



Australian Government

Department of Education, Employment and Workplace Relations

MEM11025A Operate a non-slewing mobile crane of greater than three tonnes capacity

Release: 1

MEM11025A Operate a non-slewing mobile crane of greater than three tonnes capacity

Modification History

Not applicable.

Unit Descriptor

This unit of competency applies to the operation of non-slewing mobile cranes of greater than three tonnes capacity with a boom or jib. The mobile cranes may be articulated or non-articulated truck or locomotive cranes.

Application of the Unit

This unit applies to the operation of non-slewing mobile cranes of over three tonnes capacity in a manufacturing environment. These cranes are often referred to as yard cranes and require the crane to be moved for positioning in lifting and lowering. It can also be used to cover the operation of a non-slewing crane mounted on a self-propelled or locomotive drawbar. It is used in a large manufacturing enterprise.

The unit requires the operator to plan the work, conduct routine checks, set up the crane and coordinate with others (including truck drivers, production staff and stores staff) transfer loads, and shut down and secure the crane.

This unit is not recognised by regulators for licensing requirements. In order to satisfy licensing requirements, the operator must hold a TLILIC3006A Licence to operate a non-slewing mobile crane (greater than three tonnes capacity) will be required.

Band A

Unit Weight 4

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

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| 1 | Plan work | 1.1 Potential workplace hazards are identified |
| | | 1.2 Hazard control measures are identified consistent with to ensure the safety of personnel and equipment |
| | | 1.3 Requirement for load lifting and/or transfer is obtained procedures |
| | | 1.4 The weight of the load is identified and estimated in co associated personnel |
| | | 1.5 Crane is assessed as appropriate to the load and workpl |
| | | 1.6 An appropriate path for the movement of loads in the w and determined |
| | | 1.7 Appropriate communication methods are identified wit |
| 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 visible and legible according standard |
| | | 2.4 Routine pre-operational crane checks are carried out ac |
| | | 2.5 All controls are located and identified |
| | | 2.6 Crane service logbook is checked for compliance |
| | | 2.7 Crane is started according to procedures and checked f |
| | | 2.8 All crane safety devices are tested according to proced |
| | | 2.9 Post-start operational checks are carried out according |
| | | 2.10 All communication equipment is checked for serviceab |
| | | 2.11 All damage and defects are reported and recorded acco and appropriate action is taken |

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| 3 | Set up crane | 3.1 Ground suitability is checked |
| | | 3.2 Crane is driven to the work area according to procedures |
| | | 3.3 Crane is positioned for work application and stability according to procedures |
| | | 3.4 Appropriate crane configuration for work task is determined according to procedures |
| | | 3.5 Boom or jib and counterweight configuration data is input into computer, where applicable |
| | | 3.6 Appropriate hazard prevention or control measures are implemented in work area according to procedures |
| | | 3.7 All communications equipment is tested for functionality |
| 4 | Lift and transfer load | 4.1 Lifts are determined within the capacity of the crane and working conditions |
| | | 4.2 Boom or jib and hoist block is positioned over load following procedures and associated personnel |
| | | 4.3 Test lift is carried out according to procedures |
| | | 4.4 Loads are lifted and where required transferred or moved according to crane movements according to procedures and the appropriate standard |
| | | 4.5 Appropriate path is followed where load is transferred |
| | | 4.6 All required communication signals are correctly interpreted according to procedures and the appropriate standard |
| | | 4.7 Load movement is monitored constantly ensuring safety and stability of load and crane |
| | | 4.8 Unplanned and unsafe situations are responded to in line with procedures |
| 5 | Shut down and secure crane | 5.1 Crane boom or jib and associated equipment is stowed according to procedures and the appropriate standard |
| | | 5.2 Relevant motion locks and brakes are applied, where applicable |
| | | 5.3 Outriggers/stabilisers are stowed and secured according to procedures and applicable |
| | | 5.4 Crane is shut down according to procedures |
| | | 5.5 Routine post-operational crane checks are carried out according to procedures |

- 5.6 Plates or packing are stowed and secured, where applicable
- 5.7 All damage and defects are recorded and reported according to the relevant procedures and appropriate action is taken

Required Skills and Knowledge

Required knowledge includes:

- appropriate mathematical procedures for estimation and measurement of loads
- federal, state or territory occupational health and safety (OHS) legislation, standards and codes of practice for a range of processes for the crane class
- crane characteristics and capabilities, including use of load charts, to allow the configuration of the crane for different loads
- the hierarchy of hazard identification and control
- organisational and workplace standards, requirements, policies and procedures for conducting operations
- 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

Required skills include:

- accurately recording and maintaining information relating to crane operations
- using communication techniques in the workplace, including whistles, hand signals and two-way radios
- using interpersonal communication skills at a level sufficient to communicate with other site personnel
- assessing ground conditions to confirm that the site is suitable (e.g. firm, level and safe) to operate crane
- liaising with others to ensure crane working combines efficiently with other enterprise operations (e.g. production, despatch activities)
- operating crane, including all functions to their maximum extension in the lifting and moving of loads to their rated capacity, in conjunction with other associated personnel
- undertaking mobile load transfers where load is lifted and transferred to a different location by the crane
- applying risk assessment and hazard control strategies, including hierarchy of control as applied to the particular operation of the crane, in particular, awareness of the risks associated with overhead powerlines/electrical equipment, conditions, crane tipping and demolition sites
- using and interpreting crane manufacturer specifications and data, including load charts, to enable the crane to lift the load
- verifying problems and equipment faults and demonstrating appropriate response procedures
- reading and comprehending manufacturer instructions, procedures and safety signs

Evidence Guide

Overview of assessment	A person who demonstrates competency in this unit must be able to operate a non-slewing mobile crane of greater than three tonnes capacity to industry and enterprise standards, manufacturer specifications, and in accordance with safety regulations and procedures.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • comply with OHS licensing legislation • communicate and work safely with others in the work area • apply risk assessment and management procedures (particular awareness of the risks associated with overhead powerlines/electrical cables, ground conditions, crane tipping, other vehicles and personnel) • operate a non-slewing mobile crane, including all functions to their maximum extension in the lifting and moving of loads to the safe working rated capacity of non-slewing mobile cranes (over three tonnes capacity), in conjunction with other associated personnel • use appropriate mathematical procedures for estimation of loads • conduct lifts and transfers to designated locations and via appropriate paths.
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 for the purpose of the Performance Assessment • appropriate non-slewing crane (greater than three tonnes) and associated equipment in safe condition • suitable loads as specified by endorsed Assessment Instrument • communication equipment (e.g. two-way radios and whistles) • other associated personnel to sling and direct the loads.
Method of assessment	• 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 circumstances, but is able to be transferred to other circumstances.
Guidance information for assessment	

Range Statement

Hazards	Hazards may include, but are not limited to: • ground stability (e.g. ground condition, recently filled trenches and slopes) • overhead hazards (e.g. powerlines and service pipes) • insufficient lighting • traffic (e.g. pedestrians, vehicles and other plant) • fixed equipment, including machinery, tanks and conveyors • environmental conditions (e.g. wind, lightning and storms) • other specific hazards (e.g. dangerous materials)
Hazard control measures	Hazard control measures refer 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
Appropriate path	An appropriate path is one which: • maximises safety and stability during lifting and transferring, including mobile operation of the crane and depositing of the load • minimises disruption to other operations in the enterprise • without compromising safety, stability and avoidance of disruption, is the most efficient route for the transfer of the load
Appropriate standards	Appropriate standards may include, but are not limited to: • codes of practice • legislation • Australian standards • manufacturer specifications • enterprise and industry standards, where applicable
Associated personnel	Associated personnel may include, but are not limited to:

	• doggers • riggers • forklift and truck drivers • production and trades employees
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Environmental conditions	Environmental conditions may include, but are not limited to: • wind • lightning • storms • poor light
Crane	Crane may include: • a crane (greater than three tonnes capacity) which meets the requirements of AS 1418 Set-2009 Cranes, hoists and winches Set • articulated type mobile cranes • locomotive hauled and self-propelled rail cranes
Communication methods	Communication methods may include, but are not limited to: • verbal and non-verbal language • written instructions • signage • hand signals • listening • questioning to confirm understanding • appropriate worksite protocol
Signage and labels	Signage and labels may include, but are not limited to: • crane data plates/labels • load charts • crane decals • control labels
Procedures	Procedures may include, but are not limited to: • manufacturer guidelines (instructions, specifications, operators manual or checklists) • industry operating procedures • workplace procedures (work instructions, operating procedures and checklists)
Controls	Controls may include, but are not limited to: • luffing levers • hoisting and lowering levers • slewing levers, including brake • boom extension levers (where fitted)
Service logbook	Service logbook may include, but is not limited to: • any logbook • service book • history record system where the service and

	maintenance history is kept
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Crane safety devices	Crane safety devices may include, but are not limited to: • horns/sirens • audible and visual reversing devices • operator restraint devices • lights
Communication equipment	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
Ground suitability	Ground suitability may include, but is not limited to: • rough, uneven ground • backfilled ground • soft soils • hard, compacted soil • rock • bitumen • concrete
Stability	Stability may include, but is not limited to: • deploying outriggers • establishing correct size plates or packing • correctly positioning plates or packing
Crane configuration	Crane configuration includes set up of crane for: • lift and lowering of loads where crane is not required to move (e.g. where a load is lifted off a truck and the truck then moves away to allow load to be lowered) • mobile load transfer where load is lifted and transferred to a different location by the crane The configuration may include, but is not limited to: • boom/jib • fly-jib • counterweights
Hazard prevention/control measures	Hazard prevention/control measures may include, but are not limited to: • safety tags on electrical switches/isolators • insulated power lines

	• safety observer used inside exclusion zone • disconnected power • traffic barricades and controls • pedestrian controls • trench covers • movement of obstructions • personal protective equipment • adequate illumination
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Test lift	Test list 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	Relevant crane movements may include, but are not limited to: • telescope in and out • boom/jib up and down • articulating (as applicable) • raise and lower hoist (as applicable)
Communication signals	Communication signals may include, but are 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 • telescope out - hand • telescope out - whistle • telescope in - hand • telescope in - whistle • slew/articulate right - hand • slew/articulate right - whistle • slew/articulate left - hand • slew/articulate left - whistle
Unplanned and/or unsafe situations	Unplanned and/or unsafe situations may include, but are not limited to: • failure/loss of control (e.g. brakes and steering) • failure of equipment (e.g. hydraulic system) • environmental conditions (e.g. wind, lightning and

	storms)
Planned route	Planned route may include, but is not limited to: • unusual or difficult terrains • obstacles or obstruction
Best mobile practice	Best mobile practice may include, but is not limited to: • minimum speed • gentle acceleration and braking (to minimise load swing) • minimum boom/jib length • carrying the load near to the ground surface • use of handheld taglines
Shutdown	Shutdown may include, but is not limited to: • retracting boom/jib/fly, where applicable • retracting hoist rope and hook block • idling engine to stabilise temperature • retracting outriggers/stabilisers, where applicable • turning off engine

Unit Sector(s)

Materials handling

Custom Content Section

Not applicable.