Boat Building Maintenance and Repair

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

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE 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:

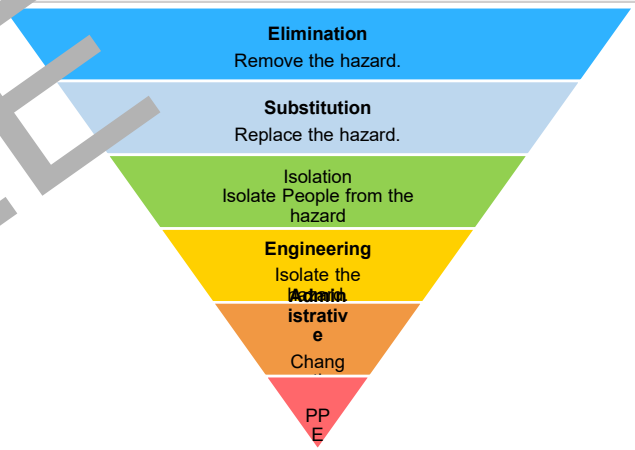
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

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
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. 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. WHS Leadership, Consultation and Contractor Management	• Lack of clear WHS leadership commitment specific to boat building, maintenance and repair activities • Inadequate consultation with workers, contractors and subcontractors about high-risk marine activities • No formal process for coordinating WHS responsibilities between shipyard, contractors and vessel owners • Confusion over control of work areas when multiple trades are present (e.g. engine technicians, riggers, painters) • Inadequate verification of contractor WHS systems for specialised marine work (e.g. mast lowering, engine installation, demolition) • Failure to incorporate lessons learned from incidents into management systems	4A	• Develop and implement a WHS Policy endorsed by senior management that explicitly covers boat building, repair, refit, and demolition activities in accordance with the WHS Act 2011 and WHS Regulations • Establish a formal WHS consultation procedure, including elected Health and Safety Representatives (HSRs), safety committees, and toolbox talks targeted to marine-specific risks (e.g. lowering masts, pressure cleaning hulls, applying anti-foul coatings) • Implement a documented contractor management procedure that requires pre-qualification, review of WHS systems, insurances, licences and high-risk work competencies before engagement • Define and document roles, responsibilities and accountabilities for principal contractor, vessel owner, supervisors and contractors for control of work areas and plant • Introduce a site induction program covering marine hazards (slips on wet decks, over-water work, confined spaces in hulls and engine rooms, marine coatings and solvents) for all workers and visitors • Require documented coordination meetings and interface plans for projects involving multiple trades (e.g. engine installation, refrigeration, navigation electronics, mast and rigging, hull pressure cleaning, demolition) • Implement a formal process for incident reporting, investigation and corrective actions, ensuring systemic issues are identified and tracked to close-out • Review WHS objectives and key performance indicators (KPIs) annually, including contractor performance and compliance with boatyard rules	3H
2. Design, Engineering and Change Management	• Inadequate engineering design for deck widening operations, mast and rigging configurations, or engine and propeller shaft alignment • Uncontrolled design changes during refit leading to structural instability or overloading • Lack of engineering review for vessel demolition methodology and staging • Insufficient consideration of access, egress and maintenance when installing electronic navigation, refrigeration and bilge pumps • Failure to assess load paths and lifting points for lowering masts and handling heavy marine components • Poor integration of new systems (engines, steering, navigation electronics) with existing vessel structure and services	4A	• Implement a formal engineering design review process using competent marine engineers or naval architects for structural modifications (deck widening, mast and rigging, rudder and steering systems, engine and shaft installations) • Require signed-off drawings and calculations for critical modifications and ensure only controlled revisions are used on site • Establish a Management of Change (MoC) procedure that requires risk assessment, approval and communication for any design or scope changes during construction, maintenance or demolition • Specify engineering requirements and acceptance criteria for lifting points, strong-backs, cradles and temporary supports used for lowering masts and supporting hulls during maintenance • Ensure demolition plans are developed by competent persons and include sequencing, temporary bracing and verification of stability at all stages • Incorporate safe access, working platforms, lighting and ventilation considerations into design of equipment locations (e.g. engine room layout, bilge pump access, navigation electronics panels, refrigeration units) • Maintain a design records system (as-built documentation) to capture changes and provide accurate information for future maintenance and emergency response	2M

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
	• No formal management of change (MoC) process for design alterations or deviations from plans			
3. Project Planning, Scheduling and Interface Management	• Poor overall planning of boat building and repair projects leading to overlapping high-risk activities (e.g. hot work near flammable coatings or refrigeration gases) • Insufficient time allocated for safe execution of complex tasks such as lowering masts, deck widening or engine alignment • Uncoordinated work sequences in confined spaces like engine rooms and hull voids • Multiple trades working simultaneously in restricted areas (electrical, mechanical, marine coatings, demolition) causing congestion and increased interaction risks • Inadequate planning for weather, tide and tidal grids affecting pressure cleaning hulls and external works • Failure to plan vessel stability during partial demolition, engine removal or deck modifications	4A	• Develop a project management plan for each vessel that identifies key work phases (demolition, structural works, mechanical, electrical, coatings, commissioning) and their WHS interfaces • Use a scheduling system (e.g. Gantt chart) that sequences high-risk activities to avoid incompatible or overlapping work in shared spaces • Implement a permit-to-work coordination process so that hot work, confined space work, electrical isolation, work at height and over-water work are planned and authorised • Plan and document safe work windows considering weather conditions, tides, and potential for vessel movement during high-pressure cleaning and external repairs • Include stability assessments when planning removal or installation of heavy items (engines, masts, deck structures) and confirm securing of vessels on hardstands, cradles or slips • Conduct regular coordination meetings between supervisors and contractors to review upcoming tasks, access requirements and control measures • Allow contingency time in schedules to prevent unsafe compression of work due to delays or scope changes	2M
4. Competency, Training and Licensing	• Workers performing specialised marine tasks (mast and rigging, engine alignment, refrigeration work, navigation electronics, demolition) without appropriate competency • Inadequate training in safe use of lifting equipment, mobile plant, pressure cleaners and confined space entry systems • Lack of awareness of specific hazards of anti-foul coatings, marine solvents, refrigerants and engine emissions • Insufficient supervision of apprentices or new workers in engine rooms, rescue boats and on decks	4A	[redacted]	2M

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
	• Unverified high-risk work licences (e.g. dogging, rigging, crane operation, forklift) where required		[redacted]	
5. Plant, Tools and Lifting Equipment Management	• Failure of lifting equipment, davits, cranes or hoists used for masts, engines, rudders, propeller shafts and rescue boats • Inadequate inspection and maintenance of mobile plant, pressure cleaners and fixed lifting points • Use of uncertified or damaged lifting gear (slings, shackles, spreader bars) for marine components • Incompatible or poorly designed cradles, blocks and chocks supporting vessels during maintenance and demolition • Uncontrolled movement of vessels during hull pressure cleaning or structural works • Lack of guarding or safety features on hand tools and powered equipment used in confined spaces and decks	4A	[redacted]	2M
6. Hazardous Chemicals, Coatings and Refrigerants Management	• Exposure to toxic or sensitising substances in anti-foul coatings, resins, solvents, paints and cleaning agents • Inhalation of vapours during application of coatings in confined or poorly ventilated vessel spaces • Uncontrolled release of refrigerants during marine refrigeration system work • Inadequate labelling, storage and segregation of flammable and corrosive substances on vessels and in workshops • Lack of Safety Data Sheets (SDS) and risk assessments for products used in deck widening, engine room maintenance and hull pressure cleaning	4A	[redacted]	2M

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
	• Incompatible use of chemicals (e.g. mixing cleaners, using flammables near hot work or electrical installations)		[redacted]	
7. Confined Spaces, Engine Rooms and Enclosed Volume Controls	• Unrecognised confined spaces within hulls, ballast tanks, voids, bilge areas and engine rooms • Atmospheric hazards (oxygen deficiency, toxic fumes, flammable atmospheres) during engine room maintenance, bilge pump installation and demolition • Inadequate ventilation and temperature control inside engine rooms and enclosed compartments • Poor communication and supervision of workers in confined or restricted spaces • Inadequate systems for isolation of fuels, power, cooling water and exhaus systems before entry	4A	[redacted]	2M
8. Working at Height, Over Water and Access Systems	• Falls from heights [illegible] mast installation or lowering, deck widenin operations and work on superstruc es • Falls into water from dec , gangways, scaffolds or dry docks • Use of unsuitable ladders or access equipment to board vessels or access engine rooms and upper decks • Incomplete or poorly controlled edge protection during demolition of vessel structures • Inadequate planning for rescue of workers who fall into water or are suspended in harnesses	4A	[redacted]	2M

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
9. Electrical Safety and Electronic Systems Integration	• Electric shock or arc flash during installation of electronic navigation equipment, bilge pumps, engines and marine refrigeration systems • Use of non-marine-rated electrical equipment in wet or corrosive environments on vessels and dry docks • Inadequate isolation and lock-out of electrical circuits during maintenance, fault finding or demolition • Poor segregation of low-voltage navigation and communication systems from higher-power circuits • Improper earthing and bonding of metallic structures, masts and electronic equipment • Deficient testing and verification of electrical systems prior to energisation	4A	[redacted]	2M
10. Fire, Explosion and Hot Work Management	• Ignition of flammable vapours from fuels, solvents, anti-fo coatings or resins during hot w • Fire in engine ro s, acc n areas or workshops maintena e or demolition • Inadequate control of hot work ar combustible insulation, tim decks or coated surfaces • Deficient fire detection and firefighting equipment on vessels under repair and in workshops • Lack of emergency shutdown procedures for engines, fuel systems and electrical supplies in the event of fire	4A	[redacted]	2M
11. Environmental, Noise and Pressure Cleaning Controls	• Uncontrolled discharge of anti-foul residues, hull growth and contaminants	3H		2M

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
	to the marine environment during pressure cleaning • Noise exposure from engines under test, pressure cleaners, compressors and demolition activities • Water jet injection or impact injuries associated with high-pressure cleaning of hulls and decks • Slip hazards created by overspray, algae and wash-down residues on hardstands and decks		[redacted]	
12. Fatigue, Manual Handling and Ergonomics	• Fatigue from extended shifts or compressed schedules during major refits or emergency repairs • Musculoskeletal injuries from manual handling of heavy or awkward marine components (rudders, propeller shafts, navigation equipment, refrigeration units) • Sustained or awkward postures in confined spaces such as engine rooms, bilges and under-deck areas • Inadequate use of mechanical aids or improper task design for repetitive tasks like sanding, coating application and component installation	3H	[redacted]	2M
13. Emergency Preparedness, Rescue and First Aid	• Delayed or ineffective response to incidents on vessels, in dry docks, on hardstands or over water • Lack of rescue capability for confined spaces, working at height and man-overboard scenarios • Insufficient first aid coverage and equipment for typical marine injuries	4A	[redacted]	2M

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
	(crush injuries, cuts, chemical exposure, hypothermia) • Poor communication of emergency procedures to contractors and visitors		[redacted]	
14. Documentation, Auditing and Continuous Improvement	• Out-of-date procedures and risk assessments for marine activities such as mast lowering, engine room maintenance and vessel demolition • Poor record keeping of inspections, maintenance, permits and training • Lack of systematic monitoring of WH performance and non-conformances • Failure to identify and act on emerging risks or repeated near m	3H	[redacted]	1L

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

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-of-codes-of-practice

Northern Territory
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulations 2011
Legislation NT: https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws
Codes of Practice NT: https://worksafe.nt.gov.au/forms-and-resources/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

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.

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

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

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

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