



# final report

Project code: P.PSH.0237  
Prepared by: Ray Dennison  
FOOD EQUIPMENT  
AUSTRALIA PTY LIMITED  
Date submitted: July 2008

PUBLISHED BY  
Meat & Livestock Australia Limited  
Locked Bag 991  
NORTH SYDNEY NSW 2059

## Evisceration pan table system

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.

This publication is published by Meat & Livestock Australia Limited ABN 39 081 678 364 (MLA). Care is taken to ensure the accuracy of the information contained in this publication. However MLA cannot accept responsibility for the accuracy or completeness of the information or opinions contained in the publication. You should make your own enquiries before making decisions concerning your interests. Reproduction in whole or in part of this publication is prohibited without prior written consent of MLA.

## Contents

		<b>Page</b>
1	Overview.....	3
1.1	Evisceration Pan Table System .....	3
2	Analysis of New Evisceration System .....	4
3	Commissioning and Conclusion.....	8

# 1 Overview

## 1.1 Evisceration Pan Table System

---

The new design consists of two round dished pans, one at 600mm diameter for white offal, the other 550mm diameter for red offal. Both hinged on a single tubular shaft which is connected to a vertical support column. This is connected to the bi-planar conveyor system. This conveyor at its lowest point would be some 2.8 meters from the floor level. The hot and cold water wash cabinet has its own collection trough which in turn has a drain pipe to the floor drainage. This then apart from the guide rails in the evisceration area, keeps the floor area clear of any up stands, which assist in the cleaning operation. Eviscerating direct into the white offal pan also eliminates any offal product being thrown onto the floor.

All operations from evisceration to the inspection are at floor level. Platforms are hindrance and restrictive to operations and also make cleaning much more time consuming. A simple moving pin is positioned on the vertical column which when passing either the red offal or casing chute activates a pneumatic ram which tips the pans to the vertical position discharging the product.

When any offal is condemned the inspector alters the position of the pin which then discharges both white and red offal into a condemned chute or conveyor. As this system can incline to a given height, the chutes also can be at a greater angle than existing chutes.

The new system also could be designed to pass through the offal rooms and discharge direct onto the table and in particular the red offal direct to a rotary offal wash then to a draining table automatically.

The round pans have large radius corners which will assist in the cleaning procedure. The bi-planar conveyor, being well above hose down levels also will assist in the cleaning and maintenance time. Drawings attached to indicate the simplicity of evisceration, inspection and the steriliser area.

## 2 Analysis of New Evisceration System

Photo 1



Empty pans approaching the evisceration area entering the guide rails and the pans 300mm from the finished floor level.

Photos 2 and 3



Evisceration procedure on the corner of the pan system and the carcasses entering. The white offal pan and the carcasses will be centred when the two conveyors are straight. The paunch and runners are lowered direct into the pan without operator turning.

**Photos 4, 5 and 6**



Operator removing red offal carcasses positioned central to white offal pan with red offal trailing.

**Photos 7 and 8**



Carcase travelling away from the pan system at 45 degrees. If red offal operator becomes held up there is still time for him to remove the offal without too much manoeuvring.



**Photos 9,10 and 11**



Pan incline up from 300mm from floor to 900mm for inspection. Guide rails provided for inspection to lean on as required. Photo 10 shows the sliding pin which when pulled forward will indicate to the system to be discharged to condemned. Photo 11 shows the wash cabinet on the return side.

**Photos 12, 13 and 14**



Discharge hopper, red offal casing and condemned. Pans are tipped by a pneumatic system discharging into their correct hopper. All pans are tipped to the condemned regardless, to ensure they are in the vertical position for washing. If there is a malfunction the system is designed to allow the pans to pass through the wash without jamming.

**Photos 15 and 16**



Wash cabinet showing pans in the vertical position for flushing and draining. Water collection trough mounted 300mm above floor level to assist in cleaning and collection of waste water. A 300mm diameter fan to vent and remove steam and mist.

**Photos 17 and 18**



Pans decline from the wash cabinet level to the lower level evisceration area.

**Photos 19, 20**



Photo 19 being the caterpillar drive and stainless steel track suspended from structural steel above ceiling level. Photo 20 and 21 show the two conveyor configuration with the counter level pan support column.

### **3 Commissioning and Conclusion**

On commissioning of the system we did have a few problems in the cleaning process. As we now eviscerate direct into the white offal pan, we collect more blood than the current procedure. As blood has platelets, this substance did build over a few hours causing small blood particles to cling to the pans. The original flat jet nozzles were replaced with a special spoon flat jet which has a stronger impact this overcame the cleaning problem.

Occupational health and safety was improved as expected with minimal lifting and twisting by evisceration slaughter man. The inspection staff found not having concrete platforms and positioned at floor level they were able to move more freely between the carcasses and the retain rail when required.

Cleaning up the waste product discharge incorrectly by the operators was made easy due to the lack of concrete plinths and platforms. Wash down carried out in a shorter time frame also. Water consumption for the pan cleaning was the same as the current tables.

The cost of construction and installation was about 180,000.00 at cost without profit added. This as expected is about twice the cost of a current Evisceration Pan Table but with the savings of the two operators to remove offal's and the common problem of not having enough staff to carry out this task the payback is about two years plus savings as stated above.