Australian Government

Department of Education, Employment and Workplace Relations

TLILIC3003A Licence to operate a bridge and gantry crane

Release: 1

TLILIC3003A Licence to operate a bridge and gantry crane

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor	This unit specifies the outcomes required to operate a bridge and gantry crane. It does not cover the types that are controlled from a location remote to a permanent cabin/control station on the crane and that have three or less powered operations, that is hoist/raise and lower is one operation, 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 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 ***hazards*** are identified in the workplace 1.2 ***Hazard control measures*** are identified consistent with ***appropriate standards*** to ensure the safety of personnel and equipment 1.3 Weight (mass) of the load is estimated in consultation with ***associated personnel*** 1.4 Appropriate paths for the movement of loads in the work area are determined 1.5 ***Crane*** is appropriate to the load/s 1.6 Appropriate ***communication methods*** are identified with ***associated personnel***
2. Conduct routine checks	2.1 Appropriate ***hazard prevention/control measures*** are applied to the work area according to ***procedures*** 2.2 ***Crane*** is accessed in a 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 All ***controls*** are located and identified 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 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 loads	3.1 Hoist block is positioned over load following directions from ***associated personnel*** 3.2 ***Test lift*** is carried out according to ***procedures***. 3.3 Loads are transferred using all ***relevant crane movements*** according to ***procedures*** and the ***appropriate standard*** 3.4 All required ***communication signals*** are interpreted correctly according to ***procedures*** and the

ELEMENT	PERFORMANCE CRITERIA
	appropriate standard 3.5 ***Crane*** is operated according to ***procedures*** 3.6 Load movements are monitored constantly ensuring safety to personnel and load, and structural stability 3.7 ***Unplanned and/or unsafe situations*** are responded to in line with ***procedures***
4. Shut down and secure crane	4.1 ***Crane*** is parked according to ***procedures*** 4.2 ***Crane*** and equipment are stowed and secured according to ***procedures*** and the ***appropriate standard*** 4.3 All relevant motion locks and brakes are applied (where applicable) 4.4 Crane is ***shut down*** according to ***procedures***. 4.5 Routine post-operational crane checks are carried out according to ***procedures*** 4.6 ***Hazard prevention/control measures*** are removed (where applicable) 4.7 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 bridge and gantry crane operations • Use communication techniques in the workplace including hand signals, whistles and use of two-way radios • Use interpersonal communication skills at a level sufficient to communicate with other site personnel • Operate a bridge and gantry crane including all functions to their maximum for the lifting and moving of loads to the maximum 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, access to cabin, vehicles and

REQUIRED SKILLS AND KNOWLEDGE
clear access whilst travelling) • Use and interpret crane manufacturer's specifications and data, including maximum load to ensure the crane is not overloaded • Verify problems and equipment faults and demonstrate appropriate response procedures
Required knowledge:
• Appropriate mathematical procedures for estimation of loads • Bridge and gantry crane characteristics • Commonwealth, state or territory OH&S legislation, standards and codes of practice relevant to the full range of processes for the crane class • Emergency procedures including escape routes • Level of literacy to be able to read and comprehend manufacturer's instructions, procedures and safety signs • 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 • 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	• Compliance with OH&S licensing legislation. • Communicate and work safely with others in the work area.

EVIDENCE GUIDE	
competency in this unit	• 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). • Conduct of pre- and post-operational checks of the bridge and gantry crane. • Operation of a bridge and gantry crane including all functions to their maximum capacity in the lifting and moving of loads to the maximum 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 bridge and gantry crane and associated equipment in safe condition
	  • 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 Instrument. These Instruments provide

EVIDENCE GUIDE	

	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 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

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
Appropriate standards	May include but not limited to: • codes of practice • legislation • Australian standards • manufacturer's specifications • industry standards (where applicable)
Associated personnel	May include but not limited to: • riggers • doggers
Crane	May include: • bridge crane, a bridge beam mounted at each end to an end carriage, capable of travelling along elevated runways and having one or more hoisting mechanisms arranged to traverse across the bridge • gantry crane, a bridge beam, supported at each end by legs mounted on end carriages, capable of travelling on supported surfaces or deck levels, whether fixed or not and which has a crab with one or more hoisting units arranged to travel across the bridge Bridge and gantry: • excluded are cranes of the type that are controlled from a location remote to a permanent cabin/control station on the crane and that have three or less powered operations, that is hoist raise and lower is one operation
Communication method	May include but not limited to: • verbal and non-verbal language • written instructions • signage

RANGE STATEMENT	
	• 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: • long travel levers • cross travel levers • hoisting and lowering levers • rotating hook levers (where applicable)
Service logbook	May include but not limited to: • any logbook • service book • history record system where the service and maintenance history is kept
Safety devices	May include but not limited to: • horns/sirens • audible and visual motion devices • operator restraint devices (where applicable) • lights
Communication equipment	May include but not limited to: • two-way radios • whistles • bells • buzzers
Hazard prevention/control	May include but not limited to:

RANGE STATEMENT	
measures	• safety tags on electrical switches/isolators • insulated powerlines • safety observer used inside exclusion zone • disconnected power • traffic barricades and controls • pedestrian controls • 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: • hoisting (raise and lower) • traversing (moving hoisting mechanisms along bridge) • travelling (at minimum speed, gentle acceleration and braking, to minimise load swing)
Communication signals	May include but not limited to: • stop - hand • stop - whistle • hoist up - hand • hoist up - whistle • hoist down - hand • hoist down - whistle • traverse - hand • travel - hand • creep - hand
Unplanned and/or unsafe situations	May include but not limited to: • failure/loss of control (e.g. brakes and steering)

RANGE STATEMENT	
	• failure of equipment (e.g. hydraulic system) • environmental conditions (e.g. wind, lightning, storms, etc.)
Shut down	May include but not limited to: • retracting hoist rope and hook block • travelling crane to park position • removing key from control panel (where applicable) • locking and securing cabin (where applicable) • isolating power to crane

Unit Sector(s)

Not Applicable