



# final report

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## Extension Package on Yard, Lairage and Restrainer Design

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## **Abstract**

The task of moving stock through yards in processing works in a timely fashion to meet production requirements is often made more difficult by poor yard design. Yards are often planned, constructed and modified with little understanding of the basic principles of yard design and a poor understanding of the impact of yard design on livestock behaviour.

The aim of this project has been to document good practice yard design principles and present them in training support materials. The objective of the training and workshops will be to provide processing plant personnel with the skills and knowledge necessary to successfully design, modify and maintain yards and restrainers.

A program of professional development workshops has been scheduled in conjunction with the AMPC MI&QA Managers' Network to roll out the training materials. In addition existing training Units and support materials have been reviewed and where necessary updated to reflect the new materials.

## Executive summary

The task of moving stock through yards in processing works in a timely fashion to meet production requirements is often made more difficult by poor yard design. Yards are often planned, constructed and modified with little understanding of the basic principles of yard design and a poor understanding of the impact of yard design on livestock behaviour.

The difficulties that poor yard and restrainer design can cause include:

- staff frustration resulting in poor stock handling
- injuries to livestock
- decreased yield due to bruising
- inability of handlers to meet production requirements for livestock flow
- poor animal welfare outcomes
- issues with regulators and third party auditors.

There has been considerable research into appropriate design parameters for cattle yards, lairage and restrainers. However, as new research continues to develop, there is a need to extend this information for practical use by processing engineers. This project has sought to quantify the existing research and design parameters and incorporate this information into a training/extension package.

The training extension package developed will underpin;

- the existing standards delivered by industry (AMIC/AMPC animal welfare standards)
- the Animal Welfare Officer Skill Set currently delivered across Australia
- Stand-alone training programs/workshops delivered on yard and restrainer design.

The training materials developed will have their ongoing currency assured through MINTRAC's Quality Assurance processes. All MINTRAC products, including Training and Assessment materials are reviewed on an annual basis and updates made where necessary.

The benefits to industry will flow firstly from having a resource that documents good yard and restrainer design principles that will serve as a reference for QA managers, plant engineering staff and lairage managers.

The industry will also benefit from the professional development workshops run nationwide through the QA managers' network. These workshops will give industry personnel, regulators and trainers access not only to the reference materials but also the technical expertise provided by a full time yard design expert.

This means that participating industry personnel such as QA managers, plant engineering staff and lairage managers will have greater skills and knowledge when appraising new yard designs or designing modifications to address problems in existing yards. The participation of trainers will ensure that the importance of good yard design is part of the ongoing training programs for QA personnel, meat safety officers and lairage staff.

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# 1 Background

## 1.1 Drivers for the project

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The task of moving stock through yards in processing works in a timely fashion to meet production requirements is often made more difficult by poor yard design. Yards are often planned, constructed and modified with little understanding of the basic principles of yard design and a poor understanding of the impact of yard design on livestock behaviour.

The difficulties that poor yard and restrainer design can cause include:

- staff frustration resulting in poor stock handling
- injuries to livestock
- decreased yield due to bruising
- inability of handlers to meet production requirements for livestock flow
- poor animal welfare outcomes
- WHS issues
- issues with regulators and third party auditors.

For these reasons it is vital that industry personnel have the skills and knowledge necessary when appraising new yard designs or designing modifications to address problems in existing yards and restrainers. Good yard and restrainer design plays an important role in ensuring good animal welfare outcomes are achieved and livestock handlers can operate safely in what can be a hazardous environment.

If yards and restrainers are well designed:

- workers can operate more safely than in badly designed yards
- good livestock handling is facilitated
- better animal welfare outcomes can be achieved.

# 2 Project objectives

## 2.1 Objectives

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This project sought to:

- develop training materials on stock handling facility design to facilitate both existing training (programs such as the AWOSS) and standalone workshops
- provide lairage managers, processing plant managers and engineers with the skills and knowledge to ensure yard, lairage and restrainer design, modification and maintenance practices are reflective of current research outcomes and best practice
- ensure that existing industry training incorporates best practice in yard design
- disseminate the outcomes of this project via:
  - AMPC fact sheets
  - network meetings/workshops
  - conference presentations
  - industry workshops.

# 3 Methodology

MINTRAC undertook a literature search to inform the initial development of written training/support materials and the review of existing training materials. The training support materials were then circulated for comment and a consultant employed to undertake a detailed technical review.

The training support materials will now be used in seven professional development workshops around Australia which will be held in conjunction with the AMPC MI&QA Managers' Network meeting. The materials will also be promoted for use by industry and RTOs through the Meat Industry Training Network meetings and at both the annual National Training and MI&QA conferences.

## **4 Results and discussion**

### **4.1 Results**

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The meat industry now has support materials to conduct both professional development workshops and accredited training in yard design. There is now a program of seven workshops nationally to promote:

- an understanding of the importance of yard design
- a basic understanding of the principles of good yard design among QA managers and regulators.

Good handling facilities are one of the fundamentals to achieving good animal welfare outcomes and efficiency in stock handling in lairage. Likewise good restrainers facilitate the smooth transition of livestock from lairage to the slaughter floor. Unless managers in plants understand the importance of good design then yards will in many cases continue to be a source of frustration to workers, a potential source of animal welfare issues, and an impediment to the smooth and efficient operation of the processing plant.

The networks offer an ideal forum to promote good yard/restrainer design and maintenance as well advancing industry's understanding of the role yards and restrainers play in achieving good animal welfare outcomes.

## **5 Success in achieving objectives**

The project has enabled the development of resource materials on yard and restrainers which will improve the delivery of accredited training resources and the provision of workshops for industry and RTO personnel.

## **6 Impact on meat and livestock industry – Now and in five years' time**

### **6.1 Immediate impact**

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In the immediate future the industry will be able to use the materials and resources developed to raise awareness of the principles and importance of good yard and restrainer design via accredited training and workshops. In addition via the AMPC MI&QA Managers' Network meetings the industry will have had access to a technical expert to lead discussions on the principles of good design and the impact of poor lairage facilities and inadequate restrainers on:

- stock flow
- animal welfare
- injuries to livestock.

Likewise through the Meat Industry Training Networks industry and RTO trainers will be made aware of the availability of the new resources and have time at network meetings to go through the materials and discuss strategies for implementing the training. The professional development

program will also be able to offer trainers an opportunity to attend workshops on yard and restrainer design.

## **6.2 Long-term impact**

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In the longer term this project will have enabled these training materials to be built into the training Units delivered as part of the following courses:

- The Animal Welfare Officer Skills Set
- Certificate III and IV in Meat Processing (Meat Safety)
- Cert IV in Meat Processing (Quality Assurance).

In turn this means that the next generation of middle managers will be conscious of the importance of yard and restrainer design and maintenance to animal welfare, productivity and profitability in a meat processing premises.

Additionally the industry personnel now have a text or reference whenever the need to address an issue associated with yards and restrainers and this text can now be easily updated as research changes our understanding of the subject or regulations are amended in ways that impact on design principles.

## **7 Conclusions and recommendations**

Industry is now in a position to deliver accredited training and workshops on the principles and importance of good yard and restrainer design. In addition via the Network meetings AMPC and MINTRAC are able to elevate the importance of this issue with both QA managers and trainers.

The incorporation of these materials into accredited industry training courses that upcoming managers will also have training in yard design as a matter of course. Injuries to livestock. MINTRAC has recommended an extension to this project and AMPC are now investing in an e-learning version of these materials which will give the materials much better presentation of design principles via CAD drawings and film dotage of design principles.