Australian Government

Department of Education, Employment and Workplace Relations

TLILIC3004A Licence to operate a derrick crane

Release: 1

TLILIC3004A Licence to operate a derrick crane

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor	This unit specifies the outcomes required to operate a slewing strut-boom crane with its boom pivoted at the base of a mast which is either guyed (guy-derrick) or held by backstays (stiff-legged derrick) and which is capable of luffing under load for licensing purposes.

Application of the Unit

Application of the Unit	This unit requires the operator to plan the work, conduct routine checks, transfer loads, and shut down and secure the derrick 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.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency	*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.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan work	1.1 Potential workplace ***hazards*** are identified 1.2 ***Hazard control measures*** are identified 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 load/s and workplace conditions 1.5 The appropriate path for the movement of loads in the work area is determined and inspected 1.6 Appropriate ***communication methods*** are identified with ***associated personnel***
2. Conduct routine checks	2.1 ***Ground stability*** is checked 2.2 ***Crane*** is visually checked for any damage or defects 2.3 All ***signage and labels*** are visible and legible according to the ***appropriate standard*** 2.4 Appropriate ***crane configuration*** for work task is determined according to ***procedures*** (where applicable) 2.5 Routine pre-operational crane checks are carried out according to ***procedures*** 2.6 All ***controls*** are located and identified 2.7 Crane ***service logbook*** is checked for compliance 2.8 ***Crane*** is start 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 Lifts are determined within the capacity of the crane 3.2 Appropriate ***hazard prevention***/***control measures*** are applied to the work area according to ***procedures*** 3.3 Boom/jib and hoist block is positioned over load following directions from ***associated personnel*** 3.4 ***Test lift*** is carried out according to ***procedures*** 3.5 Loads are transferred using all ***relevant crane***

ELEMENT	PERFORMANCE CRITERIA
	movements according to ***procedures*** and the ***appropriate standard*** 3.6 All required ***communication signals*** are interpreted correctly according to procedures and the ***appropriate standard*** 3.7 ***Crane*** is operated according to ***procedures***. 3.8 Load movement is monitored constantly ensuring safety to personnel and load, and structural stability 3.9 ***Unplanned and/or unsafe situations*** are responded to in line with ***procedures***
4. Shut down and secure crane	4.1 Relevant motion locks and brakes are applied (where applicable) 4.2 ***Crane*** equipment is stowed and secured where appropriate according to ***procedures*** and the ***appropriate standard*** 4.3 ***Crane*** is ***shut down*** according to ***procedures*** 4.4 Routine post-operational crane checks are carried out according to ***procedures*** 4.5 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 use of two-way radios • Use interpersonal communication skills at a level sufficient to communicate with other site personnel • Operate a derrick crane 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 safe operation of the crane (particular awareness of the risks associated with overhead powerlines/electrical cables and other personnel or vehicles) • Use and interpret crane manufacturer's specifications and data, or engineers specifications, assessments or designs, including load charts, or load limits at various

REQUIRED SKILLS AND KNOWLEDGE
radii, 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 • Derrick crane characteristics and capabilities to allow for the operation of the crane to suit the range of loads • 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 • Derrick crane operating techniques • Understanding of the hierarchy of hazard identification and control • 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 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

EVIDENCE GUIDE	
	(particular awareness of the risks associated with overhead powerlines/electrical cables, ground conditions, crane tipping and demolition sites). • Operation of a derrick crane for the lifting and moving of loads to the safe working rated capacity in conjunction with other associated personnel. • Appropriate mathematical procedures for the 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 derrick 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**. • Assessment may be in conjunction with the

EVIDENCE GUIDE	
	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

RANGE STATEMENT	
	5 using safe work practices 6 personal protective equipment
Appropriate standards	May include: • codes of practice • legislation • Australian standards • manufacturer's instructions • industry standards (where applicable)
Associated personnel	May include but not limited to: • riggers • doggers
Crane	Includes derrick cranes comprising a strut-boom crane with its boom pivoted at the base of a mast which is either guyed (guy-derrick) or held by backstays (stiff-leg derrick) and which is capable of luffing under load
Appropriate	May include but not limited to: • crane capabilities • environmental conditions (e.g. wind, lightning, storms etc.)
Communication method	May include but not limited to: • verbal and non-verbal language • written instructions • signage • hand signals • listening • questioning to confirm understanding • appropriate worksite protocol
Ground stability	May include but not limited to: • environmental conditions (e.g. wind, lightning, storms, etc.)
Signage and labels	May include but not limited to: • crane data plates/labels • load charts • crane decals • control labels

RANGE STATEMENT	
Crane configuration	May include but not be limited to: • boom/jib • backstays and counterweights • guys
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 • hoisting and lowering levers • slewing levers including brake
Service logbook	May include bur 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 not limited to: • 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

RANGE STATEMENT	
	• disconnected power • traffic barricades and control/s • pedestrian controls • trench covers • movement of obstructions • personal protective equipment • adequate illumination
Test lift means	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 • 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 and lowering loads
Communication signals	May include but 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
Unplanned and/or unsafe	May include but not limited to:

RANGE STATEMENT	
situations	• 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 and structures (where applicable) • retracting hoist rope and hook block • idling engine to stabilise temperature (where applicable) • turning off engine (where applicable) • isolating power supply to crane • removing key (where applicable) • locking and securing cabin (where applicable)

Unit Sector(s)

Not Applicable