



Australian Government

Department of Education, Employment and Workplace Relations

TLILIC3007A Licence to operate a portal boom crane

Release: 1

TLILIC3007A Licence to operate a portal boom crane

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor	This unit specifies the outcomes required to operate a portal boom crane mounted on a portal frame, which is supported on runways along which the crane may travel, for licensing purposes.
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Application of the Unit

Application of the Unit	This unit requires the operator to plan the work, conduct routine checks, transfer loads, mobile load and shut down and secure the crane. This unit is based on the requirements of the National Standard for Licensing Persons Performing High Risk Work. 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.
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills	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 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 The weight of the load is identified and estimated in consultation with associated personnel 1.4 Crane is appropriate to the loads and workplace conditions 1.5 Appropriate path for the movement of loads in the work area is determined 1.6 Appropriate communication methods are identified with appropriate personnel
2. Conduct routine checks	2.1 Appropriate hazard prevention/control measures are applied to the work area according to 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 visible and legible according to the appropriate standard 2.5 Routine pre-operational crane checks are carried out according to procedures 2.6 2.6 All controls are located and identified 2.7 2.7 Crane service logbook is checked for compliance 2.8 Crane is started according to procedures and checked for any abnormal noises 2.9 All crane safety devices are tested according to procedures 2.10 Post-start operational checks are carried out according to procedures 2.11 All communication equipment is checked for serviceability 2.12 All damage and defects are reported and recorded according to procedures, and appropriate action is taken
3. Transfer load	3.1 Determine lifts are within the capacity of the crane 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 to procedures 3.4 Loads are transferred using all relevant crane movements according to procedures and appropriate standards 3.5 All required communication signals are interpreted correctly

ELEMENT	PERFORMANCE CRITERIA
	according to procedures and the appropriate standard 3.6 Crane is operated according to 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 line with procedures
4. Mobile load	4.1 Suitability of planned route is checked for the crane according to procedures 4.2 Crane is configured to mobile load according to procedures 4.3 Load is moved using best mobile practice according to the appropriate standard
5. Shut down and secure crane	5.1 Crane is placed in weather vain mode according to procedures (where applicable) 5.2 Relevant motion locks and brakes are applied (where applicable) 5.3 Crane and equipment is secured correctly according to procedures and the appropriate standard 5.4 Crane is shut down according to procedures 5.5 Routine post-operational checks on crane are carried out according to procedures 5.6 All damage and defects are reported and recorded according to procedures, 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:

- Accurately record and maintain information relating to crane operations
- Use communication techniques in the workplace including whistles, hand signals and 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 portal boom crane including all functions to their maximum for the lifting and moving of loads to the safe working rated capacity in conjunction with other associated

REQUIRED SKILLS AND KNOWLEDGE

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, access to cabin, other vehicles and clear access whilst travelling)
- 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 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
- Understanding of the hierarchy of hazard identification and control
- Level of literacy to be able to read and comprehend manufacturer's instructions, procedures and safety signs
- Organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class
- Portal boom crane characteristics and capabilities to allow the configuration of the crane to suit the range of loads
- Portal boom crane operating techniques
- 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 operation of the crane and equipment and adjustments required for correction

Evidence Guide**EVIDENCE GUIDE**

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.

Overview of assessment

- Successful assessment of this unit meets the competency requirement of the National Standard for Licensing Persons Performing High Risk Work.
- State/territory OH&S regulators have mandated the use of Assessment Instruments and Instructions for Assessment for this unit which have been endorsed by the national body

EVIDENCE GUIDE	
	responsible for OH&S matters.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Compliance with OH&S licensing legislation. • Effectively communicate and work safely with others in the work area. • Risk assessment and management procedures (particular awareness of the risks associated with overhead powerlines/electrical cables, access to cabin, other vehicles and clear access whilst travelling). • Operation of a portal crane including all functions to their maximum extension in the lifting and moving of loads to the safe working rated capacity in conjunction with other associated personnel. • Appropriate mathematical procedures for estimation of loads.
Context of and specific resources for assessment	• Assessment of the safe and effective application of knowledge and skill to workplace tasks (performance) must be undertaken using the endorsed Assessment Instrument. • Assessment of performance must be undertaken either in the workplace or in a realistically simulated workplace setting. • 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. • Assessment must occur under standard and authorised work practices, safety requirements and environmental constraints. • Assessment is to comply with relevant appropriate standard requirements. • Applicants must have access to: • Personal Protective Equipment (PPE) for the purpose of the Performance Assessment • appropriate portal boom crane and associated equipment in safe condition specified by the endorsed Assessment Instrument • suitable loads as specified by the endorsed Assessment Instrument • communication equipment (e. g. two way radios, whistles, etc.) • other associated personnel to sling and direct the loads.
Method of assessment	• Assessment must be conducted using the endorsed Assessment Instruments. These Instruments provide advice on their application. • The use of 'simulators' in the assessment of this unit of competency is not acceptable.

EVIDENCE GUIDE

	• Assessment may be in conjunction with the assessment of other units of competency. • Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. • Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
Guidance information for assessment	• Further information about endorsed Assessment Instruments may be obtained from state/territory OH&S regulators.

Range Statement**RANGE STATEMENT**

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.

Hazards	May include but not limited to: • ground stability (e.g. ground condition or slopes for load placement) • overhead hazards (e.g. powerlines, service pipes) • insufficient lighting • traffic (e.g. pedestrians, vehicles, plant) • environmental conditions (e.g. wind, lightning, storms) • other specific hazards (e.g. dangerous materials)
Hazard control measures	Refers to the systematic process of eliminating or reducing the risk to personnel and property through the application of controls It includes the application of the hierarchy of control, the six-step preference of control measures to manage and control risk: 1 elimination 2 substitution 3 isolation 4 engineering control measures 5 using safe work practices 6 personal protective equipment

RANGE STATEMENT	
Appropriate standard	May include: • codes of practice • legislation • Australian Standards • manufacturer's specifications • industry standards (where applicable)
Associated personnel	May include but not limited to: • riggers • doggers
Crane	A boom crane or jib crane mounted on a portal frame, which is supported on runways along which the crane may travel
Appropriate	May include but not limited to: • crane capabilities • environmental conditions (e.g. wind, lightning, storms etc.)
Communication method	May include but is not limited to: • verbal and non-verbal language • written instructions • signage • hand signals • listening • questioning to confirm understanding • appropriate worksite protocol
Signage and labels	May include but not limited to: • crane data plates/labels • load charts • crane decals • control labels
Procedures	May include but not limited to: • manufacturer's guidelines (instructions, specifications or checklists) • industry operating procedures • workplace procedures (work instructions, operating procedures, checklists)
Controls	May include but not limited to: • luffing levers

RANGE STATEMENT	
	• hoisting and lowering levers • slewing levers including brake
Service logbook	May include but not limited to: • any logbook • service book • history record system where the service and maintenance history is kept
Crane safety devices	May include but not limited to: • audible and visual warning devices • lights • function limits
Communication equipment	May include but is not limited to: • fixed channel two-way radios • whistles • bells • buzzers 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
Hazard prevention/control measures	May include but not limited to: • safety tags on electrical switches/isolators • insulated powerlines • safety observer used inside exclusion zone • disconnected power • traffic barricades and control/s • pedestrian controls • trench covers • movement of obstructions • personal protective equipment • adequate illumination
Test lift	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: • near capacity loads do not overload the crane • loads of unusual shape or weight distribution are correctly slung

RANGE STATEMENT	
	• load measuring equipment can be used to verify the calculated weight of the load • all crane equipment is functioning properly • adjustments to the slinging can be made in a safe manner
Relevant crane movements	May include but not limited to: • luffing • slewing • hoisting • mobiling
Communication signals	May include but is not limited to: • 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
Best mobile practice	May include but not limited to: • minimum speed • gentle acceleration and braking (to minimise load swing) • minimum boom/jib radius • carrying the load near to the ground surface (where practical) • use of handheld taglines (where appropriate)
Unplanned and/or unsafe situations	May include but not limited to: • failure/loss of control (e.g. slew brakes, hoist drum) • failure of equipment (e.g. hydraulic system) • environmental conditions (e.g. wind, lightning, storms, etc.)
Shut down	May include but not limited to: • raising boom/jib to clear buildings, structures and vessels

RANGE STATEMENT

	(where applicable) • retracting hoist rope and hook block • idling engine to stabilise temperature • applying weather vain mode (where applicable) • applying motion locks and brakes are applied • turning off engine • removing key from ignition • locking and securing cabin (where applicable)
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Unit Sector(s)

Not Applicable