

Overhead Gantry and Jib 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			Elimination Remove the hazard.	
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	Substitution 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.	Engineering Isolate the hazard	
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	Administrative Change	
								PPE	

Risk Rating & Required Action:	
4A	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.
3H	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures. Monitor and keep records.

Consequence Scale:			
Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	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 Crane Safety Leadership	<ul style="list-style-type: none"> Lack of clear allocation of WHS duties for Persons Conducting a Business or Undertaking (PCBUs), officers and workers under WHS Act 2011 Inadequate consultation with workers and Health and Safety Representatives (HSRs) about crane-related risks Failure to integrate overhead gantry and jib crane risks into the organisation's WHS management system and risk register Insufficient resourcing for crane safety (budget, competent people, time) Poor safety culture leading to normalisation of unsafe crane practices (e.g. routine overloading, bypassing interlocks) Lack of documented safety objectives and performance indicators specific to cranes and lifting operations Failure of officers to exercise due diligence regarding high-risk plant such as overhead gantry cranes, jib cranes, pedestal cranes and grab cranes 	4A	<ul style="list-style-type: none"> Define and document WHS governance arrangements for crane operations, clearly allocating responsibilities under WHS Act 2011 to PCBUs, officers, managers, supervisors and workers Embed crane-related risks (overhead bridge crane, jib crane, pedestal crane, grab crane, electromagnet operations, cantilevered crane loading platforms) in the corporate WHS risk register with regular reviews Establish a formal Crane Safety Policy endorsed by senior management, referencing applicable WHS legislation, Regulations and relevant Australian Standards (e.g. AS 1418 series, AS 2550 series) Set measurable crane safety performance indicators (e.g. inspection compliance rate, near miss reporting frequency, overloading event frequency) and review them at WHS committee and management meetings Implement structured WHS consultation processes for crane issues, including toolbox talks, pre-start meetings and consultation with HSRs when changes to equipment or procedures are proposed Ensure officers receive due diligence training specific to high-risk plant and can demonstrate proactive oversight of crane safety systems Allocate adequate financial and human resources for crane maintenance, inspections, training, engineering upgrades and traffic management controls Establish an internal audit and management review program focused on crane safety governance and compliance with WHS Act and Regulations 	3H
2. Regulatory Compliance and Standards Integration	<ul style="list-style-type: none"> Non-compliance with WHS Regulations for plant registration, high-risk work licensing and safe use of cranes Failure to apply relevant Australian Standards to design, operation, inspection and maintenance of overhead gantry and jib cranes Absence of documented verification that cranes (including cantilevered and pedestal cranes, grab cranes, electromagnets) meet design and safety requirements Inadequate process for monitoring legislative and standards updates affecting crane operations 	4A	<ul style="list-style-type: none"> Maintain a compliance register mapping all crane-related legal requirements (WHS Act 2011, WHS Regulation, Codes of Practice, relevant Australian Standards) to internal procedures and records Ensure all registrable cranes and plant are registered with the WHS regulator where required and that records are kept up to date Implement a formal process for engineering verification and sign-off for new cranes, modifications, cantilevered crane loading platforms and structural changes to overhead gantry rails and supports Develop and maintain standard operating procedures (SOPs) and management plans that reference AS 1418 and AS 2550 series and any manufacturer instructions for overhead gantry, jib, pedestal and grab cranes Appoint a competent person (e.g. engineer or experienced maintenance manager) to monitor changes to legislation and standards and trigger review of procedures when requirements change Undertake periodic compliance audits against regulatory and standards requirements, and track corrective actions to completion Ensure procurement contracts for cranes and components include explicit compliance clauses with relevant Australian Standards and WHS legislation 	2M

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	<ul style="list-style-type: none"> Use of non-registered or non-compliant plant, including modifications without engineering approval 		<ul style="list-style-type: none"> Document and control all deviations or exemptions through risk assessment, competent engineering review and senior management approval 	
3. Crane Design, Selection and Procurement	<ul style="list-style-type: none"> Selection of cranes (overhead gantry, jib, cantilevered platforms, pedestal, grab, electromagnet systems) that are unsuitable for the loads, duty cycles or environment Inadequate structural capacity of building supports, runway beams and cantilevered loading platforms for crane loads and dynamic forces Crane and lifting attachments lacking fail-safe features, overload protection and emergency stop systems Poor consideration of ergonomics, visibility and operator controls leading to increased risk of collision or dropped loads Procurement of cranes without full technical documentation, design calculations and verification statements Failure to specify corrosion protection, ingress protection and environmental resilience for outdoor or harsh environments 	4A	<ul style="list-style-type: none"> Develop a formal crane procurement and design specification process that includes functional requirements, load cases, duty class, environment and interface with other plant and structures Engage competent structural and mechanical engineers to design and verify overhead bridge gantry runways, cantilevered loading platforms, pedestal crane bases and jib crane mountings Specify mandatory safety features such as overhead protection, upper and lower limit switches, anti-collision systems, emergency stop devices, limit indicators, sway control and travel interlocks Require suppliers to provide full design, documentation, certificates of compliance, test reports and manuals for cranes, grabs, electromagnets and associated equipment Include ergonomic and human factors considerations in crane design (control layout, pendant vs. remote operation, lighting, signalling, line-of-sight) to minimise human error Ensure procurement specifications include corrosion protection, IP ratings, and environmental design suited to dust, moisture, temperature and chemical exposures Include requirements for compatibility and safe integration with existing plant, electrical systems, fire protection and building services Implement a technical review and approval workflow before any crane procurement or structural modification is finalised 	2M
4. Structural Integrity and Cantilevered Platform Management	<ul style="list-style-type: none"> Structural failure of overhead crane runways, cantilevered crane loading platforms and building structures due to overloading or fatigue Inadequate design or verification of cantilevered gantry crane operations at building edges or loading docks Undetected corrosion, cracking or deformation in structural members supporting cranes and jib bases Uncontrolled modifications (e.g. welding, drilling, additional equipment) on crane supporting structures Lack of load management systems to control point loads and dynamic loads on cantilevered structures 	4A	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	2M

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			[REDACTED]	
5. Maintenance, Inspection and Asset Management Systems	<ul style="list-style-type: none"> • Inadequate preventive maintenance system for cranes, hoists, trolleys, tracks, grabs and electromagnets • Failure of critical components (wire ropes, chains, hooks, brakes, limit switches, electrical systems) due to wear or lack of inspection • Missed statutory inspections or inspections performed by non-competent persons • Poor record keeping for defects, repairs and load testing of cranes and accessories • Uncontrolled continued operation of cranes with known critical defects or bypassed safety devices 	4A	<ul style="list-style-type: none"> [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] 	2M
6. Competency, Licensing, Training and Supervision	<ul style="list-style-type: none"> • Untrained or unlicensed personnel operating overhead gantry, jib, pedestal or grab cranes • Inadequate training on specific crane types, attachments (grabs, electromagnets) and site-specific hazards • Supervisors lacking sufficient crane knowledge to monitor safe systems of work and intervene when necessary • No verification of competency for workers performing dogging, rigging or signalling activities • Failure to refresh training and competency after incidents, equipment upgrades or procedure changes 	4A	<ul style="list-style-type: none"> [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] 	2M

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			[REDACTED]	
7. Load Management, Lifting Accessories and Overhead Load Transportation	<ul style="list-style-type: none"> Overloading of cranes, hoists, cantilevered platforms or lifting accessories due to poor load estimation systems Failure or misuse of lifting gear (slings, shackles, grabs, lifting beams, magnets) leading to dropped loads Inadequate control of overhead load transportation routes across walkways, workstations and traffic areas Lack of system for inspection, storage and retirement of lifting accessories Improper selection and control of grabs and electromagnets for the load type and surface conditions 	4A	[REDACTED]	2M
8. Electromagnetic and Grab Crane Control Systems	<ul style="list-style-type: none"> Unexpected release of loads due to failure of electromagnets or grab mechanisms Inadequate backup systems (e.g. battery backup, mechanical supports) for magnet operations during power loss Control system faults or programming errors leading to unintended movements of grabs or electromagnets Lack of monitoring and alarms for magnet holding force, temperature and power supply 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> Insufficient procedures for testing magnet performance and grab closing forces before use 		[REDACTED]	
9. Workplace Layout, Traffic Management and Exclusion Zones	<ul style="list-style-type: none"> Uncontrolled interaction between cranes, mobile plant and pedestrians during overhead load transportation Lack of defined exclusion zones beneath overhead gantry, jib and pedestal crane operating envelopes Poor workplace layout causing crane travel over occupied workstations and amenities Inadequate signage, lighting and visual cues to indicate crane movement areas and no-go zones Ineffective system to prevent unauthorised entry into cantilevered loading platforms and crane operating areas 		[REDACTED]	2M
10. Operational Planning, Procedures and Permit Systems	<ul style="list-style-type: none"> Lack of standardised procedures for routine and non-routine crane operations (including tandem lifts, critical lifts, cantilevered platform loading, grab crane use) Inadequate planning of lift paths, load sequencing and staging areas leading to congestion and confusion Uncontrolled ad-hoc modifications to crane operating methods under production pressure 	3H	[REDACTED]	2M

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	<ul style="list-style-type: none"> No formal authorisation process for high-risk crane activities or operations near services and building edges 		[REDACTED]	
11. Human Factors, Fatigue and Workload Management	<ul style="list-style-type: none"> Operator fatigue leading to errors in crane control, load placement or response to alarms Cognitive overload due to simultaneous tasks such as radio communication, load observation and control of multiple crane axes Distractions from production demands, mobile phones or noisy environments reducing situational awareness Inappropriate rostering, overtime and shift patterns for crane operators and doggers 	3M	[REDACTED]	2M
12. Energy Isolation, Lock-Out/Tag-Out and Interlocks	<ul style="list-style-type: none"> Uncontrolled movement of cranes or overhead loads during maintenance or inspection activities Bypassing or failure of limit switches, interlocks and emergency stops leading to collisions or overtravel Exposure of workers to live electrical components during fault-finding or repair of overhead cranes and jib cranes Inadequate controls for isolating power to electromagnets, grabs and associated control systems 	4A	[REDACTED]	2M

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			[REDACTED]	
13. Emergency Preparedness, Incident Response and Rescue	<ul style="list-style-type: none"> • Delayed response to crane-related incidents such as dropped loads, structural failures or collisions • Lack of procedures for safely securing suspended loads during power failures or magnet failures • Inadequate rescue plans for operators in elevated or cab-based cranes, cantilevered crane platforms or pedestal cranes over water or voids • Poor communication and coordination with emergency services for crane emergencies 	3H	[REDACTED]	2M
14. Contractor and Third-Party Interface Management	<ul style="list-style-type: none"> • Contractors operating or working near cranes without understanding site-specific systems and controls • Poor coordination between in-house crane operations and external parties such as delivery drivers, riggers or maintenance contractors • Uncontrolled use of mobile cranes interacting with fixed overhead gantry and jib cranes • Inconsistent safety standards between principal contractor and subcontractors 	3H	[REDACTED]	2M

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			[REDACTED]	
15. Change Management and Lifecycle Modifications	<ul style="list-style-type: none"> • Introduction of new cranes, jib arms, grabs, magnets or control systems without proper risk assessment • Incremental modifications to crane structures, runways, cantilevered platforms or electrical systems leading to cumulative unmanaged risk • Lack of review of crane systems when production processes, load types or layout changes occur • Decommissioning and removal works creating new structural or falling object risks 	3H	[REDACTED]	2M
16. Monitoring, Auditing and Continuous Improvement	<ul style="list-style-type: none"> • Failure to detect deteriorating safety performance or emerging risks associated with crane operation • Inadequate analysis of crane-related incidents, near misses and defect data • Lack of worker feedback mechanisms to identify practical issues with crane systems, procedures and controls • Complacency due to long periods without serious incidents 	3H	[REDACTED]	1L

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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/factsheets-and-resources/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.