



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **TLILIC4009A Licence to operate a slewing mobile crane (up to 60 tonnes)**

**Release: 1**

## TLILIC4009A Licence to operate a slewing mobile crane (up to 60 tonnes)

### Modification History

Not Applicable

### Unit Descriptor

<b>Unit Descriptor</b>	This unit specifies the outcomes required to operate a slewing mobile crane (up to 60 tonnes) for licensing purposes. It encompasses the requirement for the up to 20 tonnes licence.
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### Application of the Unit

<b>Application of the Unit</b>	<p>This unit requires the operator to plan the work, conduct routine checks, set up crane, transfer loads, mobile loads and shut down and secure the crane.</p> <p>This unit is based on the requirements of the National Standard for Licensing Persons Performing High Risk Work.</p> <p>This unit in its current form meets state and territory licensing requirements. Any alteration will result in a unit which is not acceptable to regulators for the purpose of licensing.</p>
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### Licensing/Regulatory Information

Refer to Unit Descriptor

### Pre-Requisites

Not Applicable

## Employability Skills Information

<b>Employability Skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

<i>Elements describe the essential outcomes of a unit of competency</i>	<i>Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.</i>
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan work	1.1 Potential workplace <b>hazards</b> are identified 1.2 <b>Hazard control measures</b> are identified consistent with <b>appropriate standards</b> to ensure the safety of personnel and equipment 1.3 The weight of the load is identified and estimated in consultation with <b>associated personnel</b> 1.4 The <b>crane</b> is <b>appropriate</b> to the load/s and workplace conditions 1.5 Appropriate paths for the movement of loads in the work area are inspected and determined 1.6 Appropriate <b>communication methods</b> are identified with <b>associated personnel</b>
2. Conduct routine checks	2.1 <b>Crane</b> is visually checked for any damage or defects 2.2 <b>Crane</b> is accessed in a safe manner 2.3 All <b>signage and labels</b> are visible and legible according to the <b>appropriate standard</b> 2.4 Routine pre-operational crane checks are carried out according to <b>procedures</b> 2.5 All <b>controls</b> are located and identified 2.6 Crane <b>service logbook</b> is checked for compliance 2.7 <b>Crane</b> is started according to <b>procedures</b> and checked for any abnormal noises 2.8 All <b>crane safety devices</b> are tested according to <b>procedures</b> 2.9 Post-start operational checks are carried out according to <b>procedures</b> 2.10 All <b>communication equipment</b> is checked for serviceability 2.11 All damage and defects are reported and recorded according to <b>procedures</b> , and appropriate action is taken
3. Set up crane	3.1 <b>Ground suitability</b> is checked 3.2 <b>Crane</b> is driven to the work area according to <b>procedures</b> 3.3 <b>Crane</b> is positioned for work application and <b>stability</b> according to <b>procedures</b> 3.4 Appropriate <b>crane configuration</b> for work task is determined according to <b>procedures</b> (where applicable) 3.5 Boom/jib and counterweight configuration data is input into the crane computer (as required) 3.6 Appropriate <b>hazard prevention/control measures</b> are applied to the work area according to <b>procedures</b> 3.7 All <b>communications equipment</b> is tested for functionality

ELEMENT	PERFORMANCE CRITERIA
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 <i>associated personnel</i> 4.3 <i>Test lift</i> is carried out according to <i>procedures</i> 4.4 Loads are transferred using all <i>relevant crane movements</i> according to <i>procedures</i> and the <i>appropriate standard</i> 4.5 All required <i>communication signals</i> are correctly interpreted according to <i>procedures</i> and the <i>appropriate standard</i> 4.6 <i>Crane</i> is operated according to <i>procedures</i> 4.7 Load movement is monitored constantly ensuring safety to personnel and load, and crane stability 4.8 <i>Unplanned and/or unsafe</i> situations are responded to in line with <i>procedures</i>
5. Mobile load	5.1 Suitability of <i>planned route</i> is checked for the crane according to <i>procedures</i> 5.2 <i>Crane</i> is configured to mobile load according to <i>procedures</i> 5.3 Load is moved using <i>best mobile practice</i> according to the <i>appropriate standard</i>
6. Shut down and secure crane	6.1 <i>Crane</i> boom/jib and equipment are stowed and secured where appropriate according to <i>procedures</i> and the <i>appropriate standard</i> 6.2 Relevant motion locks and brakes are applied (where applicable) 6.3 Outriggers/stabilisers are stowed and secured according to <i>procedures</i> 6.4 Crane is <i>shut down</i> according to <i>procedures</i> 6.5 Plates or packing are stowed and secured 6.6 Routine post-operational crane checks are carried out according to <i>procedures</i> 6.7 All damage and defects are reported and recorded according to <i>procedures</i> , and appropriate action is taken

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

*This describes the essential skills and knowledge and their level required for this unit.*

**Required skills:**

## REQUIRED SKILLS AND KNOWLEDGE

- Accurately record and maintain information relating to crane operations
- Use communication techniques in the workplace including whistles, hand signals and use of two-way radios
- Use interpersonal communication skills at a level sufficient to communicate with other site personnel
- Load data into crane computer (where fitted) and check operation to accurately reflect the crane configuration
- Operate a slewing mobile crane (21t up to 60t capacity) for the lifting and moving of loads to the safe working rated capacity in conjunction with other associated personnel
- Apply risk assessment and hazard control strategies, including hierarchy of control as applied to the positioning and safe operation of the crane (particular awareness of the risks associated with overhead powerlines/electrical cables, wind, erection, pack up and crane stability)
- Use and interpret crane manufacturer's specifications and data, including load charts, to enable the crane to be configured for the load
- Verify problems and equipment faults and demonstrate appropriate response procedures

### Required knowledge:

- Appropriate mathematical procedures for estimation and measurement of loads
- Commonwealth, state or territory OH&S legislation, standards and codes of practice relevant to the full range of processes for the crane class
- Level of literacy to be able to read and comprehend manufacturer's instructions, procedures and safety signs
- Mobile slewing crane characteristics and capabilities to allow the configuration of the crane to suit the range of loads
- Mobile slewing crane operating techniques
- Understanding of the hierarchy of hazard identification and control
- Organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class
- Procedures for the recording, reporting and maintenance of workplace records and information
- Rated capacity and working load limits (including use of crane load charts)
- Typical routine problems encountered in the process and with equipment and adjustments required for correction

## Evidence Guide

### EVIDENCE GUIDE

<b>EVIDENCE GUIDE</b>	
<i>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for the Training Package.</i>	
<b>Overview of assessment</b>	<ul style="list-style-type: none"> <li>• Successful assessment of this unit meets the competency requirement of the National Standard for Licensing Persons Performing High Risk Work.</li> <li>• State/territory OH&amp;S regulators have mandated the use of Assessment Instruments and Instructions for Assessment for this unit which have been endorsed by the national body responsible for OH&amp;S matters.</li> </ul>
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<ul style="list-style-type: none"> <li>• Compliance with OH&amp;S licensing legislation.</li> <li>• Effectively communicate and work safely with others in the work area.</li> <li>• Risk assessment and management procedures (particular awareness of the risks associated with overhead powerlines/electrical cables, ground conditions, crane tipping and demolition sites).</li> <li>• Effectively complete the pre-operational check, positioning, stabilising, set up, operation, post-operational checks of a mobile crane including all functions to their maximum extension in the lifting and moving of loads to the safe working rated capacity of the mobile crane up to 60 tonne capacity in conjunction with other associated personnel.</li> <li>• Appropriate mathematical procedures for estimation of loads.</li> </ul>
<b>Context of and specific resources for assessment</b>	<ul style="list-style-type: none"> <li>• Assessment of the safe and effective application of knowledge and skill to workplace tasks (performance) must be undertaken using the endorsed Assessment Instrument.</li> <li>• Assessment of performance must be undertaken either in the workplace or in a realistically simulated workplace setting.</li> <li>• Assessors must ensure that the assessment in the workplace is organised to ensure that all the required equipment and materials and a suitable working area is made available to suit the assessment and the workplace.</li> <li>• Assessment must occur under standard and</li> </ul>

**EVIDENCE GUIDE**

	<p>authorised work practices, safety requirements and environmental constraints.</p> <ul style="list-style-type: none"><li>• Assessment is to comply with relevant appropriate standard requirements.</li><li>• Applicants must have access to:<ul style="list-style-type: none"><li>• Personal Protective Equipment (PPE) for the purpose of the Performance Assessment.</li><li>• appropriate slewing mobile crane (21tonne up to 60 tonne) and associated equipment in safe condition</li><li>• suitable loads as specified by the endorsed Assessment Instrument</li><li>• communication equipment (e.g. two-way radios, whistles, etc.)</li><li>• other associated personnel to sling and direct the loads.</li></ul></li></ul>
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<b>EVIDENCE GUIDE</b>	
<b>Method of assessment</b>	<ul style="list-style-type: none"> <li>• Assessment must be conducted using the endorsed Assessment Instruments. These Instruments provide advice on their application.</li> <li>• The use of '<b>simulators</b>' in the assessment of this unit of competency is <b>not acceptable</b>.</li> <li>• Assessment may be in conjunction with the assessment of other units of competency.</li> <li>• Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge.</li> <li>• Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstances, but is able to be transferred to other circumstances.</li> </ul>
<b>Guidance information for assessment</b>	<ul style="list-style-type: none"> <li>• Further information about endorsed Assessment Instruments may be obtained from State/territory OH&amp;S regulators.</li> </ul>

## Range Statement

<b>RANGE STATEMENT</b>	
<p><i>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below.</i></p>	
<b>Hazards</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• ground stability (e.g. ground condition, recently filled trenches, slopes)</li> <li>• overhead hazards (e.g. powerlines, service pipes)</li> <li>• traffic (e.g. pedestrians, vehicles, other plant)</li> <li>• insufficient lighting</li> <li>• environmental conditions (e.g. wind, lightning, storms, etc.)</li> <li>• other specific hazards (e.g. dangerous materials)</li> </ul>
<b>Hazard control measures</b>	<p>Refers to the systematic process of eliminating or reducing the risk to personnel and property through the application of controls</p> <p>It includes the application of the hierarchy of control, the six-step preference of control measures</p>

**RANGE STATEMENT**

to manage and control risk:

- 1 elimination
- 2 substitution
- 3 isolation
- 4 engineering control measures
- 5 using safe work practices
- 6 personal protective equipment

<b>RANGE STATEMENT</b>	
<b>Appropriate standard</b>	<p>May include:</p> <ul style="list-style-type: none"> <li>• codes of practice (mobile crane)</li> <li>• legislation</li> <li>• Australian standards</li> <li>• manufacturer's specifications</li> <li>• industry standards (where applicable)</li> </ul>
<b>Associated personnel</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• riggers</li> <li>• doggers</li> </ul>
<b>Appropriate</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• crane capabilities</li> <li>• environmental conditions (e.g. wind, lightning, storms, etc.)</li> </ul>
<b>Crane</b>	<p>May include a boom or jib, which is capable of being slewed (up to 60 tonnes capacity)</p> <p>The slewing mobile crane up to 60 tonnes classification encompasses the requirements for the up to 20 tonnes classification</p>
<b>Communication method</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• verbal and non-verbal language</li> <li>• written instructions</li> <li>• signage</li> <li>• hand signals</li> <li>• listening</li> <li>• questioning to confirm understanding</li> <li>• appropriate worksite protocol</li> </ul>
<b>Signage and labels</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• crane data plates/labels</li> <li>• load charts</li> <li>• crane decals</li> <li>• control labels</li> </ul>
<b>Procedures</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• manufacturer's guidelines (instructions, specifications or checklists)</li> <li>• industry operating procedures</li> <li>• workplace procedures (work instructions,</li> </ul>

<b>RANGE STATEMENT</b>
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	operating procedures, checklists)
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<b>RANGE STATEMENT</b>	
<b>Controls</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• luffing levers</li> <li>• hoisting and lowering levers</li> <li>• slewing levers including brake</li> <li>• boom extension levers (where fitted)</li> </ul>
<b>Service logbook</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• any logbook</li> <li>• service book</li> <li>• history record system where the service and maintenance history is kept</li> </ul>
<b>Crane safety devices</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• horns/sirens</li> <li>• audible and visual reversing devices</li> <li>• operator restraint devices</li> <li>• lights</li> </ul>
<b>Communication equipment</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• fixed channel two-way radios</li> <li>• whistles</li> <li>• bells</li> <li>• buzzers</li> </ul> <p>NB: where radio communication equipment is used the transmitting frequencies of the equipment must be selected to prevent interference to or from other radio equipment being used in the vicinity of the crane</p>
<b>Ground suitability</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• rough uneven ground</li> <li>• backfilled ground</li> <li>• soft soils</li> <li>• hard compacted soil</li> <li>• rock</li> <li>• bitumen</li> <li>• concrete</li> </ul>
<b>Stability</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• deploying outriggers</li> <li>• establishing correct size plates or packing</li> </ul>

**RANGE STATEMENT**

- correctly positioning plates or packing

<b>RANGE STATEMENT</b>	
<b>Crane configuration</b>	<p>May include but not be limited to:</p> <ul style="list-style-type: none"> <li>• boom/jib</li> <li>• fly-jib</li> <li>• counterweights</li> </ul>
<b>Hazard prevention/control measures</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• safety tags on electrical switches/isolators</li> <li>• powerlines insulated</li> <li>• safety observer used inside exclusion zone</li> <li>• power disconnected</li> <li>• traffic barricades and control</li> <li>• pedestrian barricades</li> <li>• trench covers</li> <li>• movement of obstructions</li> <li>• personal protective equipment</li> <li>• adequate illumination</li> </ul>
<b>Test lift</b>	<p>The load is lifted just clear of the lifting plane to allow for checks to be safely made in consultation with associated personnel to ensure that:</p> <ul style="list-style-type: none"> <li>• near capacity loads do not overload the crane</li> <li>• loads of unusual shape or weight distribution are correctly slung</li> <li>• load measuring equipment can be used to verify the calculated weight of the load</li> <li>• all crane equipment is functioning properly</li> <li>• adjustments to the slinging can be made in a safe manner</li> </ul>
<b>Relevant crane movements</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• telescope in and out</li> <li>• boom/jib up and down</li> <li>• slew boom/jib</li> <li>• operation of outriggers/stabilisers</li> <li>• raise and lower hoist</li> <li>• travel</li> </ul>
<b>Communication signals</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• stop - hand</li> <li>• stop - whistle</li> <li>• hoist up - hand</li> <li>• hoist up - whistle</li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• hoist down - hand</li> <li>• hoist down - whistle</li> <li>• luff boom down - hand</li> <li>• luff boom down - whistle</li> <li>• luff boom up - hand</li> <li>• luff boom up - whistle</li> <li>• telescope out - hand</li> <li>• telescope out - whistle</li> <li>• telescope in - hand</li> <li>• telescope in - whistle</li> <li>• slew left - hand</li> <li>• slew left - whistle</li> <li>• slew right - hand</li> <li>• slew right - whistle</li> <li>• travel - hand</li> </ul>
<b>Unplanned and/or unsafe situations</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• failure/loss of control (e.g. brakes and steering)</li> <li>• failure of equipment (e.g. hydraulic system)</li> <li>• environmental conditions (e.g. wind, lightning, storms, etc.)</li> </ul>
<b>Planned route</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• unusual or difficult terrains</li> <li>• obstacles or obstructions</li> </ul>
<b>Best mobile practice</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• minimum speed</li> <li>• gentle acceleration and braking (to minimise load swing)</li> <li>• minimum boom/jib length</li> <li>• carrying the load near to the ground surface</li> <li>• boom/jib in line with the crane</li> <li>• boom/jib as low as possible</li> <li>• load faces uphill</li> <li>• use of handheld taglines</li> </ul>
<b>Shut down</b>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• retracting boom/jib</li> <li>• retracting hoist rope and hook block</li> <li>• positioning/securing boom/jib</li> <li>• retracting outriggers/stabilisers</li> </ul>



**RANGE STATEMENT**

	<ul style="list-style-type: none"><li>• idling engine to stabilise temperature</li><li>• turning off engine (where applicable)</li><li>• removing key from ignition (where applicable)</li><li>• locking and securing cabin (where applicable)</li></ul>
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**Unit Sector(s)**

Not Applicable