



# HWSA FINAL REPORT

## Guarding of Machinery in Manufacturing

Version	1.4
Print Date	15/07/2009 12:50 PM
Release Date	
Release State	Initial Draft
Approval Date	
Approval State	Final Draft
Approved By	Campaign Working Group
Prepared By	Mini Menon WorkCover NSW
Reviewed By	Patrick Legge WorkCover NSW
File Name	HWSA Final Report – Guarding of Machinery in Manufacturing
Path Name	
Circulation List	HWSA Members
Confidentiality Category	Confidential

DOCUMENT SIGN-OFF – SECTION 1 PROJECT REPORT

NSW

Name (Position)	Signature	Date

VICTORIA

Name (Position)	Signature	Date

SOUTH AUSTRALIA

Name (Position)	Signature	Date

QUEENSLAND

Name (Position)	Signature	Date

AUSTRALIAN CAPITAL TERRITORY

Name (Position)	Signature	Date

WESTERN AUSTRALIA

Name (Position)	Signature	Date

NORTHERN TERRITORY

Name (Position)	Signature	Date

# CONTENTS

<b>1</b>	<b>PROJECT OVERVIEW .....</b>	<b>4</b>
<b>2</b>	<b>INTRODUCTION.....</b>	<b>5</b>
<b>3</b>	<b>PROJECT OBJECTIVES.....</b>	<b>5</b>
<b>4</b>	<b>METHODOLOGY .....</b>	<b>6</b>
4.1	STAKEHOLDER CONSULTATION.....	6
4.2	PRE & POST AUDIT SURVEYS .....	7
4.3	HARMONISED GUIDANCE ON MACHINE GUARDING .....	8
4.4	WORKPLACE AUDITS .....	9
4.5	EVALUATION AND REPORTING .....	9
<b>5</b>	<b>RESULTS OF CAMPAIGN ACTIVITIES.....</b>	<b>10</b>
5.1	THE WORKPLACE AUDIT RESULTS.....	10
	<i>Hazard identification &amp; Risk assessment.....</i>	<i>10</i>
	<i>Control of Risk.....</i>	<i>11</i>
	<i>Consultation.....</i>	<i>11</i>
	<i>Training and Instruction.....</i>	<i>12</i>
	<i>Supervision.....</i>	<i>12</i>
	<i>Plant Maintenance.....</i>	<i>13</i>
	<i>Control of Machine Risks.....</i>	<i>13</i>
5.2	THE NATIONAL SURVEY FINDINGS.....	14
5.3	POST INTERVENTION INSPECTORATE FOCUS GROUP .....	16
<b>6</b>	<b>MAJOR CONCLUSIONS.....</b>	<b>17</b>
<b>7</b>	<b>RECOMMENDATIONS.....</b>	<b>19</b>
<b>8</b>	<b>APPENDICES .....</b>	<b>19</b>
8.1	SUMMARY AUDIT DATA – JURISDICTIONAL LEVEL.....	19
8.2	CAMPAIGN AUDIT TOOL.....	19
8.3	INSPECTOR BRIEFING MATERIALS.....	19
8.4	CAMPAIGN MEDIA RELEASE.....	19
8.5	OFFICE OF THE ASCC SURVEY REPORT .....	19

# 1 PROJECT OVERVIEW

The Heads of Workplace Safety Authorities (HWSA) initiated a national intervention campaign focused on guarding of machinery in the manufacturing industry. Statistical analysis indicated that over 2500 claims were made in 2004/05 across the manufacturing sectors, as a result of being trapped by moving machinery and equipment and/or being hit by moving objects. There was a general consensus amongst the regulators that workers in the manufacturing industry are commonly exposed to moving machine parts which have the potential to cause severe workplace injuries, such as crushed fingers or hands, amputations, burns, or blindness and that safeguards are essential for protecting workers from these needless and preventable injuries.

The following workplace safety authorities joined forces to successfully mount a coordinated campaign focused on guarding of machinery in the identified manufacturing industry sub-sectors:

- ACT Workcover
- Safework SA
- WorkCover NSW
- Workplace Health & Safety Queensland
- Worksafe Victoria
- WorkSafe Western Australia

A Working Group (WG) was formed in April 2007 to oversee the development and implementation of the Guarding of Machinery in Manufacturing Campaign. The WG comprised representatives from the participating jurisdictions: New South Wales (NSW), Victoria, Queensland, South Australia, Western Australia and Australian Capital Territory (ACT).

WorkCover NSW took the lead role in the campaign. The Office of the Australian Safety Compensation Council (Office of the ASCC) worked closely with the WG to assist with the development and implementation of a systematic approach to campaign evaluation.

The intervention campaign targeted high-risk sub-sectors within the manufacturing industry that make extensive use of machinery. The sub-sectors targeted within the manufacturing industry were determined by each jurisdiction based upon identified statistical and anecdotal evidence.

The Victorian document, “Machinery and Equipment Safety – An Introduction” was harmonised during this campaign to provide nationally consistent guidance to obligation holders on effectively managing the risks associated with use of machinery and equipment in the workplace.

A total of 458 workplace inspections were undertaken during this Campaign across all the participating jurisdictions. As part of the workplace inspection process, Safety Inspectors audited over 1070 individual machines from an approximate total of 4500 fixed-powered machines operating at the workplaces visited. Of the machinery inspected, Inspectors identified 334 machines, where the risks associated with its operation had not been adequately controlled by the workplace, which equates to 31% of the machines inspected.

To assist with the evaluation of the Campaign, the Office of the ASCC conducted surveys of owners/managers and workers to collect baseline and post intervention information on OHS practices and attitudes towards the guarding and maintenance of machines. These surveys found the Campaign resulted in managers making some specific improvements to OHS in their businesses, such as installing guards, and a significant improvement in the compliance levels of businesses with the appropriate Australian Standards concerned with Safety of Machinery. However, the Campaign did not appear to influence the long-term safety practices of manufacturing businesses.

## 2 INTRODUCTION

The Heads of workplace Safety Authorities (HWSA) is a group comprising of the General Manager (or their representatives) of peak bodies responsible for the administration and regulation of the occupational health and safety in Australia and New Zealand.

The HWSA initiated campaigns are aligned with and support the National OHS Strategy 2002-2012, and facilitate the development of consistent approaches to agreed national priorities.

This Campaign was focused on the guarding of machinery in the manufacturing industry particularly as it relates to improving the capacity of business operators and workers to manage OHS effectively and strengthen the capacity of government to influence OHS outcomes.

## 3 PROJECT OBJECTIVES

The key objective of this Campaign was to prevent injuries in the targeted manufacturing sub-sectors due to inadequate machine guarding by:

- Improving the rate of installation and maintenance of adequate guarding on machines
- Building the capacity of businesses in the targeted sectors to systematically identify hazards and manage the high risks associated with operating machinery
- Providing businesses with nationally consistent and practical guidance on machine guarding
- Improving jurisdictional understanding of the barriers and enablers to the effective management of risks associated with unguarded machinery.

## 4 METHODOLOGY

A Working Group (WG) was formed in April 2007 to oversee the development and implementation of the Guarding of Machinery in Manufacturing Campaign. The WG comprised of representatives from the following jurisdictions: New South Wales (NSW), Victoria (Vic), Queensland (Qld), South Australia (SA), Western Australia (WA) and the Australian Capital Territory (ACT). The nominated representatives coordinated the project deliverables within their own jurisdictions.

WorkCover NSW took the lead role in the Campaign. The Office of the Australian Safety and Compensation Council (Office of the ASCC) worked closely with the WG to assist with the development and implementation of a systematic approach to campaign evaluation. The WG met on two occasions for face-to-face meetings and participated in phone-conferences at key decision making junctures whilst most of the out of session communication was undertaken via email.

The intervention Campaign targeted high-risk sub-sectors within the manufacturing industry that make extensive use of machinery. The sub-sectors targeted within the manufacturing industry were determined by each jurisdiction based upon identified statistical and anecdotal evidence. The WG used the following process to establish the jurisdictional targets for the Campaign.

- Each jurisdiction nominated their priority target sub-sector, using workers compensation data, review of previous jurisdictional campaigns and anecdotal Inspector information.
- Assessed commonality: In light of lack of a commonality, the jurisdictions identified their top priority sub-sector, giving consideration where possible to synergies with other jurisdictions.

The following table illustrates the areas selected by each jurisdiction:

Industry Sub – Sector	SA	QLD	VIC	NSW	WA	ACT
Wood Product Manufacturing				X		X
Metal Product Manufacturing	X	X			X	
Printing Industry Machine Guarding			X			

The project comprised the following key deliverables:

### 4.1 Stakeholder Consultation

Each jurisdiction identified key stakeholder groups and peak bodies within the target industry sub-sectors. This included both employer and employee groups and existing industry stakeholder networks. The stakeholders were briefed at the jurisdictional level regarding the Campaign, its purpose and approach through face-to-face meetings and/or through written correspondence.

The Media Release (Appendix 8.4) was distributed at the jurisdictional level to cater to the relevant state-wide audience. However, to ensure consistency in the message provided to industry, a copy of the NSW media release was forwarded to the HWSA Secretariat and all participating jurisdictions for approval in mid February 2008. Participating jurisdictions subsequently tailored the respective media releases by adding appropriate statistics for their region.

## 4.2 Pre & Post Audit Surveys

HWSA requested that the Office of the ASCC assist with the Campaign evaluations to ensure that the evaluations were relatively consistent across all HWSA initiated national campaigns. Subsequently, Office of the ASCC representatives joined forces with the Campaign WG in May 2007 to: advise on the evaluation of the Campaign; develop a program logic to guide the evaluation; administration, development, and analysis of the pre and post-audit surveys designed to provide selected information related to machine hazards in manufacturing. The Office of the ASCC commissioned Sweeney Research Pty Ltd to administer the pre and post audit surveys.

In keeping with the Campaign purpose outlined in the Project Concept paper, the objectives of the pre and post audit surveys were to:

- determine business managers/supervisors' current levels of awareness of the Campaign
- determine the impact of Campaign awareness on managers making specific OHS changes to their business
- determine the impact of the Campaign on factors that influence workplace safety:
  - the rate of use of machine guards
  - hazard management i.e. policies and operating procedures concerning safe work practice
  - managers' attitudes to health and safety issues
  - managers' knowledge of and compliance with Australian standards in relation to safety requirements for machines and machine guarding in manufacturing
- determine the usefulness of OHS guidance materials received by managers and how effectively these are communicated to workers
- determine the barriers that impede managers from undertaking safe work practices and reasons for non-compliance with OHS practices.

### Pre-Intervention Survey

The pre-intervention survey was conducted in NSW, Qld, WA and SA during the period March - June 2008. The pre-audit survey pack comprised two surveys: one for the managers/supervisors of the business; the other for the employees/workers of the business. The aim was to determine if managers/supervisors held different views concerning health and safety issues in the workplace than their employees/workers.

The participating jurisdictions provided the Office of the ASCC with a list of businesses in the target groups in NSW, QLD, WA and SA. Sweeney Research contacted the managers/supervisors from the businesses on this list by telephone to invite them and their workers/employees to participate in the research.

Those managers/supervisors who agreed to participate were posted the surveys and reply paid envelopes so they could mail completed surveys back to Sweeney Research. The managers/supervisors acted as the main contact for distributing the worker surveys.

No quotas were applied to the research, and the length of the survey was approximately 20 minutes. To improve the response rate of managers/supervisors, Sweeney Research telephoned those who had not returned their survey and conducted the survey over the phone.

### Post-Intervention Survey

The post-intervention survey was conducted with managers/supervisors only, after a lag time of approximately 3-4 months following the site inspections, to allow businesses to plan and implement changes. The post-intervention survey was conducted in NSW, QLD and WA in October/November 2008 and in SA in January 2009. Those managers/supervisors who had agreed to participate in the pre-audit survey were telephoned and asked if they would participate

in the follow up survey. Those who agreed to participate completed a 20-minute CATI survey (that is, a computer assisted telephone interview).

### 4.3 Harmonised Guidance on Machine Guarding

As part of this Campaign, the WG members agreed to harmonise the Victorian document, “Machinery and Equipment Safety – An Introduction”. The WG adopted this strategy to provide obligation holders with nationally consistent guidance on effectively managing the risks associated with use of machinery and equipment in the workplace. The guidance is practical in nature and outlines what compliance looks like rather than outlining what the legislation says. This enabled the document to be used as a harmonised guide in VIC, NSW, QLD, WA and SA.

The harmonised guide is currently available on the jurisdictional websites at the following links.

**Victoria:**

<http://www.worksafe.vic.gov.au/wps/wcm/connect/WorkSafe/Home/Forms+and+Publications/Publications/Machinery+and+Equipment+Safety+-+An+Introduction>

**New South Wales:**

<http://www.workcover.nsw.gov.au/Publications/Industry/Manufacturing/machinery+and+equipment+safety.htm>

**Queensland:**

<http://www.deir.qld.gov.au/pdf/whs/guidetomachinery-equipmentsafety.pdf>

**Western Australia:**

[http://www.commerce.wa.gov.au/WorkSafe/PDF/National\\_Standards/VWA\\_Machine\\_Safety\\_1.pdf](http://www.commerce.wa.gov.au/WorkSafe/PDF/National_Standards/VWA_Machine_Safety_1.pdf)

**South Australia:**

[www.safework.sa.gov.au/uploaded\\_files/MachEquip.pdf](http://www.safework.sa.gov.au/uploaded_files/MachEquip.pdf)

Jurisdictions employed a variety of dissemination approaches depending on the availability of resources as well as taking into account the particular needs and characteristics of the target sector. All the participating jurisdictions provided the harmonised guide to employers during the workplace audits.

- In NSW, the guidance was provided at the 30 workshops rolled out across the state. 313 participants from 193 workplaces attended the workshops. The guidance was also promoted and distributed at the meetings of the Manufacturing Stakeholder Groups and Manufacturing Industry Reference Groups.
- In VIC, the guidance was disseminated across the industry as part of the Maintenance, Repair, Installation, Service, and Cleaning (M.R.I.S.C) Project rolled out in 2007.
- In QLD, the target group was provided with information on the guidance through a direct mail-out.
- In SA, early contact was made with the Manufacturing OHSW Industry Committee, which was kept up to date on the progress of the project, including the development, launch and distribution of the harmonised guide during workplace audits.
- In WA, the dissemination process was undertaken via stakeholder consultation and stakeholder information sessions.

## 4.4 Workplace Audits

During the planning stages it was proposed that 500 workplace visits to targeted manufacturing sub-sector businesses would be carried out nationally, taking into consideration the size of the target sector as well as the resource availability within each jurisdiction. The following table provides an overview of the proposed and actual workplace visits conducted during this Campaign.

Jurisdiction	Proposed number of workplace visits	Actual number of workplace visits
ACT	20	8
NSW	100	151
QLD	250	221
SA	80	24
VIC	40	28
WA	25	26
<b>Total</b>	<b>515</b>	<b>458</b>

The Campaign WG developed an Audit Tool (Appendix 8.2) to enable the consistent cross jurisdictional gathering of data and intelligence, during the workplace visits, concerning the current levels of compliance in the targeted manufacturing sub-sectors with regards to the guarding of machinery and the supporting OHS systems of work.

An 'Inspector Briefing Presentation' (Appendix 8.3) and 'Visit Protocols' (Appendix 8.3) were developed in NSW as part of this Campaign and were shared with the participating jurisdictions. This allowed the documents to be amended to suit the needs and characteristics of each jurisdiction as well as the manufacturing sub-sectors being targeted within each jurisdiction.

To further maintain a nationally consistent approach the WG agreed to undertake announced workplace visits. This included Inspectors making appointments with workplaces to undertake site-visits at a mutually convenient time.

## 4.5 Evaluation and Reporting

The Office of the ASCC assisted the WG in the design of the process, output and outcome evaluation measures, sampling frames and provided advice in the development of the audit questions to be used in this Campaign. A program evaluation logic to guide the evaluation of the Campaign was developed by the Office of the ASCC, in consultation with the WG.

The Office of the ASCC Survey Report (Appendix 8.5) was provided to the Campaign WG outlining the findings from the pre intervention survey completed by 339 managers and 143 workers and the post intervention survey completed by 419 managers. The findings from the report assisted in evaluating the Campaign outcomes and in determining whether the Campaign objectives had been met.

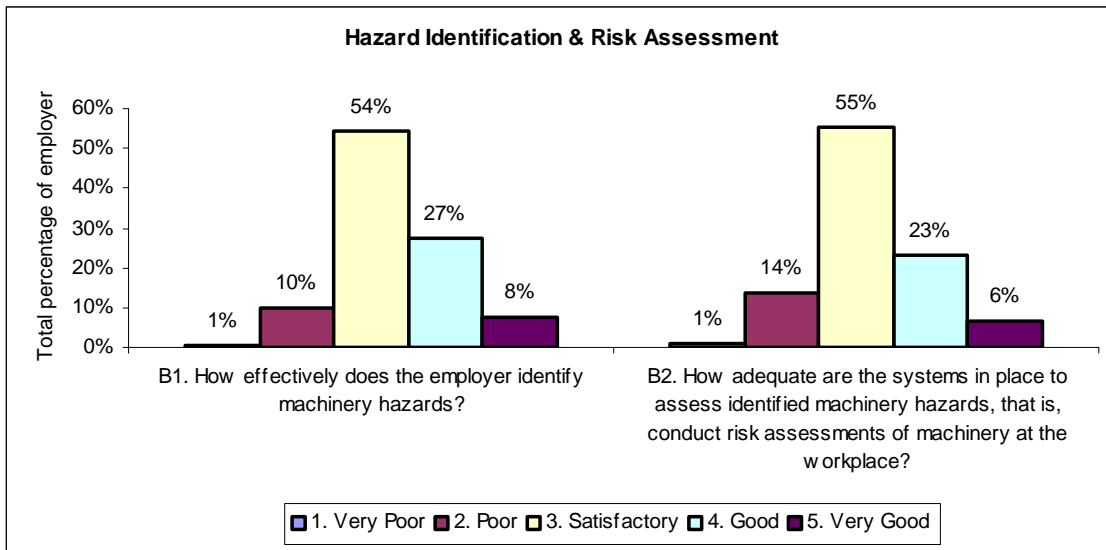
Additionally, a post intervention Inspector 'Focus Group' was undertaken in NSW, WA, QLD and SA. The Focus Groups attempted to capture the insights gained by Inspectors during the workplace audits. And in particular, to gain a better understanding of workplace standards, the impact of the national Campaign, and the manner of its execution, which could not be gained from the data alone.

## 5 RESULTS OF CAMPAIGN ACTIVITIES

### 5.1 The Workplace Audit Results

The audit data was captured and collated at both national and jurisdictional levels. The national summary of the key OHS components assessed during the audits is presented below.

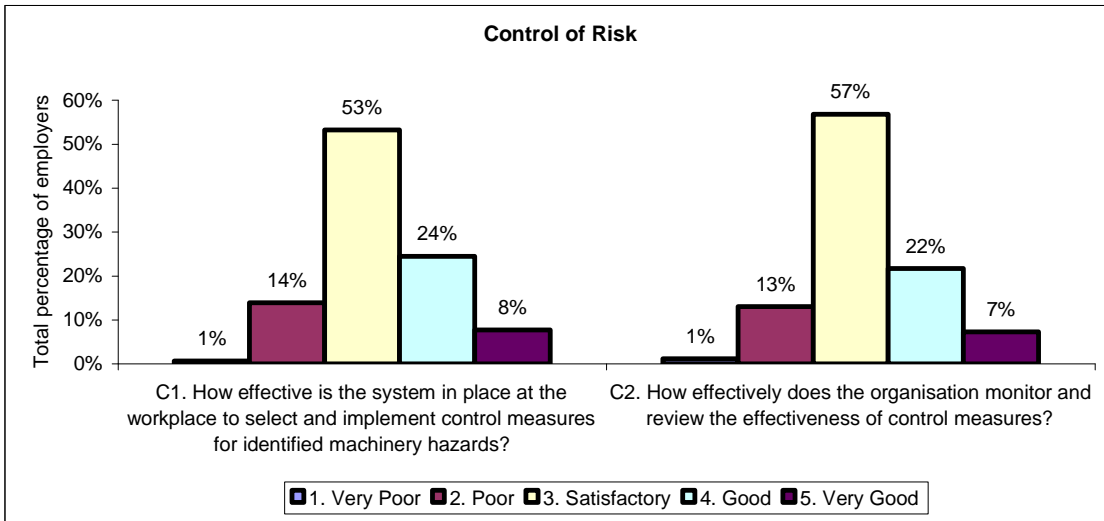
#### Hazard identification & Risk assessment



Over 89% of the workplaces visited had adequate systems (rating of satisfactory to very good) in place to identify machine hazards and over 85% had adequate systems (rating of satisfactory to very good) to assess the identified hazards and conduct risk assessments. Inspectors noted that at the majority of workplaces, hazard identification and risk assessment was undertaken in an ad hoc manner and was not properly documented. Verbal advice and information was provided to assist workplaces to adopt a systematic approach to the hazard identification and assessment process.

Across the participating jurisdictions, 15 Improvement Notices and 26 Confirmation of Advice Records (only in NSW) were issued.

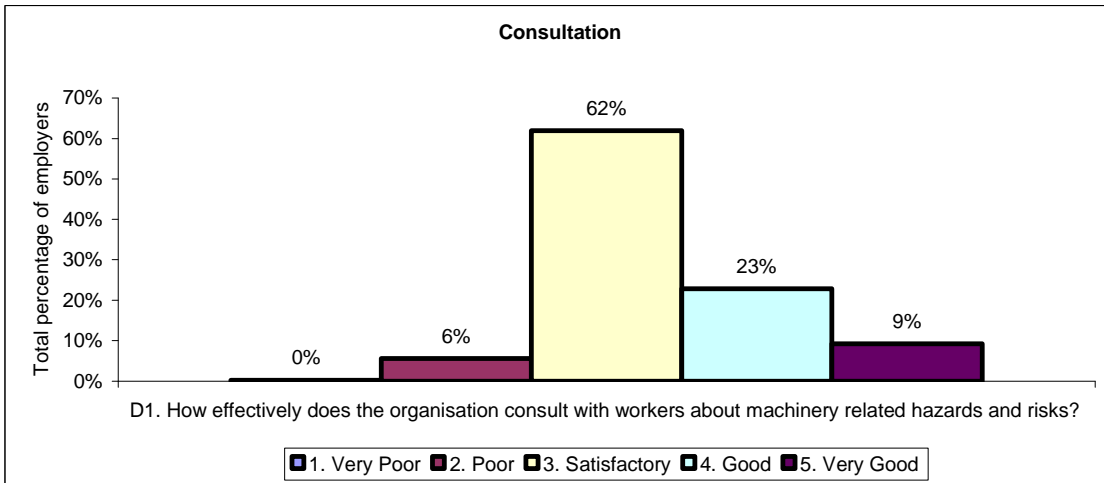
### Control of Risk



Over 85% of the workplaces visited had adequate systems (satisfactory to very good) in place to select and implement controls and to review the effectiveness of control measures. Inspectors’ comments reflect that although a majority of the workplaces implemented controls for identified machine guarding risks, the process was not undertaken in a systematic manner and was not well documented. Practical advice and information was provided, where required.

26 Improvement Notices and 19 Confirmation of Advice Records (only in NSW) were issued to employers to systematically select, implement and monitor controls for identified machine guarding risks.

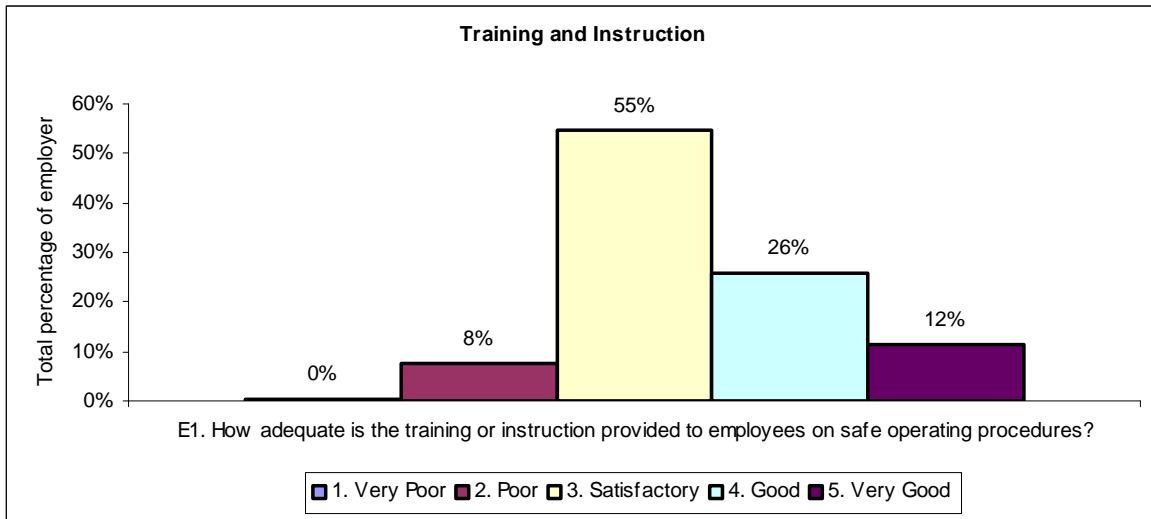
### Consultation



A very positive result was detected in this criteria with over 94% of the workplaces visited having adequate (satisfactory to very good) systems in place to consult with their workers about machinery related hazards and risks. Inspectors mostly provided verbal advice and guidance to drive improvements.

4 Improvement Notices and 11 Confirmation of Advice Records (only in NSW) were issued to ensure compliance with this criteria.

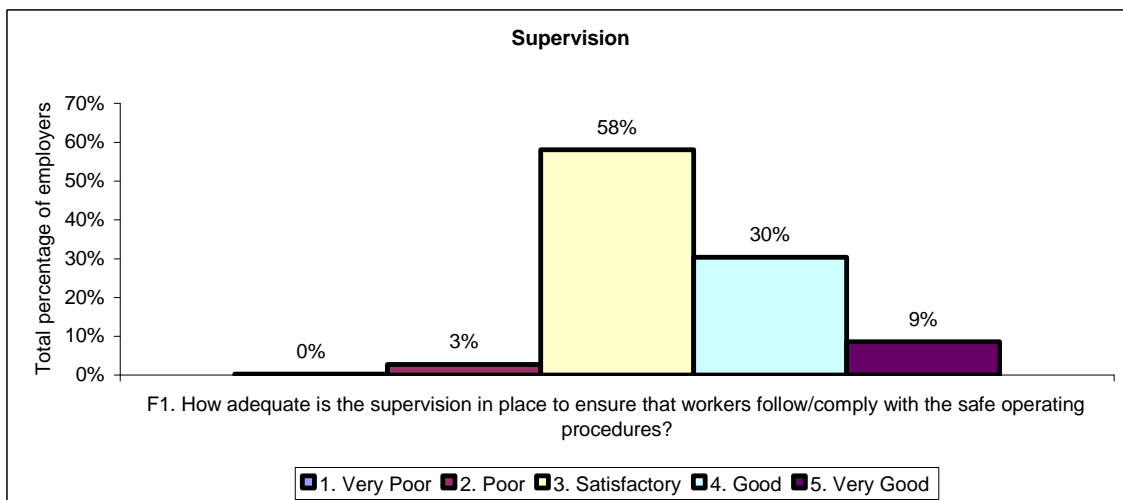
## Training and Instruction



A positive result was detected in this criteria with 92% of the workplaces visited able to demonstrate that they provide adequate (satisfactory to very good) training and instruction to their employees to ensure the safe operation of machines. A lack of documentation and maintaining training records were identified as an issue at the smaller workplaces. Inspectors provided practical advice and information to assist workplaces to develop simple systems to document the safe operating procedures and the training provided to workers.

11 Improvement Notices and 17 Confirmation of Advice Records (only in NSW) were issued under this criteria.

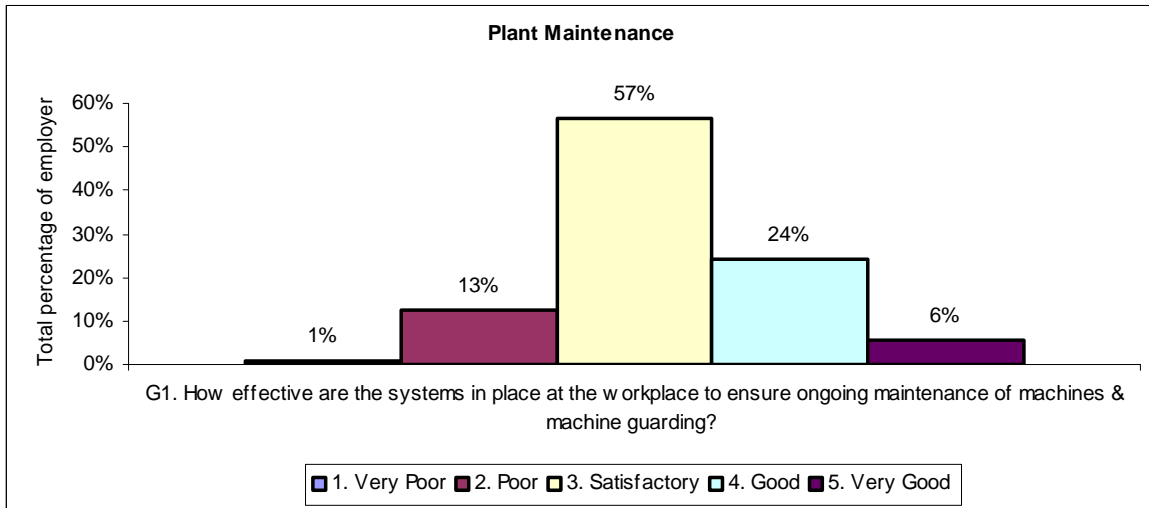
## Supervision



The Supervision criteria recorded a very high rating with 97% of the workplaces visited demonstrating that they had systems in place to adequately supervise their workers and ensure that the safe operating procedures were followed.

3 Improvement Notices and 2 Confirmation of Advice Records (only in NSW) were issued to workplaces where non-compliance was detected.

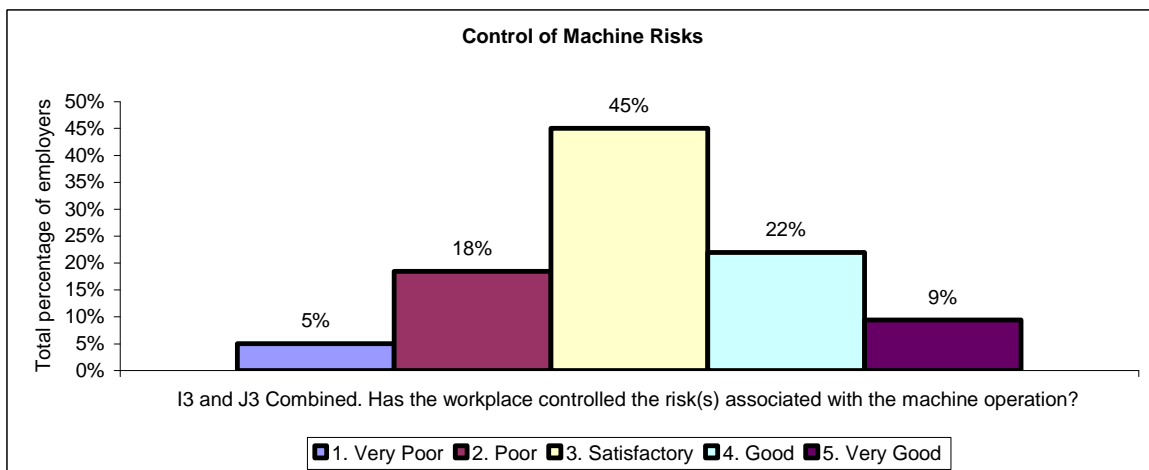
## Plant Maintenance



The Plant Maintenance criteria recorded a 'satisfactory to very good' rating at over 85% of the workplaces visited. Inspectors noted that workplaces generally had systems in place to ensure ongoing maintenance of machine and machine guarding. Record keeping was again identified as an area that required further improvement.

Inspectors issued 36 Improvement Notices and 11 Confirmation of Advice Records (only in NSW) where appropriate to address non-compliance detected in this criteria.

## Control of Machine Risks



A total of 1070 individual fixed powered machines (approximately 2 per workplace visited) were inspected across all participating jurisdictions. In the Inspectors' opinion, 78% of the workplaces visited had systems in place to adequately (satisfactory to very good) control the risks associated with the operation of the machinery at the premises.

The following were identified as the most common machines with recurring guarding issues:

- Wood product manufacturing - Wood Working Saws (46%) and Spindle Moulder (16%)
- Metal product manufacturing - Guillotines (20%), Press (15%), Metal Working Saws (16%) and Croppers (13%).
- Printing Industry - The unguarded flywheels of Cylinder and Offset Presses (60%).

251 Improvement Notices and 9 Prohibition Notices were issued where Inspectors identified a high risk of injury resulting from non-compliance with machinery safe operating procedures.

## 5.2 The National Survey Findings

The main conclusions that can be drawn from the surveys are:

- Managers were aware of the Campaign.
- Managers responded to interventions by installing new/more suitable guards if these were needed.
- This Campaign was successful in getting businesses to make some specific changes, such as installing guards, or more suitable guards, on metal milling machines. The level of guarding on metal milling and other metal working machines was improved .
- This Campaign has resulted in an 11% increase in businesses compliance with the requirements of the AS 1473 Wood processing machinery: safety requirements for finishing machinery series of Australian Standards.
- There is evidence that the mail out of guidance material is an effective means of ensuring a greater compliance level by the targeted industry sub-sectors with the appropriate Australian Standards for machine guarding.
- There is limited evidence that the Campaign has resulted in an increased use of other controls by the businesses visited.

Campaigns such as this, focused on dissemination of guidance material and workplace visits, may result in managers making specific one-off changes, as highlighted above. The proportion of workplaces with a company policy remained the same after the intervention campaign. 88% of workplaces still had operating procedures for the use of machines and guards following the campaign. The attitudes of managers to OHS appeared to remain the same. Achieving sustained change in organisational practice and safety culture requires long-term engagement, combined with training, support and assistance. Ongoing campaigns of this type could assist in making long-term change in workplaces.

Some of the survey highlights include:

### ***Making changes – Campaign effects***

77% of managers could recall the Campaign on machine guarding. Managers who reported having made changes due to the Campaign were significantly more likely to do so if they had a site visit. The most common change that managers reported making was installing a guard. Awareness of the Campaign or having received an intervention was not associated with managers' plans to make changes in the next 6 months.

The findings suggest that site visits are an effective intervention in getting managers to install guards. However, it appears that the Campaign has not influenced future planning by managers to improve OHS at the workplace. This may be because OHS changes are part of broader business planning, such as buying new machines that enable improved safety.

### ***Use of guards and other controls***

The proportion of workplaces with a company policy did not change significantly after the Campaign. Receiving an intervention was not associated with businesses putting in place an operating procedure for the use of guards.

There was a 9% increase in use of guards on metal milling machines from pre to post Campaign. This suggests that receiving an intervention may have resulted in an increased use of guards on metal milling machines.

Significantly more of those who received an intervention reported that they provide and insist on the use of safety equipment such as mesh gloves, ear muffs and goggles.

The proportion of employers/managers who reported using Australian Standard AS 1473 Wood processing machinery: safety requirements for finishing machinery series of Australian standards increased by 11% following the Campaign. Significantly more of those who received an intervention reported using Australian Standard AS1473 and the AS 4024.1 -2006 Safety of machinery series of standards most of the time or always. In both cases those who received material in the mail were the most likely to report that they always or most of the time comply with these standards.

### ***Guidance Materials – usefulness and usability***

Around half (48%) of employers/managers recalled receiving guidance material on machine guarding from their workplace authority. Of those who received the guidance material, 88% believe the information was easy to put into practice. This was consistent across manufacturing areas. A key reason why managers reported it was easy to put the information into practice was the simplicity and clarity of information. For those who did not consider the information easy to put into practice, guards being unsuitable for machine usage was a primary reason. By comparison to the generally positive view of the mailed out information, some managers commented unfavourably about the difficulty of locating online information on machine guarding.

### ***Barriers to effective management of risks in manufacturing***

Over half the employees indicated that the dangerous machines they use are also the most commonly used machines in their workplace.

The two top reasons that workers provided for guards not being fitted on machines were:

- it is “management responsibility” (41%)
- “only trained operators use the machines without a guard” (16%).

Similarly, with owners/managers:

- “trained operators use machines without guards” (23%)
- “it was the worker’s responsibility to ensure guards are fitted” (16%).

Some care is needed in the interpretation of these findings as it is not clear it is because guards can not be fitted to those machines that only trained operators can use them or alternatively, guards can be fitted to those machines but because the operators are trained, they choose to use the machines without the guards fitted.

It is of concern that nearly half the employees surveyed thought it was a management responsibility to fit the guards. It may be that the apparent confusion about whose responsibility it is to ensure guards are fitted when the machine is in use is a reflection of an ad-hoc approach. One of the most common reasons for removing guards is to clear jams caused by the guard. This is concerning. It suggests that the design of guards may need further investigation.

### ***Perceptions of OHS issues in manufacturing – managers and workers***

Workers and managers had very similar views on the frequency of use of dangerous machines in the workplace – the most dangerous machine in their workplace is used most of the time/always. They consider the most dangerous machines to be saws, spindle moulders and panel saws. Press brakes and guillotines in the metal manufacturing industry are commonly reported as being dangerous.

Managers more often report that most of the time or always there are guards on the machines being used by workers. Workers are less likely to report that there are guards on the machines they are using. This suggests that while both managers and workers recognise the dangers, workers do not always use guards to protect themselves. 41% of the workers surveyed saw the fitting of guards as a 'management responsibility' while 16% of the managers thought it was the workers responsibility to ensure the guards were fitted. The disparity between worker and manager views as to whose responsibility it is to ensure guards are fitted is notable.

While 92% of managers state that most of the time or always they consider health and safety to be more important than getting the job done, only 57% of workers believe that managers consider health and safety more important than getting the job done.

### ***Maintenance***

The Campaign did not result in managers making changes to their maintenance procedures. 97% of managers said that most of the time or always they regularly undertook maintenance on their machines, which is consistent with the inspections. Receiving an intervention made no difference to maintenance undertaken, and there was no change between the pre and post surveys.

## **5.3 Post Intervention Inspectorate Focus Group**

Overall, there was a general consensus that the Campaign was a success as it allowed Workplace Safety Authorities across the participating jurisdictions to take a collaborative and consistent approach focussed on the guarding of machinery in targeted manufacturing sectors.

Project Inspectors agreed that the balanced intervention strategy was well received by the industry. It consisted of a number of activities including stakeholder consultation, harmonised information product, industry workshops/information sessions and workplace inspections. This strategy allowed Inspectors to engage with industry stakeholders more effectively.

Project Coordinators in some of the participating jurisdictions faced serious challenges during the development of the harmonised guide. Concerns were raised that the protocols around harmonising of documents are not consistent nationally and are largely dependent on the directives of the Communication Divisions within each jurisdiction. Therefore, these jurisdictions faced extended delays during the harmonisation process and this in turn resulted in the delay in the roll out of workplace audits and the post intervention survey.

Project Inspectors in some of the participating jurisdictions noted that the lead-time between the dissemination of the guide and the workplace audits was not sufficient and this did not allow the workplaces to plan or implement any changes before the Inspectors visit. In those instances where guidance was provided in a timely manner and workplace visits were pre-arranged, Inspectors noted positive safety outcomes at the workplaces visited.

Project Inspector responses to the Campaign Audit Tool varied. It ranged from positive comments such as "very comprehensive and easy to use" to comments that the tool was "complicated and repetitive". Some Inspectors commented that the Tool was largely focused on OHS management systems which are not applicable in a small business environment and some thought that it was 'overly simple' particularly when used in the assessment of complex machinery systems.

A balanced combination of 'Education and Enforcement' mechanisms was identified by the Campaign Inspectors as a key driver in enhancing businesses' compliance with their machine guarding responsibilities. The industries lack of knowledge of practical workable controls and the cost of installing and maintaining guards was identified as a key barrier.

Labour hire workers, 457 Visa workers, working with machinery manufactured overseas and outsourcing of work overseas was identified as some of the emerging issues in the manufacturing sectors targeted through this Campaign.

Constructive suggestions to improve Campaign outcomes included:

- Ensuring all participating jurisdictions target the same manufacturing sub-sector as part of HWSA Campaigns.
- Ensuring all participating jurisdictions complete the project deliverables, particularly the workplace audits, in a timely and coordinated manner.
- Implementing a nationally agreed protocol that supports the development of harmonised industry guides, as a component of HWSA campaigns.
- Disseminating the guide through a one-on-one engagement mechanism, however it was acknowledged that this approach was highly resource intensive. The workshops in NSW were highly successful in building the capability of employers to adopt a systematic approach to managing workplace safety.

## 6 MAJOR CONCLUSIONS

The following evaluation points were highlighted in the Campaign Evaluation Logic developed by the Office of the ASCC:

- Stakeholder consultation was undertaken within each participating Jurisdiction.
- Media Releases were developed and distributed within the planned time-frames.
- The Victorian guide on 'Machine and Equipment Safety' was harmonised within NSW, QLD, WA and SA. It should be noted that some jurisdictions found this exercise very challenging due to the lack of agreed national protocols.
- The Office of the ASCC in NSW, WA, SA and QLD administered the pre-intervention survey in a timely manner.
- The workplace audits were undertaken within most jurisdictions within the agreed project timeframes. However, some jurisdictions were not able to undertake the site audits within the timeframes agreed to in the project plan.
- The post intervention phone survey was administered by the Office of the ASCC in a staggered fashion to accommodate the delay in the completion of the site-audits in some jurisdictions.
- A post intervention 'Inspector Focus Group' was conducted in NSW, QLD, WA and SA.

This is the first national campaign focused on guarding of machinery and as such it does not allow for data comparisons of long-term changes in the guarding of machinery in the manufacturing industry sector.

The workplace audits provided a snap-shot of how effectively the workplaces were controlling the risks associated with operating machinery at the time of the Inspector's visit. Nationally, 458 workplace audits and inspection of 1070 individual fixed powered machines was undertaken as part of this Campaign. 78% of the workplaces visited had in place systems to adequately control the risk associated with machine operations. Actions taken by the Inspectors ensured that all the workplaces inspected were compliant at the end of the Inspectors' interventions.

Of the managers surveyed who were aware of the Campaign, 47% claimed to have made a change to workplace safety practice following the Campaign. The most common change the

managers reported making was installing a guard. There was a 9% increase in use of guards particularly on milling machines from pre to post Campaign. Wood and metal working saws, spindle moulders, press brakes and guillotines were identified as machines with recurring guarding issues which is reciprocated in the survey findings as the most dangerous machines used in the workplace.

During the workplace audits, the Inspectors noted that the majority of the smaller workplaces managed their OHS responsibilities in an ad hoc manner and did not have structured OHS management systems in place. The documentation at these workplaces was inadequate. Inspectors provided practical advice and information to promote a more systematic approach particularly while undertaking a risk assessment process and documenting the induction and training provided to workers. However, the survey findings do not indicate any significant change in the attitude of managers to OHS between those who did and did not receive an intervention. This is not surprising as there was only an approximate four month period between pre and post surveys and attitudes tend to be highly stable in the short-term.

The survey findings indicate an 11% increase in industries' compliance with the requirements of the series of Australian standards entitled AS 1473 Wood Processing Machinery: Safety Requirements for Finishing Machinery. Additionally, 88% of those who received the guidance material and advice believed the information was easy to put into practice. Survey findings suggest that mailed out information was positively received by managers and seen as useful. This does not correspond with the feedback drawn from the Inspector Focus Groups, which highlighted that mailed out information is generally ignored by workplaces especially small to medium business operators. Workplaces expressed concerns in the survey as regards the difficulty of locating online information vis-à-vis machine guarding issues.

Barriers to controlling risks through the use of guards were reported by the managers and workers during the surveys. 41% of the workers surveyed saw the fitting of guards as a 'management responsibility' while 16% of the managers thought it was the workers responsibility to ensure the guards were fitted. The disparity between worker and manager views on the responsibility to ensure guards are fitted is noteworthy. Other perceived barriers included problems with materials fitting through the guards, sawdust build up causing machinery jams, guards getting in the way of material being worked with and guards slowing down production. The range of these issues suggests that there may be a need for all stakeholders to consider the design of guards for specific machines and workplace activities. Inspectors identified factors such as the cost and industries lack of knowledge of workable solutions as some of the main barriers to workplaces controlling risks through use of machine guards.

## 7 RECOMMENDATIONS

As a result of this Campaign, it is recommended that the Heads of Workplace Safety Authorities:

1. Consider the findings of this report.
2. Develop and implement an agreed national framework, which streamlines the harmonisation of information products during HWSA campaigns.
3. Support the continued development and promotion of nationally branded information products during HWSA campaigns aimed at providing consistent, practical and industry-specific guidance. Systematic evaluation of the usability of online information is also recommended.
4. Encourage jurisdictions to target the national campaigns on the same industry sub-sector to reduce complexity and support statistically significant evaluations.
5. Consider a follow up of this Campaign in four years to determine the long-term changes in compliance levels in the targeted industries regarding the guarding of machinery and whether the changes observed in the post Campaign survey have been sustained, such as an increased level of compliance with the appropriate Australian standards.
6. The provision of information on Australian safety standards in regards to manufacturing machinery appears to have been effective in achieving change. The methods used to deliver this information should be documented as it may be of value to increase the penetration and uptake of information, especially within the small to medium business sector.
7. Consider the continued involvement of the Office of the ASCC in future HWSA campaigns, to assist with the systematic evaluation of campaigns.

## 8 APPENDICES

### 8.1 Summary Audit Data – Jurisdictional level

### 8.2 Campaign Audit Tool

### 8.3 Inspector Briefing Materials

### 8.4 Campaign Media Release

### 8.5 Office of the ASCC Survey Report