



Managing risks of mobile and operational plant in the construction industry

Campaign report

The construction industry has a high rate of serious incidents involving mobile and operational plant (MOP), including earthmoving equipment, personnel and materials hoists, elevating work platforms (EWPs) and cranes.

The Managing risks of mobile and operational plant campaign aimed to reduce the number of these incidents.

This report provides industry with the outcomes of the campaign as well as practical guidance to better manage MOP risks.

Key issues

Between 2009/10 and 2011/12, workers' compensation data showed there were four fatalities and 134 injuries resulting in permanent impairment from incidents involving MOP within the construction industry.

The majority of injuries involved workers either being hit or becoming trapped or crushed by MOP.

The campaign

Between 2013-2015 Workplace Health and Safety Queensland (WHSQ) worked with industry to help raise awareness and manage risks associated with MOP by:

- releasing a series of short films and other guidance material to encourage uptake of higher-level control measures.
- The focus of the campaign was checking compliance of high risk activities utilising MOP on construction sites, particularly:
- the interaction of workers with MOP
 - traffic management on and around sites
 - planning and scheduling of work being done near MOP
 - operator competency
 - evaluating the quality and relevance of safe work method statements (SWMS)
 - on-site compliance with SWMS
 - worker knowledge and understanding of SWMS.
- undertaking 699 audits covering four types of MOP throughout the state:
 - 70 earthmoving equipment audits
 - 34 personnel and materials hoist audits
 - 464 EWP audits
 - 326 tower and mobile cranes audits.



Assessment results

The results of the campaign highlight that the construction industry is conscious of the need to address safety issues associated with MOP and are willing to continually improve industry practice.

The key findings and issues include:

Site management and exclusion zones

- Workers performed work inside exclusion zones who could:
 - perform the task outside the exclusion zone
 - perform the task at another time or while plant was inactive
 - be located away from the plant whilst remaining in contact with the operator (e.g. radio communication).
- There was a reliance on administrative controls for plant exclusion zones instead of attempts to eliminate the hazard. For example, the SWMS referred to the use of safety cones or perimeters, rather than more effective engineering controls.
- Commercial sector and smaller companies struggled with traffic management control measures as the extent and quality of the planning was often limited.
- Residential construction sites in built up areas, often did not prevent unauthorised entry, increasing the likelihood of people coming into contact with moving plant.



Operator and spotter skill levels

- Verification and documentation of operator training varied in scope, mostly based on the relative size of the worksite.
- Operators of boom type EWP's did not always hold the required high risk work licence.
- Plant operators were not able to always identify exclusion zones for overhead power lines or determine when a trained safety observer was required.
- Safety observers for EWP's often did not understand their role in observing, warning and communicating effectively with the operator.

Information, training, supervision and instruction

- Operators often did not receive any form of familiarisation training for the make and model of plant they were working on.
- Young or inexperienced workers rarely operated plant, but when they did they usually received no additional information, training, instruction or supervision.

Documentation

- SWMS were generally comprehensive, but unhelpful as they were often generic in nature and not specific to the site or work environment.
- Most operators said they understood the content of the SWMS but were often not consulted during its development or review.
- Monitoring compliance with SWMS was often left up to the workers performing the task or not monitored at all.

Plant condition, maintenance and operation

- Plant was generally in good condition, with minimal visual defects or faults and maintained in accordance with manufacturer's instructions, however:
 - a significant number of mobile cranes older than ten years did not have a major inspection certificate readily available
 - personnel hoists often had broken or bypassed interlocks, despite prestart checklists being completed without the faults identified
 - the positioning and quality of guarding around some plant, particularly hoists, could be improved to prevent access to moving parts.
- The set-up of cranes and EWP's on outriggers could be improved, particularly where the plant was set up on timbers or pads (e.g. support not under all feet, deformed/cracked timbers) or where the plant was not set up a suitable distance away from an excavation.
- A significant number of workers reported they had witnessed mobile plant overturning.



Campaign resources

Assessment tools

The campaign assessment tools have been converted to checklists for industry to use. The checklists will help plan the safe set-up and operation of mobile plant on construction worksites and should be done in consultation with workers, supervisors and principal contractors.

- [Earthmoving equipment checklist](#)
- [Personal materials and hoists checklist](#)
- [Elevating work platforms checklist](#)
- [Mobile crane checklist](#)
- [Tower crane checklist](#)

Films



This film explains how to control the risks when using EWP's.



This film explains how to control the risks of loading and unloading EWP's onto tilt trays.



This film explains how to manage the interaction between powered mobile plant and pedestrians to keep your construction site safe.



This film explains how to control the risks of loading and unloading powered mobile plant.

A range of further information is available at worksafe.qld.gov.au to assist principal contractors, managers, supervisors and workers, including:

- [Mobile crane Code of Practice 2006](#)
- [Tower crane Code of Practice 2006](#)
- [Traffic management for construction or maintenance work Code of Practice 2008](#)
- [Managing Risks of Plant in the Workplace Code of Practice 2013](#)
- [Working near overhead and underground electric lines Electrical Safety Code of Practice 2010](#)
- [safe work method statements.](#)



Future actions

Under the *Queensland Construction Trades Industry Action Plan 2014-2017* and *Civil Construction Industry action Plan 2014-2017*, WHSQ will:

- continue to work proactively with construction industry stakeholders to identify and share examples of good practice, innovation and safety in design relating to managing the risks of MOP
- develop a campaign focused on onsite traffic management and pedestrian safety across the supply chain, including the interaction between construction, manufacturing, transport and logistics businesses
- facilitate an industry solutions group for EWPs to review current industry practice and explore what resource materials are required
- work with other government entities to improve traffic management and control practices in the construction industry.



More information

For more information, visit worksafe.qld.gov.au or call 1300 362 128.

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