



Australian Government

TLILIC3007 Licence to operate a portal boom crane

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit specifies the skills and knowledge required to operate a portal boom crane safely.

Portal boom crane means a boom crane or a jib crane that is mounted on a portal frame that, in turn, is supported on runways along which the crane travels.

A person performing this work is required to hold a portal boom crane high risk work (HRW) licence.

This unit requires a person operating a portal boom crane to plan the work, conduct routine checks, transfer load, mobile load, and shut down and secure crane.

Licensing/Regulatory Information

This unit is based on the licensing requirements of Part 4.5 of the Model Work Health and Safety (WHS) Regulations, HRW and meets Commonwealth, state and territory HRW licensing requirements.

Any alteration to this unit would result in a unit that would not be acceptable to work health and safety (WHS)/occupational health and safety (OHS) regulators for the purpose of licensing.

Pre-requisite Unit

Not applicable.

Competency Field

LIC – Licensing

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Plan work

- 1.1 Potential workplace hazards are identified
- 1.2 Hazard control measures are identified in consultation with appropriate personnel consistent with appropriate standards to ensure the safety of personnel and equipment
- 1.3 Weight of load is identified and estimated in consultation with associated personnel
- 1.4
Crane appropriate to load/s and workplace conditions is identified
- 1.5 Appropriate path for moving loads in work area is determined
- 1.6 Appropriate communications methods are identified in consultation with appropriate personnel

2 Conduct routine checks

- 2.1 Appropriate hazard prevention/control measures are applied to work area in accordance with procedures in consultation with associated personnel
- 2.2 Crane is accessed in safe manner
- 2.3 Crane is visually checked for any damage or defects
- 2.4 All signage and labels are checked to ensure they are visible and legible in accordance with the appropriate standard
- 2.5 Routine pre-operational crane checks are carried out in accordance with procedures
- 2.6 All controls are located and identified
- 2.7 Crane service logbook is checked for compliance
- 2.8 Crane is started in accordance with procedures and is checked for any abnormal noises
- 2.9 All crane safety devices are tested in accordance with procedures
- 2.10 Post-start operational checks are carried out in accordance with procedures
- 2.11 All communications equipment is checked for serviceability
- 2.12 All damage and defects are reported and recorded in accordance with procedures, and appropriate action is taken

3 Transfer load

- 3.1 Lifts are confirmed to be within crane capacity in consultation with associated personnel
- 3.2 Boom/jib and hoist block is positioned over load following directions from associated personnel
- 3.3 Test lift is carried out in accordance with procedures to allow for checks to be safely made, in consultation with relevant personnel
- 3.4 Loads are transferred using all relevant crane movements in accordance with procedures and appropriate standards
- 3.5 All required communications signals are interpreted correctly in accordance with procedures and the appropriate standard
- 3.6 Crane is operated in accordance with procedures
- 3.7 Load movement is monitored constantly, to ensure safety of personnel and load, and structural stability
- 3.8 Unplanned and/or unsafe situations are responded to in accordance with procedures

4 Mobile load

- 4.1 Suitability of planned route for crane is checked in accordance with procedures
- 4.2 Crane is configured to mobile load in accordance with procedures
- 4.3 Load is moved using best mobile practice in accordance with the appropriate standard

5 Shut down and secure crane

- 5.1 Crane is placed in weathervane mode as required in accordance with procedures
- 5.2 Relevant motion locks and brakes are applied as required
- 5.3 Crane and equipment are secured correctly in accordance with procedures and the appropriate standard
- 5.4 Crane is shut down in accordance with procedures
- 5.5 Routine post-operational crane checks are carried out in accordance with procedures
- 5.6 All damage and defects are reported and recorded in accordance with procedures, and appropriate action is taken

Foundation Skills

The language, literacy, numeracy and employment skills that are essential to performance that are not explicit in the unit are listed below.

Skill	Performance feature
Employment skills to:	- operate a portal boom crane in different types of workplaces transferring key principles of safe operation to different contexts - improve own performance in safely and efficiently operating a portal boom crane by incorporating learnings from different workplaces and different conditions into current performance
Numeracy skills to:	- interpret numerical information including: - selecting appropriate portal boom crane in accordance with load and workplace conditions - load weight assessment, to ensure compliance with portal boom crane data plate specifications - controlling and monitoring instrument readings
Language skills to:	- use and interpret vocabulary specific to safely and efficiently operating a portal boom crane and workplace procedures to communicate with other workplace personnel - use non-verbal feedback to support effective communication - use relevant two-way radio conventions
Literacy (reading) skills to:	- interpret documentation that includes technical specificity including: - portal boom crane data plate - plant operation manuals and manufacturer specifications - workplace procedures, including emergency plan - workplace signage and labels
Literacy (writing) skills to:	- accurately record and maintain information relating to operating a portal boom crane, including: - incident reports - vehicle checking and maintenance records
Self-management skills to:	- implement risk control measures - initiate emergency management strategies

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit is equivalent to TLILIC3007A Licence to operate a portal boom crane.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLILIC3007 Licence to operate a portal boom crane

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Performance Evidence

A person who demonstrates competency in this unit must provide evidence of safely operating a portal boom crane and satisfy all of the elements, performance criteria and foundation skills requirements of the unit on at least one occasion including:

- applying appropriate mathematical procedures to estimate loads
- applying best mobile practice including:
 - carrying load near to the ground surface (where practical)
 - gently accelerating and braking (to minimise load swing)
 - minimum boom/jib radius
 - minimum speed
 - using handheld taglines
- applying hazard prevention/control measures including:
 - adequate illumination
 - disconnected power
 - insulated electric lines
 - moving obstructions
 - pedestrian barricades
 - personal protective equipment
 - safety tags on electrical switches/isolators
 - using safety observer inside exclusion zone
 - traffic barricades and control
 - trench covers
- applying risk assessment and hazard control strategies, including hierarchy of control as applied to positioning and safely operating a crane
- applying risk assessment and management procedures
- communicating with other workplace personnel through:
 - appropriate worksite protocols
 - bells
 - buzzers
 - listening
 - making and interpreting hand signals

- questioning to confirm understanding
- signage
- two-way radios
- verbal and non-verbal language
- whistles
- written instructions
- complying with WHS/OHS licensing legislation
- loading data into crane computer as required and checking operation to accurately reflect crane configuration
- operating a portal boom crane including all functions to their maximum for lifting and moving loads to the safe working rated capacity while applying relevant crane movements including:
 - hoisting
 - luffing
 - mobiling
 - slewing
- receiving and interpreting workplace instructions, safety information, emergency procedures
- recording and maintaining accurate information relating to crane operations
- shutting down a portal boom crane in accordance with manufacturer specifications and workplace procedures including:
 - applying motion locks and brakes are applied
 - applying weathervane mode as required
 - idling engine to stabilise temperature
 - locking and securing cabin as required
 - raising boom/jib to clear buildings, structures and vessels as required
 - removing key from ignition
 - retracting hoist rope and hook block
 - turning off engine
- test-lifting load just clear of lifting plane to ensure:
 - adjustments to slinging can be made in a safe manner
 - all crane equipment is functioning properly
 - load measuring equipment can be used to verify calculated weight of load
 - loads of unusual shape or weight distribution are correctly slung
 - near capacity loads do not overload crane
- using and interpreting crane manufacturer specifications and data, including load charts to enable crane to be configured for load
- using communications signals including:
 - stop – hand
 - stop – whistle
 - hoist up – hand

- hoist up – whistle
- hoist down – hand
- hoist down – whistle
- luff boom down – hand
- luff boom down – whistle
- luff boom up – hand
- luff boom up – whistle
- slew left – hand
- slew left – whistle
- slew right – hand
- slew right – whistle
- mobile – hand
- verifying problems and equipment faults, and applying appropriate response procedures to unplanned and/or unsafe situations including:
 - environmental conditions (e.g. wind, lightning, storms, etc.)
 - failure/loss of control (e.g. brakes and steering)
 - failure of equipment (e.g. hydraulic system)
 - obstacles and obstructions
 - unusual or difficult terrains.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- appropriate mathematical procedures for estimating loads
- Australian and industry standards relevant to operating a portal boom crane
- Commonwealth, state or territory WHS/OHS legislation, standards and codes of practice relevant to the full range of processes for the crane class
- hazards including:
 - environmental conditions (e.g. wind, lightning, storms)
 - ground stability (e.g. ground condition or slopes for load placement)
 - insufficient lighting
 - other specific hazards (e.g. dangerous materials)
 - overhead hazards (e.g. electric lines, service pipes)
 - traffic (e.g. pedestrians, vehicles, plant)
- hierarchy of hazard identification and control:
 - elimination

- substitution
- isolation
- engineering controls
- administrative controls
- personal protective equipment (PPE)
- organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class
- portal boom crane characteristics and capabilities to allow crane configuration to suit the range of loads
- procedures for recording, reporting and maintaining workplace records and information
- rated capacity and working load limits (including use of crane load charts)
- risks associated with overhead electric lines/electrical cables, access to cabin, other vehicles and clear access while travelling
- systematic process of eliminating or reducing risk to personnel and property through the application of controls
- typical routine problems encountered operating crane and equipment, and adjustments required for correction.

Assessment Conditions

Assessments must be conducted by an assessor accredited for this high risk work (HRW) licence class in the Commonwealth/state/territory where the licence will be obtained (i.e. an assessor authorised by a Commonwealth/state/territory WHS/OHS regulator).

As a minimum, assessors must satisfy applicable regulatory requirements, which may include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and all assessment must be conducted in the English language.

Assessment of performance must be undertaken in the workplace and/or under realistic workplace conditions which typically reflect:

- performing tasks/activities within timelines that would be expected in a workplace
- standard and authorised work practices, safety requirements and environmental constraints
- using full-scale equipment.

Portal boom crane operation assessment must be conducted in a working zone in accordance with state/territory arrangements.

If the working zone is located at a 'live' site, assessment should continue in all weather conditions unless the safety of the candidate or others could be compromised.

Simulators must **not** be used in the assessment of this unit of competency

Accredited assessors are responsible for ensuring candidates have access to:

- appropriate portal boom crane and associated equipment in safe condition specified by the endorsed Assessment Instrument
- appropriate personnel to sling and direct loads including:
 - doggers
 - riggers
- communications equipment including:
 - bells
 - buzzers
 - fixed channel two-way radios
 - whistles
- controls including:
 - hoisting and lowering levers
 - luffing levers
 - slewing levers including brake
- required personal protective equipment (PPE) for the purpose of the Performance Assessment
- safety devices including:
 - audible and visual warning devices
 - function limits
 - lights
- signage and labels including:
 - crane data plates/labels
 - crane decals
 - control labels
 - load charts
- where appropriate, relevant workplace procedures and standards for operating a portal boom crane including:
 - approved codes of practice and guidance
 - Australian Standards
 - checklists
 - industry operating procedures
 - relevant industry standards (where applicable)
 - logbook
 - manufacturer guidelines (instructions, specifications or checklists) for the purpose of the Performance Assessment
 - safe work method statement (SWMS), as required
 - service logbook.

Links

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