



Australian Government

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

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

Modification History

Release	Comments
2	Unit code updated in Application to reflect status.
1	This unit of competency was first released in MEM Manufacturing and Engineering Release 2.0.

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 TLILIC0040 Licence to operate a non-slewing mobile crane (greater than 3 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

Licensing/Regulatory Information

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite unit(s)

MEM11011	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering

MEM16006	Organise and communicate information
----------	--------------------------------------

Competency field(s)

Materials handling

Unit sector(s)

N/A

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	1.1 Follow standard operating procedures (SOPs) 1.2 Comply with work health and safety (WHS) requirements at all times 1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs 1.4 Obtain requirement for load lifting and/or transfer according to procedures
2. Plan work	2.1 Identify potential workplace hazards 2.2 Identify hazard control measures consistent with appropriate standards to ensure the safety of personnel and equipment 2.3 Identify and estimate the weight of the load in consultation with associated personnel 2.4 Assess crane as appropriate to the load and workplace conditions 2.5 Inspect and determine an appropriate path for the movement of loads in the work area 2.6 Identify appropriate communication methods with associated personnel
3. Conduct routine checks	3.1 Check crane visually for any damage or defects 3.2 Access crane in a safe manner 3.3 Ensure all signage and labels are visible and legible according to the appropriate standard 3.4 Carry out routine pre-operational crane checks according to SOPs

	3.5 Locate and identify all controls 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 mobile using all relevant crane movements according to SOPs and the 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 include one (1) or more of the following:	- doggers and riggers - 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 • 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)

	○ 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 • 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

Current Code and Title	Previous Code and Title	Comments	Equivalence
MEM11025 Operate a non-slewing mobile crane of greater than three tonnes capacity	MEM11025A Operate a non-slewing mobile crane of greater than three tonnes capacity	Supersedes and is equivalent to MEM11025A Operate a non-slewing mobile crane of greater than three tonnes capacity	Equivalent

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

Modification History

Release	Comments
2	Unit code updated in Application to reflect status.
1	This unit of competency was first released in MEM Manufacturing and Engineering Release 2.0.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting safety signs and crane manufacturers' specifications and data, including load charts to enable crane to be configured for the load
- complying with work health and safety (WHS) licensing legislation
- communicating and working safely with others in the work area following SOPs
- assessing ground conditions to confirm site is suitable (e.g. firm, level and safe) to operate crane
- applying risk assessment and management procedures (particular awareness of the risks associated with overhead powerlines/electrical cables, ground conditions, crane tipping, other vehicles and personnel)
- operating 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
- using appropriate mathematical procedures for estimation of loads
- conducting lifts and transfers to designated locations via appropriate paths.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)

- appropriate mathematical procedures for estimation and measurement of loads
- federal, state or territory WHS legislation, standards and codes of practice relevant to the full range of processes for the crane class
- crane characteristics and capabilities, including use of load charts, to allow the configuration of the crane to suit the range of loads
- organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class
- hierarchy of hazard identification and control
- 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.

Assessment Conditions

- Assessors must:
 - have vocational competency in operating a non-slewing mobile crane of greater than three tonnes capacity at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Link

Companion volumes, including implementation guides, are found on the national training register - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=45a7f1d5-61a5-447a-9688-7abbd7e1a5c7>.