An assessment of the ongoing appropriateness of Mark I and IV restraint boxes

Executive summary

On 30 May 2011, Senator the Hon. Joe Ludwig, Minister for Agriculture, Fisheries and Forestry, asked the Australian Chief Veterinary Officer (ACVO) to coordinate an independent, scientific assessment of the ongoing appropriateness of both the Mark I and Mark IV restraint boxes.

The ACVO conducted this assessment using the World Organisation for Animal Health (OIE) Code as the internationally accepted guidance on animal welfare, in particular Chapter 7.5 of the Code dealing with slaughter of animals. Both Australia and Indonesia have endorsed this chapter for animal welfare. Material provided to the ACVO was compared to the OIE Code and conclusions drawn as to the ongoing appropriateness of the Mark I and IV restraint boxes.

This assessment, based on material provided to the ACVO, concludes that slaughtering of cattle using the **Mark I restraint box** does not comply with several elements of the internationally accepted animal welfare standards for the slaughter of animals: the OIE Code—Chapter 7.5 Slaughter of Animals. The Mark I restraint box is designed to use the escape response of cattle to make them trip and fall and to restrain them by ropes applied to the feet. Both of these objectives are contrary to OIE guidelines. Footage of the Mark I box shows that in many cases the floor of the restraint box was slippery, there was noisy clanging of metal, animals were falling onto sharp concrete edges and that animals were injured and distressed through the sudden movement of tripping and falling from the box onto a concrete plinth. Again, these outcomes were directly contrary to OIE guidelines.

The ACVO assessment found that proper use of the **Mark IV restraint box** is consistent with the requirements of the OIE Code—Chapter 7.5 Slaughter of Animals and on this basis slaughter of cattle using the Mark IV restraint box was found to have ongoing appropriateness.

Even with suitable equipment, poor animal welfare outcomes can result from lack of slaughterman competency in animal slaughtering and inadequate operational procedures. These types of deficiency can be addressed through proper procedures and training.

Introduction

On Monday 30 May 2011 the ABC's *Four Corners* program aired footage of the mistreatment of Australian cattle in Indonesian processing facilities. Senator the Hon. Joe Ludwig, Minister for Agriculture, Fisheries and Forestry, requested that the department immediately investigate the footage and provide options on how the welfare outcomes for the live export trade could be improved.

Minister Ludwig also directed the department to implement a moratorium on the installation of any new Mark I restraint boxes, as seen being used in the footage. This applied to installation of any new Mark I boxes with Commonwealth funds across global markets.

In addition, Minister Ludwig asked the Australian Chief Veterinary Officer to coordinate an independent, scientific assessment of the ongoing appropriateness of both the Mark I and Mark IV restraint boxes.

This document represents the independent, scientific assessment of the ongoing appropriateness of both the Mark I and Mark IV restraint boxes coordinated by the Australian Chief Veterinary Officer. This assessment was conducted as a desktop exercise, as access to facilities in Indonesia was not available to the Australian veterinary group sent to Indonesia by the Australian Chief Veterinary Officer on 11 June 2011.

M e t h o d o l o g y

As no on-site observations were possible, an assessment of the ongoing appropriateness was carried out by viewing available footage, including of slaughtering operations, and still images of the Mark I and Mark IV restraint boxes used for the slaughter of cattle in Indonesia. Images were sourced from Animals Australia, the RSPCA, the ABC and the industry body Meat & Livestock Australia. Also considered were photos, design specifications and industry-funded research reports on the use of the Mark I and Mark IV restraint boxes.

These materials were compared to the internationally accepted animal welfare guidance for the slaughter of animals of the OIE Terrestrial Animal Health Code—Chapter 7.5 Slaughter of Animals (the OIE Code).

The Mark I box considered in this report is as designed and operated in Indonesia before any modifications were made. It should be noted that a number of ‘copy boxes’ and modified Mark I boxes are used in Indonesia.

B a c k g r o u n d

Since 1998, the Australian livestock export industry has funded development of cattle restraint boxes, mainly for use in South-East Asia for halal slaughter of cattle. These designs relied on the use of springs and levers, as opposed to pneumatics, hydraulics or electricity (Whittington & Hewitt 2009). The stated rationale was to improve on traditional methods of restraint by developing cost-effective units that were easily installed, compatible with existing skills and processes, serviceable and not reliant on electricity supply.

According to Whittington & Hewitt (2009) traditional methods of restraint used for local cattle in South-East Asia involve manual handling and casting procedures. Earlier industry research identified the traditional casting and restraint processes as key welfare issues. In addition, these methods were not always effective for imported Australian cattle, unfamiliar with human contact. As Australian animals are larger and less tractable than local breeds the risk of injury to workers using the traditional methods was relatively higher. Workers responded to this with a range of methods, some of which included inhumane or unacceptable methods of restraint in an attempt to cast the animal while avoiding injury to the stockman.

The live export industry identified slaughter methods in Indonesia as an area that required investment and improvement (Whittington & Hewitt 2009). Over the years of Australian investment in this field a number of developments have attempted to improve animal welfare during the

handling, restraint and slaughter processes. For those interested, Whittington & Hewitt (2009) provide a chronology of the development of restraint boxes in Indonesia.

World Organisation for Animal Health (OIE)

The World Organisation for Animal Health was created in 1924 as the Office Internationale des Épizooties and still keeps its French acronym OIE. The OIE is an inter-governmental organisation with 178 Members, including Australia and Indonesia.

The OIE has a network of more than 230 reference laboratories, collaborating centres and regional and sub-regional representations, and manages the world animal health surveillance and early warning system, playing a key role in veterinary research and scientific information.

Since its creation, the OIE has been the sole international reference organisation for animal health, enjoying established international recognition and benefiting from direct collaboration with the veterinary services of all Members. OIE animal health standards are accepted by the World Trade Organisation as standards for implementing non-tariff barriers in international trade, based on human and animal health grounds.

As a mark of the close relationship between animal health and animal welfare, the OIE has more recently become, at the request of its Members, the leading international organisation advising on animal welfare. It prepares and issues non-binding outcomes-focused international standards within the scope of its mandate for animal welfare.

Since May 2005, the World Assembly of OIE Delegates (currently representing the 178 Members) has endorsed seven animal welfare chapters in the OIE Code and two animal welfare chapters in the OIE Aquatic Animal Health Standards Code. The chapter for animal welfare at slaughter contains the standards as well as associated guidance on how they can be met. It was adopted unanimously by the 167 delegates at the OIE General Assembly in Paris in May 2005.

The Mark I restraint box

Whittington & Hewitt (2009) provide a summary of the casting and restraint process using the Mark I restraint box:

- The Mark I restraint box is designed to enable casting of the animal, brought about by its exit through the side door, once the catch has been manually released by the stockman. Ropes are attached to two legs prior to door release.

- The length of the front rope arrests forward movement of the leg and the momentum of the animal initiates a roll out towards the slope of the plinth. The animal is restrained by a combination of its own weight on the sloping plinth and the tension on the casting rope.

- Following casting, a rope is placed around the head, neck and horns, or the head is manually restrained by the stockman. Downward pressure by the stockman prevents any attempt by the animal to regain posture.

The training material prepared by the University of Bristol (AWTraining) is more explicit on the means of casting: 'The escape response after the doors are opened will cause the animal to trip and fall.'

Above: Mark I restraint boxes showing lower plinth height (left figure) and a box with raised plinth (right figure)

Observations of the Mark I restraint box

The appropriateness of the Mark I box for restraining cattle for non-stun slaughter was assessed against the requirements of Chapter 7.5 of the OIE Code, covering the slaughter of animals. The key clause is Article 7.5.2.4, Provisions relevant to restraining and containing animals.

7.5.2.4 a) Provisions relevant to restraining animals for stunning or slaughter without stunning, to help maintain animal welfare, include:

1. provision of a non-slippery floor

Comment: A restraint box floor needs to provide good foot grip. Performance indicators for non-slip flooring of restraint in Australian abattoirs are applied at the level of less than three slippages per 100 animals and less than one fall per 100 animals. The available evidence indicates that many of the floors and ramps were slippery as a number of animals shown in the *Four Corners* footage were slipping. This may have been because of soiling with faeces and urine and the water used to wash down the plinth. Based on the available footage, the operation of Mark I boxes failed to meet this requirement of the OIE Code.

2. avoidance of excessive pressure applied by restraining equipment that causes struggling or vocalisation in animals

Comment: A number of animals were observed to struggle and/or vocalise during the restraint process (attachment of ropes to two legs while standing in the restraint box). Relevant performance indicators applied in Australian abattoirs are that less than three animals per 100 should be vocalising during restraint, indicative of stress and inappropriate restraint. There is insufficient footage to assess this point but it was noted that many of the cattle in the footage shown were vocalising. It is likely that this was associated with distress due to excessive pressure being applied during the restraining process on top of pre-existing levels of stress related to prior handling. As the Mark I box form of restraint causes struggling and vocalisation in animals it fails to meet this requirement of the OIE Code.

3. equipment engineered to reduce noise of air hissing and clanging metal

Comment: The attachment of the casting ropes to the hind legs can initiate a severe kicking response, resulting in loud banging. This leads to increased stress levels not only in the restrained

animals but also those waiting for slaughter. Based on the available footage the Mark I boxes failed to meet this requirement of the OIE Code in a number of instances.

4. absence of sharp edges in restraining equipment that would harm animals
Comment: While the interior of the box does not appear to have any sharp edges, the plinth onto which cattle are dropped for restraint has a blood gutter with hard uneven concrete edges. Unless immediately restrained, animals will automatically lift their heads in an attempt to right their bodies (this is a reflex response to being suddenly dropped, particularly where animals are aroused) but because their legs are unable to be retracted (the ropes prevent it) their heads then slam back onto the concrete ramp. This will harm the animals and if repeated is 'struggling' against the restraint employed, evidence of undue stress. It was noted in an assessment report to Meat & Livestock Australia from Stark (2010) that there was evidence of broken jaws from the force of head slamming on the plinth. The sharp edges of the integrated plinth onto which cattle are cast by the Mark I restraint box has been demonstrated to cause injury to animals, the Mark I box fails to meet the requirements of the OIE Code in this regard.

5. *avoidance of jerking or sudden movement of restraining device*
Comment: The effect of restraining animals by their feet and then casting them onto a sloping concrete plinth means this method will inherently result in distress and, in some cases, physical injury. As described above, there is no way to avoid this as it involves a reflex response. Based on the available footage, the Mark I boxes failed to meet this requirement of the OIE Code as it requires sudden movement of the restraining device to trigger the escape response, followed by tripping and falling of animals.

7.5.2.4 b) Methods of restraint causing avoidable suffering should not be used in conscious animals because they cause severe pain and stress:

1. suspending or hoisting animals (other than poultry) by the feet or legs
Comment: The angle of the slope onto which the cattle fall means their weight is held in part by the restraining leg ropes. While this is not 'suspending or hoisting' it is poor practice as it contributes to self-harm and distress (see point 3 below)

2. indiscriminate and inappropriate use of stunning equipment
Comment: Not observed in the footage.

3. mechanical clamping of the legs or feet of the animals (other than shackles used in poultry and ostriches) as the sole method of restraint
Comment: In the footage provided, the animals are actually restrained by two feet and forced to lose their balance down a slope. They are prevented from righting themselves because their weight is hanging from the two roped feet. This also contributes to the animals damaging themselves in their attempts to sit up, as previously described. In our opinion, and as discussed in the comment against Article 7.5.2.4 a) points 4 and 5 above, this practice causes avoidable suffering and is therefore in breach of this clause.

4. breaking legs, cutting leg tendons or blinding animals in order to immobilise them
Comment: There was some footage showing an animal that had slipped the leg restraints being further restrained by having its tendons cut. While not a fault of the restraint box, this behaviour is unacceptable. Under Article 7.5.10 methods, procedures or practices of immobilisation by injury such as breaking legs, cutting leg tendon, and severing the spinal cord are not acceptable in any species.

5. severing the spinal cord, for example using a puntilla or dagger, to immobilise animals using electric currents to immobilise animals, except for proper stunning.
Comment: not observed in the footage.

While clause 7.5.2.4 is relevant to any assessment of the Mark I restraint box, it is also necessary to pay attention to other parts of this chapter for a broader assessment of the appropriateness of the Mark I box. Article 7.5.1 states that 'animals ... should be managed to ensure that their ... restraint and slaughter is carried out without causing undue stress to the animals'; Article 7.5.2.1.f.7 states that 'Conscious animals should not be thrown, dragged or dropped'; and Article 7.5.2.1. e) specifies that 'animals should be handled in such a way as to avoid harm, distress or injury'.

As the Mark I restraint box works by restraining cattle by the feet and then tripping them so they fall onto a concrete plinth, by its very design it fails to meet the above three criteria. The purpose of the box is to cast animals from a standing to a prostrate position. In doing soit has been reported (Stark 2010) that animals broke jaws from the initial or repeat impacts between their head and the concrete plinth. Further, the means of restraint (by ropes applied to the feet) causes obvious stress, evidenced by the kicking response when the ropes are applied and attempts to right themselves when cast onto the concrete plinth.

Article 7.5.2.1.g) of the OIE Code advises that performance standards should be developed to assess operational outcomes from use of facilities and equipment used in association with slaughter of animals. The ACVO is unaware if such standards were developed as part of the training for operation of these boxes.

Summary of Mark I restraint box observations

As Wittington & Hewitt observed in their 2009 review of the Mark I restraint box:

> The OIE concluded that the process of slaughter without stunning should not be exempt from the guidelines and consequently methods of restraint have to comply with several basic requirements, as detailed below:
>
> - Provision of a non-slip floor.
> - Ensuring that the restraining equipment does not exert excessive pressure, thus causing the animal to struggle or vocalise.
> - Engineering equipment to reduce the noise of hissing air and clanging metal.
> - Ensuring equipment has no sharp edges that would harm animals.
> - Using restraining devices appropriately and not jerking them or making sudden movements.
>
> The installation of a restraining box will only achieve all the desired outcomes of the OIE code if it is operated by a knowledgeable and skilful stockman and maintained to ensure that acceptable standards of animal welfare are consistently achieved.

It is worth noting that the initial design of the Mark I restraint box predated OIE provision of international guidance for the welfare of animals during slaughter. In their review Wittington & Hewitt (2009) concluded,

> the use of restraining boxes in the Middle East and South-East Asia has the following benefits:
>
> - Improved animal handling pre-slaughter and during the slaughter process as it removes the need to incapacitate cattle in an attempt to restrain them effectively.

- Increased processing efficiency and improved safety.
- Demonstrated commitment to improving animal welfare standards in the export chain.

However, the Mark I restraint box does not comply with the OIE's internationally accepted animal welfare guidance on the following points:

- in a number of cases the floor was slippery
- excessive pressure was applied by the restraining equipment (ropes)
- noise of clanging metal arising from rope restraint of feet
- sharp edges of concrete ramp and blood gutter injure fallen animal initially and when it attempts to right itself
- animals injured and distressed through sudden movement (tripped and falling)
- mechanical clamping of feet as a sole means of restraint.

While this assessment was limited to the ongoing effectiveness of the Mark I restraint box as a piece of equipment, a number of observations were made on the actions and behaviours of the slaughtermen observed to be using the equipment. As these workforce elements are pertinent to the overall delivery of acceptable animal welfare outcomes, our observations are presented in Attachment 1 to this report.

Based on the desktop review of available materials on the design and operation of the Mark I restraint box, the ACVO found that use of this box for restraining and casting cattle for non-stun slaughter does not comply with elements of the OIE Code—Chapter 7.5 Slaughter of Animals. It has also been found from the footage provided that the poor animal welfare outcomes associated with use of the box were further exacerbated by lack of competency in animal handling and deficient infrastructure, operational procedures, equipment and training. Modification of Mark I restraint boxes to incorporate stunning prior to slaughter may address many of the animal welfare concerns identified, but positive animal welfare outcomes require both an engineering and a workforce solution.

Development and operation of the Mark IV restraint box

Whittington & Hewitt (2009) describe the rationale behind Meat & Livestock Australia's development of restraint boxes for implementation in markets in the Middle East and South-East Asia. While traditional methods of restraint for slaughter in these areas have been effective for local cattle, they

> have not always been effective for imported Australian cattle unfamiliar with human contact and handling procedures. Consequently there has been a tendency to use inhumane unacceptable methods of restraint in an attempt to cast the animal while avoiding injury to the stockman.

As described above, the Mark I restraint box operation involves animals falling freely onto an apron beside the box, restrained by ropes around their legs. Mark II and later designs 'were developed to control the casting process to a greater degree'.

Meat & Livestock Australia developed a Mark III concept to further refine the process. However, Stark (2010) reported that the contract to develop and install a prototype Mark III box was amended

(following a visit to Indonesia) to encompass design and construction of both a manual and an automatic Mark IV box because of concerns over the Mark III design. Specific features of the Mark IV design in operation are:

- The crush is designed to fit animals up to 450 kg live weight.
- Cattle enter the crush and stand on a raiseable steel floor.
- The manual version of the crush then restrains the animal using a load binder strap system to lock it against a pivoting wall that is sloped slightly inwards (the left side wall of the crush as seen in the footage viewed). The hydraulically controlled version uses a purpose-built steel panel section that moves across from the opposite side to support the animal's belly and lock the animal in place against the pivoting wall.
- The floor then lifts by 250 mm using hydraulic power (powered by hand in the manual version of the Mark IV box) to raise the centre of gravity of the animal, and the wall then pivots under hydraulic control to ensure smooth travel, bringing the animal to a horizontal position at approximately waist level of the slaughterman.
- Once horizontal the head is restrained and slaughter can proceed.

Figure 1 – Completed manual Mark IV restraint box

Figure 2 – Testing hydraulic Mark IV restraint box

Observations of the Mark IV restraint box

The appropriateness of the Mark IV box for restraining cattle for non-stun slaughter was assessed during operation against the requirements of Chapter 7.5 of the OIE Code, covering the slaughter of animals.

The assessment below considers the compliance of the box against the specific requirements of the OIE Code. In addition, Article 7.5.2.1.g) advises that performance standards should be developed to assess operational outcomes from using facilities and equipment in association with slaughter of animals. The ACVO is unaware whether such standards were developed as part of the training for operation of these boxes.

7.5.2.4 a) Provisions relevant to restraining animals for stunning or slaughter without stunning, to help maintain animal welfare, include:

1. provision of a non-slippery floor

Comment: A restraint box floor needs to provide good foot grip. Performance indicators for non-slip flooring of restraint in Australian abattoirs are applied at the level of less than three slippages per 100 animals and less than one fall per 100 animals. There is insufficient footage to make an assessment on the specific rate of slipping; however, all animals observed were moving calmly, none showed behaviour consistent with unusual stress and none of the footage showed animals slipping. In addition, the general handling of the animals in the boxes was calm and without haste. Based on the available footage, the operation of Mark IV boxes meets this requirement of the OIE Code.

2. avoidance of excessive pressure applied by restraining equipment that causes struggling or vocalisation in animals

Comment: None of the animals observed struggled and/or vocalised during the restraint and tilting process. The right side of the box has a portion that moves across under hydraulic control to support the animal's belly and hold the body firmly against the left inner side of the box. The entire left-hand side of the box is hinged at waist height and swings out gently under hydraulic control, with the animal held against it once the body is restrained. The body of the animal is then lying flat, parallel to the ground, with its legs slightly raised. This movement is controlled hydraulically by the operator, raising the extended legs to about the same height as the middle of the animal's body.

Relevant performance indicators applied in Australian abattoirs are that less than three animals per 100 should be vocalising during restraint, indicative of stress and inappropriate restraint. There is insufficient footage to assess this point. It would appear that at least some of the animals involved may not have been Australian-sourced, and that there is a general perception that local cattle are smaller framed and far more tractable when handled than Australian-sourced animals. In this context it is worth noting that some of the larger-framed animals seen in the footage provided by the industry showed signs of arousal when the box tilted past the horizontal, but did not show distress and did not vocalise. In addition, the presence of workers near their heads to apply head restraint was not a cause of further arousal. Based on the available footage, the operation of Mark IV boxes meets this requirement of the OIE Code.

3. equipment engineered to reduce noise of air hissing and clanging metal

Comment: The legs of animals are not restrained while they are standing in the Mark IV box so there is no stimulus to initiate a kick response and bang loudly against the metal box. While there was some noise associated with the hydraulic operation of the Mark IV box in the footage seen, it did not appear to cause undue stress to the restrained animals.

However, it is noted that some of the animals involved may not have been Australian-sourced, and that the general perception is that local cattle are smaller framed and far more tractable when handled than Australian-sourced animals. Accordingly, while the operation of the Mark IV box as observed meets this aspect of the OIE requirements it would need to be viewed during normal processing of Australian-sourced animals to definitively answer this point.

4. absence of sharp edges in restraining equipment that would harm animals

Comment: The interior of the box, as shown on the footage, does not appear to have any sharp edges that would harm animals. In some cases animals had head restraints applied through use of the halter and ropes once the animal was cast to prevent self-harm and this was not resented by the animals involved. In other cases the head was restrained by two workers and this was not associated

with signs of distress by the animal. Based on the available footage, the operation of Mark IV boxes meets this requirement of the OIE Code.

5. avoidance of jerking or sudden movement of restraining device
Comment: As noted, animals were calm and calmly handled throughout. None of the animals observed struggled and/or vocalised when entering the box or during the restraint and tilting process, despite a slight jerk at the end of the tilting to horizontal. Based on available footage, the operation of Mark IV boxes meets this requirement of the OIE Code.

7.5.2.4 b) Methods of restraint causing avoidable suffering should not be used in conscious animals because they cause severe pain and stress:

1. suspending or hoisting animals (other than poultry) by the feet or legs
Comment: The way in which the animals' weight is supported throughout the operation of the box while the side tilts prevents a sudden shift of weight. The animals' weight ends up supported by the entire left-hand side of the animal, with no excessive pressure on the legs or feet. The Mark IV box does not breach OIE requirements in this respect.

2. indiscriminate and inappropriate use of stunning equipment
Comment: Not observed in the footage.

3. mechanical clamping of the legs or feet of the animals (other than shackles used in poultry and ostriches) as the sole method of restraint
Comment: In the footage provided, the animals are not restrained by the feet or legs. Use of the Mark IV box does not breach OIE requirements in this regard.

4. breaking legs, cutting leg tendons or blinding animals in order to immobilise them
Comment: No such activity was shown in association with the Mark IV box. Operational practices observed at these abattoirs in this footage did not breach the requirements, under Article 7.5.10 of the OIE Code.

5. severing the spinal cord, for example using a puntilla or dagger, to immobilise animals using electric currents to immobilise animals, except for proper stunning
Comment: Not observed in the footage.

Summary of Mark IV restraint box observations

The Mark IV restraint box generally complies with the OIE's internationally accepted animal welfare guidance in that there were no significant findings against the OIE Code sections 7.5.2.4.a) and b).

As with the assessment of the Mark I restraint box, observations on the mechanical aspects of the Mark IV restraint box needs to be balanced with observations on the workforce aspects—these observations have been presented in Attachment 2.

C o n c l u s i o n s

Based on the desktop review of available materials on the design and operation of the **Mark I restraint box,** the ACVO found that use of this box for restraining and casting cattle for non-stun slaughter does not comply with elements of the OIE Code—Chapter 7.5 Slaughter of Animals.

Based on the review of the available footage of cattle being processed through the **Mark IV restraint box,** the ACVO found that proper use of this box for restraining and casting cattle for non-stun slaughter complies generally with elements of the OIE Code—Chapter 7.5 Slaughter of Animals. It has also been noted, from the footage provided, that poor animal welfare outcomes are still possible where ineffective cutting of the blood vessels in the neck occurs because of lack of sound operational procedures and training.

Mark Schipp
A/g Australian Chief Veterinary Officer
August 2011

References

Adams, D. & Sheridan, A. 2008. *Specifying the risks to animal welfare associated with livestock slaughter without induced insensibility*. Report prepared for the Animal Welfare Working Group of the Animal Welfare Committee, Primary Industries Standing Committee of Australia. http://www.daff.gov.au/__data/assets/pdf_file/0019/1370332/animal-welfare-livestock-slaughter.pdf (accessed 1 June 2011)

AWTraining, University of Bristol, MK1 Restraining Box – guidance notes for tutors.

AWTraining, University of Bristol, MLA/Livecorp/APFINDO Restraining box: a program of training.

OIE 2010, 'Slaughter of animals', Chapter 7.5 in *OIE Terrestrial Animal Health Code*, OIE (World Organisation for Animal Health), Paris, France, available at www.oie.int/international−standardsetting/terrestrial−code/access−online/ (accessed 1 June 2011).

Stark, G 2010, *Review of Mark III and development of Mark IV cattle restraining box*, project code: W.LIV.0374, Meat & Livestock Australia Ltd, North Sydney.

Whittington, P & Hewitt, L 2009, *Review of the Mark I, II and III cattle restraining boxes*, project code: W.LIV.0371, Meat & Livestock Australia Ltd, North Sydney.

Further reading

Anon 2007, *Libya animal welfare improvements project – Stage 1*, September, Meat & Livestock Australia Ltd, North Sydney.

Caple, I, McGown, P, Gregory, N & Cusack, P 2010, *Final Report: Independent study into animal welfare conditions for cattle in Indonesia from point of arrival from Australia to slaughter*, May.

Jones, B 2011, *The slaughter of Australian cattle in Indonesia: an observational study*, RSPCA Australia.

MLA & Livecorp (undated) *Installation of restraining boxes to improve animal welfare in Malaysia*, Meat & Livestock Australia and Livecorp, North Sydney.

Attachment 1

Additional observations on the Mark I restraint box

In addition to concerns with the mechanical aspects of the Mark I restraint box, other key welfare concerns were noted arising from the workforce using the Mark I restraint box. The first of these is the severity with which the animals fall onto their side on the concrete plinth. Repeated attempts to regain posture caused a number of animals to impact heads and bodies against the hard surface. This is noncompliant with operational guidelines that were developed for use of the box (which provided for a gradual movement of the animal into a recumbent position and quick securing of the animal's head), as well as with the requirements of OIE articles 7.5.2.1. e) and 7.5.2.4. b).

A second significant observation is that the accuracy and effectiveness of sticking was poor. Good head positioning and restraint is essential for safe and effective throat cutting of conscious cattle. The current design of the restraint Mark I box makes no provision for head restraint.

Third, there was footage of the treatment of a beast with a broken leg that showed behaviour by the abattoir workers that is in direct contravention of Article 7.5.2.1. b) of the OIE Code: 'injured or sick animals, requiring immediate slaughter, should be killed humanely and without delay, in accordance with the recommendations of the OIE'.

A fourth observation was an instance of an animal brought up to the restraint box being forced to walk over another that had gone down in the race. This is in direct contravention of Article 7.5.2.1 d) of the OIE Code: 'animals for slaughter should not be forced to walk over the top of other animals'.

A final observation is that some footage showed a number of cattle lined up in an open-sided race that could see their cohorts being serially slaughtered until the final animal was shown to be trembling in obvious distress; this is unacceptable practice. Sensitivity of cattle to such sights and noises should be taken into account when handling animals.

In conclusion, it has been found from the footage provided that poor animal welfare outcomes associated with use of the box were further exacerbated by lack of competency in animal handling and deficient infrastructure, operational procedures, equipment and training. An example of this was the continual throwing of water on animals about to be and recently slaughtered which caused stimulation and further compromised animal welfare.

Whittington & Hewitt (2009) noted that predisposing animals to high levels of stress prior to restraint, through poor handling and facilities will have an effect on the ability to use the restraint box effectively. The same box design used in different abattoirs would show variety in the success of operation due to the personnel involved. There would also be variation in the restraint process due to the individuals carrying out the procedure.

Attachment 2

Additional observations on the Mark IV restraint box

A significant observation is that the accuracy and effectiveness of sticking, despite the use of head restraint in association with the Mark IV box, was poor in some animals. The OIE Code states that 'All animals should be bled out by incising both carotid arteries or the vessels from which they arise' (Article 7.5.7.5.). From the footage seen it is likely that in some cases only the jugular veins plus one carotid artery were severed.

In addition, animals were shown constantly being sprayed with water and not left to quietly bleed out with no further disturbance. This is poor hygienic and welfare practice and in general terms is inconsistent with the overarching requirement in Article 7.5.2.1. e): 'Animals should be handled in such a way as to avoid harm, distress or injury'. Spraying water on the animal while it is restrained and losing blood may induce it to flinch or react in ways that would lead to it pulling against the head restraint, refreshing the pain sensations from the site of the neck cut.

The same footage showed dressing commencing (laying back the dewlap at the base of the neck) and then a reaction from the animal indicative of consciousness and not associated directly with further flaying of the hide—which would be expected if it were reflexive or a response to direct nerve stimulation. Unfortunately the footage is not continuous so it is not possible to assess if staff checked for signs indicative of brain death before commencing that operation, which is essential practice. The OIE Code advises that 'no further procedure should be carried out until bleeding out is complete, (i.e. at least 30 seconds for mammals)' (Article 7.5.9.) and 'no dressing procedures should be performed on the animals for at least 30 seconds, or in any case until all brain-stem reflexes have ceased' (Article 7.5.7.5.).

A number of the animals seen in the footage of the Mark IV boxes in operation were probably used to very close handling. Whether larger, stronger, more flighty Australian-sourced cattle would be handled repeatedly in the same way during slaughtering operations is unknown, but if handled well prior to slaughter they would be minimally aroused by the time they entered the restraint box. Whittington & Hewitt (2009) noted that predisposing animals to high levels of stress prior to restraint, through poor handling and facilities, would have an effect on the ability to use the restraint box effectively. The same design of box in different abattoirs would vary in the success of operation. The amount of variation in the restraint process when Australian-sourced animals are being processed cannot be predicted with confidence.

This is consistent with a previous study of hazards associated with the slaughter of animals (Adams & Sheridan 2007). The authors of that paper commented that

> Sheep, cattle and goats in Australia's pastoral industries have the welfare advantage of being able to express natural behavioural tendencies. The result is that they are not habituated to close contact with people and husbandry practices have been adapted to meet their welfare needs in this regard. ... the risk of excessive arousal during handling of such animals must be managed with particular skills and appropriate equipment.