

Occupational Health and Safety Performance Overview

Meat and Meat Product Manufacturing Industry, Australia, 1994-95

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This report was prepared by the Statistics Unit of the National Occupational Health and Safety Commission on behalf of the Meat Research Corporation.

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Explanatory Notes

1. General

The data on occupational injuries and diseases contained in this report have been compiled by the National Occupational Health and Safety Commission (NOHSC) from information supplied by a number of Commonwealth, State and Territory workers' compensation authorities for the financial year 1992-93.

These agencies processed workers' compensation claims received from insurance companies, self-insurers and some government departments.

The denominators used in calculating the incidence rates data included in this report were provided by the Australian Bureau of Statistics (ABS) from their Register of Business Units or their Labour Force Survey and the Survey of Employee Earnings and Hours.

2. Scope and Coverage

The statistics have been compiled from claims for workers' compensation made under the Commonwealth, State and Territory workers' compensation Acts which resulted in a fatality, permanent disability or a temporary disability resulting in an absence from work of one week (5 working days) or more.

The statistics in this report do not cover all occurrences of occupational injuries and diseases. They underestimate the true extent of the problem for the following reasons:

- (i) data for the Australian Capital Territory were not available for inclusion in this report;
- (ii) temporary disability occupational injuries resulting in absences from work of less than one week (5 working days) have not been included (less than 6 days in Vic for 1991-92 and 1992-93, and less than 11 in 1993-94);
- (iii) only cases compensated under general Commonwealth, State and Territory workers' compensation legislation are included. Excluded, therefore, are injuries covered under separate legislation, e.g. under the Seamen's Compensation Act;
- (iv) cases not claimed as workers' compensation because the injury did not first occur at work or was not acknowledged as being a work-related injury are excluded; and
- (v) most occupational injuries to the self employed are excluded because such workers generally are not covered for workers' compensation (note: the exclusion of self-employed persons is likely to have a marked effect on data for industries where self-employed persons are common, for example, Agriculture, Forestry, Fishing and Hunting, Construction and Retail Trade).

3. Incidence Rates

The incidence rate of occupational injuries and diseases is the number of occurrences expressed as a rate per 1,000 wage and salary earners employed. Such rates were calculated using the following formula:

number of occupational injuries and diseases x 1,000

number of wage and salary earners

4. Reliability of Data

The data in this report are preliminary and subject to revision. Errors may occur because of errors in the reporting, recording and processing of data. Also, data in respect of jurisdictions not available for inclusion in these analyses might produce overall results which differ, to some extent, from findings presented in this report.

5. Confidentiality

Where necessary, the data on which the analyses have been based have been adjusted according to NOHSC confidentiality practices.

6. Related Publications

- *Compendium of Workers' Compensation Statistics 1994-95*, Worksafe Australia, December 1996.
- *Estimates of National Occupational Health and Safety Statistics, 1993-94*, Worksafe Australia, December 1995.
- *The Cost of Work-related Injury and Disease*, Worksafe Australia, July 1994.
- *Occupational Health and Safety Performance Overviews, Selected Industries Issues 1, 2 and 3*, Worksafe Australia, 1994, *Issues 4, 5, 6, 7, 8, 9 and 10*, Worksafe Australia, 1995.
- *The Role of Workers' Compensation-based Data in the Development of Effective Occupational Health and Safety Interventions*, Worksafe Australia, 1996.

7. Definitions

Industry

The predominant industry at the location at which the occupational injury/disease occurred was classified in accordance with the Australian Bureau of Statistics and New Zealand Department of Statistics classification, the Australian and New Zealand Standard Industrial Classification 1993 (ANZSIC), (ABS Cat. No. 1292.0 / NZ Cat No. 19.005.0092).

Occupation

The occupation of the injured worker was classified in accordance with the ABS classification, the Australian Standard Classification of Occupations (ASCO), First Edition, September 1986 (ABS Cat. No. 1222.0).

Duration of Absence

Time lost data were classified in working weeks (5 working days) or more off work as a result of a compensated occupational injury or disease.

Occupational Injuries

All employment injuries which are the result of a single traumatic event occurring while a person is on duty or during a recess period and where there was a short or non-existent latency period. This includes injuries which are the result of a single exposure to an agent(s) causing an acute toxic effect.

Occupational Diseases

All employment injuries which result from repeated or long-term exposure to an agent(s) or event(s) and employment injuries which are the result of a single traumatic event where there was a long latency period

(for example, the development of hepatitis following a single exposure to the infection). It should be noted that workers' compensation data are not an ideal measure of the extent of work-related disease as many disease occurrences do not result in compensation claims for a variety of reasons.

8. Symbols Used

na - not available

nec - not elsewhere classified

NSW - New South Wales

Vic - Victoria

Qld - Queensland

SA - South Australia

WA - Western Australia

Tas - Tasmania

NT - Northern Territory

ACT - Australian Capital Territory

Cwth - Commonwealth

NOHSC - National Occupational Health and Safety Commission

Meat and Meat Product Manufacturing Industry

Occupational Health and Safety Performance Overview Australia, 1994-95

The industries referred to in this overview (classified according to the Australian and New Zealand Standard Industrial Classification - ANZSIC - see Appendix 1 for more detail) are:

ANZSIC Group 211 - Meat and Meat Product Manufacturing

ANZSIC Class -

ANZSIC 2111 - Meat Processing

ANZSIC 2112 - Poultry Processing

ANZSIC 2113 - Bacon, Ham and Smallgood Manufacturing

This is the first detailed analysis of the Meat Processing industry undertaken using ANZSIC industry codes. Previous analyses have been based on the Australian Standard Industrial Classification (ASIC) codes. It should be noted that this change of coding systems has no effect on comparison of data with previous years as, for this industry group, the industry activities covered by the new codes are virtually unchanged from those covered by the old ASIC codes. (The relevant ASIC codes were: ASIC 2115 - Meat (except Smallgoods or Poultry); ASIC 2116 - Poultry; and ASIC 2117 - Bacon, Ham and Smallgoods, not elsewhere classified).

Data Quality

The injury/disease data provided in this paper are preliminary and, therefore, subject to revision. They are based on workers' compensation data relating to the more serious cases (that is, those involving a fatality, permanent disability, or temporary disability resulting in 5 days or more time lost from work).

These data have been collected from NSW, Vic Qld, SA, WA, NT, Tas, Comcare Australia, Australia Post and Telstra jurisdictions. While data for the ACT have not yet been provided at all, there are very few persons working within this industry in the ACT and the effect of this omission on the results of the analysis is considered to be negligible.

A significant factor affecting this analysis is that from 1993-94 onwards, Victoria provided detailed compensation data only for cases involving more than 10 days time lost from work (compared to 5 days or more for other jurisdictions). For 1991-92 and 1992-93, Victoria provided data on the basis of 6 working days or more lost. It has been estimated from analysis of data provided by Victoria that they are now only providing data for 65% of the number of cases they would have reported, if they were still providing information on the pre 1993-94 basis (*Occupational Health and Safety Performance Overviews, Selected Industries, Issue No. 10 - Meat Products Industry*, Foley G and Davis M, Worksafe Australia, May 1996).

Furthermore, the number of cases reported by Victoria for the Meat and Meat Products Industry Group of more than 10 days duration has dropped significantly. The Victorian Workcover Authority advises that this sharp decline (evident in all Victorian industries) has resulted from a combination of circumstances including:

- greater onus being placed on the employee to prove that work was a significant causal factor in the injury/disease occurrence, and
- introduction of legislative changes that require an experience rating to be applied in the premium-setting process for individual employers.

In view of these circumstances, many of the incidence rates, etc, mentioned in this analysis relate to all jurisdictions excluding Victoria and the ACT. However, an *estimate* has been made of the number of Victorian cases which would have been reported if data had been consistently provided on a 5 days or more lost time basis. This estimate is partly based on the fact that the incidence rate for Victorian cases entailing more than 10 days lost time from work is 20% higher (67 cases per 1,000 employees) than the incidence rate for Australia excluding Victoria (56 cases per 1,000 employees), for cases of equivalent duration. The estimate is also partly based on the distribution of occurrences by duration from an analysis of past data provided by Victoria and other jurisdictions. The estimate has been used to produce a national number of occurrences and to derive a national incidence rate. These estimates should be treated with some caution.

While estimated Victorian data have been included in some national figures for number of cases and incidence rates, they have been omitted from analyses relating to 'occupation' and 'type of occurrence'. This has been unavoidable because these data items were not coded in accordance with national standards by this jurisdiction.

Shown below, for each ANZSIC Class, are percentages indicating the proportion of Australian employment covered within that ANZSIC Class after the exclusion of Victorian and ACT data. This information provides an indication of the extent to which the 'occupation' and 'type of occurrence' aspects of the analysis are representative of the OHS position of the Meat and Meat Products industry from a national perspective.

ANZSIC 2111 - 85.0%

ANZSIC 2112 - 76.5%

ANZSIC 2117 - 76.1%

As can be seen from the above, all industry classes are well covered in terms of total Australian employment for information relevant to 'occupation' and 'type of occurrence'. In addition, further data provided by the Victorian Workcover Authority infer that there is little difference in the circumstances surrounding occurrences in Victoria compared to those surrounding occurrences in this industry for the rest of Australia. In this respect, Table 1 shows very similar injury/disease patterns exist in the Victorian Meat Processing industry and the remainder of Australia.

Table 1

**Comparison of Victoria & rest of Australia,
Type of occurrences experienced in the Meat Processing
industry, expressed as a proportion of total serious,
compensated cases, 1994-95**

	Australia (excl Vic) (%)	Victoria (%)
<i>Nature of Injury/Disease</i>		
Fractures	3	3
Sprains & strains	42	43
Open wounds	24	24
Contusion	3	3
Burns	4	3
Deafness	4	5
Hernia	1	2
Muscle tendons & other soft tissue	5	5
Zoonoses	3	3
Total Proportion of Cases Covered by Above	89	91
<i>Mechanism of Injury/Disease</i>		
Falls, slips & trips	8	8
Hitting or being hit by objects, etc	32	31
Body stressing	42	40
Total Proportion of Cases Covered by Above	82	79
<i>Bodily Location of Injury/Disease</i>		
Ear	4	5
Neck	2	3
Back	16	15
Hands, finger & thumb	28	27
Foot & toes	3	3
Shoulder	9	7
Elbow	4	3
Forearm	3	5
Wrist	9	8
Knee	3	3
Total Proportion of Cases Covered by Above	81	79

Table 1 - Comparison of Victoria and rest of Australia, type of occurrences experienced in the Meat Processing industry, expressed as a proportion of total serious, compensated cases, 1994-95

It can, therefore, be confidently expected that this analysis will be a very reliable reflection of the complete Australian picture, particularly in respect of the major types of serious, compensated injuries experienced in the industry. In this latter regard, it is considered that the omission of Victorian data will have negligible effect on the utility of the analysis.

Nevertheless, it should be made clear that this paper is not meant to be a definitive statement of the OHS performance of the Meat and Meat Products industry. Rather, it is primarily intended to provide an indication of what appear to be the major potential problem areas and to serve as the basis for further discussion and investigation. It is also hoped that it will provide an insight into general trends in the industry's OHS performance over recent years.

Focus of this Paper

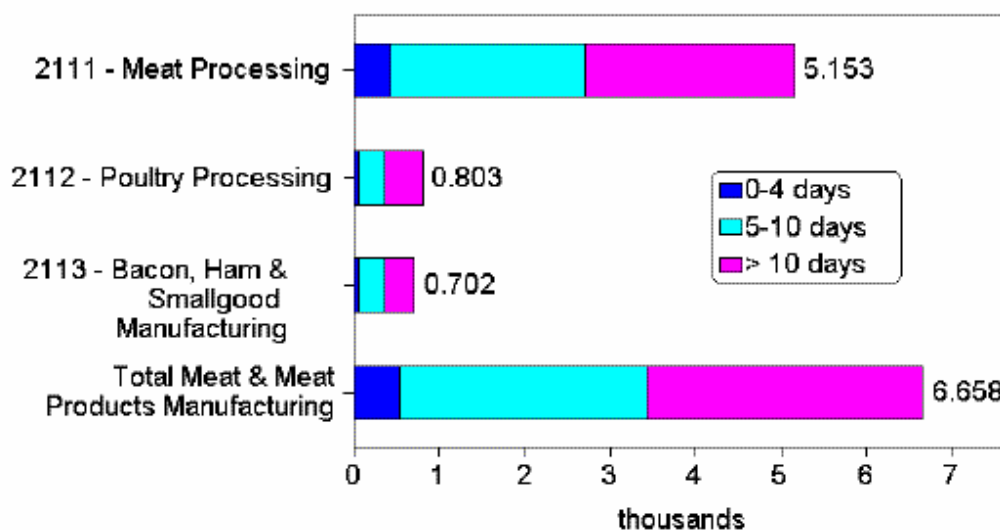
The primary focus of this paper is the Meat Processing Industry Class. It should be noted that the OHS performance of other industry classes within the Meat and Meat Product Manufacturing ANZSIC Group also appears quite poor. However, they have been included in this analysis mainly for the purposes of comparison. The main reason for this focus is that the Meat Processing Class has almost three and one half times as many injury/disease cases as the other two industry Classes combined. Another factor is that this analysis has been made possible through the financial assistance of the Meat Research Corporation and, consequently, the analysis has largely been aligned with their specific areas of interest.

Number of Occurrences

There were 6 compensated fatalities in the Meat and Meat Product Manufacturing Group during 1994-95, higher than the 3 cases reported for 1993-94 and 1992-93, but less than the 8 reported for 1991-92. Of the 1994-95 fatalities, 5 occurred in the Meat Processing Class.

Figure 1 shows the number of occurrences reported for the Meat and Meat Product Manufacturing ANZSIC Group by ANZSIC Class. As alluded to above, data for Victoria have been estimated and included in the data used in this graph. The graph shows that more than three quarters of cases experienced in this industry group occur within the Meat Processing Class. It also shows that this class has only a slightly lower proportion of longer duration occurrences, that is cases necessitating more than 10 days absence from work, than the other classes included in this group (48% for Class 2111 compared to 55% for Class 2112 and 50% for Class 2113).

Fig 1
Comparison of Injury/Disease Occurrences, Australia,
Meat & Meat Product Manufacturing Industry Group, 1994-95



Note: cases shown of 0-4 days duration generally involve permanent disability or fatality

Figure 1 - Comparison of Injury/Disease Occurrences, Australia, Meat & Meat Product Manufacturing Industry Group, 1994-95

The number of new cases reported during 1994-95 implies that a worker in the Meat Processing industry class has almost 1 chance in 5 of experiencing a serious (that is, entailing a fatality, permanent disability, or temporary disability resulting in 5 days or more time lost from work), compensated, work-related injury/disease over the course of a working year. Assuming a worker spends his/her whole working life in this industry, say from 18 years old to 65 years old, on the basis of probability, he/she is almost certain (99.96%) to experience a serious, compensated work-related injury/disease over the course of his/her working life. (Probability will depend on the occupation and age of a worker and while some workers will actually avoid an injury/disease over the course of their working lives, others will experience more than one).

Figure 1a shows the trend in the number of new cases reported over the period 1991-92 to 1994-95, by ANZSIC Class. The slopes of the best fit trend lines shown indicate that the number of cases experienced in the Meat Processing Class is showing an upward trend at 220 cases per year over the period concerned, compared to a rise of 90 per year for Poultry Processing and 55 per year for Bacon, Ham and Smallgood Manufacturing.

Fig 1a
Comparison of Injury/Disease Trends, Australia,
Meat & Meat Product Manufacturing Industry Group, 1991-92 to 1994-95

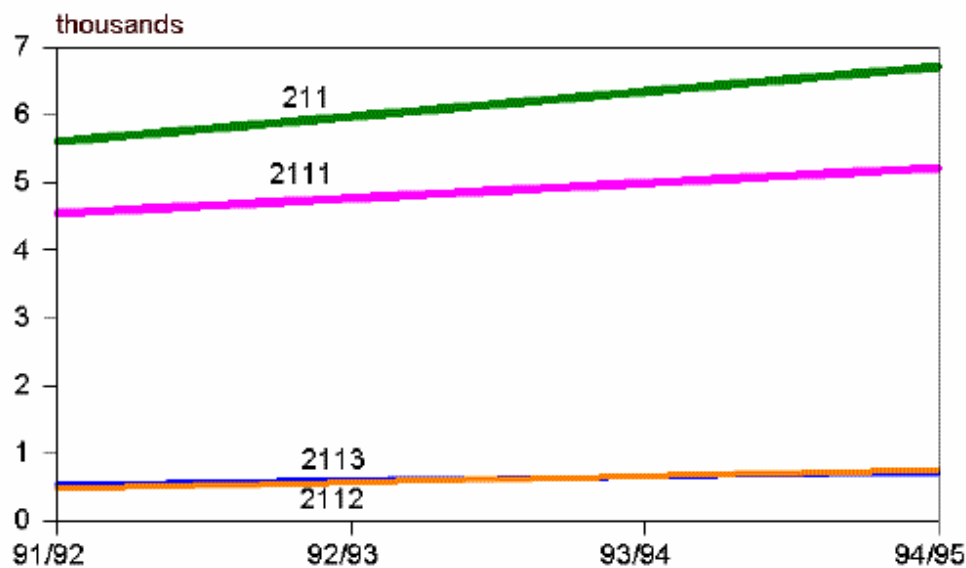


Figure 1a - Comparison of Injury/Disease Trends, Australia, Meat & Meat Product Manufacturing Industry Group, 1994-95

Considering proportionate rates of growth, Meat Processing has experienced a 12.8% growth in the number of cases over the period 1991-92 to 1994-95 at an annual average growth rate (geometric mean) of 4.1%. Poultry Processing has experienced a 56.8% increase over the same period, at an annual average growth rate of 16.2%. Bacon, Ham and Smallgood Manufacturing experienced an increase of 24% at an annual average increase of 7.4%.

Therefore, in terms of rate of change in the number of cases experienced, Meat Processing is performing better than other classes constituting the Meat and Meat Product Manufacturing industry group. However, a similar comparison with rate of change for the All Industries total number of cases indicates that Meat Processing is lagging somewhat behind the national trend over the period 1991-92 to 1994-95. The national number of cases

increased by 9.3% at an average 3.0% per annum. Nevertheless, trends in number of cases experienced in the Meat Processing industry appear encouraging when it is considered that there was no increase in the number of cases experienced between 1993-94 (5,158 cases) and 1994-95 (5,153 cases), whereas the number of cases experienced nationally rose by 2.1% between these years.

Figure 1b provides a comparison of new injury/disease occurrences reported in the Meat Processing industry during 1994-95 by those jurisdictions (excluding Victoria) which had reasonably significant numbers of cases. This indicates that 38% of all cases were experienced in Qld, about 24% of cases occurred in NSW and that these two jurisdictions combined accounted for nearly two-thirds of national occurrences.

Fig 1b
Comparison of Injury/Disease Occurrences by Selected Jurisdictions, Meat Processing Industry Class, 1994-95

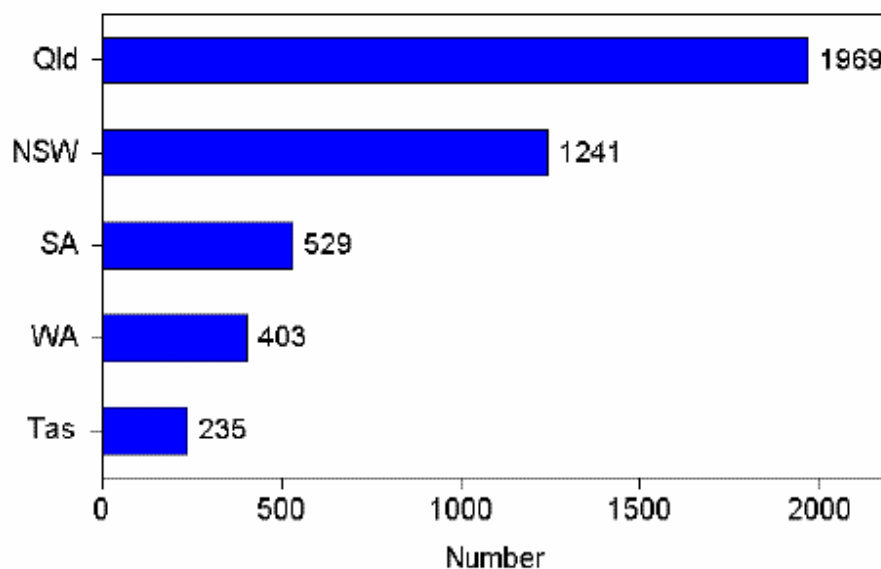


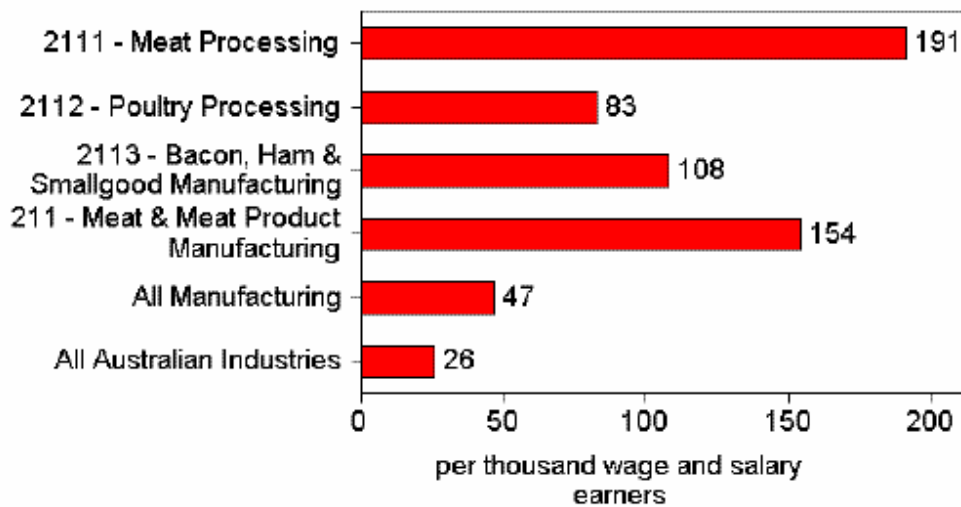
Figure 1b - Comparison of Injury/Disease Occurrences, by Selected Jurisdictions, Meat Processing Industry Class, 1994-95

Injury/Disease Incidence Rates

The comparison of injury/disease rates (occurrences per 1,000 wage and salary earners) shows the Meat Processing industry's performance in a less encouraging light. As Figure 2 shows, the industry's performance remains quite poor in comparison to other industry sectors, with an incidence rate which is now seven and one-third times the national, All Industries, rate. In fact, it still appears to be one of the worst performing industry classes in Australia, in terms of incidence rates.

Fig 2

**Comparison of Injury/Disease Incidence Rates, Australia
Meat Processing & Selected Industries, 1994-95***



* Figures for Victoria are estimated - see text for information

Figure 2 - Comparison of Injury/Disease Incidence Rates, Australia, Meat Processing & Selected Industries, 1994-95*

Figure 2a shows trends in incidence rates over the period 1991/92 to 1994/95, by ANZSIC Class. The slopes of the best fit trend lines shown indicate that injury/disease incidence rates experienced by the Meat Processing Class showed an upward trend at 18.6 incidence rate points per year over the period concerned, compared to a rise of 11.7 points per year for Poultry Processing and 12.3 points per year for Bacon, Ham and Smallgood Manufacturing.

Fig 2a

**Comparison of Injury/Disease Incidence Rates Trends, Australia
Meat Processing Class & Selected Industries, 1991-92 to 1994-95**



Excludes Vic & ACT

Figure 2a - Comparison of Injury/Disease Incidence Rates Trends, Australia, Meat Processing Class & Selected Industries, 1991-92 to 1994-95

Considering proportionate rates of growth in incidence rates, Meat Processing has experienced a 40.4% growth in terms of incidence rate points over the period 1991-92 to 1994-95, at an annual average growth in its incidence rate (geometric mean) of 12%. Poultry Processing has experienced an 88.6% increase over the same period, at an annual average growth in its incidence rate of 23.6%. Bacon, Ham and Smallgoods Manufacturing experienced an increase of 33.3% at an annual average increase in incidence rate of 10.1%.

Therefore, in terms of rate of change in incidence rates, Meat Processing is performing significantly better than the Poultry Processing classes but marginally worse than the Bacon, Ham and Smallgoods Manufacturing class.

However, a similar comparison with rate of change for the All Industries incidence rate confirms that Meat Processing fell well behind the national trend in OHS performance over the period 1991-92 to 1994-95. The national incidence rate increased by 4.0% at an average 1.3% per annum. Furthermore, the national All Industries injury/disease incidence rate dropped marginally (by 3.7%) between 1993-94 and 1994-95 whereas the rate for Meat Processing rose by 4.9%. Nevertheless, one positive aspect arising from an analysis of the industry's OHS performance over time is that there appears to have been a continual slowing down in the rate at which performance has been declining. An 18.4% deterioration between 1991-92 and 1992-93 was followed by a 13% decline between 1992-93 and 1993-94 and only a 4.9% decline between 1994-95.

Figure 2b compares injury/disease incidence rates by jurisdiction. This clearly indicates that the jurisdiction where the Meat Processing industry currently has the most serious problems is Qld. In fact this has been the case since 1991-92, with Qld incidence rates being markedly higher than the other jurisdictions in each year since then. It has been suggested that the severity of the problem in Qld is at least partly attributable to the heavier average carcass weight of animals processed in that jurisdiction.

**Fig 2b
Comparison of Injury/Disease Incidence Rates, by Selected Jurisdictions, Meat Processing Industry Class, 1994-95**



Figure 2b - Comparison of Injury/Disease Incidence Rates, by Selected Jurisdictions, Meat Processing Industry Class, 1994-95

Figure 2c compares injury/disease incidence rate trends by jurisdiction over the period 1991-92 to 1994-95. The slopes of the best fit trend lines shown indicate that injury/disease incidence rates experienced by SA rose at 28.9 incidence rate points per year over the period concerned, compared to a rise of 20.7 points per year for WA, 16 points per year for NSW and 9 points per year for Qld.

Fig 2c

Comparison of Injury/Disease Incidence Rates Trends, Australia, Selected Jurisdictions, Meat Processing Industry Class, 1991-92 to 1994-95



Figure 2c - Comparison of Injury/Disease Incidence Rates Trends, Australia, Selected Jurisdictions, Meat Processing Industry Class, 1991-92 to 1994-95

Considering proportionate rates of growth in incidence rates, SA has experienced a 70.5% growth in terms of incidence rate points over the period 1991-92 to 1994-95, at an annual average growth in its incidence rate of 19.5%. WA has experienced a 67.3% increase over the same period, at an annual average growth in its incidence rate of 18.7%. NSW experienced an increase of 42.5% at an annual average increase in incidence rate of 12.5%. Qld experienced an increase of 17.8% at an annual average increase in incidence rate of 5.6%.

If the above incidence rate growth trends experienced over the period 1991/92 to 1994/95 continue, then by the year 1996/97, SA and WA will have overtaken Qld as the worst performing jurisdictions for the Meat Processing industry, in terms of incidence rates. Furthermore, the Meat Processing industry class will have an incidence rate nearly 9 times the national All Industries rate.

Gender Comparison

Males were involved in 86% of occurrences in the Meat Processing class, while females accounted for 14% of cases. Most female occurrences were experienced by workers responsible for hand packing meat.

There is no information available which would allow calculation of comparative incidence rates by gender at the Meat Processing class level. However, other information available at the Meat and Meat Product Manufacturing group level (which understates rates overall, but does so consistently and, therefore, should be reliable for ascertaining the relativity between males and females) shows the incidence rate for females at 116 compared to 132

for males and the frequency rate (occurrences per million hours worked) at 69 for both males and females. These female rates are 7.3 times and 6.4 times the national All Industries incidence and frequency rates for females, respectively.

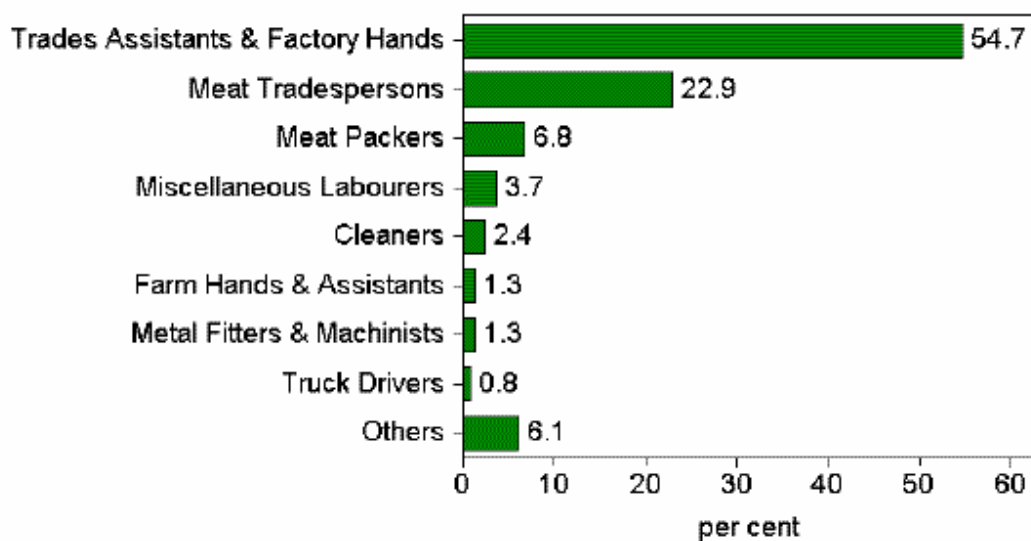
Over one half of the female cases in the Meat and Meat Product Manufacturing group were reported by the Meat Processing class and, if rates at group level can be taken as indicative of performance at class level, it appears that this industry class presents particular problems for women workers. While the information available does not show that the types of problems/risks confronting female workers in this industry are significantly different from those confronting males, intuitively it might be expected that this is the case. Certainly, solutions to similar specific problems could easily be quite different for males vis a vis females. This might be an area of the industry's practices and OHS performance worth further consideration and investigation.

Injury / Disease Occurrences by Occupation

Figure 3 shows the proportion of injury/disease cases by occupation for the Meat Processing industry class for 1994/95. In interpreting this graph, and all other graphs in this paper, it should be noted that the 'Other' category shown **does not** represent occurrences which have not been fully and/or appropriately classified. Rather, that category represents the sum of all remaining categories which, individually, would be insignificant.

Figure 3 shows that the occupation experiencing by far the highest number of injuries/diseases in this industry class was Trades Assistants and Factory Hands, which accounted for more than half of all cases experienced (this occupation includes Meat Works Labourers and Meat Boners and Slicers). The occupation with the second highest number of cases was Meat Tradespersons which experienced more than a fifth of all cases (this occupation includes Abattoir Worker Supervisors, Butchers and Slaughtermen/women). Together, these two occupations accounted for more than three-quarters of the industry's cases. The pattern of injuries/diseases by occupation in 1994/95 remained very similar to that evident in 1993/94.

Fig 3
Comparison of Injury/Disease by Occupation
Meat Processing Industry Class, 1994-95

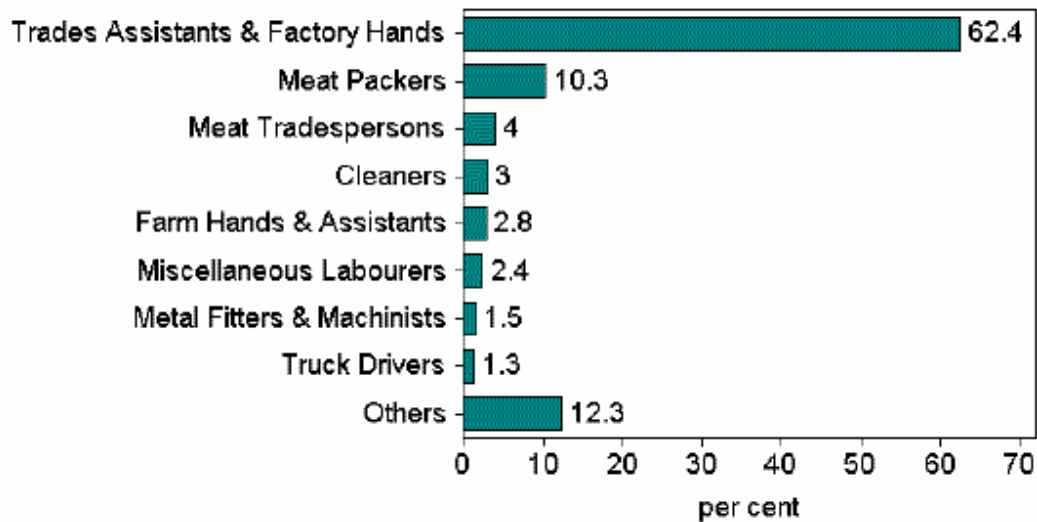


Excludes Vic & ACT

Figure 3 - Comparison of Injury/Disease by Occupation, Meat Processing Industry Class, 1994-95

Figure 3a shows similar details for the other industry classes in the Meat and Meat Product Manufacturing group, for comparative purposes. These industry classes showed more pronounced problems with Trades Assistants and Factory Hands than did the Meat Processing industry class. Both the pattern of injury/disease by occupation within these classes and the effects on occupation in comparison with the Meat Processing industry class remain very similar to the 1993-94 experience.

Fig 3a
Comparison of Injury/Disease by Occupation
Poultry Processing & Bacon, Ham & Smallgood Manufacturing
Industry Classes, 1994-95



Excludes Vic & ACT

Figure 3a - Comparison of Injury/Disease by Occupation, Poultry Processing & Bacon, Ham & Smallgood Manufacturing Industry Classes, 1994-95

Figure 3b provides a perspective on the types of injury/disease which are the most important concerns for occupations with significant numbers of occurrences (the three occupations shown accounted for over 83% of occurrences in the Meat Processing industry class). It shows occupation cross-classified by nature of injury/disease, measured in terms of the percentage of total occurrences for an occupation which are accounted for by a particular nature of injury/disease category. The graph indicates that there are some significant differences in the importance of certain types of injury/disease to workers in the occupations shown.

Fig 3b
Injury/Disease Proportion of Occurrences by Occupation
Meat Processing Industry Class, 1994-95

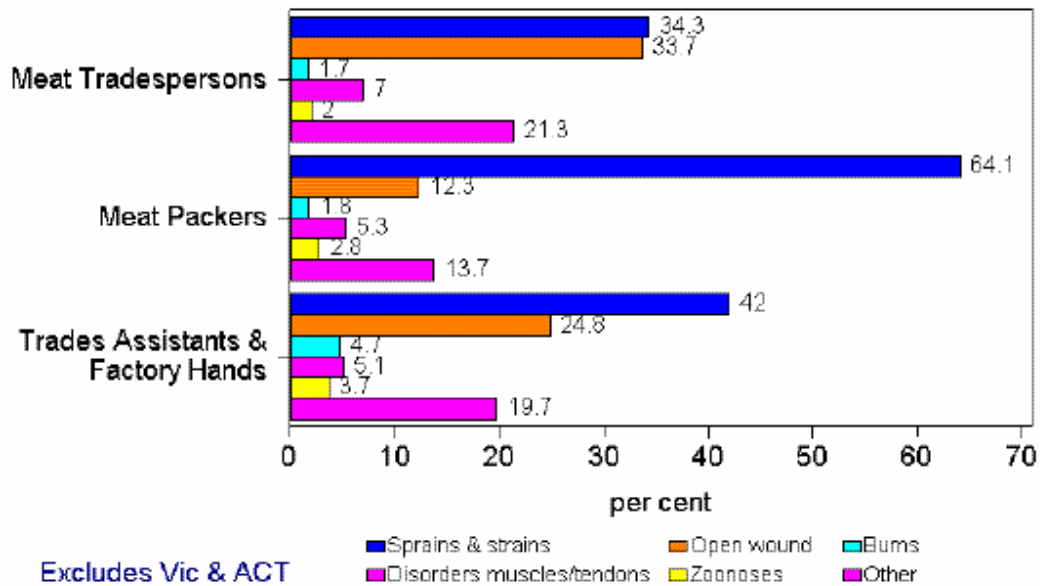


Figure 3b - Injury/Disease Proportion of Occurrences by Occupation, Meat Processing Industry Class, 1994-95

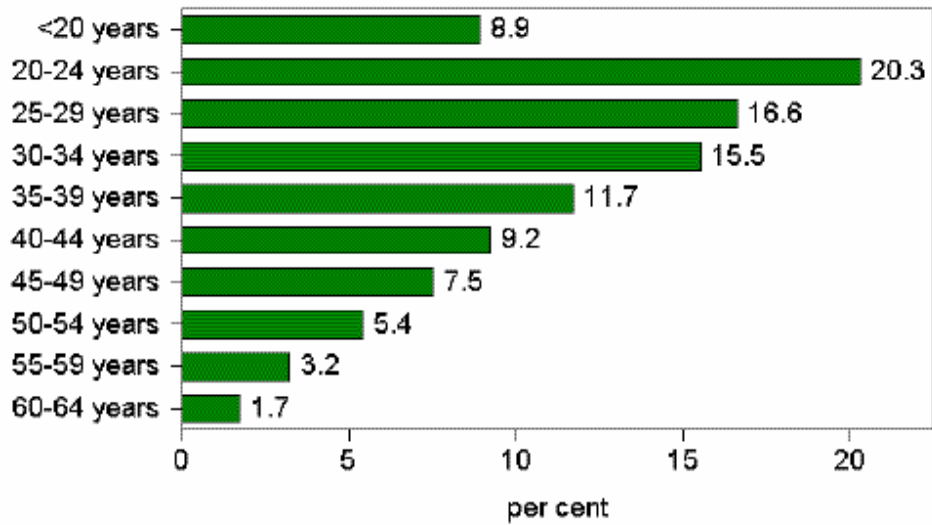
Trades Assistants and Factory Hands, who experienced over half of all occurrences in the industry class, were most affected by Sprains and strains of joints and adjacent muscles but also had significant problems with Open wounds and the highest proportion of Burns and Zoonoses. In contrast, Meat Packers had far more trouble (relatively speaking) with Sprains and strains, while Meat Tradespersons had almost as much of a problem with Open wounds as they had with Sprains and strains and also had the highest proportion of Disorders of muscles and tendons. (Note that more detailed information on the nature of injury/disease experienced within the industry is provided later in this paper under the heading Nature of Injury/Disease).

Distribution of Injury/Disease by Age Group

Figure 4 shows the proportion of injury/disease occurrences by age group for the Meat Processing industry class (Figure 4a shows data for the other classes within the Meat and Meat Products Manufacturing Group for comparative purposes). This graph clearly shows that most occurrences in the Meat Processing industry class involved workers in the 20-24 year old age group, followed by the 25-29 year old group.

Fig 4

**Injury/Disease by Age Group
Meat Processing Industry Class, 1994-95**

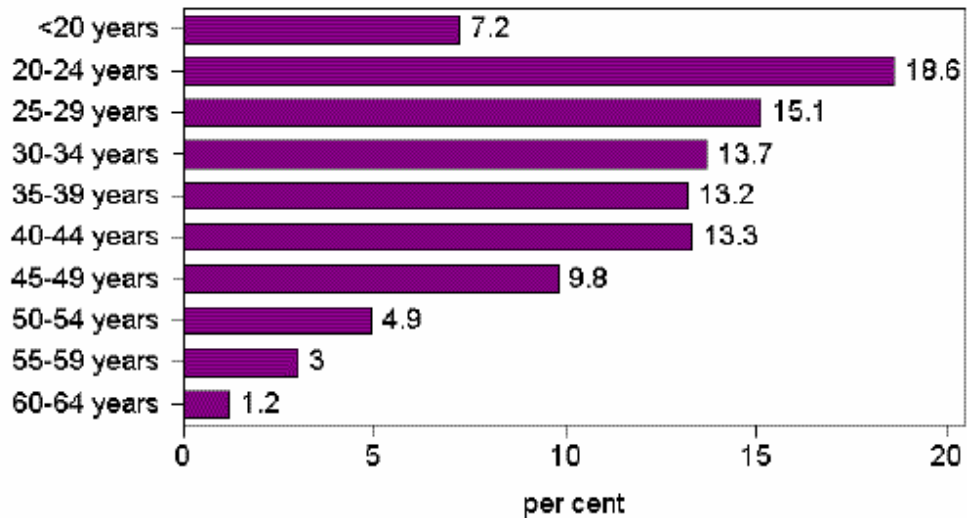


Excludes Vic & ACT

Figure 4 - Injury/Disease by Age Group, *Meat Processing Industry Class, 1994-95*

Fig 4a

**Injury/Disease by Age Group
Poultry Processing & Bacon, Ham & Smallgood Manufacturing
Industry Classes, 1994-95**



Excludes Vic & ACT

Figure 4a - Injury/Disease by Age Group, *Poultry Processing & Bacon, Ham & Smallgood Manufacturing Industry Classes, 1994-95*

Figure 4b provides an insight into the relationship between types of injury/disease and age. The graph shows that Sprains and strains increased steadily with age until age 35 where they remained fairly static until age 55 when they started to gradually decline in importance as a cause of concern for workers over 55 years old. This tends to suggest that a particular focus on the manual handling practices and problems of workers between the ages of 35 and 55 might be productive.

Fig 4b
Injury/Disease Proportion of Total Occurrences by Age
Meat Processing Industry Class, 1994-95

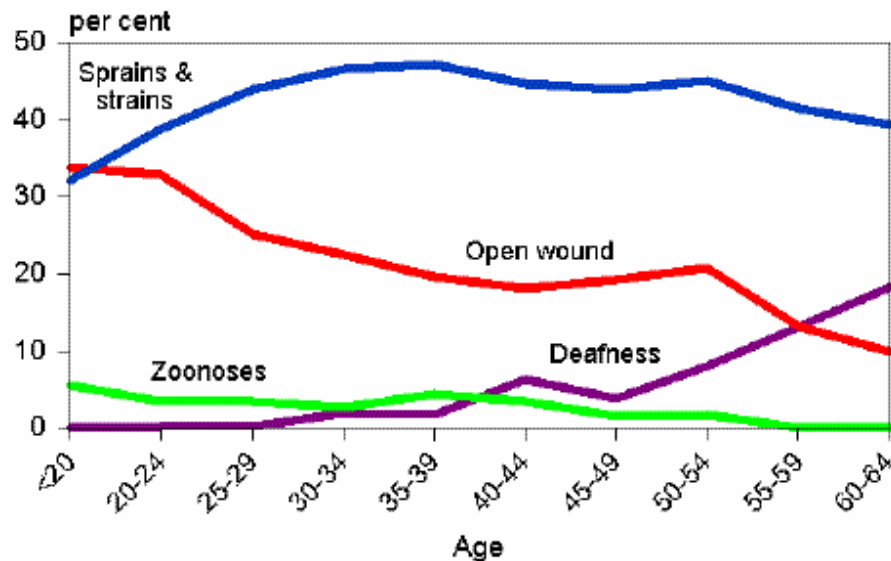


Figure 4b - Injury/Disease Proportion of Total Occurrences by Age, Meat Processing Industry Class, 1994-95

Deafness shows a sharp increase after age 45. As Deafness is usually associated with long term exposure to sound, this trend does not necessarily identify any age group for special attention. However, it does serve to illustrate the long-term disadvantages for workers in this industry of ignoring appropriate preventive options. This is applicable to workers of all ages, perhaps younger workers in particular.

The graph also clearly shows that Open wounds and Zoonoses were more frequent occurrences for younger, rather than older workers. Perhaps it would be productive to consider whether training for younger workers and other preventive measures in these areas can be improved.

The higher number of occurrences in particular age groups (as illustrated in Figure 4) might simply stem from larger numbers of workers of that age being employed in the industry. The most reliable measures which take this into account are incidence rates (number of cases per 1,000 wage and salary earners) and frequency rates (number of cases per million hours worked). Unfortunately, this information is only available at the Meat and Meat Products Manufacturing industry group level. Figure 4c provides this information by age group. Given the high proportion of cases from the Meat Processing industry class included in this group, it is considered that these data should represent a reasonable proxy for rates in the Meat Processing industry class. On this assumption, the graph confirms that the age group in the industry which was most frequently affected by work-related injury/disease was the 20 to 29 year olds. This is consistent with findings from analysis of 199394 data and suggests that strategies for improving OHS performance in the industry might initially be targeted on this age group to achieve best short-term results.

Fig 4c
Injury/Disease by Incidence & Frequency by Age Group
Meat & Meat Products Industry Group, 1994-95

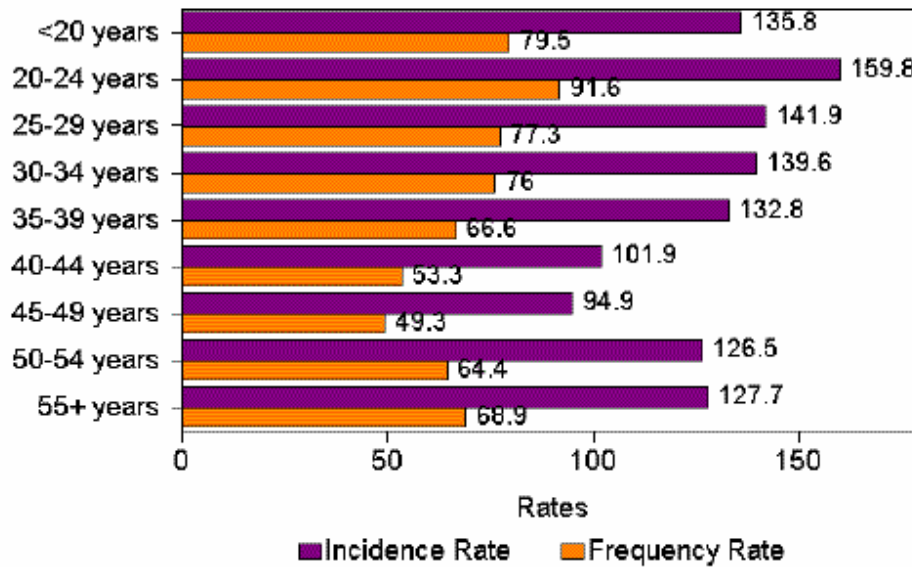


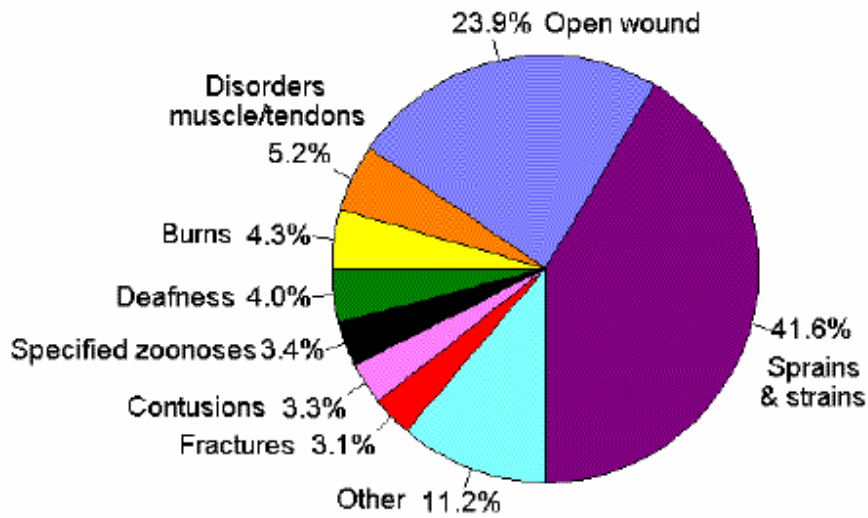
Figure 4c - Injury/Disease by Incidence & Frequency by Age, Meat & Meat Products Industry Group, 1994-95

Nature of Injury/Disease

Figure 5 provides information on the nature of injury/disease experienced within the Meat Processing industry class (Figure 5a shows data for the other classes within the Meat and Meat Products Manufacturing Group for comparative purposes). Both figures show that the most frequently occurring injury/disease was Sprains and strains of joints and adjacent muscles and, while this injury occurs more frequently in the other industry classes, it increased significantly in both industry sectors between 1993-94 and 1994-95. Open wounds, Disorders of muscles/tendons, Burns, Deafness and Zoonoses were also obviously problems for the Meat Processing industry class during 1994-95.

Fig 5

**Nature of Injury/Disease
Meat Processing Industry Class, 1994-95**

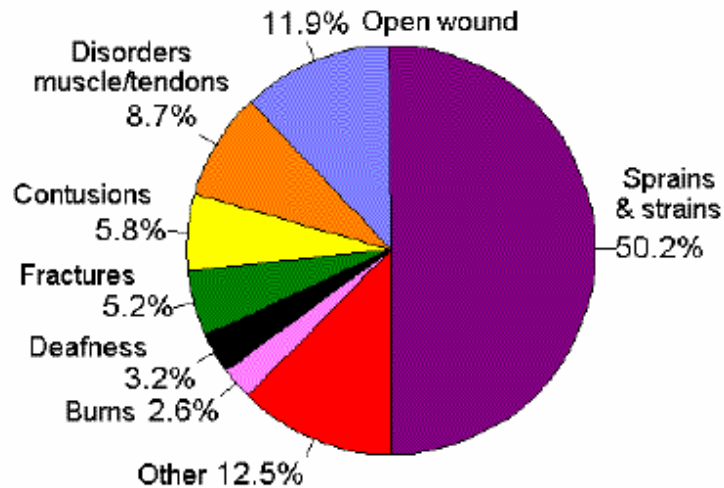


Excludes Vic & ACT

Figure 5 - Nature of Injury/Disease, Meat Processing Industry Class, 1994-95

Fig 5a

**Nature of Injury/Disease
Poultry Processing & Bacon, Ham & Smallgood Manufacturing
Industry Classes, 1994-95**



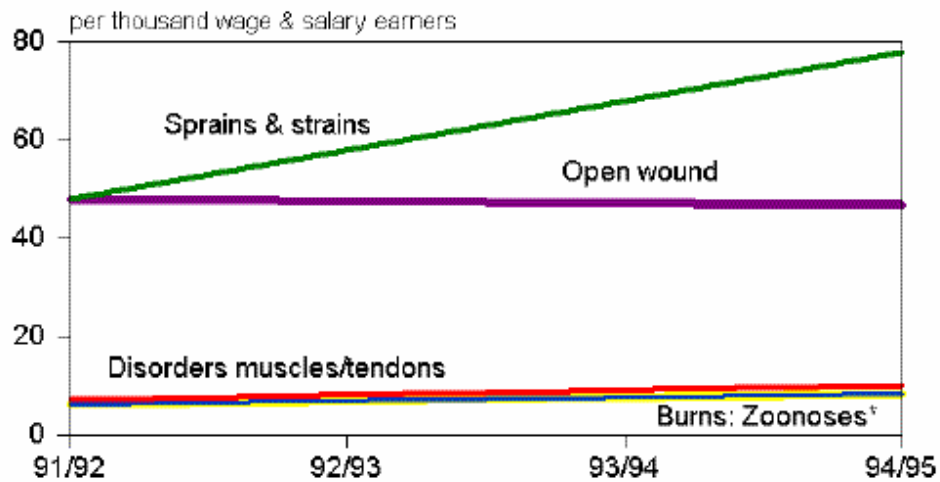
Excludes Vic & ACT

Figure 5a - Nature of Injury/Disease, Poultry Processing & Bacon, Ham & Smallgood Manufacturing Industry Classes, 1994-95

Figure 5b compares nature of injury/disease occurrence rate (that is number of cases of this type of occurrence per 1,000 wage and salary earners) trends over the period 1991-92 to 1994-95. The slopes of the best fit trend lines shown indicate that occurrence rates for Sprains and strains of joints and adjacent muscles rose at 9.9 occurrence rate points per

year over the period concerned, compared to a fall of 0.4 points per year for Open Wounds, a rise of 1.0 points per year for Disorders of muscles/tendons, a rise of 0.8 points per year for Zoonoses and 0.7 points per year for Burns.

Fig 5b
Selected Nature of Injury/Disease Occurrence Rate Trends
Meat Processing Industry Class, 1991-92 to 1994-95



† Trends for Burns & Zoonoses are basically identical - lines shown on the graph overlap

Excludes Vic & ACT

Figure 5b - Selected Nature of Injury/Disease, Occurrence Rate Trends, Meat Processing Industry Class, 1991-92 to 1994-95

Considering proportionate rates of growth in occurrence rates, Sprains and strains of joints and adjacent muscles has experienced a 56.4% growth in terms of occurrence rate points over the period 1991-92 to 1994-95, at an annual average rate growth of 16.1%. Other natures of injury/disease showing significant upward trends in occurrence rate were Disorders of muscles/tendons showing growth in terms of occurrence rate points of 46.4% over the period 1991-92 to 1994-95, at an annual average growth in its rate of 13.5%, Burns with a growth over the period of 31.8% at 9.6% annually, Zoonoses growing 25.0% over the period at 7.7% annually and Deafness growing 79.1% over the period at 21.4% per year. In contrast, the category Open wounds has decreased over the period in terms of occurrence rate points by 2.1% at 0.8% per year.

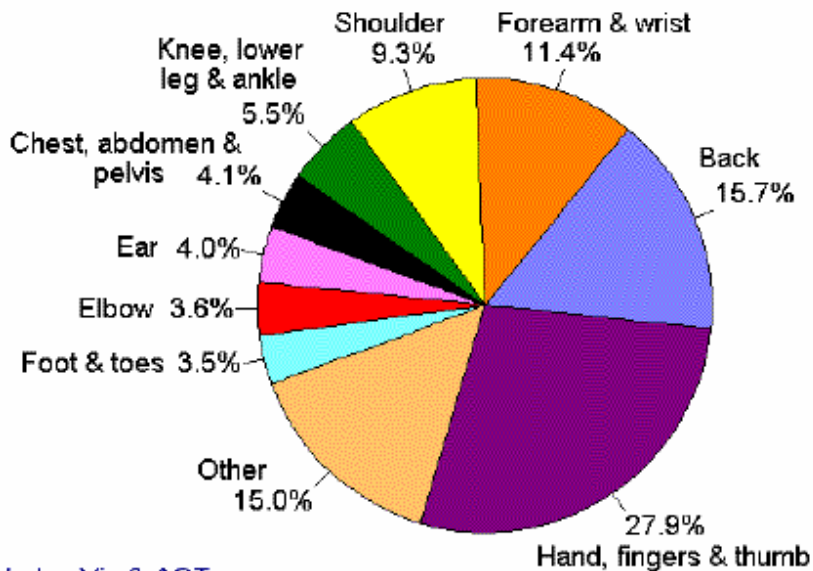
If the above occurrence rate trends over the period 1991-92 to 1994-95 continue, then by the year 1996-97, about 205 workers out of every 1,000 in the industry will experience a serious, compensated injury involving a sprain or a strain each year, Open wounds will have declined marginally in importance but will still seriously affect 44 workers per 1,000 annually, 16 workers per 1,000 will be experiencing serious Disorders of muscles/tendons each year and 11 per 1,000 will be affected by Deafness.

Bodily Location of Injury/Disease

Figure 6 provides information on the bodily location of injury/disease experienced within the Meat Processing industry class (Figure 6a shows data for the other classes within the Meat and Meat Products Manufacturing Group for comparative purposes). Figure 6 shows that the most frequently affected bodily location was Hand, fingers and thumbs followed by Back and Forearm and wrist. This represents a change from 1993-94 when Forearm and Wrist occurrences were more frequent occurrences than injuries/diseases affecting the Back. In fact, the number of cases involving Hand, fingers and thumbs and Forearm and Wrist have dropped between 1993-94 and 1994-95.

Fig 6

**Bodily Location of Injury/Disease
Meat Processing Industry Class, 1994-95**

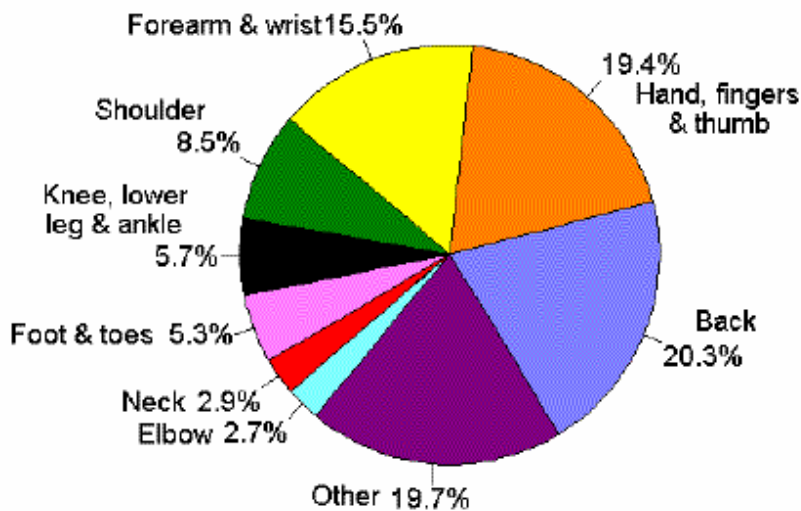


Excludes Vic & ACT

Figure 6 - Bodily Location of Injury/Disease, Meat Processing Industry Class, 1994-95

Fig 6a

**Bodily Location of Injury/Disease
Poultry Processing & Bacon, Ham & Smallgood Manufacturing
Industry Classes, 1994-95**



Excludes Vic & ACT

Figure 6a - Bodily Location of Injury/Disease, Poultry Processing & Bacon, Ham & Smallgood Manufacturing Industry Classes, 1994-95

Figure 6b compares bodily location of injury/disease occurrence rate (that is number of cases of this type of occurrence per 1,000 wage and salary earners) trends over the period 1991-92 to 1994-95. The slopes of the best fit trend lines shown indicate that occurrence

rates for Backs rose at 2.9 occurrence rate points per year over the period concerned, compared to, a rise of 2.8 points per year for Shoulder, a rise of 1.4 points per year for Forearm and Wrist and 0.9 points per year for Hand, fingers and thumbs.

Fig 6b
Selected Bodily Location of Injury/Disease Occurrence Rate Trends
Meat Processing Industry Class, 1991-92 to 1994-95



Excludes Vic & ACT

Figure 6b - Selected Bodily Location of Injury/Disease Occurrence Rate Trends, Meat Processing Industry Class, 1991-92 to 1994-95

Considering proportionate rates of growth in occurrence rates, Backs experienced a 39.2% growth in terms of occurrence rate points over the period 1991-92 to 1994-95, at an annual average growth in its rate of 11.5%. The other bodily locations showing significant upward trends in occurrence rate were Shoulder showing growth in terms of occurrence rate points of 86.3% over the period 1991-92 to 1994-95, at an annual average growth in rate of 23.1%, Forearm and Wrist with a growth over the period of 23.8% at 7.4% annually, and Hand, fingers and thumbs growing 4.1% over the period at 1.4% per year.

If the above occurrence rate trends over the period 1991-92 to 1994-95 continue, then by the year 1996-97, about 55 workers out of every 1,000 in the industry will experience a serious, compensated injury/disease affecting the Hand, fingers and thumbs, 37 will experience a serious, compensated injury/disease affecting the Back, 27 will be affected by Shoulder injury/disease and 25 by Forearm and wrist problems.

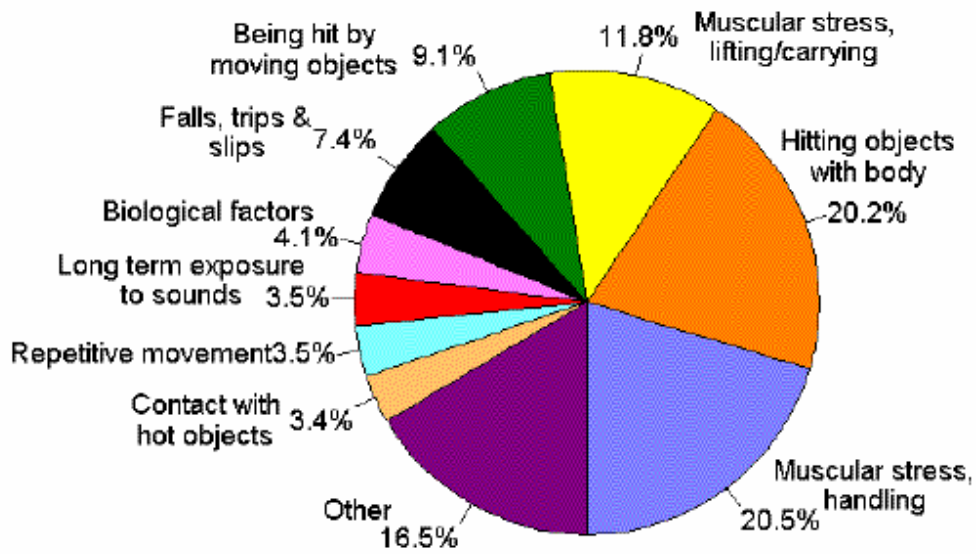
Mechanism of Injury/Disease

Figure 7 provides information on the mechanism of injury/disease experienced within the Meat Processing industry class (Figure 7a shows data for the other classes within the Meat and Meat Products Manufacturing Group for comparative purposes). The mechanism of injury/disease is defined as the action, exposure or event which is the direct cause of the most serious injury or disease experienced.

Figure 7 shows that muscular stress of some kind was involved in almost a third of all cases. Hitting objects with part of the body was also a significant problem (this mechanism includes contact with knives) as was Being hit by moving objects (this also includes contact with knives) and Falls, slips and trips.

Fig 7

**Mechanism of Injury/Disease
Meat Processing Industry Class, 1994-95**

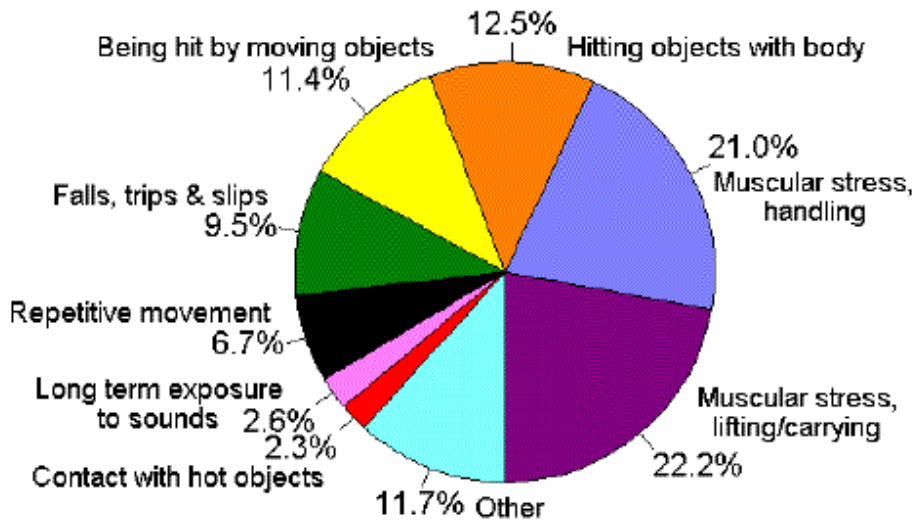


Excludes Vic & ACT

Figure 7 - Mechanism of Injury/Disease, *Meat Processing Industry Class, 1994-95*

Fig 7a

**Mechanism of Injury/Disease
Poultry Processing & Bacon, Ham & Smallgood Manufacturing
Industry Classes, 1994-95**



Excludes Vic & ACT

Figure 7a - Mechanism of Injury/Disease, *Poultry Processing & Bacon, Ham & Smallgood Manufacturing Industry Classes, 1994-95*

Figure 7b compares mechanism of injury/disease occurrence rate trends over the period 1991-92 to 1994-95. The slopes of the best fit trend lines shown indicate that occurrence rates for Muscular stress while lifting, carrying or putting down objects increased at 3.9

occurrence rate points per year over the period concerned, compared to a rise of 3.8 points per year for Muscular stress handling objects, a rise of 1.1 points per year for Falls, slips and trips and 0.7 points per year for Hitting objects with part of the body. In contrast, Being hit by moving objects declined by 0.2 points per year.

Fig 7b
Selected Mechanism of Injury/Disease Occurrence Rate Trends
Meat Processing Industry Class, 1991-92 to 1994-95

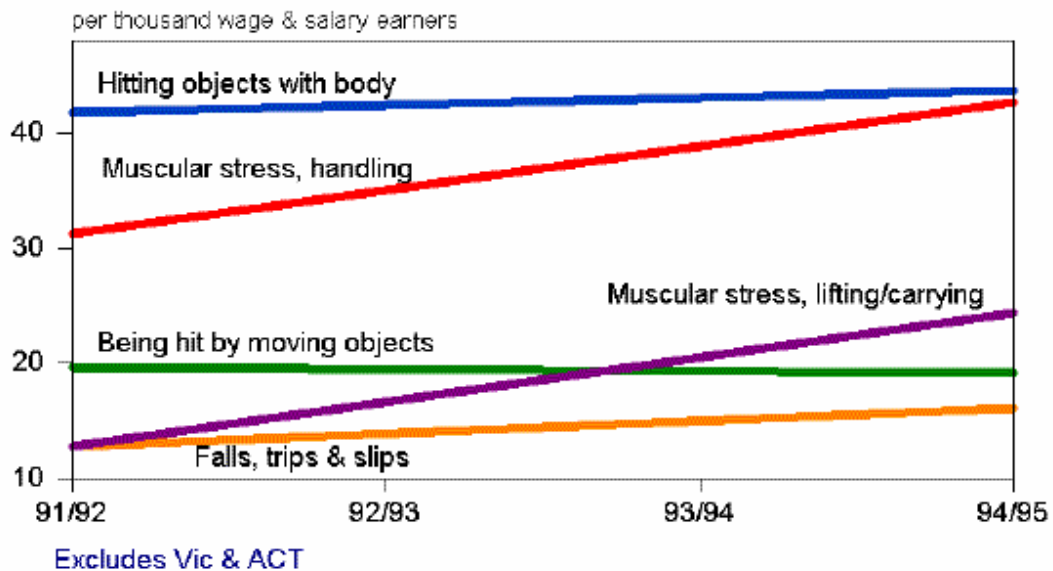


Figure 7b - Selected Mechanism of Injury/Disease Occurrence Rate Trends, Meat Processing Industry Class, 1991-92 to 1994-95

Considering proportionate rates of growth in occurrence rates, Muscular stress handling objects displayed a 37.6% growth in terms of occurrence rate points over the period 1991-92 to 1994-95, at an annual average growth of 11.1%. The other mechanisms showing significant occurrence rate growth trends were Muscular stress while lifting, carrying or putting down objects showing occurrence rate points growth of 75.6% over the period 1991-92 to 1994-95, at an annual average growth of 20.5%, Falls, slips and trips with 21.5% growth over the period at 6.8% annually and Hitting objects with part of the body growing 4.7% over the period at 1.5% per year. Against these rises, Being hit by moving objects dropped by 1.4% at 0.7% per year.

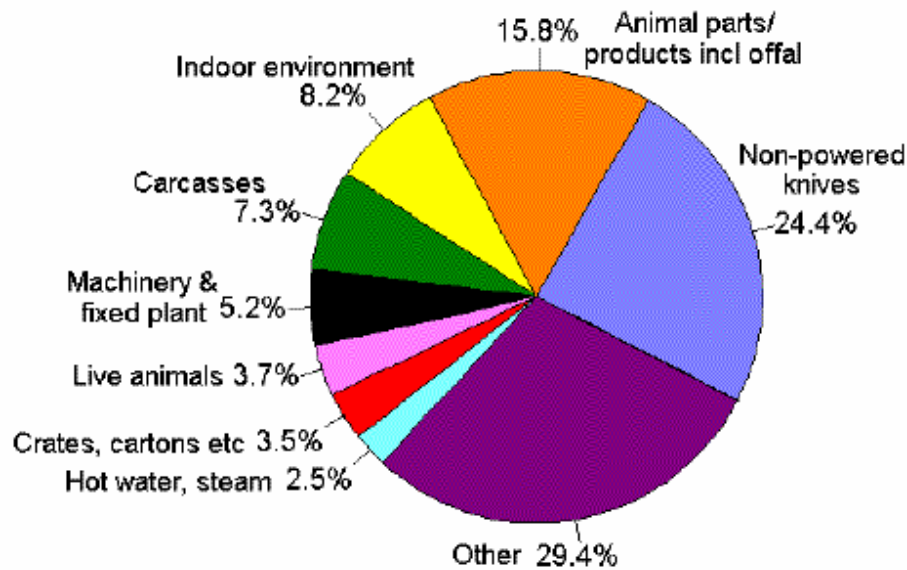
The above occurrence rate trends over the period 1991-92 to 1994-95 indicate a continuing, strongly growing problem with muscular stress (more with lifting than handling), a steadily growing problem with Falls, slips and trips and a relatively static but significant problem with Hitting objects and Being hit by objects.

Breakdown Agency of Injury/Disease

Figure 8 shows information on the breakdown agency of injury/disease in the Meat Processing industry class. Breakdown agency is defined as the object, substance or circumstance involved in the first event leading to the injury/disease.

Fig 8

**Breakdown Agency
Meat Processing Industry Class, 1994-95**



Excludes Vic & ACT

Figure 8 - Breakdown Agency, Meat Processing Industry Class, 1994-95

Not surprisingly, the agency most frequently associated with occurrences in the Meat Processing industry class was Non-powered Knives. The next most frequently reported agency was Animal parts/products including offal, with the bulk of this agency relating to offal and waste products, but around an eighth relating to things such as bone, skin, pelts, etc. Cases connected with Indoor environment were generally attributable to steps and stairways, wet or oily ground areas and noise. The pattern with breakdown agency in 1994-95 was generally similar to that experienced in 1993-94.

Type of Occurrence Cross-classifications

Mechanism of injury/disease cross-classified by breakdown agency provides a focus on connections which figure in a large proportion of injury/disease occurrences in the Meat Processing industry class. More than a third of all reported cases resulted from muscular stress of some type. Almost a third of these cases were associated with the lifting, carrying, putting down or handling of offal and waste products (noticeably more with handling than with lifting, etc). Almost 13% of muscular stress cases resulted from handling knives, while about 14% resulted from lifting, carrying, putting down or handling carcasses, and 8% from lifting, carrying, putting down or handling crates, cartons, boxes and cases.

Hitting objects with the body accounted for nearly one-quarter of all cases. A little less than three-quarters of these cases were associated with knives. This represents an improvement on the situation in 1993-94 when seven-eighths of these cases were associated with knives.

Eight percent of cases resulted from Falls, slips and trips. The agencies most commonly associated with this mechanism were steps and stairways, and internal ground areas with hazardous objects or wet, oily surfaces.

Taking this type of analysis from a different perspective, by considering data which show nature of injury/disease cross-classified by mechanism and breakdown agency, allows

some insight into the circumstances surrounding the most frequent type of injury/disease occurrences.

Sprains and strains of joints and adjacent muscles was the most frequently occurring injury in the Meat Processing industry class accounting for over two-fifths of cases and almost a half of the total compensable working days lost, at an average 35 days lost per occurrence. This type of injury also entailed direct costs which were about 25% higher than the average cost per occurrence for the industry.

Over one-fifth of these cases resulted from the lifting, carrying, putting down or handling of offal and waste products. The *National Guidelines for Health and Safety in the Meat Industry* (produced by the Australasian Meat Industry Employees Union and the Meat and Allied Trades Federation of Australia) provide some useful ideas on how risk in this area might be minimised, including:

- reorganising layout of trimmers' and sorters' workplaces for easy transfer of product
- between tables;
- provide height-adjustable tables to suit the height of the worker and the task at hand;
- position tubs for trimmings and inedible products within easy reach so that workers do not have to throw or twist; and
- use of mechanical aids to reduce risk, e.g. conveyor belts to transport containers of product, screws (with appropriate guards), self-tipping trolleys, etc.

About one-ninth of Sprains and strains cases derived from trips, slips, stumbles and falls on the same level. Over two-thirds of these cases were associated with wet or oily, or otherwise hazardous, traffic and ground surfaces, steps and stairways. The National Guidelines suggestions include:

- treating the surface of existing floors to improve slip-resistance, e.g. acid etching, sand grinding, grooving;
- maintenance procedures that facilitate prompt repair of leaks from equipment or fittings;
- designing appropriate routine cleaning procedures;
- provision of suitable footwear with slip-resistant soles should be considered; and
- stairs, steps and ramps could be fitted with slip-resistant tread or surface.

Nearly one-tenth of Sprains and strains resulted from handling knives. The National Guidelines suggestions include:

- consideration of alternative knife designs to reduce wrist and arm strain, e.g. designs that bend the knife handle rather than the wrist;
- have a supply of knives with different handle sizes; and
- ensure knives are correctly maintained to have the sharpest possible cutting edge at all times.

Six percent of Sprains and strains resulted from lifting, carrying, putting down or handling crates, cartons, boxes and cases.

More than one-third of sprains and strains affected the back. One-quarter of these cases were associated with offal and waste products while one-ninth were associated with carcasses. Almost one-fifth of Sprains and strains affected the shoulder. Just under 30% of these cases were associated with offal and waste products while 15% were associated with knives and 14% with carcasses.

Open wounds, not involving traumatic amputation, accounted for almost one-quarter of all cases in the industry and over an eighth of the total working days lost at an average time lost of 16 days. On average the direct cost of this type of injury was half the cost of an average cost of a case within this industry. Not surprisingly, given the nature of the

industry, 7 in 10 of these injuries resulted from being cut by a knife. The National Guidelines suggestions include:

- provide sufficient work space for each employee to reduce the risk of employees cutting or
- stabbing one another;
- ensure that knives are pouched when not in use in pouches which are properly designed so that the blade is not exposed, too much handle does not protrude and only one knife is stored per compartment;
- ensure knife handles are cleaned regularly during the day; and
- where there is a risk of a knife cut to a particular bodily location, provide and ensure proper use of personal protective equipment such as mesh gloves and arm or abdominal guards.

More than 80% of Open wounds affected the Hand, fingers or thumb. Of these, three-quarters resulted from being cut by a knife. A further 10% of open wounds affected the Forearm and Wrist with three-quarters of these also resulting from being cut by a knife.

Disorders of muscles, tendons and other soft tissue accounted for just over 5% of cases, but more than 8% of total days lost at an average time lost of 48 working days. The average direct cost per occurrence for this type of disease was nearly one-fifth higher than the average cost of all types of injury/disease in the industry. One-fifth of cases with this type of occurrence were connected to handling knives and about 30% were connected to lifting, carrying, putting down and handling offal and waste products. Points from the National Guidelines mentioned above with regard to sprains and strains are also relevant in this respect.

Almost all disorders of muscles, tendons and other soft tissue affected the upper limb with 38% affecting the forearm or wrist, and 20% each affecting the elbow and shoulder respectively. More than one-quarter of disorders of muscles, tendons and other soft tissue affecting the upper limb were associated with offal and waste products while one-fifth were associated with knives and one-seventh were associated with carcasses.

Burns accounted for over 4% of cases and 2% of total days lost at an average time lost of 16 working days. The average cost for this type of injury was 40% lower than the average cost of all types of injury/disease in the industry. Three-fifths of burns were associated with contact with hot water or steam while 8% resulted from contact with hot pipes or taps. It is worth noting that cross classification of nature with bodily location and agency indicates that almost one-half of burns involve the contact of hot water or steam with the lower leg, ankle or foot and toes. Investigation into work practices associated with the use of hot water/steam, with particular focus on lower limb risks, might be productive in initiating a significant reduction in the prevalence of burn injuries.

Deafness accounted for 4% of cases. The average cost for this type of injury was 8% higher than the average cost of all types of injury/disease in the industry. Almost 70% of deafness cases were associated with a noisy indoor environment.

Specified Zoonoses accounted for over 3% of new cases reported and about 4% of working days lost at an average time lost of 30 working days. This represents a significant increase in the average time lost compared with 1993-94 (19 working days), suggesting that the illnesses contracted might be different or more debilitating strains than those encountered in the past. The average direct cost for this type of disease was about 20% lower than the average cost of all types of injury/disease. Naturally enough, these disorders result from contact with, or exposure to, bacteria and other micro-organisms. One-half of these exposures were connected with offal and waste products, while just under one-fifth were connected to carcasses and 8% were related to live animals. The National Guidelines suggestions include:

- ensure work practices minimise the risk of contamination and infection;
- provide adequate personal hygiene facilities;

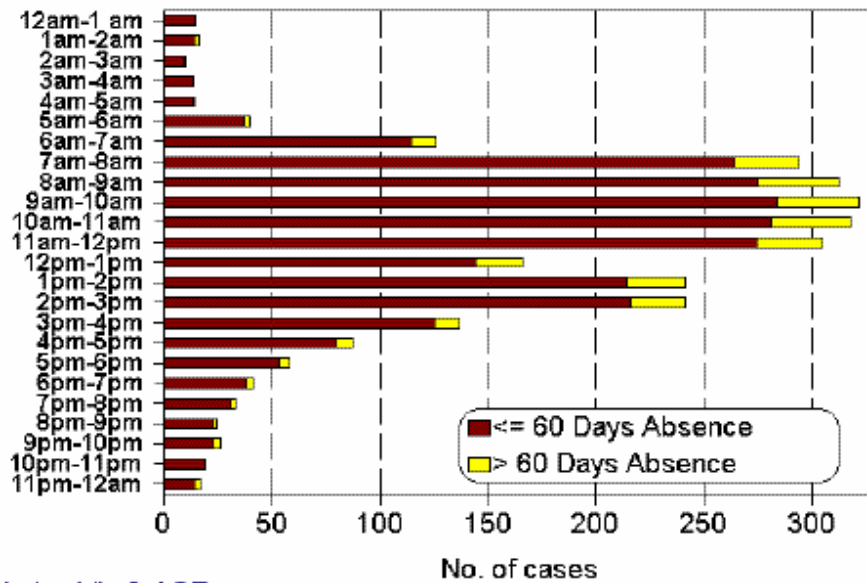
- laundering of all work clothing on site or by a professional off-site laundry;
- develop an occupational health program which includes relevant vaccination and first aid facilities;
- provide and ensure use of appropriate equipment including personal protective equipment; and
- training for all employees on the risks of zoonotic infection and possible control measures and, for employees undertaking high risk tasks, skills training to assist them in identifying and controlling the risks.

Time and Day of Accident

Figure 9 is aimed at identifying any relationship between time of day and injury occurrences. It shows injury data (note that disease cases are excluded from this graph) where time of accident has been recorded (note also that some of the cases shown as occurring between 12am and 1am, relate to cases where the time of accident is, in fact, not known). Unfortunately, data currently available cannot be used to compare incidence rates across the working day. As far as possible, the graph also distinguishes injuries with longer term effects from less severe occurrences by identifying those resulting in more than 60 days absence from work separately from those causing absences of 60 days or less.

Figure 9 shows substantial numbers of occurrences first appearing between 7am and 8am, rising to a peak between 9am and 10am and remaining fairly high until another peak between 1pm and 3pm, after which they steadily taper off. The more severe cases, ie. those resulting in more than 60 days absence from work, also peak fairly much in line with the less severe.

Fig 9 Injuries by Time of Accident
Meat Processing Industry Class, 1994-95

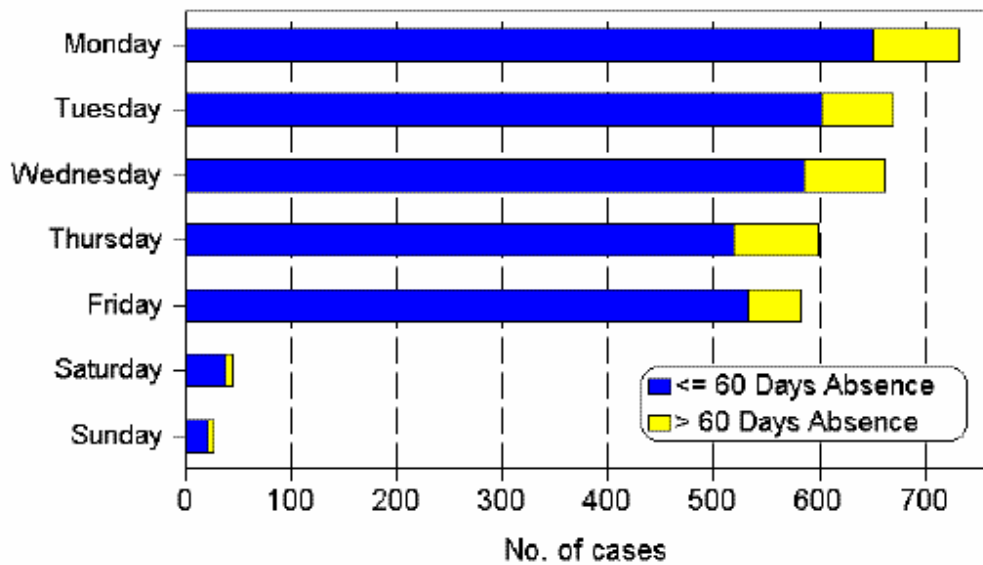


Excludes Vic & ACT

Figure 9 - Injuries by Time of Accident, Meat Processing Industry Class, 1994-95

Figure 9a shows the number of cases by day of the week, again with a distinction made between cases involving more than 60 days absence from work and those involving less than 60 days absence. Most cases, including the highest number of the more severe cases, occurred on Mondays.

Fig 9a
Injuries by Day of Accident
Meat Processing Industry Class, 1994-95



Excludes Vic & ACT

Figure 9a - Injuries by Day of Accident, Meat Processing Industry Class, 1994-95

Looking at day of occurrence by time of occurrence, the working hour of the week in which employees were most likely to be injured was 10.00 am to 11.00 am on a Thursday, marginally ahead of Monday between 8am and 9am.

Cost of Work-related Injury and Disease

The social cost of injury/disease in the Meat Processing industry class is apparent from the very high injury/disease incidence rates experienced and the fact that approximately one in ten cases resulted in more than 60 days lost from work. Furthermore, there were five compensated fatalities in this Industry Class during 1994-95. These facts need to be taken into account in the context that around 27,000 people are employed in this industry class throughout Australia.

This analysis clearly shows that there is a great deal of room for improvement in the Meat Processing industry class' OHS performance. Therefore, in addition to considering social costs, it is also useful to attempt to put an economic perspective on potential savings from any performance improvement and, to this end, workers' compensation payments data have been used.

Workers' compensation payments data are available, for all States and Territories, from the Australian Bureau of Statistics' Labour Costs surveys. For 1991-92 data were available at industry group level, but for 1993-94 they have only been made available at the two digit ANZSIC Group level. These data have been used as the basis for estimation of costs information provided in this section.

In practice, this information relates primarily to premium payments to insurers (although it also covers all other relevant costs borne by the employer and not the insurer). An underlying assumption of this analysis is that premium payments are directly and proportionately linked to risk levels which would be measured in terms of injury rates and characteristics. This is considered quite valid given the increasing interest in, and general movement towards, setting more finely-tuned

experience rated premium rates in all jurisdictions. It is considered that in comparison to risk, other costs factored into premium calculations (e.g. administration costs, profit margins, etc) would not have anywhere near the same degree of impact upon premium rates (particularly if, for example, it is assumed that administration costs are largely fixed and that profit objectives in the insurance industry are set on a low margin, high volume basis). Certainly, as a simplifying assumption, it is considered valid to use risk (injury rates and characteristics) as the primary determinant in premium variability and, by extension, the primary determinant of the magnitude and variability of total compensation costs to the industry.

Costs information for 1993-94 which has been provided in this section at more detailed industry level than 2 digit ANZSIC has been synthetically estimated by NOHSC, using workers' compensation payments data provided by the various compensation jurisdictions. Given the manner in which these data have been used and some differences in the way compensation systems operate between States, **the results should be treated with caution**, but should be useful as general indicators of magnitude.

Figure 10 shows workers' compensation costs for the Meat and Meat Products Manufacturing industry group by State and Territory, for 1991-92 and 1993-94 (the most recent Major Labour Costs data released by ABS). Figure 10 shows that the States bearing the highest cost of poor OHS performance in this industry group during 1993-94 were Victoria followed by Queensland, New South Wales, and South Australia. These figures also imply that there was a 66% increase in compensation costs to the industry between 1991-92 and 1993-94, at the national level, and that the largest States all showed significant increases. Furthermore, it is estimated that total workers' compensation costs were one-fifth more expensive for the Meat and Meat Products Manufacturing industry group than Payroll Tax, two-thirds more expensive than superannuation costs and over twenty times the cost of Fringe Benefit Taxes.

Fig 10
Compensation Costs by State & Territory
Meat & Meat Products Manufacturing Industry Group, 1991-92 & 1993-94

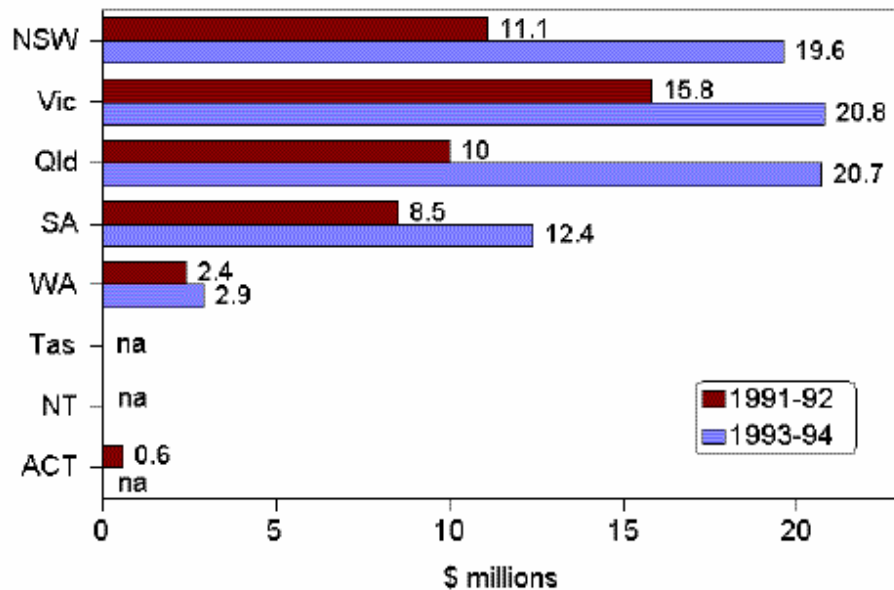


Figure 10 - Compensation Costs by State & Territory, Meat & Meat Products Manufacturing Industry Group, 1991-92 & 1993-94

Figure 11 shows that the States bearing the highest cost per employee were Victoria, followed by South Australia, Queensland and New South Wales. Appendix 2 to this paper illustrates the magnitude of this burden upon the industry by listing selected industries in descending order of workers' compensation costs per employee. It shows that the Food, Beverage and Tobacco Manufacturing industry subdivision (which includes the Meat and Meat Products Manufacturing group) had the twelfth highest cost per employee which, at \$1,180, was nearly twice the all industries average cost of \$598 per employee. The estimated cost of \$1,859 per employee for the Meat and Meat Products Manufacturing group is more than three times the all industries average cost and places this industry group amongst the most expensive per worker in Australia.

Fig 11
Compensation Costs per Employee by State & Territory
Meat & Meat Products Manufacturing Industry Group, 1991-92 & 1993-94

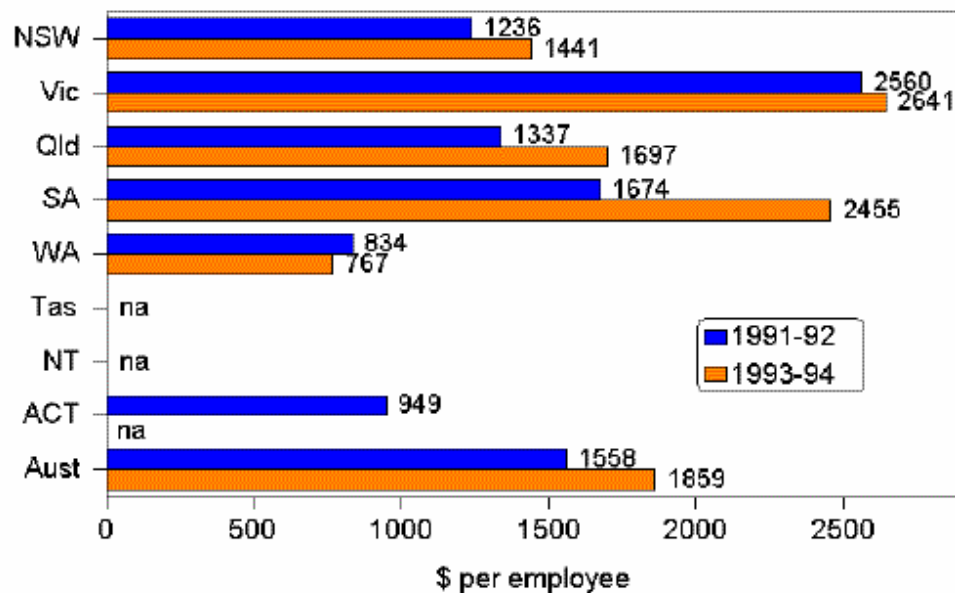


Figure 11 - Compensation Costs per Employee by State & Territory, Meat & Meat Products Manufacturing Industry Group, 1991-92 & 1993-94

Compensation costs estimates focusing specifically on the Meat Processing industry class, which accounts for more than three-quarters of occurrences in the Meat and Meat Products Manufacturing group, are provided in Table 2. These estimates imply that the cost per employee for the Meat Processing industry class is more than three and a half times the all industries average cost per employee, obviously making this industry class one of the most costly per worker in Australia. If costs for this class rise in line with trends experienced to date by the Meat and Meat Products Manufacturing group, that is by an average 29% per annum, *workers compensation costs* for the Meat Processing industry class could reach *one quarter of a billion dollars annually* by the year 2000 (*this translates to a total annual cost to the economy of around one billion, with \$400m being borne by employers, \$300m by employees and \$300m by the community, see below*). It should be borne in mind when considering this rather bleak cost outlook, that current growth trends in incidence rates imply that by the year 2000 this industry class will have an incidence rate more than 12 times the national rate. Therefore, if workers compensation premium rates are set on a fully *experience rated* basis by 2000, the quarter billion dollar cost estimate made above might, in fact, prove optimistic.

Table 2**Compensation Costs by Selected States
Meat Processing Industry Class, 1993-94***

	Total Cost (\$ million)	Cost Per Employee (\$)
NSW	15	1895
Vic	15.6	3506
Qld	15.1	1673
SA	8.9	2503
WA	1.9	843
Aust	58.6	2176

* These data have been estimated by NOHSC and caution should be exercised in their use and interpretation

Table 2 - Compensation Costs by Selected States, Meat Processing Industry Class, 1993-94*

Clearly there are potentially very significant cost savings to be made by this industry arising from improvements to their OHS performance. The extent of potential savings in this area cannot be fully appreciated unless considered over the likely term of those savings. Taking into account the possible impact of future technological change (which might alter risk factors) a ten year period has been used as the potential "life" of OHS improvements effected now. Consequently, savings are quantified in terms of real costs, measured in 1993-94 dollars, over a ten year period when considering possible scenarios for returns from effective action to improve OHS performance.

Cost data are best put into meaningful context if alternative degrees of performance improvement are considered (note that some of the alternatives presented are more likely to be successfully achieved in the short term than others). For example, the following broad assumptions put some perspective onto costs and potential savings:

- The Australian all industries annual average cost per employee is \$598. If Meat Processing industry class could improve its performance so as to reduce costs to that level per employee, the industry Group would save \$42 million per year. Or, assuming a 6% annual earnings potential, \$554 million over the next 10 years in terms of 1993-94 dollars.
- The ideal situation, at this stage, would be for the higher cost States/Territories to improve their performance so as to equal the lowest cost State/Territory in the Meat Processing industry class. If this could be achieved, the industry would save \$36 million per year, or at 6%, \$475 million over the next 10 years.

Note that in the foregoing, only direct compensation costs have been considered (basically premium payments and costs not covered by insurers). There are a number of indirect costs associated with injury (e.g. production loss, retraining costs, etc). The ratio of indirect to direct costs has been estimated by some authorities as being as high as 7:1. Using the most conservative measure of 1:1,

this implies, for example, if the improvement in ii above could be achieved, total potential savings to the industry of around \$949 million over the next 10 years.

Another way of looking at costs to the industry of poor OHS performance is to assess it in terms of overhead per worker on an annual basis. The Industry Commission (*Work, Health and Safety, Inquiry into Occupational Health and Safety*, September 1995) estimated the total cost of poor OHS in Australia at the equivalent of \$22 billion per annum (in 1995-96 dollars). Worksafe Australia had previously estimate a cost range with an upper level of \$40 billion. Merging these two estimates into a cost range, this translates into an average cost overhead (borne by all sectors of the economy) for every employee within Australia of between \$3,142 and \$5,714 annually. When putting this into perspective for the Meat Processing industry, it has to be remembered that compensation costs per employee for this class are currently nearly three and a half times the all industries rate. If this can be taken as a realistic guide, the overheads for this Industry Group might well be of the order of \$11,000 and perhaps as high as \$20,000 per annum, per employee.

Using the more conservative end of the above cost range estimate implies that the *total burden* from poor OHS performance in this industry is currently of the order of *one quarter of a billion dollars annually*. Based on the Industry Commission's estimate (*Work, Health and Safety, Inquiry into Occupational Health and Safety*, September 1995) of the way this cost is distributed across the economy, this implies that \$100 million of the cost is borne by employers, about \$75 million by employees and about \$75 million by the community (through sickness benefits, social security, Medicare payments, etc).

Significant Occupational Health & Safety Issues

Any conclusions from this preliminary analysis have to be qualified by the fact that it is based on an incomplete data set and on workers' compensation data which have inherent coverage limitations, especially in the area of hazardous substances and long-term exposure to noise which result in diseases which have a long term latency period (it is likely that the actual number of occurrences are somewhat higher than those presented in this paper). Nevertheless, in this specific context, preliminary indications, in terms of major areas of OHS focus are:

1. Current Position and Some Emerging Trends

This analysis clearly indicates that the occupational health and safety performance of the Meat Processing industry class remains very poor with employees having a very high probability of experiencing serious, compensated injury/disease occurrences. Incidence rates currently stand at more than 7 times the national rate and trends over 1991-92 to 1994-95 imply that they could reach 9 times the national average by 1996-97 and 12 times the rate by the year 2000. Sprains and strains, largely caused by Body stressing appear to be growing markedly, while Open wounds are showing steady, albeit relatively minor, improvement. Shoulder injuries/diseases also appear to be a growing area of concern. The current level of compensation costs for the industry are estimated at around \$59 million annually, implying a total cost to the Australian economy of \$250 million (taking all other direct and indirect costs into account), \$100 million of which would be borne by employers, \$75 million by employees and \$75 million by the community (mostly through government revenues). At current rates of growth, it estimated that total costs for the industry could reach over three-quarters of a billion dollars by the year 2000, \$300 million of which would be borne by employers, \$225 million by employees and \$225 million by the community.

2. Non-powered Handtools and Equipment

While there was a reduction in the prevalence of injuries/diseases associated with Non-powered knives they were still connected with nearly one-quarter of injuries.

They featured significantly in Open wound injuries, Sprains and strains and Disorders of muscles and other soft tissue. This suggests that continued assessment of practices in the maintenance and usage of this equipment might be productive in identifying appropriate preventive procedures and the analysis sets out a number of suggestions as starting points for discussion. Certainly, a focus on this area will be necessary to make any significant impact on reducing the total number of injury/disease occurrences in this industry.

3. Plant

Only about 5% of injury/disease occurrences were attributed to a breakdown agency of Machinery and (mainly) fixed plant. This tends to suggest that existing Plant did not present as a major area of concern for the industry. However, this analysis (as did previous analyses) does beg the question of whether the absence or underutilisation of more technologically advanced types of Plant might be a contributory factor to high injury rates in this industry.

4. Noise

On the basis of the available data, deafness represents 4% of cases reported. This might be interpreted as meaning that deafness does not present as a major area of concern for the industry, but trends over 1991-92 to 1994-95 imply this is a growing problem. Furthermore, it should be borne in mind that deafness is a gradual onset disease which is not always easily detected at the time at which it occurs. Therefore, the data used in the analysis would definitely understate risk in this regard and it might be worth paying attention to this issue now to pre-empt future problems.

5. Manual Handling Practices

Over 40% of cases were associated with Muscular stress of some type and trends indicate that this problem is growing sharply. Almost a half of these cases were associated with lifting, carrying, putting down or handling carcasses, offal and waste products. As Sprains and strains of joints and adjacent muscles comprised over two-fifths of injuries, a half of total compensable days lost, and had an average cost 25% higher than the average cost for all injuries, it would appear well worthwhile to address options for improving practices and introducing more mechanical aids to reduce risks in this regard. It is also worth noting that a large proportion of muscular stress cases are associated with handling Non-powered, edged handtools (knives) and the analysis makes a number of suggestions as starting points for improving performance in this regard.

6. Work Environment

Falls, slips and trips appear to now account for a little under 7% of occurrences, a noticeable improvement on 1993-94. Nevertheless, it would appear worthwhile to continue to pay appropriate attention to this issue.

Appendix 1

Extract From:

Australian and New Zealand Standard Industrial Classification: Detailed Classification, Australian Bureau of Statistics, Australia and The Department of Statistics New Zealand, 1993

Australian and New Zealand Standard Industrial Classification: Detailed Classification

Division C - Manufacturing

Subdivision 21 - Food, Beverage and Tobacco

Group 211 - Meat and Meat Product Manufacturing

Class 2111 - Meat Processing

This class consists of units mainly engaged in slaughtering animals (except poultry), boning, freezing, preserving or packing meat (except poultry), canning meat (except bacon or ham), manufacturing meals from abattoir by-products (except from products of poultry slaughtering), or rendering lard or tallow.

Exclusions / References Units mainly engaged in:

- a) slaughtering, dressing, packing (except canning) or freezing poultry are included in Class 2112 Poultry Processing;
- b) manufacturing or canning bacon or ham are included in Class 2113 Bacon, Ham and Smallgood Mfg;
- c) manufacturing refined animal oils or fats (except neatsfoot oil) are included in Class 2140 Oil and Fat Mfg; and
- d) manufacturing musical instrument strings or surgical sutures from animal gut are included in Class 2949 Manufacturing nec

Primary Activities

Abattoir operation (except poultry slaughter house)

Animal meat packing and freezing (except poultry)

Animal oils or fats, unrefined, mfg

Beefburgers, frozen, mfg (except precooked)

Bungs, caps or weasands, mfg

Frozen meat mfg (except poultry)

Gut materials, hand or machine split, mfg (for further processing)

Meat, canned, mfg (except bacon or ham)

Meat, dehydrated, mfg (except poultry)

Meat extracts or essences mfg

Meat mfg (except bacon, ham or uncanned poultry)

Meat or bone meal mfg (except fish, poultry or whale meal)

Meat packing (except poultry)

Class 2112 - Poultry Processing

This class consists of units mainly engaged in slaughtering, dressing, freezing or packing (except canning) poultry and game birds.

Exclusions / References Units mainly engaged in:

- a) canning poultry are included in Class 2111 Meat Processing; and
- b) manufacturing poultry based smallgoods are included in Class 2113 Bacon, Ham and Smallgood Mfg

Primary Activities

Abattoir operation (poultry)

Croquettes mfg (from poultry meat)

Frozen poultry mfg

Game bird (e.g. pheasant, quail) slaughtering

Meals, poultry offal, mfg

Poultry meat mfg

Poultry packing

Class 2113 - Bacon, Ham and Smallgood Manufacturing

This class consists of units mainly engaged in manufacturing bacon or ham (including canned bacon or ham), smallgoods, or prepared meat products n.e.c..

Exclusions / References Units mainly engaged in:

- a) rendering lard are included in Class 2111 Meat Processing;
- b) refining lard are included in Class 2140 Oil and Fat Mfg; and
- c) manufacturing meat paste (including ham paste) are included in Class 2179 Food Manufacturing n.e.c..

Primary Activities

Bacon mfg

Corned meat mfg (except canned)

Croquettes mfg n.e.c.

Ham, canned, cooked green or smoked, mfg

Hamburgers, precooked, mfg

Meat, cooked, mfg (except poultry)

Meat specialities mfg n.e.c.

Pate mfg (except fish)

Sausages mfg (except canned)

Smallgoods mfg

Appendix 2

Meat and Meat Product Manufacturing Industry

Listing of Selected Industries by Average Workers' Compensation Cost Per Employee, 1993-94 [(\$AUD), by ANZSIC Group in Descending Order of Cost]

- **\$AUD - ANZSIC Group**
- 9345 - Water Transport**
- 1986 - Coal Mining
- 1857 - Metal Ore Mining
- 1855 - Rail Transport
- 1342 - General Construction
- 1338 - Other Mining
- 1333 - Metal Product Manufacturing
- 1310 - Wood, & Paper Product Manufacturing
- 1229 - Non-Metallic Mineral Product Manufacturing
- 1214 - Electricity & Gas Supply
- 1198 - Machinery & Equipment Manufacturing
- 1180 - Food, Beverage & Tobacco Manufacturing
- 1149 - Other Transport
- 1141 - Water Supply, Sewerage & Drainage Services
- 1081 - Services to Mining
- 1036 - Road Transport
- 996 - Services to Transport
- 943 - Storage**
- 887 - Petroleum, Coal, Chemical & Associated Product Manufacturing
- 857 - Textile, Clothing, Footwear & Leather Manufacturing
- 845 - Construction Trade Services
- 711 - Other Manufacturing
- 695 - Other Services
- 677 - Personal & Household Good Wholesaling
- 669 - Government Administration
- 618 - Communication Services
- 611 - Basic Material Wholesaling*
- 606 - Oil & Gas Extraction
- 598 - **All Industries total**
- 561 - Health Services
- 525 - Air & Space Transport
- 495 - Motor Vehicle Retailing & Services*
- 495 - Defence
- 481 - Community Services
- 432 - Machinery & Motor Vehicle Wholesaling
- 402 - Printing, Publishing & Recorded Media
- 398 - Property Services*
- 377 - Personal Services
- 345 - Education
- 306 - Food Retailing
- 301 - Motion Picture, Radio & Television Services*
- 292 - Accommodation, Cafes & Restaurants
- 274 - Libraries, Museums & the Arts
- 262 - Business Services
- 256 - Insurance
- 246 - Sport & Recreation
- 244 - Personal & Household Good Retailing
- 213 - Finance
- 154 - Services to Finance & Insurance*

* RSE 25%-50%

** RSE >50%

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