

**Overhead Crane**

Business Name:		ABN:	
Business Address:			
Contact Person:	Phone:	Email:	

**THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THIS PROJECT**

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

Full Name:		
Signature:	Title:	Date:

**CLIENT OR PRINCIPAL CONTRACTOR DETAILS**

Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	



RISK MATRIX									
LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION	HIERARCHY OF CONTROLS	
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE			<b>Elimination</b> Remove the hazard.	
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	<b>Substitution</b> Replace the hazard.	
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before work starts.	Isolation Isolate People from the hazard	
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Ensure control measures in place.	<b>Engineering</b> Isolate the hazard	
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	<b>Administrative</b> Change	
								<b>PPE</b>	

  

Risk Rating & Required Action:	
<b>4A</b>	Stop work. The risk is intolerable. Eliminate the hazard or redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or higher-level authorisation is required.
<b>3H</b>	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
<b>2M</b>	Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions.
<b>1L</b>	Proceed, following standard operating procedures. Monitor and keep records.

  

Consequence Scale:			
Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
<b>Catastrophic</b>	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
<b>Major</b>	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
<b>Moderate</b>	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
<b>Minor</b>	First-aid only, no lost time	negligible delay	Isolated non-conformance
<b>Insignificant</b>	No injury	no schedule impact	Deviation caught and corrected on site

  

**Notes on Hierarchy of Controls:**  
Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. **Substitute**
3. **Isolate**
4. **Engineering**
5. **Administrative**
6. **PPE**

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

*aligned with Safe Work Australia's Managing the risk of fatigue at work (2023) and ISO 45001:2018 clauses 6–8.*

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. Governance, WHS Duties and Consultation	<ul style="list-style-type: none"> <li>Lack of clear allocation of PCBU, officer and worker WHS duties for crane operations under WHS Act 2011 and WHS Regulation</li> <li>Inadequate consultation with crane operators, doggers, riggers, maintenance staff and contractors about crane-related risks and changes to systems of work</li> <li>No formal WHS objectives or performance indicators relating specifically to overhead crane safety</li> <li>Failure of officers to exercise due diligence in verifying that effective resources, processes and competent people are in place for crane safety</li> <li>Poor integration of crane risk management into the overall WHS management system (e.g. risk register, incident reporting, contractor management)</li> <li>Inadequate review of crane-related incidents, near misses and audit findings leading to repeat events</li> </ul>	High	<ul style="list-style-type: none"> <li>Establish and document a governance structure that defines WHS roles, responsibilities and accountabilities for overhead crane management, including PCBUs, officers, line managers, supervisors and workers in accordance with WHS Act 2011</li> <li>Include overhead crane risks in the organisation-wide WHS policy and risk management framework, referencing relevant Australian Standards (e.g. AS 2550.1, AS 2550.3, AS 1418 series) and Safe Work Australia model Codes of Practice</li> <li>Implement a formal consultation and communication procedure requiring regular toolbox talks, safety committee meetings and pre-change consultations about crane systems, work layouts and lifting practices</li> <li>Require officers to periodically review crane risk controls, inspection results, maintenance records and training data as part of due diligence processes, with documented actions and follow-up</li> <li>Maintain a WHS risk register that specifically captures system-level risks associated with overhead electric travelling cranes, including controls, owners and review dates</li> <li>Implement an incident and near-miss reporting and investigation procedure that specifically identifies crane-related events, requires root cause analysis and tracks corrective actions to completion</li> <li>Set key performance indicators (e.g. completion of statutory inspections, close-out time for crane defects, percentage of operators with current competency) and review them at management meetings</li> <li>Ensure contractor management procedures require third-party crane service providers and engineers to demonstrate competence, insurances and compliance with WHS legislation and relevant standards</li> </ul>	Medium
2. Procurement, Design and Engineering Controls	<ul style="list-style-type: none"> <li>Selection of overhead crane systems that are not fit for purpose for the load, duty cycles or environment (e.g. corrosive, high heat) leading to structural failure or loss of control</li> <li>Failure to specify compliance with relevant Australian Standards and WHS legislative requirements in purchase and installation contracts</li> <li>Inadequate consideration of crane runway design, structural supports and building interface, increasing risk of collapse or misalignment</li> <li>Omission of engineered safeguards such as overload protection, end-stop buffers, anti-collision systems and limit switches</li> </ul>	High	<ul style="list-style-type: none"> <li>Implement a formal engineering and procurement specification for overhead electric travelling cranes that mandates compliance with WHS Regulation, AS 1418 (cranes, hoists and winches) and AS 2550 (safe use of cranes) and relevant electrical standards</li> <li>Require documented design verification and, where necessary, independent engineering certification of crane structures, runways, supporting steelwork and load paths before installation and commissioning</li> <li>Specify inclusion of critical safety functions such as overload limiting devices, upper and lower hoist limit switches, travel limit switches, emergency stop circuits, end-stop buffers and anti-collision systems where multiple cranes share a runway</li> <li>Ensure procurement processes assess vendor competence, track record and availability of technical support, spare parts and documentation for the life of the asset</li> <li>Incorporate a formal management of change (MOC) process for any modifications to crane capacity, lifting attachments, controls, travel limits or runway structures, requiring engineering review and updated documentation</li> <li>Ensure the design phase includes a hazard analysis (e.g. HAZOP, risk workshop) that considers load paths, dropped object zones, exclusion zones, access ways, lighting, noise, visibility, and interactions with other plant and pedestrians</li> </ul>	Medium

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	<ul style="list-style-type: none"> <li>Poor layout and design of crane operating zones, leading to interactions with pedestrians, mobile plant and other cranes</li> <li>Insufficient consideration of access and egress for inspection, maintenance and emergency rescue on and around the crane</li> <li>Procurement of control systems with complex or non-intuitive human-machine interfaces, increasing risk of operator error</li> <li>Inadequate electrical design (earthing, isolation, protection, cable management) creating fire, shock or arc flash hazards</li> </ul>		<ul style="list-style-type: none"> <li>Require design and installation of safe access for inspection and maintenance (e.g. fixed ladders, walkways, platforms, anchor points) in accordance with relevant fall protection standards</li> <li>Specify control systems that are ergonomically designed with clear labelling, consistent control direction, and appropriate feedback to reduce operator confusion and fatigue</li> <li>Ensure electrical systems are designed and installed by competent persons, with appropriate protection, lockable isolation points, clear labelling, and documentation of single-line diagrams</li> <li>Maintain an engineering file for each crane including design calculations, certifications, as-built drawings, original manuals and commissioning records, accessible for future reference</li> </ul>	
3. Competency, Licensing, Training and Supervision	<ul style="list-style-type: none"> <li>Operators, doggers or riggers not holding required high risk work licences (where applicable) or verified competencies for the specific type of overhead crane and lifting configurations</li> <li>Inadequate induction and familiarisation with site-specific crane controls, limitations, emergency procedures and local hazards such as shared runways or restricted headroom</li> <li>Lack of ongoing refresher training leading to skill fade, bad habits or poor understanding of updated procedures and standards</li> <li>Supervisors lacking sufficient technical understanding of overhead crane risks to monitor work effectively and challenge unsafe practices</li> <li>Contractor personnel operating or working around cranes without the same competency standards, inductions or supervision as employees</li> <li>Poor communication skills or language barriers among workers leading to misunderstanding of signals, instructions and warning signs</li> </ul>	High	<ul style="list-style-type: none"> <li>Develop and implement a competency management system that identifies all roles associated with the overhead crane (operators, doggers, riggers, spotters, supervisors, maintenance personnel) and defines the required licences, training and verification processes</li> <li>Ensure that workers performing dogging, rigging or relevant crane operations hold and maintain the appropriate high risk work licences, and that evidence is verified and recorded before they commence work</li> <li>Provide site-specific induction and familiarisation for overhead crane use, covering crane capabilities and limitations, control layout, exclusion zones, communication methods, emergency stops, isolation procedures and local environmental factors</li> <li>Maintain a register of training, licences and competency assessments for all personnel involved with cranes, with automatic prompts for refresher training or licence renewal</li> <li>Deliver periodic refresher training and toolbox sessions that address recent incidents, changes to equipment, near misses, and lessons learned, ensuring content is tailored to the particular crane configuration</li> <li>Train supervisors and managers in overhead crane risk factors so they can recognise unsafe systems of work, verify pre-use checks are completed, and intervene effectively</li> <li>Implement a verification of competency (VOC) process for new operators, contractors and after significant periods of non-use or following incidents</li> <li>Ensure communication protocols are established (e.g. standard hand signals, radio procedures) and that language or literacy barriers are addressed using interpreters, pictograms or translated materials where necessary</li> <li>Restrict access to crane controls using key control, passwords or authorisation lists so that only competent and authorised persons can operate the crane</li> </ul>	Medium

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4. Procedures, Work Planning and Operational Controls	<ul style="list-style-type: none"> <li>Absence of documented safe operating procedures (SOPs) and lifting plans for typical and non-routine crane operations</li> <li>Inconsistent application of pre-operational checks and condition monitoring due to unclear or informal processes</li> <li>Unplanned or ad-hoc lifting activities that do not consider load characteristics, travel paths, overhead obstructions or interactions with other work</li> <li>No defined system for establishing and enforcing exclusion zones beneath and around lifted loads</li> <li>Inadequate planning for simultaneous operations where multiple cranes, forklifts, vehicles or work groups share the same area or runway</li> <li>Lack of formal controls for out-of-service conditions, lock-out/tag-out and re-rotation during breakdowns or maintenance</li> <li>Poor integration of crane operations into broader production schedules leading to time pressure and unsafe shortcuts</li> </ul>	High	<p>[REDACTED]</p>	Medium
5. Physical Environment, Layout and Traffic Management	<ul style="list-style-type: none"> <li>Crane operating areas overlapping with pedestrian walkways, workstations or vehicle routes, increasing the risk of struck-by or crushed injuries</li> <li>Insufficient overhead clearance or presence of fixed structures, services or storage that may be struck by the crane, hoist block or load</li> <li>Poor lighting, noise and visual distractions in the crane operating area</li> </ul>	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium

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	<ul style="list-style-type: none"> <li>affecting the operator's ability to see and judge load position and people nearby</li> <li>Inadequate signage and floor markings to identify crane travel paths, hook travel zones and no-go areas</li> <li>Shared use of the same runway or bay by multiple cranes without robust anti-collision and coordination systems</li> <li>Cluttered work areas leading to reduced escape routes and increased trip hazards for people working under or around the crane</li> <li>Insufficient emergency access and egress for rescuing an injured or suspended person on or near the crane</li> </ul>		<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	
6. Maintenance, Inspection and Asset Management	<ul style="list-style-type: none"> <li>Failure to undertake statutory inspections, testing and certification of cranes and lifting equipment in accordance with WHS Regulation and AS 2550 requirements</li> <li>Reactive, breakdown-only maintenance resulting in increased wear, fatigue, corrosion and malfunction of critical components such as wire ropes, brakes, limit switches and hooks</li> <li>Poor documentation and availability of inspections and repairs, leading to uncertainty about the crane's condition and service history</li> <li>Use of unqualified or inadequately supervised maintenance personnel for specialised crane and electrical work</li> <li>Operating cranes with known defects because reporting and tagging processes are ineffective or discouraged by production pressures</li> <li>Lack of a formal system for managing lifting accessories (slings, shackles, lifting beams, magnets, grabs), resulting</li> </ul>	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium

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	in use of uninspected or incompatible gear		[REDACTED]	
7. Control Systems, Electrical Safety and Integrity	<ul style="list-style-type: none"> <li>• Failure or malfunction of control systems (e.g. contactors, variable-speed drives, pendant controls, remote controls) leading to unintended movement or loss of braking</li> <li>• Inadequate emergency stop circuits or failure of safety-related control functions due to poor design, modification or lack of testing</li> <li>• Exposure of workers to electrical shock, burns or arc flash from inadequately protected live parts, damaged cables or poor earthing</li> <li>• Uncontrolled modification of electrical systems, software or control logic without engineering review or validation</li> <li>• Use of non-original or incompatible replacement components that compromise the safety integrity of the crane</li> <li>• Lack of redundancy or monitoring for critical safety devices such as limit switches and overload protection</li> </ul>		[REDACTED]	Medium
8. Human Factors, Fatigue and Organisational Pressures	<ul style="list-style-type: none"> <li>• Operator fatigue or reduced alertness due to shift patterns, overtime, high workload or monotonous tasks</li> <li>• Production and schedule pressures leading to intentional bypassing of safety systems, procedures or exclusion zones</li> </ul>	Medium	[REDACTED]	Low

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	<ul style="list-style-type: none"> <li>Poor ergonomics of controls and workstations causing strain, distraction or errors during crane operation</li> <li>Complacency arising from routine, repetitive crane use without incidents, leading to reduced vigilance</li> <li>Inadequate consideration of cognitive load when operators are required to multi-task (e.g. operating multiple cranes or plant simultaneously)</li> <li>Psychosocial factors such as stress, conflict or bullying impacting decision-making and communication around crane operations</li> </ul>		[REDACTED]	
9. Emergency Preparedness, Rescue and Incident Management	<ul style="list-style-type: none"> <li>Lack of clear procedures for managing crane-related emergencies such as dropped loads, entrapment, collision, structural failure or electrical incidents</li> <li>Inadequate planning for rescue of an operator or worker incapacitated on the crane bridge, runways or access platforms</li> <li>Poor integration of crane scenarios into site emergency plans and training leading to confusion during real events</li> <li>Insufficient availability or maintenance of emergency equipment such as communication devices, fire extinguishers or rescue gear in crane areas</li> <li>Delayed reporting or inadequate investigation of crane incidents and near misses, resulting in missed learning opportunities</li> </ul>	High	[REDACTED]	Medium
10. Documentation, Records and	<ul style="list-style-type: none"> <li>Incomplete, outdated or inaccessible documentation relating to crane design,</li> </ul>	Medium	[REDACTED]	Low

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Continuous Improvement	operation, inspections, maintenance and training <ul style="list-style-type: none"> <li>• Inconsistent record-keeping that makes it difficult to demonstrate compliance with WHS Act 2011, WHS Regulation and applicable standards</li> <li>• Lack of systematic review of performance data, audit findings and incident trends to drive improvements in crane safety management</li> <li>• Failure to control and archive superseded procedures, manuals and drawings, creating confusion and potential use of obsolete information</li> </ul>		[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]	

SAMPLE

**EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES**

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

**LEGISLATIVE REFERENCES**

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES FOR ANY STATE THAT ARE NOT APPLICABLE

**Queensland & Australian Capital Territory**

Work Health and Safety Act 2011  
 Work Health and Safety Regulations 2011  
 Legislation QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws>  
 Codes of Practice QLD: <https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice>  
 Legislation ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations>  
 Codes of Practice ACT: <https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice>

**Victoria**

Occupational Health and Safety Act 2004  
 Occupational Health and Safety Regulations 2017  
 Legislation VIC: <https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations>  
 Codes of Practice VIC: <https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice>

**New South Wales**

Work Health and Safety Act 2011  
 Work Health and Safety Regulations 2025  
 Legislation NSW: <https://www.safework.nsw.gov.au/legal-obligations/legislation>  
 Codes of Practice NSW: <https://www.safework.nsw.gov.au/resource-library/list-codes-of-practice>

**Western Australia**

Work Health and Safety Act 2020  
 Work Health and Safety Regulations 2022  
 Legislation Western Australia: <https://www.commerce.wa.gov.au/worksafe/legislation>  
 Codes of Practice WA: <https://www.commerce.wa.gov.au/worksafe/codes-practice>

**Northern Territory**

Work Health and Safety (National Uniform Legislation) Act 2011  
 Work Health and Safety (National Uniform Legislation) Regulation 2011  
 Legislation NT: <https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws>  
 Codes of Practice NT: <https://worksafe.nt.gov.au/laws-and-compliance/codes-of-practice>

**Safe Work Australia Links**

Law and Regulation (All States): <https://www.safeworkaustralia.gov.au/law-and-regulation>  
 Model Codes of Practice: <https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice>

**South Australia**

Work Health and Safety Act 2012 (SA)  
 Work Health and Safety Regulations 2012 (SA)  
 Legislation for SA: <https://www.safework.sa.gov.au/resources/legislation>  
 Codes of Practice for SA: <https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs>

**Model Codes of Practice**

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work

**Tasmania**

Work Health and Safety Act 2012  
 Work Health and Safety (Transitional and Consequential Provisions) Act 2012  
 Work Health and Safety Regulations 2012  
 Work Health and Safety (Transitional) Regulations 2012  
 Legislation for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations>  
 Codes of Practice for TAS: <https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice>

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.