

Safe handling when securing loads advisory campaign report

Final report
November 2012

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1. Executive summary

Workplace Health and Safety Queensland's (WHSQ) *Safe handling when securing loads* campaign conducted 427 advisory inspections ("inspections") between February and June 2012, at transport workplaces across Queensland.

Inspectors assessed the work health and safety risks of the load restraint equipment and techniques used on 427 trucks transporting general and mixed freight, steel, logging, timber and machinery. The practices of securing loads involve a range of techniques and equipment. Immediate feedback was provided to the driver or transport operator. Four load securing activities were targeted: placing lashings and corner protectors; handling curtains; handling gates and tensioning chains and webbing. A total of 858 activity inspections occurred. The campaign had a particular aim to quantify the prevalence of using fixed lever over-centre load tensioners (dogs) and lever extension bars (cheater bars) within the activity of tensioning chains and webbing.

High risk practices (high risk tasks or equipment use) were noted in 48 per cent of inspections. Some of the high risk practices observed included the use of dogs and cheater bars, worn or damaged load binders or winches, or where a single worker manually removes a gate which weighs over 12kg. This indicates that the industry is going some way to reducing risks but unacceptably high levels of risk are still widespread.

The activity of placing lashings and corner protectors was assessed for 44 per cent (186) of the 427 inspections and accounted for the highest proportion of high risk practices across all freight tasks: 76 per cent of the inspections which assessed this activity noted that high risk practices were occurring. This activity was considered high risk when the practices involved: throwing chains or lashing over the load; climbing on the truck to place the chains, webbing, or other lashings tarpaulins or corner protectors over the load; or, where other workers were at risk of being struck and injured.

In keeping with the particular aim of the campaign, the activity of tensioning chains and webbing was assessed for 337 of the 427 truck inspections. High risk practices for this activity were most often noted in: steel 29 per cent; timber/logging 29 per cent; machinery 18 per cent and other 19 per cent. Use of dogs (with or without cheater bars) was observed most commonly for: steel 24 per cent, machinery 16 per cent; and other 15 per cent.

The data from the campaign shows that high risk practices are evident across all types of freight tasks and especially for steel and timber/logging freight tasks. The use of dogs to tension chains is still common practice, particularly for steel and machinery.

It is recommended that WHSQ:

1. widely communicate the results of this campaign and key findings, by distributing this report and associated material, to the transport and supply chain industries.
2. continue to work with the transport industry to improve understanding about how to eliminate or reduce the risks of unsafe equipment and work practices through effective safety management, including encouraging the industry and the manufacturers and suppliers of innovative load restraint equipment to expedite the uptake of safer equipment and phase out of dogs and cheater bars.
3. target supply chain industries to eliminate or minimise risks associated with the loading and unloading of trucks. This should include highlighting the requirement that persons conducting a business or undertaking (PCBUs) consult, cooperate and coordinate activities with others in the supply chain.
4. incorporate reference to the activities associated with securing loads into future campaigns including those which focus on falls, muscular stress and being hit by objects.
5. use higher order compliance actions (e.g. notices), where high risk practices are identified as contravening a provision of the *Work Health and Safety Act 2011*.

2. Background

Concerns about load tensioners were raised by the transport industry and WHSQ inspectors in 2010. These concerns suggested that a significant number of injuries resulted from dogs and cheater bars. The Heads of Workplace Safety Authorities Load Restraint (Dogs and Cheater Bars) Working Group (HWSA LRWG) was formed in July 2010 to further investigate the concerns and make recommendations for improved practices.

Load restraints are classified as tie-down/friction restraints or direct restraints (containing, blocking and attaching) or a combination of the two. Commonly, webbing and chains are used for tie-downs and direct restraints. Side curtains and gates are used as containment restraints. The LRWG established that unacceptable risks exist with the use of dogs and cheater bars and that alternative equipment and restraint techniques are readily available.

In 2011, Worksafe Victoria conducted an intervention campaign which promoted safer practices based on their guidance note "Safe handling when securing loads on trucks". This guidance note addresses common load restraint practices including the use of truck gates, side curtains, and chain and webbing tensioners. A similar approach was decided on in Queensland.

The campaign *Safe handling when securing loads* began on 1 July 2011, with inspections to be conducted state-wide from March to June 2012. The campaign targeted the risk factors of high or sudden force, awkward posture, sustained posture, repetitive movement, falls and hitting or being hit by objects, when workers:

- handle gates
- handle curtains
- place lashings and corner protectors; and
- tension chains and webbing

The campaign's main objectives were:

1. To raise awareness among truck drivers and transport operators of the risks associated with equipment used to secure loads on trucks, including gates, curtains and load tensioners and identify alternatives which are reasonably practicable;
2. To identify work factors (e.g. location, load types, restraint methods and vehicle types) associated with high risk practices
3. To gather information about the extent of use of fixed lever over-centre load tensioners (dogs) and lever extension bars (cheater bars).

3. Advisory tool

The Transport and Storage Industry Sector Standing Committee provided advice about the design of the campaign and suggestions about how inspectors could most effectively engage with transport operators and drivers.

An advisory tool was designed to assist inspectors to easily identify and consider the risk of the activities being undertaken using observation of, and discussions with, truck drivers. The approach was advisory in nature and advice and information was provided to the drivers during the inspection. The tool was piloted in February 2012. Minor changes were made to the tool and the results of the pilot inspections were incorporated into the overall campaign data.

The tool identified common load restraining practices or features of equipment used in four targeted load securing activities: handling gates; handling curtains; placing lashings and corner protectors; and, tensioning chains and webbing. The tool is attached as Appendix A.

These practices were then classified as “high risk”; “moderate risk” or “controlled risk”:

- “high risk” - very likely to cause injury; limited or no use of equipment or methods to control the risk.
- “moderate risk” - some potential risk of injury; some risk controls have been implemented but these are not fully effective in minimising or eliminating the risk.
- “controlled risk” - less likely to result in injury; higher level of risk control which substantially minimises or eliminates the risk are implemented.

The four activities are not mutually exclusive and often all four form part of the activity of securing the load on a truck. The restraining method and equipment used within the four activities depends on the type of load and type of truck, and this can often involve multiple restraining methods and equipment for each truck.

The overall activity observed by the inspector was recorded against the specific risk practices under the four activities. If one or more risk practices were noted under the high risk, moderate risk or controlled risk headings, the activity was considered to have that risk characteristic. As noted above, these categories are not mutually exclusive and for the overall activity of securing loads, multiple practices, involving varying levels of risk, may be undertaken.

For example, a truck may have both gates and curtains and then also use webbing straps to tie down pallets to the floor of the truck. Observation of the overall activity of securing the load on this truck may note that both high risk and moderate risk practices are involved in handling curtains; moderate risk and controlled risk practices are used in the use of the webbing; moderate risk practices are used when placing lashings and corner protectors and controlled risk practices are used for handling gates.

4. Results and discussion

Four hundred and twenty-seven (427) inspections were conducted across Queensland. The inspections assessed load securing practices across the four activities targeted. A total of 858 activity inspections were conducted: handling gates - 165 inspections; handling curtains - 170 inspections; placing lashings and corner protectors - 186 inspections; and, tensioning chains and webbing - 337 inspections. Figure 1 shows the proportion of inspections which identified high risk practices for each activity.

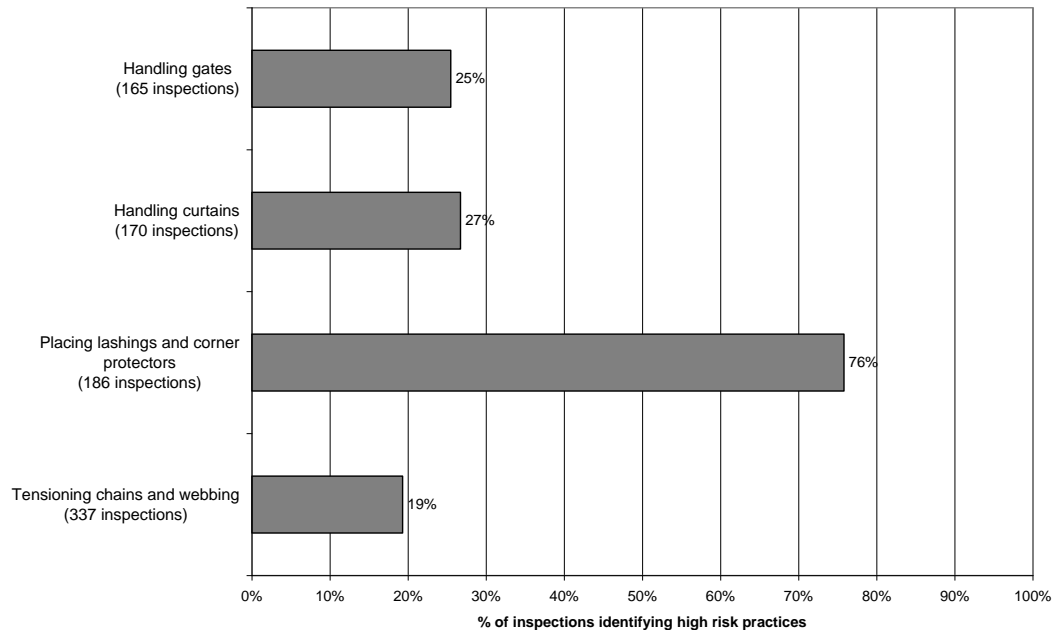


Figure 1. Inspections identifying high risk practices

4.1 Load securing activities

Handling gates

The activity of handling gates was assessed by 165 of the inspections. A quarter of these (25 per cent) manually removes a gate which weighs over 12kg. Reducing the risk could involve a worker manually moving a gate where the weight was supported by straps or rollers. The risk is minimised if mechanical assistance is used to position the gates and the risk is eliminated if gates are replaced with load rated curtains or another effective load restraint such as racking, chocking or purpose built flooring is used. The level of high risk practices indicates that there is significant scope for industry to reduce risks and injuries by implementing better controls.

Handling curtains

Handling curtains was assessed by 170 inspections. High risk level practices were apparent in 27 per cent of these inspections. Poorly designed and/or maintained curtains or practices which increase the risk of muscular stress (e.g. forceful actions, repetitive movements and awkward postures) are considered high risk. The risk is reduced when well-designed, well maintained curtain tracks are used. Use of an extension strap and/or procedures to reduce muscular stress can also reduce the level of risk. The risk is controlled when automatic curtains or fastening systems are used. These systems are relatively new to the market and are generally expensive to install. Although they are gaining acceptance it is unsurprising that the inspections noted relatively low use. The findings indicate that although some risk control is occurring in almost all cases, the proportion of high risk practices is unacceptable and this is an activity which requires attention by transport operators.

Placing lashings and corner protectors

The activity of placing lashings and corner protectors was assessed by 186 of the inspections. This activity was notable because it recorded a very high proportion (76 per cent) of high risk practices, indicating widespread practices which are unacceptable. The high risk practices mainly involved workers throwing chains, webbing or lashing over the load and workers climbing onto the trailer to place chains, webbing lashings or other tie down equipment. Risks can be partially controlled by the use of platform ladders, elevated work platforms or the use of lightweight extension poles to place lashings or corner protectors. Lead ropes for chains can reduce the risk of muscular stress and the chain striking other workers. Risks can be minimised or eliminated if retractable webbing straps which are suspended from the roof of the trailer are used or tie-down lashings are replaced by purpose built racking and chocking. Significant action is required by the industry in this area to eliminate the unacceptable frequency that high risk practices are used.

Tensioning chains and webbing

Tensioning chains and webbing was the activity which was particularly focussed on during this campaign. Three hundred and thirty-seven (337) inspections considered this activity. High risk practices were noted in 19 per cent of inspections. High risk practices include using dogs, using worn or damaged load binders or winches, and tightening tensioners above shoulder height. Risk reduction can be achieved by using webbing instead of chain, using a turnbuckle or winch type tensioners instead of dogs and the use of a stable platform so that the tensioner is between knee and shoulder height. Risks can be minimised by using highly geared manual or automatic winches or eliminated if containment without tie-down is used. There has been a significant effort by WHSQ and nationally through the HWSA Load Restraint (Dogs and Cheater Bars) Working Group to promote safer equipment and better practice in this activity of securing loads. These results show that the transport industry is recognising the risk and in many areas have adopted improved practice. The level of high risk practices remains unacceptable and given that safer equipment and practices are available, this is still an activity where action is required by the industry.

4.2 Freight tasks

A broad range of freight tasks were inspected; 180 general freight; 79 steel; 52 timber and logging; 38 machinery; and, 78 other (includes concrete products, mixed and non-specified loads).

General freight

The general freight inspections assessed practices across all four types of activities. High risk practices were noted in 48 per cent of inspections. The highest proportion of high risk practice was noted in the activity of placing lashings and corner protectors (78 per cent), followed by handling curtains (29 per cent), handling gates (24 per cent) and tensioning chains and webbing (11 per cent). Common high risk practices noted included awkward, forceful or repetitive manual tasks; climbing on the truck to place load securing equipment; and, throwing chains, webbing or lashings over the load.

Steel

Securing steel freight mainly involved placing lashings and corner protectors and tensioning chains and webbing. High risk practices were noted in 54 per cent of inspections. High risk practices were noted in 67 per cent of the inspections which assessed placing lashings and corner protectors and in 30 per cent of those which assessed tensioning chains and webbing. As with general freight, awkward, forceful or repetitive manual tasks; climbing on the truck to place load securing equipment; and, throwing chains, webbing or lashings over the load, contributed significantly to these high risk practices. Steel freight predominantly uses chains to secure the load. The use of dogs was noted in 24 per cent of steel freight inspections. Considering that the two main steel suppliers, BlueScope and OneSteel, have banned the use of dogs on trucks picking up or delivering to their sites, the continued dog use must be occurring for other steel products or further down the supply chain. Action by supply chain industries, such as construction and manufacturing, to follow the lead by BlueScope and OneSteel of specifying that dogs not be used for transport of their goods or materials, would support the phase out of this high risk equipment.

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Machinery

Securing machinery for transport also mainly involves placing lashings and corner protectors and tensioning chains and webbing. High risk practices were noted in 34 per cent of inspections. High risk practices were noted in 79 per cent of the inspections which assessed placing lashings and corner protectors and in 20 per cent of those which assessed tensioning chains and webbing. Use of dogs was noted in 16 per cent of inspections. It is noted that turnbuckle tensioners used as a direct restraint are generally more suitable than dogs for securing machinery. A business which transports and uses machinery, RPQ Asphalt Pty Ltd, was found guilty and fined \$40,000 in 2011 for an incident where a worker using a dog and cheater bar to secure machinery was struck in the eye and blinded. RPQ Asphalt Pty Ltd has since replaced dogs with turnbuckles. This case is useful for highlighting the severe injuries which can occur and the legal consequences of failing to implement effective controls. The civil construction and mining supply industries would be well placed to influence change in the transport of machinery.

Timber and logging

Timber and logging have been combined as freight categories because of their association in the supply chain and the limited number of inspections conducted. It is however noted that these freight types and the trucks used to transport them are significantly different and ideally they should be analysed separately. High risk practices were noted in 54 per cent of inspections. As for steel and machinery, securing these loads mainly involved placing lashings and corner protectors and tensioning chains and webbing. High risk practices were noted in 86 per cent of the inspections which assessed placing lashings and corner protectors and in 31 per cent of those which assessed tensioning chains and webbing. Dogs were not commonly used in timber freight but were prevalent in the few logging inspections conducted. Work health and safety improvements in this freight category will be mainly driven by the wood manufacturing industry (e.g. sawmills).

Other

The inspections for the other categories of freight noted that a mix of the four securing activities was used. High risk practices were noted in 42 per cent of inspections. Tensioning chains and webbing occurred commonly (76 per cent of inspections) and high risk practices for this activity were noted in 25 per cent of these. Use of dogs was noted in 15 per cent. This category included a diverse range of freight tasks and reduction of high risk tasks will be highly specific to the load type.

4.3 Driver employment status

The driver's employment status was noted at the time of each advisory conducted. These were recorded as employee, owner driver, self-employed or employer. The proportion of high risk practices was similar across all of the four different employment statuses. In-depth analysis and comparison between different risk aspects has not occurred as the overall results do not indicate that employment status is an influencing factor in the risk level of practices used.

5. Conclusions

The results indicate that a reasonable proportion of transport operators are taking steps to address practices that are part of the activity of securing loads on trucks and are a high risk to workers health and safety. However, an unacceptable prevalence of high risk practices remains.

Level of risk

It is apparent that the industry generally is using equipment which goes some way to reducing risk. Equipment which is obviously unsafe or difficult to use often has been replaced with safer or easy to use equipment. For example, the adoption of curtains with better tracks and rollers and the trend away from the dogs in favour of using other chain tensioners, or replacing chains and using webbing

and webbing tensioners. However, it is also apparent that in parts of the industry and for certain freight tasks, high risk practices continue to be employed.

High risk work practices in the area of placing lashings and corner protectors are most prevalent. Throwing lashings over the load and climbing on the back of the truck appear to be standard work practices although the unacceptably high number of workers compensation claims, associated with falls and being struck by objects, demonstrate the high risk and serious consequences of these practices.

Importance of supply chain

Although the transport industry is reducing risks associated with securing loads further improvements and the elimination of high risk practices is necessary. The activity of securing loads frequently occurs on the work sites of other industries, for example, rural, manufacturing, construction, wholesale and retail. As noted by the initiatives of the steel industry, the policies and contractual actions of the supply chain are a powerful driver of improvement in the transport industry. Actions to improve health and safety in the transport industry must therefore involve or even be targeted at the supply chain as well as directly at the transport industry.

Future WHSQ campaigns

The prevalence of high risk practices, particularly for the activity of placing lashings and corner protectors, indicates a continuing need for WHSQ to have a compliance focus in this area. As well as an advisory approach, through publicity, information, education and guidance, there is justification for higher order compliance actions (e.g. notices) by WHSQ.

The activity of securing loads on trucks encompasses three of the four major mechanisms of injury in the road freight industry (falls, muscular stress and hitting or being hit by objects) and also features prominently in the fourth, vehicle accidents (albeit from a different perspective in that unsecured loads can cause accidents for other vehicles). WHSQ will continue to highlight the risks and drive better practices for the activity of securing loads through a continued focus on these risk areas. The current campaign (2012-13) on preventing falls from trucks is an example.

6. Recommendations

It is recommended that WHSQ:

1. Widely communicate the results of this campaign and key findings, by distributing this and associated material, to the transport and supply chain industries, including by:
 - Publicising the report on the WHSQ website and releasing articles in the eSafe newsletter and industry trade publications.
 - Distributing the information to the transport industry: indirectly through transport networks and industry associations; and, directly to those businesses involved in the audit campaign and the businesses that manufacture or supply load restraint equipment.
 - Providing the information electronically to other key internal and external stakeholders, including industry partners, the HWSA Load Restraint Working Group and the WHS Inspectorate.
 - Discussing the information with the Transport and Storage Industry Sector Standing Committee.
2. Continue to work with the transport industry to improve understanding about how to eliminate or reduce the risks of unsafe equipment and work practices through effective safety management, including encouraging the industry and the manufacturers and suppliers of innovative load restraint equipment to expedite the uptake of safer equipment and phase out of dogs and cheater bars.

3. Target supply chain industries to eliminate or minimise risks associated with the loading and unloading of trucks. This should include highlighting the requirement that persons conducting a business or undertaking (PCBUs) consult, cooperate and coordinate activities with others in the supply chain.
4. Incorporate reference to the activities associated with securing loads into future campaigns including those which focus on falls, muscular stress and being hit by objects.
5. Use higher order compliance actions (e.g. notices), where high risk practices are identified as contravening a provision of the *Work Health and Safety Act 2011*.

7. Appendix A – Securing loads advisory tool and information sheet

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