



**Southern
Ports**

Cranes and Lifting Procedure

DOCUMENT CONTROL

Revision Number	Description	Reviewed by	Approved by	Review Date	Issue Date
01	Initial release.	Operational Compliance Manager	Maintenance Manager	24/10/2014	24/10/2014
02	Converted to Southern Ports Procedure and reviewed.	Health and Safety Representatives, Supervisors, Maintenance Manager, Operations Manager	Regional Manager - Esperance	08/07/2022	08/07/2022
03	Review and update for all ports.	Squad review: Port Health Safety & Environment teams	Chief Operating Officer	23/06/2023	23/06/2023
04	General review, updated to include broader scope for lifting equipment other than cranes including workboxes and earthmoving equipment used as crane.	Squad review	Chief Operating Officer	19/09/2025	23/09/2025

AUDIT

This Procedure shall be reviewed or revised:

- where a Risk Assessment or Audit identifies a need to review
- when legislative changes impact this Procedure
- following a significant incident involving this Procedure
- at least every three years.

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1 INTRODUCTION

1.1 Objective

This Procedure provides a systematic process to manage safe selection and use of cranes and lifting equipment for all Southern Ports work places and work activities.

1.2 Scope

Use of cranes and lifting equipment at all Southern Ports work places and work activities.

1.3 Roles and Responsibilities

Table 1: Roles and Responsibilities

Role	Responsibility
Crane Operator	<i>Crane Operators</i> must hold a current High Risk Work Licence of the appropriate class for the work they undertake as described in the national certification standards and have completed a Verification of Competency on each make and model of plant. Undertake required inspections and report damages or faults on identification. Perform only work authorised and competent in.
Dogger	Workers performing dogging duties shall hold a current High Risk Work Licence of class DG – Dogging for the work they undertake as described in the national certification standards. Undertake required inspections and report damages or faults on identification. Perform only work authorised and competent in.
Rigger	A <i>Rigger</i> ensures that no crane is used for hoisting unless the hoisting is supervised by a person who holds a high risk work licence authorising the person to do rigging work involving hoisting. A Rigging Work High Risk Work Licence includes a dogging licence as a pre-requisite. Workers performing dogging and rigging duties shall hold a current High Risk Work Licence of the appropriate class for the work they undertake as described in the national certification standards. Undertake required inspections and report damages or faults on identification. Perform only work authorised and competent in.
Southern Ports Representative	The <i>Southern Ports Representative</i> is the Southern Ports <i>Manager, Superintendent or Supervisor</i> assigned and authorised to liaise with the Contractor on behalf of Southern Ports, who is the <i>Contract Owner</i>.
Work Supervisor	Ensures all persons are suitably and licenced and competent in:

2 CRITICAL CONTROLS

The following minimum requirements are to be implemented as applicable to the type of lifting equipment:

- Current compliance information and data plates are in place, legible and current.
- Statutory and planned maintenance tests and inspections current and marked on equipment (e.g. tag or compliance plate), with records available
- Equipment selection, maintenance and pre-operational checks process completed with no defects identified prior to use.
- Rated and certified lifting components: gross maximum load is clearly identified and marked on equipment shall not be exceeded.
- Rated and certified load bearing device including Axel Stands, Jacks, trestle stands and Hoists: gross maximum load is clearly identified and marked on equipment shall not be exceeded.
- Rated and certified cranes; gross maximum load is clearly identified and marked on equipment shall not be exceeded.
- Load cells and tilt/level indicators fitted to cranes that measure and monitor the load and indicates to the operator if the crane is within the safe tilt, slew and load and rated capacity as applicable to the machine, with a display fitted in visual range of operator.
- Overhead travelling cranes fitted with audible travel and visual alarms.
- Load chart (including for all attachment types and where earthmoving machines are used as cranes)
- Safety latches are fitted and operational on rigging equipment
- Use of outriggers deployed, locked and only used in line with original equipment manufacturer standards (except pick and carry operations) Ensure sufficient licenced persons when operating cranes. I.e. one rigger/dogman with a twenty-tonne crane, two rigger/dogman with a sixty-tonne crane. Multi crane lifts require two riggers with a minimum of R Intermediate R Advanced
- Trained and competent workers – doggers, riggers and crane operators (including for earth moving equipment used as cranes, such as excavators or IT)
- Exclusion zones with hard barricading and segregation are in place in accordance with barricading and guarding procedure- Drop zones and load movement pathway
- Lift plan with associated permits (e.g. powerline vicinity permit), JHA / Risk assessment to be in place and approved by competent person
- Workers are not under or between a suspended load and load slew path is not over workers or occupied buildings/ plant & equipment
- Integrity of the ground / surface has been assessed as having capacity for the load prior to the lift (example berth loading permit as applicable)
- Tag Lines of not less than 16mm rope thickness and sufficient length for task are in use (no hands placed on suspended loads)

3 GENERAL INFORMATION

Cranes are used at Southern Ports to raise and lower loads and to move loads horizontally. Cranes can be:

- fixed (tower, bridge, gantry, portal boom and vessel-mounted)
- mobile (slewing, non-slewing and vehicle loading).
- Some powered mobile plant, like telescopic handlers, can be used as cranes.

Southern Ports Representatives (Supervisors, Superintendents and Managers) have a duty to keep workers and the workplace safe from the *risks* of cranes. Everyone must work together to ensure cranes are both safe to use and used safely.

Lifting equipment includes all rigging and attachments used with cranes for the purpose of moving a load, and all other lifting and load bearing equipment that is not specifically identified as a crane, including: jacks, stands, hoists and winches.

4 REGISTRATION

Certain types of cranes must be registered. A person must not use a registrable item of plant in the workplace if it has not been registered. The purpose of registering cranes is to ensure it is inspected by a competent person and is safe to operate.

4.1 Item Registration

In order to have an item of plant registered, the item must be inspected and a statement provided by a competent person stating the plant is safe to operate. A person is competent to inspect an item of plant if the person has educational or vocational qualifications in an engineering discipline relevant to the plant, or knowledge of the technical standards relevant to the plant to be inspected.

If the design of the plant was also required to be registered, the design registration number must be included with the application.

The registration document must be kept within the vicinity of the plant and be available for inspection under the Act, and the registration number must be marked on the item of plant.

4.2 Design Registration

A person with management or control of cranes must obtain a copy of the Design Registration from the supplier of the plant, as required, to ensure all registrable plant items are registered.

Evidence of plant registration is to be displayed on the crane.

5 COMPETENCY

Crane Operators must hold a current High Risk Work Licence of the appropriate class for the work they undertake as described in the national certification standards and have completed a Verification of Competency on each make and model of plant.

Where mobile cranes are operated on gazetted roads, the operator must also have an appropriate heavy vehicle licence for driving (i.e. HR / HC). As applicable, higher rated high risk work licences, permit holder to operate the lesser rated equipment / activity of same type, as noted on licence.

Crane High Risk Work Licence classes are as listed below, where earthmoving or other equipment is used as a crane the relevant crane licence must be held example excavator or loader used as a crane (refer to WHS Regulations (General) for further information:

- CT Tower Crane

- CS Self-erecting Tower Crane
- CD Derrick Crane
- CP Portal Boom Crane
- CB Bridge and Gantry Crane
- CV Vehicle Loading Crane
- CN Non-slewing Mobile Crane
- C2 Slewing Mobile Crane (up to 20t)
- C6 Slewing mobile crane (up to 60t)
- C1 Slewing mobile crane (up to 100t)
- CO Slewing mobile crane (over 100t)
- RS Reach Stacker (>3tonnes, replacing the previous allowance for some non-slewing mobile crane (CN))
- HM Materials Hoist
- LF Forklift Truck
- LO Order Picking Forklift Truck
- WP Boom type elevating platform
- PB Concrete placing boom

Doggers and *Riggers* must hold a current High Risk Work Licence of the appropriate class for the work they undertake as described in the national certification standards. Dogging and Rigging High Risk Work Licence classes are as listed below:

- DG Dogging
- RB Basic Rigging
- RI Intermediate Rigging
- RA Advanced Rigging.

6 RISK MANAGEMENT

6.1 Plant Risk Assessment and Management of Change

- For purchase of any new plant and equipment or modifications to any existing plant and equipment, a plant risk assessment must be conducted.
- Modifications must be conducted through engineering design and management of change process, that includes original equipment manufacturer approval.
- Review manufacturer and supplier instruction for safe set-up and use of the plant.
- If you have hired or leased plant, you should also consult the person who owns the plant about potential hazards, because you both have responsibility for ensuring, so far as is reasonably practicable, the plant is safe and without risk to health and safety.

6.2 Activity Risk Management

Prior to carrying out any lifting activity, the appropriate level risk assessment must be completed, it is the responsibility of the work group supervisor / planner / project manager to ensure the appropriate level of risk assessment is undertaken. The three levels of operational activity risk management at Southern Ports are below;

Project / Team risk assessment (such as Critical Risk Assessment Workshop), completed prior to scheduled scope of work to ensure that all overarching / adjacent risks are identified and managed, including where simultaneous operations may affect the work. This should cover the Significant Risks, Probable Critical Failures and Critical Controls. For small scale tasks (simple lift, no adjacent work, one work group), this could be

incorporated into the task risk assessment. CRAW is updated on an ADHOC basis if / when scope or task varies or changes are made. Reviewed and signed off prior to work re - commencing.

Task risk assessment (such as JHA / SWMS), conducted prior to commencing task in order to plan the specific steps and risk controls for the task. This should incorporate controls identified in project / team risk assessment.

Personal Risk Assessment (such as Stop & Think), for all high risk tasks the personal risk assessment must be used in conjunction with a higher level risk assessment.

Planning risk assessment;

- Review safety information relating to task and equipment (manuals and procedures)
- Inspect / understand each item of plant in the workplace and observe how it is used.
- Inspect work area and check schedule and permit register for any other work in or adjacent to the work area.
- Consult workers and health and safety representatives to find out what their experience is with the task, and plant they operate, inspect or maintain.

When identifying hazards you should think about all the activities that may be carried out during the life of the plant at your workplace, for example installation, commissioning, operation, inspection, maintenance, repair, transport, storage and dismantling. For each of these activities, you should consider whether the plant could:

- cause injury due to entanglement, falling, crushing, trapping, cutting, puncturing, shearing, abrasion or tearing
- create hazardous conditions due to harmful emissions, fluids or gas under pressure, electricity, noise, radiation, friction, vibration, fire, explosion, moisture, dust, ice, hot or cold parts, cleaning, and undisclosed asbestos-containing materials
- cause injury when an operator responds to common failure modes. For example, machine jams cause injury due to poor ergonomic design; if operator controls are difficult to reach or require high force to operate.

Other factors to consider include:

- the condition of the plant, for example its age, maintenance history and how frequently the plant is used
- the suitability of the plant. For example, is it actually being used for its intended purpose? Has it been modified from its intended use?
- the location of the plant. For example, what is its impact on the design and layout of the workplace and are workers able to access the plant without risk of slips, trips or falls?

Frequently encountered hazards and control measures for safe use of cranes and lifting equipment are shown in Table 5 below.

Table 2: Hazards and Control Measures

Hazard	Controls
Pinch Points	• Avoid adjusting a sling as it tightens as this is an unsafe work practice. • Ensure hands are kept clear of potential moving parts and pinch points. • Make sure you have the correct sling attachments and know the sling adjustment procedures. Wear appropriate gloves for this work • A certificate of competency for Dogging work is required.
Incorrect rigging of loads	• Completion of lift plan that determines load weight and forces • Selection of lifting and rigging equipment including spreader bars is based on lift plan and does not exceed the rated capacity of equipment. • Making sure that the load's centre of gravity is taken into account.

Table 2: Hazards and Control Measures

Hazard	Controls
	A High Risk Work Licence for Dogging work is required.
Equipment or structural failure	- Only a ticketed Dogger or Rigger is to attach or sling loads. - Ensure that the crane/rigging equipment is suitable for the loads weight. - Ensure lifting equipment is inspected and tagged on a regular basis. - Safety latches must be fitted to all lifting hooks.
Suspended load	- Establish exclusive control zone as per barricading and guarding procedure - Communicate lift to other workers so that they keep out of lift zone and travel path, use a spotter where required. - Keep load as close to the ground as possible when moving materials.

6.3 Personal Protective Equipment

All crane operators, riggers and workers in the area where overhead cranes and lifting equipment are in operation must wear Personal Protective Equipment as required by Southern Ports Personal Protective Equipment Procedure, such as:

- hard hats (with chin strap if W@H)
- hearing protection (as required)
- safety glasses
- hi-vis jackets and pants
- protective footwear (hard-toe boots)
- personal flotation device (required for work near water)
- work gloves.
- Tool lanyards for works from EWP or at height.

Equipment required to affect a rescue shall be set up and rigged prior to any work at height commencing. The rescue and retrieval equipment will enable the *Standby Person* or work group to initiate a rescue, if safe to do so, prior to the arrival of emergency services.

A clear continuous method of communication between the crane operator, doggers and riggers, emergency workers and persons conducting the work shall be agreed prior to work commencing and documented in the SWMS / JHA.

7 BARRICADES, SIGNAGE AND EXCLUSION ZONES

An exclusive control zone shall be set-up around area of lift and lifting equipment using barricading and signage that covers the entire working, including equipment radius, tail swing and working arc of boom. The size of the exclusion zone and extent of barricading and signage required is determined through the risk assessment and planning process.

Access to areas where lifting operations are carried out shall be restricted, clearly marked, signposted, protection provided and procedures put in place such that persons in the vicinity are not exposed to danger. Barricades shall be positioned at a distance that will prevent dropped objects from lifts falling outside the barricade from both direct falls and deflected items.

Danger exclusion zones shall be established around cranes and adjoining areas to stop people entering the area and being injured by the crane or falling objects.

Where the exclusion zone is a footpath or roadway that requires closure seek approval from the relevant department. People should be safely directed to an alternative route.

8 LIFTING EQUIPMENT

Lifting equipment must be checked before and after use and inspected regularly to determine whether it is suitable to keep using. Checks must include:

- Lifting gear is tagged and all relevant information listed, e.g. relevant information for a chain sling includes grade of chain, rated capacity, manufacturer, chain size and any relevant Australian Standard marking.
- All lifting hooks (except for grab and chain shortening hooks) will be fitted with a safety latch to prevent the load from accidentally detaching, unless otherwise specified in a risk assessment approved by the Senior Site Official.
- Shackles used as terminal fittings are prevented from unscrewing, e.g. mousing or similar.
- Lifting eyes and inserts are compatible.
- Lifting slings are not damaged, e.g. excessive wear, damaged strands, cracks, stains, deformation or severe corrosion.
- The sling is appropriate for load being lifted, including adequate capacity and protection from sharp edges.

All lifting gear, including slings, hooks and material boxes, should be periodically inspected for damage and wear by a competent person and inspection records kept.

All lifting gear must be tagged to identify the date of the lifting gear's last inspection and documented maintenance records for the lifting gear available at the workplace.

9 CRANE OPERATION

9.1 Lift Plans

Lift plans define responsibilities and provide a logical and systematic approach to the crane lift allowing the crane operation to be carried out safely, in particular for the following situations:

- Multiple crane lifts, where more than one crane is used to lift a load at any one time, ensuring in this case that there are two licenced riggers with a minimum of R Intermediate R Advanced HRWL licences.
- Single lifts of multiple loads at different heights, also known as staggered lifting.
- Lifting workboxes with people in the workbox.
- Working near live overhead electric lines (vicinity permit and spotters required).
- Lifting over live plant (live equipment e.g. rotating scrubbers, conveyors).
- When using cranes for demolition work.
- Lifting large pressure vessels or tanks.
- Using mobile cranes on barges.
- For rotating loads.
- Lifting a load close to the maximum capacity on the relevant load chart or the cranes maximum rated capacity.

9.2 Load Charts

Load charts are provided with cranes of varying radius, e.g. mobile cranes, vehicle mounted cranes. The load chart sets out how the lift capacity varies depending on how the crane is set up, boom extension and boom angle. Using the load chart correctly is critical to ensuring the crane is safe to use.

Bridge and gantry cranes do not have load charts but have a maximum rated capacity or working load limit (WLL) that must be marked on the crane and not exceeded.

Earthmoving and fork truck equipment used as a crane will not automatically be supplied with a load chart, this shall be sourced and be appropriate for the equipment and all attachment types prior to use as a crane.

Load charts should be fixed in the operator's cabin in a place which is easy to see and read. Where the crane has more than one load chart, for example for different boom and fly jib configurations, the charts should be easily accessible for the operator to verify that the crane is not overloaded and may be kept electronically or in hard copy.

9.3 Pre-operational Safety Checks

Before using the crane, check:

- Go through the prestart inspection applicable for the equipment
- The pendant control to ensure all directions are clearly marked and correct in their direction of travel.
- That the pendant control operates the crane. If after pressing Start or Reset nothing happens check to make sure the crane hasn't been tagged out and somebody is working on it. If it still doesn't operate, report it to your Supervisor.
- The areas that you will be operating in are clear of persons, materials and equipment before any movements with the crane.
- Ground bearing pressures have been checked if deemed necessary and bearing plates or dunnage are placed correctly.
- If working on berth a "Berth load" permit must be obtained and specific crane location implemented.
- The correct rated slings are being used for the load to be lifted, ensuring work load limit is not exceeded.
- All lifting equipment has been inspected and tested, has current Inspection Tags and is visually inspected and free of damage prior to use.
- A Stop and Think has been conducted.
- For cranes, before commencing the lift ensure the load will be lifted vertically and is not in a position that may cause it to swing as it leaves its supporting surface. The hook and slings should be directly over the centre of the load and not on an angle. Vertical load angle A vertical load angle occurs when the load is lifted directly upward. Angled Load Angle
- An angled load angle occurs when the load is lifted at an angle between the vertical and horizontal directions, this may not be undertaken using cranes under any circumstance. Where no other alternative is possible and it is identified that an angled load may be required, a risk assessment must be completed to demonstrate that there is no alternative method and that all risks are adequately controlled. The following minimum controls must be in place:
 - use equipment designed for the purpose
 - increase the rigging equipment's capacity to ensure the WLL is not exceed due to a non-vertical lifting position, ensure that the rigging restrains the load and resolves the opposing forces and any stored energy.
 - Example where use of winches and lever or pulley blocks involves a load being slung on an inclined angle, the rigging and inclined angle must remain within the manufacturers specifications.

9.4 Crane Start-up

When starting up the crane:

- Ensure controls are in place to prevent unauthorised entry.
- Test all crane movements and controls to the full extent of their capability.

- Determine the weight of the load to be lifted and ensure it is within the safe working load of the crane.
- Select the right sling and attachments for the lift (Dogger required).
- Inspect each item of lifting equipment before attachment to the load (Dogger required).
- Balance the load to avoid overstress on any legs of the sling (Dogger required).
- Reduce the working load limit of chain slings if operation involves the movement of molten metals (Dogger required).
- Protect synthetic slings from damage by padding sharp edges with corner saddles or wooden blocks (Dogger required).

9.5 Operating controls

9.5.1 Controls for safe use of cranes

General controls (including for earthmoving equipment used as cranes) include the following:

- Ensure that the plant used is specifically designed to lift or suspend the load.
- No load is to be lifted simultaneously by more than 1 item of plant unless the method of lifting ensures that the load placed on each item of plant does not exceed the design capacity of the plant
- Loads are only to be lifted or suspended in a way that ensures that the load remains under control during the activity
- Where the crane operator does not have a clear view of the load being lifted, a competent rigger shall provide instruction and act as a spotter
- In the event of malfunctioning equipment all operations shall cease
- All cranes and lifting equipment shall only be used in accordance with equipment manufacturers specification.
- Ensure fundamental and ground stability: ensure ground conditions and means of supporting crane/ outrigger pads / tyres, assess and implement controls for slope of ground, wind conditions and the manner in which loads are lifted or moved that may destabilise crane.
- Loads must be slung and secured so that the load or any part of it, cannot fall.
- Tag lines, push poles or similar devices should be used to control loads while being lifted, lowered or suspended. Where there is a risk of a load becoming unstable it must be restrained.
- Lifting and rigging gear is to be removed and stowed away when not in use.
- Do not:
 - operate the crane if the limit switches are out of order.
 - drag a load; always ensure the crane is centred directly above the load and lift vertically.
 - carry a load on the point of a hook or insert the point of the hook into a link of the chain.
 - raise loads higher than necessary to clear objects.
 - pass a load over people in the workplace, including the operator.
 - leave a crane unattended while a load is suspended in the air (lightning and emergency situations excepted, with adequate controls in place).
 - stand between the load and solid structure such as a wall or vehicle.
 - ride on any part of the exterior of the crane, load or rigging
- Hook unused slings to the oblong link or sling rings (Dogger required).

- When moving the load with the crane, make sure that you are facing the load and its direction of travel, and that the area behind you is not obstructed.
- Lift the load to the minimum height needed to transport it clear of obstructions and for placing it in its required position.
- Be observant of other employees and equipment that are in the path of travel, never take a load over other persons.
- Have spotters in place, most operations will require at least two spotters.
- Place the load safely where it is required ensuring that it is stable and will not unexpectedly move or roll when the tension is released off the slings or hook.
- Keep hands and fingers away when slack is being taken out of a sling.
- Keep everyone away from the load before the lift is made.
- Ensure lifting devices are fully seated in the saddle of the hook before the load is moved.
- Move crane controls smoothly, and avoid abrupt, jerky movements of the load.
- Ensure the load is high enough to clear all objects in the path of travel.
- Never stand between the load and solid structure such as a wall or vehicle.

9.5.2 *Pick and Carry Operations*

The walking of loads by cranes shall only be undertaken by cranes that are specified to do so by the crane's manufacturer. Where cranes or loads are being moved around site, the following shall apply:

- The travel route shall be inspected to ensure that any gradients, including cross gradients, are taken into account and the crane is suitably de-rated.
- No person is to walk between a load and the crane at any time.
- Chains/slings shall be removed or tied back to the crane body.
- The hook block shall be secured to prevent swinging and damage to boom sections. Where it is impractical for non-slewing cranes to secure hooks, the hook block may be held fast against the boom head.
- Doggers and Riggers shall guide the crane during tramping of loads on site.
- Cranes shall not pick and carry loads on a fly or with a fly in the unstowed position.
- Tag lines shall be used on loads when in pick and carry operation.
- Under no circumstances shall a Rigger or Dogger travel in the crane cab or on the crane while moving loads.
- Crane manufacturer's specifications shall be referenced for all pick and carry operations.

9.6 Crane shutdown

You must make sure a crane is left as safe as possible if unattended, parked or stored. There will be exceptional circumstances such as where lightning or emergencies are affecting work areas, in these circumstance the specific steps are outlined in relevant procedures.

A crane should not be left unattended unless:

- loads are removed
- Boom or hook is in retracted and stowed position
- power has been turned off

10 USE OF WORKBOXES

The use of a workbox, or man cage, requires a workbox permit and shall only be authorised after all other methods of access have been reviewed, deemed impracticable and a risk assessment has been conducted.

10.1 General requirements for use of a workbox

- An appropriate work procedure shall be developed and implemented to transfer any work materials from the workbox
- The rated capacity of the workbox shall not be exceeded
- The workbox and lifting attachments and records shall be inspected by a competent person, prior to use
- Ensure that if persons are lifted or suspended in a work box, that it is securely attached to the plant
- Ensure persons in the work box remain substantially within the work box while they are being lifted or suspended
- if there is a risk of a person falling from a height, a safety harness is provided and worn by the person in order to prevent, so far as is reasonably practicable, injury to the person as a result of the fall.
- means are provided by which the persons being lifted or suspended can safely exit from the plant in the event of a failure in its normal operation.
- The workbox shall only be used to lift personnel and materials necessary to carry out the work
- The crane operator shall remain at the controls of the crane
- Effective means of communication between any person in the workbox and the operator shall be established
- Mobile cranes shall not travel while people are in the workbox
- Movements of the workbox shall be at slow speeds with minimum acceleration and deceleration
- Workboxes should not be used in winds in excess of 7 m/s (25 km/h), electrical storms, snow, ice, sleet or other adverse weather conditions that could affect the safety of personnel.
- Flammable liquids, oxygen and acetylene cylinders, and similar flammable liquids, shall be correctly secured and housed in a separate compartment from the personnel. No more than the minimum quantities, sufficient to carry out the work, shall be carried. Where flammable liquids are carried, a suitable fire extinguisher shall also be carried
- Personnel shall not enter or leave the workbox when elevated, except in an emergency and only if each of the following conditions are met;
 - a risk assessment has been completed that identified that access and egress from the workbox in this manner is safe, and that this means of access is safer than all other alternative means.
 - The structural adequacy of the landing area has been established and the landing area is clear.
 - Where the landing is at the edge of a structure, the maximum gap between the workbox and landing does not exceed 100mm, the workbox is secured to a suitable point on the landing and access and egress does not take place unless a fall-arrest harness is properly worn and attached to a suitable anchorage on the structure.

10.2 Requirements for the Workbox

The workbox shall;

- Be designed in conformance with AS 1418.1, and the design shall be registered with WorkSafe.
- Be stamped with a metal data plate, securely attached in a prominent position, providing the following design information
 - the maximum hoisted load in kilograms
 - the safe working load in kilograms
 - the tare mass in kilograms
 - the minimum allowable (rated) crane capacity in kilograms
 - an identification reference.
- Be marked permanently and legibly with letters and numerals not less than 25mm high in a colour contrasting with the background, with the safe working load in kilograms.
- Carry no more than the maximum number of occupants, at least one person of which is a licensed and competent dogman
- Be in a safe working condition
- Be fitted with slings that are permanently attached to the workbox by moused shackles, hammer lock shackles or other means.
- Be provided with anchorage points for safety harness lanyards to be attached, and there are enough anchorage points for each occupant, The harness anchors shall be fitted so as not to form a hazard to personnel moving and working from inside the workbox
- Be painted in high visibility colours
- Where access gates are provided, they should be at least 500mm in width and comply with the following - open inwards where practical; be self-closing and self-locking and be permanently attached to the workbox.
- Be designed only for use of personnel with the minimum tools and materials required to perform the necessary work.
- Not be used as transportation for personnel or bulk materials, or for the removal of debris or scrap.

10.3 Requirements for crane use to lift workbox:

- The crane shall not be used to simultaneously raise, lower or suspend any other load
- Designed by the manufacturer for use with a workbox.
- Fitted with a safety hook or moused accessory.
- Equipped with controls that return to the neutral position when released and this action causes the motion to stop.
- Equipped with power leveraging.
- Equipped with a positive freefall lockout control so that inadvertent disengagement of the lockout is not possible.
- Fitted with an up limit switch on the hoist motion.
- Fitted with a down-limit switch, if the workbox is to be lowered below the crane supporting surface.
- Be such that at the maximum radius of the task to be performed, the crane has a minimum rated capacity of 1000kg
- Be such that, when the jib or boom of the crane is at its maximum radius for the task to be performed, the rated capacity for the crane in this condition, when divided by 2, is equal to or greater than the total load of the workbox and its contents.

- Equipped with 'drive up' and 'drive down' controls on both the hoisting and luffing motions and these are used.
- Equipment with a safety hook or shackle is used to attach the cranes hoist rope to the workbox.
- Fitted with a means by which the workbox can safely be lowered in the event of an emergency or failure of power supply.

11 STATUTORY INSPECTIONS, MAINTENANCE & REPAIR

Mobile plant isolation procedures must be implemented and followed where there is a requirement to de-energise or lock-out a crane for maintenance, testing or repair.

A record must be made of all maintenance, inspections, testing, alterations and repairs. Records must be accessible at all reasonable times.

11.1 Inspection and Testing

Inspections and testing are conducted in accordance with the relevant Australian Standards, manufacturer's specifications and the relevant legislation.

Failure to carry out appropriate planned inspections, tests and preventative maintenance programs according to the manufacturer's instruction or those of a competent person may lead to structural or mechanical failure, collapse, decreased safety and efficiency in operation.

Lifting equipment including but not limited to chains, slings, shackles, jacks, stands, hoists and winches should be inspected and tagged quarterly by a competent person and tested as applicable at the frequency required for the type of equipment.

Crane inspection and appropriate testing shall be carried out frequently to ensure parts of the crane subject to deterioration through corrosion, damage, wear or abrasion are replaced before they become unserviceable.

Details of inspection of cranes and lifting equipment must be recorded and include the type of inspection or test, the date, whether or not it was found suitable for use and any defects repairs or destruction requirements.

Crane Inspection and testing programs must include the:

- Major inspection required for registrable mobile cranes,
- Regular inspection and testing required for all cranes, and
- Inspection and testing for crane re-registration.

Crane Inspecting and testing frequencies must include:

- Annual inspections,
- Commissioning inspection and tests,
- Routine inspections and maintenance, and
- Pre-operational inspections.

11.2 Maintaining, Repairing and Cleaning

The Southern Ports Isolation procedure shall be followed when undertaking maintenance, repair and cleaning and maintenance personnel and operators deemed competent to apply them.

Repairs to plant must be conducted in accordance with the applicable Australian Standard and the original equipment manufacturers specifications. Modifications to plant must follow management of change process which includes risk assessment, safety in design, engineering and original equipment manufacturers approval.

All records associated with repair and modification shall be maintained in the appropriate management system (example, maintenance in D365, Management of Change in ecoPortal), records may include but not be limited to the following:

- Detailed drawings and calculations
- Material test certificates
- Non-destructive examination reports
- Inspection and testing procedure and details
- Welding procedure records
- Welder qualification records
- Certificate of compliance

12 REFERENCES AND RECORDS MANAGEMENT

12.1 Record Keeping

Where works are conducted under an Authority to Work and Crane Permit, on completion of the work, the *Southern Ports Representative* shall return the completed Authority to Work and Crane Permit to the *Shift Superintendent*. The *Maintenance & Operations Administrator* will then scan and file the permit into the Administrator Asset Management Database.

The person with management or control of plant that is required to be registered at a workplace must keep a record of all tests, inspections, maintenance, commissioning, decommissioning, dismantling and alterations of the registered plant for the period that the plant is used or until the person relinquishes control of the plant.

The person with management or control of plant with a presence-sensing safeguarding system must keep a record of safety integrity tests, inspections, maintenance, commissioning, decommissioning, dismantling or alterations of the plant. The record must be kept for:

- five years or
- the life of the plant or until the person relinquishes control of the plant if the plant is registered plant or has been altered.

12.2 References

12.2.1 External documents

External documents referenced by this Procedure are shown in Table 2 below.

Table 3: External documents

Reference	Title
AS 1418.5-2013	Cranes, hoists and winches – Mobile Cranes
AS 2550	0. Cranes - Mobile, tower and derrick - Selection and operation
AS 2550.1 through to .19	Cranes, hoists and winches Safe Use : 1. General Requirements 2. (Not Used) 3. Bridge, gantry, portal (including container cranes) and jib cranes 4. Tower cranes 5. Mobile Cranes 6. Guided storing and retrieving appliances 7. Builders' hoists and associated equipment 8. (Not Used)

Table 3: External documents

Reference	Title
	9. Vehicle hoists 10. Mobile elevating work platforms 11. Vehicle-loading cranes 12. (Not Used) 13. Building maintenance units 14. (Not Used) 15. Concrete placing equipment 16. Mast climbing work platforms 17. (Not Used) 18. (Not Used) 19. Telescopic handlers
AS 1657:2018	Fixed platforms, walkways, stairways and ladders—Design, construction and installation
AS 4991-2004	Lifting devices
Safe Work Australia	Model Code of Practice – Managing the risks of plant in the workplace
AS 2359.1:2019	Powered industrial trucks – General requirements
	Road Traffic (Vehicles) Act 2012
	Road Traffic (Vehicles) Regulations 2014
WA	Work Health and Safety (General) Regulations 2022
WA	Work Health and Safety Act 2022

12.2.2 Southern Ports Documents

Southern Ports documents referenced by this Procedure are shown in Table 3 below.

Table 4: Southern Ports Documents

Reference	Title
D23/6142	Authority to Work and Permits Procedure
D18/2169	Barricading, Guarding and Signage Procedure
	Isolation and Tagging Procedure
	Lift Plan
D16/1002	Personal Protective Equipment Procedure
D24/216	Record Keeping Plan
D16/1038	Removal and Re-instatement of Walkways, Flooring and Handrails Permit
D19/12256	Risk Assessment Procedure
D18/11692	Risk Management Framework
	Vicinity Permit (working near powerlines)
D16/900	Work at Height Permit
D18/24902	Work Health and Safety Management Plan
D16/1023	Workbox Permit
D16/26	Work On, Over or Near Water Procedure

13 DEFINITIONS

Definitions for terms used in this Procedure are shown in Table 4 below.

Table 5: Definitions

Term	Definition
Ancillary winches	Belt splicing winches, cable winches (manual or powered winding)
Axel Stands, Jacks, trestle stands	Fixed or adjustable load bearing equipment, items or structures, designed for supporting or raising vehicles or other materials and equipment.
Authority to Work	A signed statement by a Southern Ports Supervisor and Competent Person that authorises that specific work may be performed by competent workers under the stated conditions. This form shall be completed and authorised when engaging any contractor to conduct work at Southern Ports.
Barricade	Any object or structure that creates a barrier to control, block passage or force the flow of traffic in the desired direction.
Control Measure	An action taken to eliminate or minimise health and safety risks so far as is reasonably practicable. A hierarchy of control measures is set out in the Work Health and Safety (General) Regulations 2022 to assist duty holders to select the highest control measures reasonably practicable. Note: The Work Health and Safety (General) Regulations 2022 also refer to a control measure as a risk control measure or a risk control.
Crane	Means an appliance intended for raising or lowering a load and moving it horizontally, including the supporting structure of the crane and its foundations. Cranes may be fixed (tower, bridge, gantry, portal boom and vessel-mounted) or mobile (slewing, non-slewing and vehicle loading). Earth moving equipment used as cranes example: excavator, telehandler, front end loader, forklift with jib, other equipment with interchangeable tools attachments or other means to lift items.
Danger / Exclusion zone	An area from which people are excluded.
Dogger	A High Risk Work License (Dogging License) is required where dogging work is performed, such as applying slinging techniques for the purposes of lifting a load, including selecting the method of lifting (by consideration of the nature of the load, its mass and its centre of gravity) and inspecting lifting gear (for suitability and condition); or directing the operator of a crane or hoist in the movement of a load when the load is out of the view of the operator. Workers performing dogging duties shall hold a current High Risk Work Licence of class DG – Dogging for the work they undertake as described in the national certification standards.
Exclusive control zone	An area in which only personnel authorised to perform task may enter unless express permission has been received from work are supervisor (each occasion).
Gantry and Post Cranes	Means a crane that consists of a bridge beam or beams supported at one or both ends by legs mounted to end carriages, and is capable of travelling on supporting surfaces or deck levels, whether fixed or not, and has a grab with one or more hoisting units arranged to travel across the bridge. Fixed, independently standing single post supporting a lifting arm with a hoist mechanism. Includes davit and vehicle loading

Table 5: Definitions

Term	Definition
Hazard	A situation or thing that has the potential to harm a person. Hazards at work may include noisy machinery, a moving forklift, chemicals, electricity, working at heights, a repetitive job, bullying and violence at the workplace.
Health and Safety Representative	A worker who has been elected by their work group under the Work Health and Safety Act 2022 to represent them on health and safety matters.
High Risk Work Licence	A license obtained under the Work Health and Safety Legislation on completion of the required training and licence application.
Hoist	An appliance intended for raising or lowering a load or people, and includes an elevating work platform, a mast climbing work platform, personnel and materials hoist, scaffolding hoist and serial hoist but does not include a lift or building maintenance equipment.
JHA	Job Hazard Analysis – a documented risk assessment of the task identifying the hazards and controls in place.
Limiting device	A higher order engineering control which stops the crane moving beyond its operating limits into an unsafe situation.
Load Chart	A notice fitted or displayed on or in a crane or hoist specifying the rated capacities as supplied by the manufacturer or competent person.
May, Should	Recommended, but discretionary.
Must, Shall, Will	Mandatory.
Plant	Plant includes machinery, equipment, appliance, container, implement and tool components or anything fitted or connected to those things. Plant includes items as diverse as lifts, cranes, computers, machinery, conveyors, forklifts, vehicles, power tools, quad bikes, mobile plant and amusement devices. Plant that relies exclusively on manual power for its operation and is designed to be primarily supported by hand, for example a screwdriver, is not covered by the Work Health and Safety (General) Regulations 2022. The general duty of care under the Work Health and Safety Act 2022 applies to this type of plant. Certain kinds of plant, for example forklifts, cranes and some pressure equipment, require a licence from the regulator to operate and some high-risk plant must also be registered with the regulator.
Rated Capacity	The maximum gross load that may be applied to the crane or lifting equipment while in a particular working configuration and under a particular condition of use, Also sometimes identified as; • SWL /MRC: Safe Working Load/ Machine Rated Capacity • WLL: Work Load Limit.
Rigger	A <i>Rigger</i> ensures that no crane is used for hoisting unless the hoisting is supervised by a person who holds a high risk work licence authorising the person to do rigging work involving hoisting. A Rigging Work High Risk Work Licence includes a dogging licence as a pre-requisite. Workers performing dogging and rigging duties shall hold a current High Risk Work Licence of the appropriate class for the work they undertake as described in the national certification standards. These classes are: • DG Dogging • RB Basic Rigging • RI Intermediate Rigging • RA Advanced Rigging.
Risk Assessment	For the purposes of identifying hazards and the required controls to minimise risk to safety, health, environment and community. May include:

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Table 5: Definitions

Term	Definition
	• Safety in Design (example; plant risk assessment) • Project / Team risk assessment ○ Critical Risk Assessment Workshop • Task Risk Assessment ○ Safe Work Instruction ○ Job Hazard Analysis • Personal Risk Assessment (example: Stop & Think), or a combination of the above.
Tirfor	Mechanical device used to pull in (wind up) or let out (wind out) or otherwise adjust the tension of a rope or wire rope.
Vehicle loading/mounted crane (VLC/VMC)	A crane mounted on a vehicle for the purpose of loading and unloading the vehicle.
Work Box	Means a personnel carrying device, designed to be suspended from a crane, to provide a working area for a person elevated by and working from the device
Workers	Workers at Southern Ports include Employees, Contractors and consultants who are performing work (but not Visitors).
Workplace	An area, ship, vehicle, building, or other structure, where employees work or are likely to occupy in the course of their work.