



Australian Government

MEM11025 Operate a non-slewing mobile crane of greater than three tonnes capacity

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM11025A Operate a non-slewing mobile crane of greater than three tonnes capacity

Application

This unit of competency defines the skills and knowledge required to operate non-slewing mobile cranes of greater than three tonnes capacity in a manufacturing environment. It applies to cranes commonly referred to as yard cranes which require the crane to be moved for positioning to lift and lower loads. The cranes covered by this unit incorporate a boom or jig and include mobile cranes on articulated and non-articulated vehicles and cranes mounted on self-propelled or locomotive drawn rail vehicles inside a large manufacturing enterprise.

This unit is not recognised by regulators for licensing requirements. In order to satisfy licensing requirements, the imported unit TLILIC3006 Licence to operate a non-slewing mobile crane (greater than three tonnes capacity) will be required.

Where interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of engineering measurement is required unit MEM12023 Perform engineering measurements should also be selected.

Where the selection and use of tools is required unit MEM18001 Use hand tools, and unit MEM18002 Use power tools/hand held operations, should also be selected as appropriate.

Band A

Unit Weight 4

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Materials handling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | |
|-------------------------------------|---|
| 1 Determine job requirements | <ul style="list-style-type: none">1.1 Follow standard operating procedures (SOPs)1.2 Comply with work health and safety (WHS) requirements at all times1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs1.4 Obtain requirement for load lifting and/or transfer according to procedures |
| 2 Plan work | <ul style="list-style-type: none">2.1 Identify potential workplace hazards2.2 Identify hazard control measures consistent with appropriate standards to ensure the safety of personnel and equipment2.3 Identify and estimate the weight of the load in consultation with associated personnel2.4 Assess crane as appropriate to the load and workplace conditions2.5 Inspect and determine an appropriate path for the movement of loads in the work area2.6 Identify appropriate communication methods with associated personnel |
| 3 Conduct routine checks | <ul style="list-style-type: none">3.1 Check crane visually for any damage or defects3.2 Access crane in a safe manner3.3 Ensure all signage and labels are visible and legible according to the appropriate standard3.4 Carry out routine pre-operational crane checks according to SOPs3.5 Locate and identify all controls |

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- 3.6 Check crane service logbook for compliance
- 3.7 Start crane according to SOPs and check for any abnormal noises
- 3.8 Test all crane safety devices according to SOPs
- 3.9 Carry out post-start operational checks according to SOPs
- 3.10 Check all communication equipment for serviceability
- 3.11 Report all damage and defects and record according to SOPs, and take appropriate action

4 Set up crane

- 4.1 Check ground suitability
- 4.2 Drive crane to the work area according to SOPs
- 4.3 Position crane for work application and stability according to SOPs
- 4.4 Determine appropriate crane configuration for work task according to SOPs
- 4.5 Input boom or jib and counterweight configuration data into the crane computer, as applicable
- 4.6 Apply appropriate hazard prevention or control measures to the work area according to SOPs
- 4.7 Test communication equipment for functionality

5 Lift and transfer load

- 5.1 Determine lifts within the capacity of the crane and environmental conditions
- 5.2 Position boom or jib and hoist block over load following directions from associated personnel
- 5.3 Carry out test lift according to SOPs
- 5.4 Lift loads and, where required, transfer or move using all relevant crane movements according to SOPs and the

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appropriate standard

- 5.5 Follow appropriate path where load is transferred or mobiled
- 5.6 Interpret all required communication signals according to SOPs and the appropriate standard
- 5.7 Monitor load movement constantly, ensuring safety to personnel and stability of load and crane
- 5.8 Respond to unplanned and unsafe situations in line with SOPs

6 Shut down and secure crane

- 6.1 Stow crane boom or jib and associated equipment and secure according to SOPs and the appropriate standard
- 6.2 Apply relevant motion locks and brakes, where applicable
- 6.3 Stow outriggers/stabilisers and secure according to SOPs, where applicable
- 6.4 Shut down crane according to SOPs
- 6.5 Carry out routine post-operational crane checks according to SOPs
- 6.6 Stow plates or packing and secure, where applicable
- 6.7 Record all damage and defects and report according to SOPs, and take appropriate action

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Hazards include one (1) or more of the following:

- 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 include the following:

- the systematic process of eliminating or reducing the risk to personnel and property through the application of controls consistent with appropriate standards
- 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 includes one (1) or more of the following:

- one which maximises safety and stability during lifting and transferring, including mobile operation of the crane and depositing of the load
- one which minimises disruption to other operations in the enterprise
- one which without compromising safety, stability and avoidance of disruption, is the most efficient route for the transfer of the load

Appropriate standards include one (1) or more of the following:

- codes of practice and legislation
- Australian Standards
- manufacturer specifications
- enterprise and industry standards, where applicable

Associated personnel

- doggers and riggers

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include one (1) or more of the following:

- forklift and truck drivers
- production and trades employees

Environmental conditions include one (1) or more of the following:

- wind
- lightning
- storms
- poor light
- temperatures

Cranes include one (1) or more of the following:

- 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 include one (1) or more of the following:

- verbal and non-verbal language
- written instructions
- signage
- hand signals
- listening
- questioning to confirm understanding
- appropriate worksite protocol

Signage and labels include one (1) or more of the following:

- crane data plates/labels/decals
- load charts
- control labels

Procedures include one (1) or more of the following:

- manufacturer guidelines (instructions, specifications, operator's manual or checklists)
- industry operating procedures
- workplace procedures (work instructions, operating procedures and checklists)

Controls include one (1) or more of the following:

- luffing levers
- hoisting and lowering levers

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- slewing levers, including brake
- boom extension levers (where fitted)

Service logbook includes one (1) or more of the following:

- service book and any logbook
- history record system where the service and maintenance history is kept

Crane safety devices include the following:

- horns/sirens/lights
- audible and visual reversing devices
- operator restraint devices

Communication equipment includes one (1) or more of the following:

- fixed channel two-way radios
- whistles
- bells and buzzers

Note: 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 includes one (1) or more of the following:

- rough, uneven ground
- backfilled ground
- soft soils
- hard, compacted soil
- rock
- bitumen
- concrete

Stability includes the following:

- deploying outriggers
- establishing correct size plates or packing
- correctly positioning plates or packing

Crane configuration includes the following:

- set up of crane for:
 - lift and lowering of loads where crane is not required to move (e.g. where a load is lifted of a truck and the truck then moves away to allow load to be lowered)

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- mobile load transfer where load is lifted and transferred to a different location by the crane
- boom/jib, fly-jib and counterweights

Hazard prevention/control measures include one (1) or more of the following:

- 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

Test lift includes the following:

- lifting the load 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 include the following:

- telescope in and out
- boom/jib up and down
- articulating (as applicable)
- raise and lower hoist (as applicable)

Communication signals include the following:

- stop – hand and whistle
- hoist up – hand and whistle
- hoist down – hand and whistle
- luff boom down – hand and whistle
- luff boom up – hand and whistle

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- telescope out – hand and whistle
- telescope in – hand and whistle
- slew/articulate right – hand and whistle
- slew/articulate left – hand and whistle

Unplanned and/or unsafe situations include one (1) or more of the following:

- 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 includes one (1) or more of the following:

- unusual or difficult terrains
- obstacles or obstruction

Best mobile practice includes the following:

- 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 includes the following:

- retracting boom/jib/fly, where applicable
- retracting hoist rope and hook block
- retracting outriggers/stabilisers, where applicable
- idling engine to stabilise temperature and turning off engine

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>