



Australian Government

TLILIC4011 Licence to operate a slewing mobile crane (over 100 tonnes)

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 safely operate a slewing mobile crane with a capacity over 100 tonnes.

Slewing mobile crane means a mobile crane incorporating a boom or jib that can be slewed, but does not include:

- a front-end loader or
- a backhoe or
- an excavator or
- other earth moving equipment, when configured for crane operation.

This unit applies to the activities of a person operating a slewing mobile crane with a capacity over 100 tonnes that is a:

- non-slewing mobile crane with a capacity exceeding 3 tonnes
- reach stacker
- slewing mobile crane with a capacity exceeding 100 tonnes
- vehicle loading crane with a capacity of 10 metre tonnes or more, excluding the application of load estimation and slinging techniques to move a load.

A person performing this work is required to hold a slewing mobile crane with a capacity over 100 tonnes high risk work (HRW) licence.

This unit requires a person operating a slewing mobile crane with a capacity over 100 tonnes to plan work, conduct routine checks, set up crane, transfer load, mobile load and shut down and secure crane after completing operations.

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	PERFORMANCE CRITERIA
Elements describe the essential outcomes.	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 prevention/control measures are identified consistent with appropriate standards to ensure the safety of personnel and equipment 1.3 Weight of load is identified and estimated in consultation with relevant workplace personnel 1.4 Crane is appropriate to the load/s and workplace conditions 1.5 Appropriate path for moving load/s in work area is inspected and determined 1.6 Appropriate communications methods are identified in consultation with relevant personnel
2 Conduct routine checks	2.1 Crane is visually checked for any damage or defects 2.2 Crane is accessed in a safe manner 2.3 All signage and labels are checked to ensure they are visible and legible in accordance with the appropriate standard 2.4 Routine pre-operational crane checks are carried out in accordance with procedures 2.5 All controls are located and identified 2.6 Crane service logbook is checked for compliance 2.7 Crane is started in accordance with procedures and checked for any abnormal noise 2.8 All crane safety devices are tested in accordance with

procedures

2.9 Post-start operational checks are carried out in accordance with procedures

2.10 All communications equipment is checked for serviceability

2.11 All damage and defects are reported and recorded in accordance with procedures, and appropriate action is taken

3 Set up crane

3.1 Ground suitability is checked

3.2 Crane is driven to work area in accordance with procedures

3.3 Crane is positioned for work application and stability in accordance with procedures

3.4 Appropriate crane configuration for work task is determined as required in accordance with procedures

3.5 Boom/jib and counterweight configuration data is input into crane computer as required

3.6 Appropriate hazard prevention/control measures are applied to work area in accordance with procedures

3.7 All communications equipment is tested for functionality

4 Transfer load

4.1 Lifts are determined within the capacity of the crane

4.2 Boom/jib and hoist block is positioned over load following directions from relevant workplace personnel

4.3 Test lift is carried out in accordance with procedures to allow for checks to be safely made, in consultation with relevant personnel

4.4 Loads are transferred using all relevant crane movements in accordance with procedures and the appropriate standard

4.5 All required communications signals are correctly interpreted in accordance with procedures and the appropriate standard

4.6 Crane is operated in accordance with procedures

4.7 Load movement is monitored constantly, to ensure safety of personnel and load, and crane stability

4.8 Unplanned and/or unsafe situations are responded to in accordance with procedures

5 Mobile load

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

6 Shut down and secure crane

- 6.1 Crane boom/jib and equipment are stowed and secured as required in accordance with procedures and the appropriate standard
- 6.2 Relevant motion locks and brakes are applied as required
- 6.3 Outriggers/stabilisers are stowed and secured in accordance with procedures
- 6.4 Crane is shut down in accordance with procedures
- 6.5 Plates or packing are stowed and secured
- 6.6 Routine post-operational crane checks are carried out in accordance with procedures
- 6.7 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 slewing mobile crane over 100 tonnes in different types of workplaces transferring key principles of safe operation to different contexts • improve own performance in safely and efficiently operating a slewing mobile crane by incorporating learning from different workplaces and different conditions into current performance
Numeracy skills to:	• interpret numerical information including: • selecting appropriate slewing mobile crane in accordance with load and workplace conditions • load weight assessment, to ensure compliance with slewing

Skill	Performance feature
	mobile crane data plate specifications controlling and monitoring instrument readings
Language skills to:	- use and interpret vocabulary specific to slewing mobile crane operations 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: - slewing mobile 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 slewing mobile 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

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 TLILIC4011 Licence to operate a slewing mobile crane (over 100 tonnes)

Modification History

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Performance Evidence

A person who demonstrates competency in this unit must provide evidence of safely operating a slewing mobile crane over 100 tonnes 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:
 - boom/jib as low as possible
 - boom/jib in line with crane
 - carrying load near to ground surface
 - gently accelerating and braking (to minimise load swing)
 - facing load uphill
 - minimum boom/jib length
 - 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
 - using safety observer inside exclusion zone
 - safety tags on electrical switches/isolators
 - 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
- hand signals
- listening
- making and interpreting hand signals
- questioning to confirm understanding
- signage
- two-way radios
- verbal and non-verbal language
- written instructions
- whistles
- completing the pre-operational check, positioning, stabilising, set up, operation, post-operational checks of a mobile crane including all functions to their maximum extension in lifting and moving loads to the safe working rated capacity of a slewing mobile crane over 100 tonnes capacity in conjunction with other associated personnel
- complying with WHS/OHS licensing legislation
- loading data into crane computer as required and checking operation to accurately reflect the crane configuration
- operating a slewing mobile crane over 100 tonnes capacity to lift and move loads to the safe working rated capacity while applying relevant crane movements including:
 - boom/jib up and down
 - operation of outriggers/stabilisers
 - raise and lower hoist
 - slew boom/jib
 - telescope in and out
 - travel
- receiving and interpreting workplace instructions, safety information, emergency procedures
- recording and maintaining accurate information relating to crane operations
- shutting down a slewing mobile crane over 100 tonnes capacity in accordance with manufacturer specifications and workplace procedures including:
 - idling engine to stabilise temperature
 - locking and securing cabin as required
 - positioning/securing boom/jib
 - removing key from ignition as required
 - retracting boom/jib
 - retracting hoist rope and hook block
 - retracting outriggers/stabilisers
 - securing crane for travel
 - turning off engine as required
- stabilising a slewing mobile crane by:
 - correctly positioning plates or packing

- deploying outriggers
- establishing correct size plates or packing
- 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 including:
 - boom/jib
 - counterweights
 - fly-jib
- 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
 - telescope out – hand
 - telescope out - whistle
 - telescope in – hand
 - telescope in whistle
 - slew left – hand
 - slew left – whistle
 - slew right – hand
 - slew right – whistle
 - travel – 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 of equipment (e.g. hydraulic system)
 - failure/loss of control (e.g. brakes and steering)
 - 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 and measuring loads
- Australian and industry standards relevant to operating a slewing mobile crane (over 100 tonnes)
- Commonwealth, state or territory WHS/OHS legislation, standards and codes of practice relevant to the full range of processes for the crane class
- crane rated capacity and lifting gear working load limits (including use of crane load charts)
- ground suitability including:
 - backfilled ground
 - bitumen
 - concrete
 - hard compacted soil
 - rock
 - rough uneven ground
 - soft soils
- hazards including:
 - environmental conditions (e.g. wind, lightning, storms, etc.)
 - ground stability (e.g. ground condition, recently filled trenches, slopes)
 - insufficient lighting
 - obstacles or obstruction
 - other specific hazards (e.g. dangerous materials)
 - overhead hazards (e.g. electric lines, service pipes)
 - traffic (e.g. pedestrians, vehicles, other plant)
 - unusual or difficult terrains
- hierarchy of hazard identification and control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - personal protective equipment (PPE)
- mobile slewing crane characteristics and *capabilities* to allow crane configuration to suit the range of loads

- organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class
- procedures for recording, reporting and maintaining workplace records and information
- risks associated with overhead electric lines/electrical cables, wind, erection, pack up and crane stability, ground conditions, crane tipping and demolition sites
- systematic process of eliminating or reducing risk to personnel and property through the application of controls
- typical routine problems encountered in the process and with 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.

Slewing mobile crane (over 100 tonnes) 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 slewing mobile crane over 100 tonnes in capacity and associated equipment in safe condition
- appropriate personnel to sling and direct loads including:
 - doggers
 - riggers
- communications equipment including:
 - bells
 - buzzers

- two-way radios
- whistles
- controls including:
 - boom extension levers (where fitted)
 - 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 reversing devices
 - horns/sirens
 - lights
 - operator restraint devices
- signage and labels including:
 - crane data plates/labels
 - load charts
 - crane decals
 - control labels
- where appropriate relevant workplace procedures and standards for operating a slewing mobile crane over 100 tonnes including:
 - approved codes of practice and guidance
 - Australian Standards
 - checklists
 - history record system where service and maintenance history is kept
 - industry operating procedures
 - manufacturer guidelines (instructions, specifications or checklists) for the purposes of the Performance Assessment
 - relevant industry standards (where applicable)
 - service book
 - safe work method statement (SWMS), as required.

Links

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