual Handling Injuries

Contact was made with the Victorian WorkSafe Authority to obtain details of manual handling injuries from the meat processing sector between 2009 and November 2012.

This data was then sorted to identify particular categories of workers involved in meat lumping to understand the frequency of manual handling injuries from this task.

During the site visits, some information was obtained from the meat processors in relation to manual handling injuries involving their drivers or contract drivers that provided some perspective on the type of activities that were being undertaken and the nature of the injuries that may have been sustained.

Due to privacy and confidentiality agreements, the exact details of these injuries were unable to be included in the project report. Consequently, only data at a general level and generic descriptions of the manual handling tasks where the injuries have been reported have been included in this report.

4. Ergonomics Review

During the site visits, observations, measurements and photographs were undertaken of the work methods associated with meat lumping. This included the various techniques and forces involved in pushing the carcasses of meat on rails and alternative handlings methods in transferring the meat from the meat processor in and out of the truck and to the retail butcher.

Each of these assessments was conducted in consultation with selected meat processors identified by the AMPC. The identity of these meat processors has been kept confidential in the report to ensure privacy in relation to their specific work methods and technology items that are utilised. The individual meat processors have been identified simply as Site A; Site B; Site C and Site D.

The ergonomics review utilised manual handling risk assessment methodologies that were relevant for push and pull tasks. It also utilised methodologies relating to manual lifting and carrying. It is evident that the nature of handling a carcass of meat is quite different to a two handed lifting task involving a symmetrical shaped box in front of the operator. Consequently, many of the biomechanical ergonomics tools could not be utilised in this quantitative analysis.

5. Summary of Work Methods

This report provides a summary of the different work methods that were observed in the meat lumping tasks. It includes the respective OHS advantages and disadvantages including comparisons between the systems of work.

These included the use of rails suspending the meat carcasses within the meat processing plant, in the truck, and for transferring into the butcher. The comparison also includes mechanical aids such as trolleys that may be utilised in some instances in the meat lumping task.

This report discusses the advantages and disadvantages of some other devices that have previously been used, or could potentially be used for the delivery of products into butcher shops as part of the meat lumping activity.

A particular focus has been made in the study on the utilisation of rail systems for moving meat for the delivery vehicle into the cool rooms of retail stores. This includes butcher shops in strip shopping centres where the back of store or main road access may involve carrying the meat across a gutter or footpath.

The other scenario that was considered included large shopping centre complexes and supermarkets where loading docks are provided. This often involved meat lumping over considerable distances from the parking location of the truck to the cool room of the store.

6. Technologies and Practices.

The alternative methods or potential technologies and practices that were identified during this study for the unloading and transportation of meat and other produces have been described in this report.

For each of the potential alternative methods for technologies, the associated advantages and disadvantages have been provided.

7. Presentation and Debriefing Meeting

A debriefing on the outcomes of this study was conducted at the AMPC to summarise the draft report. This presentation included examples of best practice recommendations in a summary of the available options. These included different technologies and work practices that were identified during the study to minimise the manual handling risks.

8. Final Report

This report has been submitted to the AMPC to include the key content for the proposed Guideline on meat lumping. An Appendix to this report has been provided including photographs and measurements that were taken during the site work to highlight the particular work method, or technology.

These have been provided separately to maintain confidentiality for the work sites and approval from the respective meat processors should be obtained before they could be included within the proposed meat lumping Guideline.

3 Literature Review

Literature associated with safe work methods and manual handling within the meat processing industry has been under development particularly over the last 20 years. Meat lumping is one aspect of the industry sector that has not had extensive research and evaluation during this period. Meat lumping is the process of the delivery driver to retail butcher shops manually carrying lamb or beef carcass meat from their truck into the retail store. Historically, this was the primary method for the delivery of meat to retail butchers from the meat processor. Over the last 20 years, there has been a progressive change to this delivery model. The majority of meat that is now delivered to the largest retail shops such as supermarkets, is now done using boxed meat. This meat is processed into primal cuts or retail ready product at the meat processor and packaged in carton boxes for delivery to the retail shops. For those butchers who receive the cryovac primal cuts, they will then further process them at the shop into their own range of retail products.

Within the small retail butcher sector, there is still demand for purchasing full or part carcasses of lamb or beef. This is more cost effective for the small butcher to purchase and process for their consumer requirements, rather than the pre-packaged primal from the processor.

Manual handling risks associated with meat lumping have been raised by the industry sector and been the subject of enforcement activities by the work health and safety Regulators in those jurisdictions of Australia where this system of work is still in use.

The work methods involved in safe meat lumping were described in the publication “Manual Handling in the Red Meat Industry”, (2006) published by WorkSafe Victoria. This includes a traffic light model showing the potential systems of work to reduce the incidents of musculoskeletal disorders (MSD) to the back, shoulders, neck and arms. The low risk (green) option recommends using integrated rail systems to eliminate lumping between the truck and the customer premises. It also recommends the integration of trolleys incorporating rails that can link between the rail in the truck and the rail in the customer premises. The reduced risk (orange) solutions describes diverters between rails within the truck enabling the carcasses to slid between rails. It also proposes a rail that can be extended from the rear of the truck to facilitate lowering the carcass from the truck to ground level. This assists in eliminating potential trip and fall incidents when carrying the carcass down the rear steps of the truck to ground level.

The practical issues associated with implementing these and other systems of work relate to those work environments under the control of the meat processor and those that are outside their control.

At the load out area in the meat processing facility, there is the opportunity to implement integrated rail to rail systems for loading the carcasses into the truck. This enables the driver to sequence the

loading of their truck to reflect the delivery requirements to their customers so that double handling during the delivery process is minimised.

However, at the point of delivery there are a number of risk factors which are outside the control of the driver or meat processor. Our previous reviews in the meat industry have indicated that some of these risk factors include:

- The driver may need to carry the carcass over uneven surfaces including gutters and up steps to the butcher shop.
- Whilst the rail height within the truck is compatible with the load out dock at the meat processor, there is no standardisation of the rail height in the retail butcher cool room.

- The access to the cool room in the butcher shop involves opening and transporting the meat through doorways, around counters, and narrow corridors.
- Housekeeping within the cool room may result in restricted space to hang the carcass onto their rail. This is often due to boxes, trolleys and other items stored by the butcher in the area where the driver requires clear access.
- The delivery is done in the middle of the night when trip hazards may be more critical due to poor lighting in the area where the meat lumping occurs.
- The road surface may be wet or slippery due to the external weather conditions.

These are practical issues that need to be incorporated into the risk assessment processes when determining safe work practices involving meat lumping.

One of the most comprehensive reports identified in the literature directly relating to meat lumping was developed by the Health and Safety Laboratory (HSL) in the UK funded by the Health and Safety Executive in 2008. This report is known as “An ergonomics assessment of delivery of animal carcasses to retail buther’s premises” (ERG/08/16). This study describes similar risk factors in the UK to those already identified for meat lumping in Australia. It provides some useful recommendations which would be considered as part of potential guidance content in this review. This includes utilising of rails, beams, ramps, and trolleys to reduce the exposure to the identified hazards during the delivery process.

Within Australia, organisations such as Meat & Livestock Australia (MLA) together with the Australian Meat Processing Corporate (AMPC) and MINTRAC have been developing extensive resources in relation to the management of OH & S for meat processing. The CDs that have been provided for “OH & S for meat processing workers” (2001) and the CD “Australian Red Meat OHS Reference Guide” (2008) are examples of industry specific guidance that has been developed. It is noted that the specific hazards associated with meat lumping are not covered in these presentations although the generic risks associated with manual handling are one of the major features.

The approaches taken to reduce manual handling risks from meat lumping primarily involve the trialling and introduction of mechanical aids. The MINTRAC Trainer’s Conference (2008) included a paper by A.J. Bush and Sons Retail Pty Ltd titled “An innovative approach to manual handling”. This described a trial involving a winching device to lift carcasses onto overhead rails from trolleys or tubs. Whilst positive feedback was provided in the presentation, there is no evidence of any sustained trialling or systematic evaluation.

WorkSafe in Western Australia provides guidance on their website (2013) on manual handling in the meat industry. This primarily describes a range of mechanical aids such as an extensive of the rail from the loading dock into the truck for the transfer of the carcasses. They also describe the use of dock levellers or ramps to reduce the chance of tripping and falling when manually handling the carcasses from the truck.

The HSL paper from the UK (2008) also describes a range of mechanical aids that should be considered in transferring the carcasses between the loading dock and the truck, as well as from the truck into the store. These mainly utilise various styles of trolleys to support one or more carcasses during the transfer process.

Other overseas researchers were contacted to determine any projects completed in relation to meat lumping. In New Zealand, Tappin et al (2006) completed a review on literature on “Musculoskeletal disorders in meat processing”. This paper does not specifically discuss the risks associated with meat lumping but provides general guidance in relation to the prevention of manual handling injuries.

Similarly, discussions with the Swedish Meat Research team at the Royal Institute of Technology in Stockholm indicates that they have also not researched meat lumping although they have conducted a range of detailed research studies on musculoskeletal disorders amongst meat processing workers.

Some state governments in Australia have produced general guidance in relation to the meat industry (WorkSafe Victoria, 2008; NSW Department of Primary Industries, 2006). They provide general advice around risk controls including management of the work environment, training, visibility, slip, trip and fall risks, as well as the use of mechanical aids when meat lumping.

The use of trolleys for transporting the carcass between the truck and the butcher shop has not been specifically reviewed in the literature in relation to meat lumping. However, there are other industry sectors such as the delivery of milk which utilises ramps from the trucks and two wheeled trolleys over similar environmental constraints as meat lumping.

The utilisation of simple trolleys was identified in the literature from 1957 through the US Patent Office. The reference titled “Hand trucks for handling bunches of bananas” (2,800,235-1957) highlights that other industry sectors have been evaluating the use of such trolleys for the transportation of large and awkward shaped objects for some decades.

On the basis of the literature review, it can be concluded that there is little in the way of scientific evaluation with associated research papers that have been undertaken within Australia, and also internationally. Whilst the engineering systems implemented at the meat processor end for the loading of carcasses onto trucks to eliminate meat lumping, the majority of the potential manual handling risks as identified at the delivery end, particularly with the small retail butchers.

It is evident that the majority of the carcass meat transported from the meat processor is being delivered to boning rooms or larger facilities that have a rail to rail load in and load out capacity. It is concluded that the primary focus for meat lumping is for those small retail butchers that do not have the capacity for the integrated rail to rail carcass transfer systems.

The primary gap in the research relates to the identification of “reasonably practicable” mechanical aids that enable the driver to safely transport the carcass into the cool room of the butcher shop without compromising food safety requirements and their own OHS risks.

Whilst the research contains some concepts such as trolleys, hoists and booms that extend from the rear of the truck for lowering the carcass, there has not been any literature identified where these have been implemented and evaluated as a sustainable risk control option.

It is recommended from the literature review that the guidelines should identify those risk controls that are deemed to be “reasonably practicable” including simple risk controls that may be utilised in other industry sectors. For example, the evaluation of the use of ramps or tailgate lifters for lowering the driver and carcass from the truck should be further considered as an alternative to the use of steps for carrying the carcass from the truck. Also the greater focus on the use of simple two wheeled trolleys that are used for other delivery items such as multiple milk crates should be further evaluated in the retail butcher work environments.

It is evident that there will be guidelines required for the design of rail systems within the butcher shop including the location of the rails and the compatible heights. This may enable greater opportunity for direct transfer of the carcass if the truck is able to park close to the cool room entrance. Recommendations are also required in the guidelines in relation to access and egress from the cool room area with a simple focus on housekeeping as a fundamental starting point.

The field work conducted with this project will identify the systems of work which are utilised by major companies involved in the delivery of meat carcasses using meat lumping work methods. This will provide further content to the meat lumping guidelines.

Review of Injury Data

During each of the site visits, it is proposed that details of manual handling injuries associated with meat lumping would be discussed. However, due to confidentiality and privacy reasons, it is not expected that this data would be shared with the industry in general and therefore would not be included as part of this report.

Anecdotally, it would appear that there are few injuries that are reported in WorkCover data as a direct result of meat lumping activities.

The information provided to date would indicate that the injuries have been associated with slip, trip and fall, contact injuries, as well as vehicle driving incidents.

With the assistance of the Statistical Unit at WorkSafe Victoria, we have been provided with three years of aggregated injury data from standard WorkCover claims in that jurisdiction. A summary of this data is provided as an Appendix to this report.

It is evident from the data that manual handling injuries constitute around 50% of all WorkCover claims in this sector. These result between 50%-60% of injuries involving musculoskeletal disorders.

In considering the agency of injuries, the descriptions that are utilised for categorising the injuries do not enable identification of drivers/meat lumping activities.

In the occupations where manual handling claims have been reported, the claims involving road transport drivers, is less than 2% of all of the WorkCover claims. This includes all types of injuries associated with this group of employees.

On the basis of the data that we have been able to access, it would appear that whilst manual handling incidents and musculoskeletal disorders is by far the major area of WorkCover claims, there is no data that specifically identifies meat lumping as an area where claims are being lodged.

There are a range of potential explanations for this lack of data in what would appear to qualify as a hazardous manual handling activity based on the definitions contained in the National Regulations. It is possible that there is under reporting amongst this work group, however the initial feedback from the workers is that they have developed techniques and systems of work to minimise the potential for injury associated with balancing these carcass items on their shoulder, and back. When considering the broader nature of their work duties, it would seem appropriate to include risks associated with slip, trip and fall whilst meat lumping as part of the manual handling risk profile.

Whilst manual handling is the largest mechanism of injury for the sector, slip trip and falls account for around 12% of the WorkCover claims. It is proposed that these need to be considered as part of the broader injury data profile when considering the risks associated with these work duties.

It is concluded from the analysis of injury data available to date that there is little evidence that meat lumping is resulting in WorkCover claims any more than the many other manual handling tasks undertaken in the meat processing sector.

The establishment of base line data to determine the potential impact of introducing risk controls is possibly best done using the incident reporting data and claims documented at the individual meat processor locations.

In recognising the confidentiality of this data, it may be difficult to establish baseline statistics other than general findings.

Appendix 1:

WorkSafe Victoria

Standardised Claims reported July 2009 to June 2012 - as at 30 November 2012

C11110 - Meat Processing

Mechanism of injury/disease	2009/2010		2010/2011		2011/2012	
	Claims	%	Claims	%	Claims	%
Falls, Trips and Slips	46	12.8	27	7.3	34	10.9
Hitting Objects	26	7.2	29	7.8	23	7.4
Being Hit by Moving Object	62	17.3	85	22.9	57	18.3
Sound and Pressure	13	3.6	22	5.9	16	5.1
Manual handling	177	49.3	167	45	161	51.6
Other Mechanism	35	9.7	41	11.1	21	6.7
All	359	100	371	100	312	100

WorkSafe Victoria

Standardised Claims reported July 2009 to June 2012 - as at 30 November 2012

C11110 - Meat Processing

Nature of injury/disease	2009/2010		2010/2011		2011/2012	
	Claims	%	Claims	%	Claims	%
Fractures	15	4.2	24	6.5	15	4.8
Musculoskeletal Disorders	214	59.6	176	47.4	169	54.2
Open Wound	57	15.9	65	17.5	54	17.3
Contusion/Crushing	17	4.7	24	6.5	15	4.8
Burns	4	1.1	6	1.6	8	2.6
Deafness	13	3.6	22	5.9	16	5.1
Digestive system (including hernia)	11	3.1	16	4.3	18	5.8
Other injuries/diseases	28	7.8	38	10.2	17	5.4
All	359	100	371	100	312	100

WorkSafe Victoria

Standardised Claims reported July 2009 to June 2012 - as at 30 November 2012

C11110 - Meat Processing

Manual handling claims

Agency of injury	2009/2010		2010/2011		2011/2012	
	Claims	%	Claims	%	Claims	%
11 Cutting/Slicing/Sawing machinery	5	2.8	8	4.8	5	3.1
12 Crushing/Pressing/Rolling machinery	1	0.6	1	0.6	0	0
15 Conveyors and Lifting plant	3	1.7	2	1.2	2	1.2
18 Filling and Bottling/packaging plant	1	0.6	1	0.6	0	0
19 Other plant and equipment	3	1.7	1	0.6	2	1.2
22 Semi-portable plant	0	0	1	0.6	0	0
23 Other mobile plant	0	0	2	1.2	2	1.2
29 Other transport	0	0	0	0	1	0.6
31 Workshop and worksite tools and equipment	1	0.6	1	0.6	0	0
32 Kitchen and domestic equipment	0	0	0	0	1	0.6
33 Office and electronic equipment	1	0.6	0	0	0	0

39 Other powered equipment,tools and appliances	3	1.7	0	0	0	0
41 Handtools,non-powered,edged	12	6.8	7	4.2	8	5
42 Other handtools	1	0.6	2	1.2	1	0.6
43 Fastening,packing and packaging equipment	28	15.8	22	13.2	25	15.5
44 Furniture and fittings	1	0.6	0	0	1	0.6
49 Other non-powered equipment	7	4	3	1.8	11	6.8
62 Other materials and objects	12	6.8	30	18	30	18.6
63 Other substances	6	3.4	13	7.8	11	6.8
71 Outdoor environment	1	0.6	2	1.2	0	0
72 Indoor environment	1	0.6	1	0.6	0	0
81 Live four-legged animal	27	15.3	19	11.4	19	11.8
82 Other live animals	3	1.7	2	1.2	2	1.2
83 Non-living animal	42	23.7	31	18.6	23	14.3
84 Human agencies	2	1.1	3	1.8	1	0.6
99 Other and unspecified agencies	16	9	15	9	16	9.9
All	177	100	167	100	161	100

WorkSafe Victoria

Standardised Claims reported July 2009 to June 2012 - as at 30 November 2012

C11110 - Meat Processing

Manual handling claims

Occupation	2009/2010		2010/2011		2011/2012	
	Claims	%	Claims	%	Claims	%
121 Resource managers	0	0	1	0.6	0	0
122 Engineering, distribution & process managers	0	0	1	0.6	0	0
129 Miscellaneous managers	1	0.6	0	0	0	0
131 Farmers & farm managers	1	0.6	1	0.6	0	0
332 Hospitality & accommodation managers	0	0	0	0	1	0.6
339 Miscellaneous managing supervisors	2	1.1	2	1.2	4	2.5
399 Miscellaneous associate professionals	0	0	2	1.2	1	0.6
411 Mechanical engineering tradespersons	3	1.7	2	1.2	1	0.6
431 Electrical & electronics tradespersons	0	0	0	0	1	0.6
451 Food tradespersons	25	14.1	39	23.4	32	19.9
498 Miscellaneous tradespersons	1	0.6	2	1.2	11	6.8
619 Miscellaneous intermediate clerical workers	0	0	0	0	1	0.6

639 Miscellaneous intermediate service workers	0	0	1	0.6	0	0
711 Mobile plant operators	5	2.8	2	1.2	4	2.5
729 Miscellaneous intermediate machine operators	2	1.1	1	0.6	3	1.9
731 Road & rail transport drivers	0	0	4	2.4	3	1.9
799 Miscellaneous intermediate prod. & trans.workers	2	1.1	2	1.2	3	1.9
911 Cleaners	1	0.6	2	1.2	1	0.6
921 Process workers	104	58.8	66	39.5	48	29.8
922 Product packers	5	2.8	3	1.8	6	3.7
992 Agricultural & horticultural labourers	3	1.7	3	1.8	0	0
993 Elementary food preparation & related workers	0	0	1	0.6	2	1.2
999 Miscellaneous labourers & related workers	22	12.4	32	19.2	39	24.2
All	177	100	167	100	161	100

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5 Ergonomics Analysis

The following table summarises the recommendations that could be included in the industry Guidelines for the three “systems of work” at the meat processor where the carcass meat is loaded onto the delivery truck, moved within the truck and then delivered to the retail outlet. It is noted that these trucks may be operated by the meat processor using employed Meat Lumpers or may be provided by an external contractor who employs their own Meat Lumpers.

These tables which include OHS risk factors, and recommended risk controls, were used as draft recommendations towards the final guidelines.

6 Guideline Contents

3. Carrying of the carcass meat from the truck into the retail outlet.

3.1 Using the steps when egressing the truck.

3.1.1 A design specification should be developed for a secured non-slip ramp that could be stored underneath the delivery truck and slid to road level when required.

3.1.2 Trucks with access steps at the rear should ensure that the design of the steps is consistent with the Australian Standards associated with steps and stairs (AS1657-1992).

3.1.3 Ramps should be designed with consideration given to the force required to pull it out from the truck, the overall weight, angle, width and slip resistance.

3.1.4 The airbags on the truck should be lowered when using the ramp.

3.1.5 Industry wide evaluation of an articulated arm from removing the carcass from the truck to road level should be undertaken. If this arm were to be successfully implemented, then a program to introduce it onto all meat lumping trucks should be implemented.

3.1.6 The “Targa bar” as developed in the UK to lower up to six carcasses from the rear of the truck down to ground level should be evaluated. This would need to be assessed within the context of the rail design within the truck and the potential for the Targa bar to interface with a rail or trolley at ground level. Carcasses are then lumped from the street level rather than from the back of the truck, eliminating the hazards associated with carrying



Targa Bar in use in the UK



A well designed step used in Victoria

the carcasses down the steps or ramps.	
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<p>3.2 Parking location for unloading of the truck.</p> <p>3.2.1 The use of a rail section at the individual retail outlet that interfaces between the truck trail and the cool room rail should be promoted. This has already been seen to be useful in those shops where the truck is able to park in close proximity to the cool room. The section of rail links the truck into the shop and eliminates the need for manual meat lumping.</p> <p>3.2.2 Those facilities with loading docks or rails designed to interface with the delivery truck should have a specification developed to ensure the interface is at the right height for the truck.</p> <p>3.2.3 Meat Lumpers should be provided with shop keys. This gives them the flexibility to schedule delivery times to avoid peak hour traffic and therefore avoid congested roadways.</p>	
<p>3.3 Lumping technique</p> <p>3.3.1 There is a high turnover of meat lumpers in this job. This means that up to half of the meat lumpers are new to the job each year. Therefore it is recommended that all new employees to this work should undergo a mentoring program with a range of different meat lumpers in the team. This will help the new employee refine his own technique as well as provide a graduated work fitness for the job. The most experienced meat lumper in the team could oversee this program. This program would not be dissimilar to other mentor programs that are found in the sheep shearing industry for example, where it is important for the shearer to develop a safe technique for the job.</p>	

3.4 Standardised locations or designs of rails.

3.4.1 A design specification needs to be developed for the rails within the customer premises. In particular, the local government Inspectors involved in food safety should participate in an enforcement program relating to the design and condition of rails within the cool rooms. The specifications should define not only the height of the rail, but also the orientation, load carrying capacity, shape and length of the rail in relation to the walkway and walls.

3.4.2 Guidelines for walkways and access paths should be provided to include specifications on widths, heights and space available for the meat lumper to safely access the retailer's hook.

3.4.3 Delivery trucks could carry connecting rails in the back of the trucks. This could be a modular adjustable design or possibly a steel wire rope that connects to the rail in the retail outlet. Alternatively it could connect to an attachment point above the shop when the truck is parked outside the front or back of the shop. An excellent example of this was identified during one of the night shift delivery trips we attended.

3.4.4 Due to the range of parking positions of the truck to the entrance to the stores, the option of having a side door to the truck should be considered. This may enable the truck to pull alongside a loading dock and move the carcass directly through the side door into the store.



3.4.5 The building permit process administered by local government in the design evaluation of new retail premises should include a more prescriptive requirement on loading dock areas and store delivery processes. These would be the ideal opportunity to interface the loading dock with the




A rail connection from the back of the truck to the retailer.



A rail connection close to the back of a truck

<p>truck and to incorporate load out rails where required.</p> <p>3.4.6 A rail extension could be installed on the central rail of the truck to allow for the rail to rail linkage between the truck and the customers loading dock. These are commonly seen at the processor but not at the retail outlets.</p>	
<p>3.6 Hook designs.</p> <p>3.6.1 Discussion should occur with the industry about the potential for standardising the meat hooks that are used between meat processors and the retail outlet, to eliminate double handling of carcasses when swapping hooks</p>	 <p>Low resistance plastic hooks</p>  <p>Other metal hook designs</p>
<p>3.7 Housekeeping within cool rooms.</p> <p>3.7.1 Some simple guidelines need to be developed for retail outlet on housekeeping within their cool rooms. In particular, they need to:</p> <ul style="list-style-type: none"> • Eliminate the storage of items underneath their rails where they expect the Meat Lumpers to hook the carcass meat. • Clear a pathway where the Meat Lumper is 	

<p>expected to walk</p> <ul style="list-style-type: none">• Ensure all items on counters near access pathways are free from equipment and products.• Ensure access paths are wider than 800mm <p>3.7.2 Ensure retail outlets have current compliance certificates with Primesafe to ensure cleanliness standards are maintained for the meat lumper.</p>	 <p>Clear access to the meat rail</p>
<p>3.8 Trolleys</p> <p>3.8.1 Greater utilisation of trolleys at the customer locations should be evaluated. This would be practical when there is a smooth ground level from the rear of the truck directly into the cool room.</p>	

<p>4.1 Personal Safety</p> <p>4.1.1 The Meat Lumper should lock the cabin when lumping.</p> <p>4.1.2 Further consideration on the working alone procedures should be discussed with the industry to improve safety for the meat lumpers.</p>	
<p>4.2 Weight of the carcasses</p> <p>4.2.1 Produce smaller cuts such as a maximum size of the “Pistola cut”. Therefore eliminate delivery of the “Hindquarter with the Flank”.</p> <p>4.2.2 Some processors have general guidelines for reducing the weights of carcasses to be lumped. For example if the half carcass weight is greater than 160Kg then it must be cut down into three sections; butt, rump and loin and a short cut forequarter. This could be considered as a suitable option for some processors. Concerns raised about this recommendation are that lumpers will carry the two cut down carcasses anyway, given that the main objective of the lumper is to limit the number of trips they have to do during the delivery. They would rather carry more weight than have to do more trips.</p> <p>4.2.3 The Processor should employ a qualified Butcher to cut the carcass correctly.</p>	
<p>4.3 Meat Lumping overtime</p> <p>4.3.1 From a work practice perspective, the staff responsible for loading the trucks should be</p>	

<p>different from staff involved with driving and unloading the trucks on the same shift. This is due to the accumulative physical demand of loading the full truck of meat and then subsequently manually unloading it during the night shift.</p>	
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4.4 Posture adopted when loading carcass.

4.4.2 Training and mentoring could be provided to the new meat lumpers. This training is very specific and should involve video analysis training, so that the lumper is able to view his own posture on a video and discuss this with a more experienced meat lumper.

4.4.3 Some processing plants do not provide Meat Lumping/ Driving jobs to workers until they have been working for the company for 5 or 6 years.

This allows them to build up a physical capacity or work fitness for the job and it also provides the employer with confidence that their employer will be more suitable than anyone “off the street”.