final report

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ALC Colac Leap III Production System Upgrade Project

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Executive Summary

This project was conceived to upgrade the LEAP system originally installed in the Australian Lamb Company's Colac facility (formerly CRF) in 2006. The upgrade included incorporating an x-ray sensing system and implementation of the learnings from the original LEAP project at CRF Colac.

Key objectives for this project included building, installing and commissioning a fully automated LEAP III + x-ray system capable of processing 10 carcases per minute (ppm) with two cuts or 7ppm with three cuts per carcase.

Following a successful build, installation and commissioning of the upgraded leap III (XRAY and primal cutting machine) at Australian Lamb Company (ALC) Colac, operators, maintenance and cleaning staff have now been trained in its use and up-keep, and accuracy trials have been performed to achieve a handover to ALC. The system is, and has been, running reliably cutting lamb on both day and night shift and at rates between 3 product per minute (ppm) and 10ppm.

The industry will now benefit from an additional "show site" with differing line speeds, exposure to a greater range of environmental factors for improved reliability, further detailed data review, and an additional site able to progress future phases of LEAP development.

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1 Background

1.1 Purpose and benefit to industry

The purpose of this project was to upgrade the first Australian prototype leap 3 primal cutter that was developed at the Australian Lamb Company's Colac facility (formerly CRF) in 2006. The original installation suffered reliability and accuracy issues and was not effective or beneficial to production. The original equipment was bypassed and sat idle until this project was conceived. The upgrade included incorporating an x-ray sensing system and implementation of the learnings from the original LEAP project at CRF Colac.

There have been a number of advancements in the leap 3 technology as a result of and since the CRF prototype. This project includes addition of an x-ray sensor to improve accuracy (which was not part of the original prototype), circular knives and dynamic clamping which provide for improved yield and cut quality.

The industry will benefit from an additional demonstration system and the learnings that come from differing line speeds, exposure to a greater range of environmental factors, detailed data review and an additional site able to progress further phases of LEAP development.

2 Projective Objectives

2.1 Project Objectives

The objective of this project is for Scott Technology and ALC to have successfully installed and have operational a fully automated LEAP III and X-ray machine capable of processing 10ppm with two cuts per carcass or 7ppm with three cuts per carcase.

3 Methodology

3.1 Method of delivery

The system design included collating and implementing all the learnings from the LEAP development process to date. The design incorporated x-ray technology, circular knife technology and dynamic clamping technology. The areas where mechanical reliability had been found to exist in the original prototype were designed out of the new system.

The build of the system was conducted using the latest manufacturing methods and technologies that have stemmed from the learnings arising from the LEAP development process. Stainless fabrication techniques, material selection and handling are key elements incorporated into this build.

Following a successful build, installation and commissioning of the upgraded leap III (XRAY and primal cutting machine) at Australian Lamb Company (ALC) Colac, maintenance staff (including electricians and mechanical staff on day and night shift), ALC contract cleaning

staff, room supervisors and boning room operational staff were trained in its use and up-keep.

Performance trials were conducted to ensure the system was operating correctly before the system was handed over to ALC.

4 Results

4.1 Leap III Install, commissioning and handover

Following a successful build, installation and commissioning of the upgraded leap III (XRAY and primal cutting machine) at Australian Lamb Company (ALC) Colac, operators, maintenance and cleaning staff have now been trained, and are comfortable with the use and up-keep of the machine. Accuracy trials have been performed and a handover to ALC completed. The system has proven to run at speeds up to the desired 10ppm for two cuts and 7ppm for three cuts and to the desired performance criteria. The system is, and has been, running reliably cutting lamb on both day and night shift and at rates between 3 product per minute (ppm) and 10ppm. A set of hardcopy and softcopy manuals and drawings for the machine were left with ALC to assist with operation of the machine.

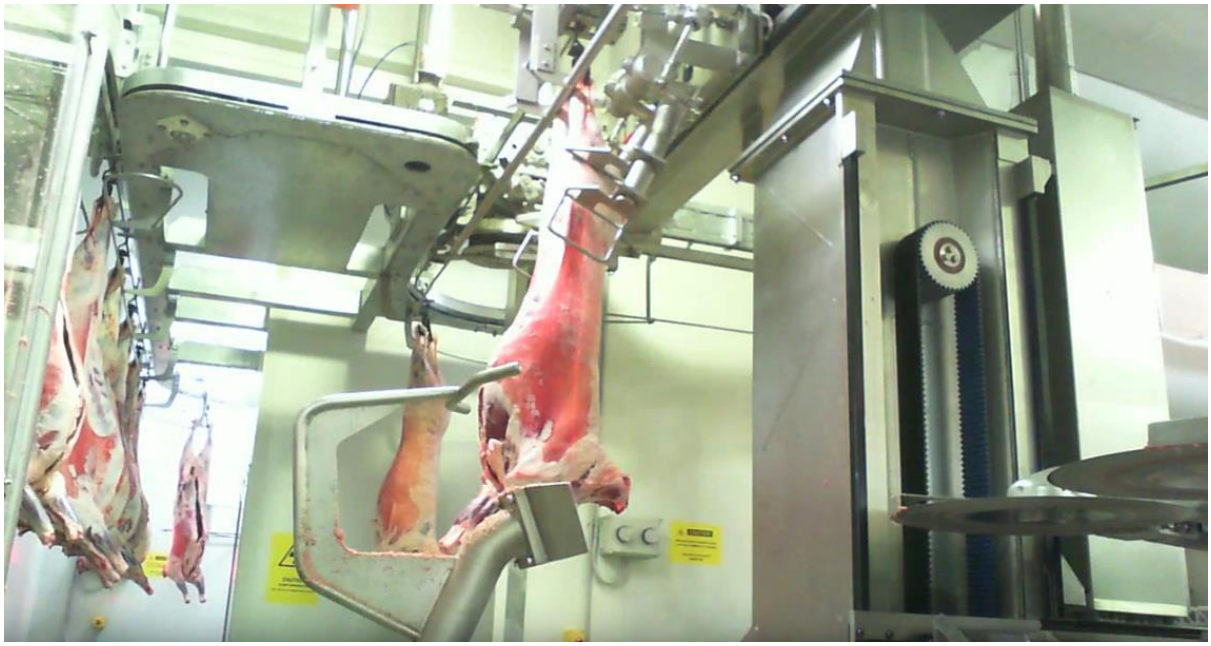
The system is now able to operate un-attended and process ALC's entire lamb production throughput.

The system has been fitted with remote monitoring and remote assistance capability to support ALC with the continued up-keep of the machine.

The system included the following components:

X-ray:

Forequarter cutting tower:



Saddle cutting tower:

Transfer, stability and clamping:

5 Discussion

5.1 Project Discussion

Project P.PIP.0352 has now reached a conclusion. The machine continues to operate unassisted and process all of ALC Colac lamb production.

Through the installation and operation of the Colac LEAP 3 it has been shown that the developments and advances in technology to date can be replicated into new sites with little effect on performance or reliability. Installation in a new site has given further insights into the suitability of the design to industry cut specifications, chemical wash-down, operators, environments and production variables. Importantly it has shown that the technology can both fit and be retrofitted to an existing boning room whilst maintaining continuous manual production during installation and seamless changeover to automatic once the machinery is commissioned. It gives good insight into the suitability of the machinery to a number of processing plants and processing models.

The industry will benefit from an additional demonstration system and the learnings that come from differing line speeds, exposure to a greater range of environmental factors, detailed data review and an additional site able to progress further phases of LEAP development.

It is anticipated that having the LEAP III equipment installed in a broader number of locations will provide confidence to other potential adopters of the technology of its versatility, reliability and benefits.

When reflecting on what could be improved, it is certain that with every installation of this machinery we are going to discover further benefits that can be achieved. Either through a

greater understanding of product specification or as all stakeholders develop an awareness of the machinery's ability to enhance product quality and production capabilities there will be opportunities to improve the LEAP offering moving forward.

Importantly with this installation there have been a number of learnings that will translate into benefits for future adopters particularly with regard to seamless installation, faster time to commissioning, reducing client infrastructure investment and integration into common production line arrangements. It has been found that there is benefit to be had for potential adopters in understanding product specification cut lines and determining cut line efficiencies that flow on beyond the outputs from the current LEAP system.

Finally, it was recognised that with the system in place and operating the ALC group are keen to investigate using the technology for mutton breakdown. This will require further design and development.

6 Conclusions/Recommendations

6.1 Project conclusions

PIP.0352 project objectives have been met successfully. The industry will now benefit from access to a demonstration system that contains the learnings from the LEAP development projects and will give rise to learnings that come from differing line speeds, exposure to a greater range of environmental factors, detailed data review and a platform that is able to support further phases of LEAP development.

It is anticipated that having the LEAP III equipment installed in broader number of locations will provide confidence to other potential adopters of the technology of its versatility, reliability and benefits.

Remote monitoring and assistance is built into the machine so that access can be sought to monitor and collect data from the machinery at any point in the future if the need arises.

It is recommended that the project be concluded with a successful outcome and that the machinery be utilised as a key step to progressing the LEAP automation strategy.

7 Key Messages

7.1 Key points

Successfully Installed and commissioned: Proving the learnings from previous machines can translate to new installs and that the machine design is suitable to retrofitting to existing boning rooms

Operating automatically for all lamb production: The reliability and suitability of the machinery to a new site is confirmed by ALC's ability to run all their lamb production through the machinery automatically.

Opportunity for further LEAP development: Having the x-ray and Primal installed in a further site gives rise to the opportunity for continued development of the LEAP system.

Versatility of the machinery: Having the equipment installed in a major lamb producing facility gives further exposure to a wide range of environmental variables that will further enhance the versatility and reliability of the X-ray Primal machinery.

8 Appendix

No appendix.