



**Australian Government**

# **Assessment Requirements for TLILIC0009 Licence to operate a portal boom crane**

**Release: 1**

# Assessment Requirements for TLILIC0009 Licence to operate a portal boom crane

## Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

## Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and include:

- applying relevant mathematical calculations in conjunction with lift plan and load chart to determine radius requirements and relevant lifting gear to perform work/task to enable crane to be configured for load including:
  - boom/jib
  - line pull
  - type of hook
- applying relevant communication signals from associated personnel
- applying relevant crane movements including:
  - boom/jib up and down (luffing)
  - catching load swing appropriately
  - positioning and using main and auxiliary hook and attachments to connect to load safely
  - raise and lower hoist
  - slew boom/jib
  - travel
- conducting and applying hazard and risk assessment strategies including:
  - confirming work area operating surface suitability based on crane and task requirements
  - dynamic loads
  - load swing
  - overloading
  - lifting and placing load
  - tyre pressures or track condition
  - asymmetric loads
  - overhead hazards
  - restricted and poorly ventilated areas
  - risk of collision with people, moving plant and fixed structures
  - adequate lighting
  - weather conditions
- complying with Commonwealth, state and territory Work Health and Safety

(WHS)/Occupational Health and Safety (OHS)/Occupational Safety and Health (OSH) legislation

- communicating with other associated personnel through using appropriate worksite procedures which must include:
  - 2-way radio
  - active listening
  - demonstrating and interpreting hand signals
  - questioning to confirm understanding
  - signage
  - whistles
  - written instructions
- completing the pre-start check including:
  - engine / mechanical fluid level checks as required by manufacturer requirements
  - presence of correct logbook
  - evidence of damage
  - fluid leaks
  - lights work effectively
  - locating, identifying and confirming all controls
  - mirrors and seat are adjusted appropriately
  - fire extinguisher
  - safety equipment checks
  - signage and labels to ensure they are visible and legible
  - checking for signs of paint separation and stressed welds indicating potential structural weakness
  - wheels and rail for damage/wear
  - updating records as required
  - visual damage or equipment faults
- conducting operational checks ensuring:
  - all controls are located, identified and tested for functionality
  - all hydraulic functions are operated
  - lifting gear movements and control functions are smooth and comply with lift plan
  - hazard warning systems, safety, audible and visual warning devices are checked for to ensure they are functional including:
    - travel beepers
    - lights
    - horns
    - crane computer alarm (where fitted)
    - anti-two block alarms (where fitted)
  - start-up is in accordance with manufacturer requirements and safe work procedures
  - there are no unusual noises

- transmission and brake functions comply with operating requirements
- confirming and following traffic management plan procedures relevant to their role in the work area
- determining any defects or faults with operation of crane and reporting to relevant person/s
- ensuring risk control measures within the work area are effective as per workplace procedures
- following directions of dogger or rigger
- inputting crane configuration into crane computer (where fitted) and checking operation to accurately reflect crane configuration
- interpreting and confirming relevant documentation for the work task and relevant area
- maintaining three points of contact whilst accessing crane
- monitoring load disconnection from hook is safe and ensuring no movement of controls
- operating a portal boom crane to lift three different loads using the main hook that:
  - is 25% of the maximum working radius with a load weighing at least 25% of the crane's rated capacity at that radius, and
  - is 50% of the maximum working radius with a load weighing at least 50% of the crane's rated capacity at that radius, and
  - is 75% of the maximum working radius with a load weighing at least 75% of the crane's rated capacity at that radius
- positioning portal boom crane in relevant area for next task
- positioning the portal boom crane for safe operation for:
  - application of the task
  - manoeuvring in the safe work
  - stability of the portal boom crane and the load
- recording and maintaining accurate information relating to crane operations
- reporting to relevant person/s on site risk control measures that are not in place or deficient
- setting up and validating an exclusion zone
- shutting down a portal boom crane in accordance with manufacturer requirements and safe work procedures
- test-lifting load just clear of lifting plane to allow for checks to be safely made in consultation with associated personnel to ensure:
  - slinging is correct
  - all crane equipment is functioning properly
  - load centre of gravity is correct
  - loads of unusual shape or weight distribution are correctly slung
- test-lifting load just clear of lifting plane to allow for checks of crane computer (where fitted) to ensure:
  - load measuring equipment can be used to verify calculated weight of load
  - near capacity loads do not overload crane
- using communications signals including:
  - hoist down - hand and whistle and radio
  - hoist up - hand and whistle and radio

- luff boom down - hand and whistle and radio
- luff boom up - hand and whistle and radio
- slew left - hand and whistle and radio
- slew right - hand and whistle and radio
- stop - hand and whistle and radio
- travel - hand and radio

## Knowledge Evidence

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

- appropriate worksite communication procedures including:
  - listening
  - hand signals
  - questioning techniques
  - signage
  - two-way radios
  - written instructions
  - whistles
- crane configuration mathematical calculations to:
  - estimate loads
  - radius requirements
  - relevant lifting gear to perform work/task
- characteristics and impact of factors affecting portal boom crane stability whilst moving loads including:
  - overloading
  - pick and carry the load
  - asymmetric loads
- crane, lifting gear load chart/s and manufacturer requirements
- lift impacting factors including:
  - centre of gravity
  - dynamic nature of load
  - flex/deflection of boom
  - length
  - radius of lift
  - weight
- set up of jib
- hazards including:
  - erection and pack up
  - crane stability

- ground stability and condition including recently filled trenches and slopes
- insufficient lighting
- obstacles or obstruction
- other specific hazards and dangerous materials
- overhead hazards including:
  - electric lines
  - service pipes
  - structures
  - vegetation (trees)
- traffic including pedestrians, vehicles and other plant
- operations on unusual, uneven or difficult terrains
- manufacturer requirements and instructions on shutting down and packing up crane
- portal boom crane characteristics and capabilities to allow crane configuration to suit a range of loads
- relevant safe work instructions, safety information, emergency procedures
- relevant documentation requirements and procedures for recording, reporting and maintaining workplace records and information
- risk assessment management and mitigation strategies including hierarchy of control:
  - elimination
  - substitution
  - isolation
  - engineering controls
  - administrative controls
  - personal protective equipment (PPE)
- roles and responsibilities of duty holders as per legislative obligations of Work Health and Safety (WHS)/Occupational Health and Safety (OHS)/Occupational Safety and Health (OSH) requirements and safe work / workplace procedures
- prestart and operational checks required for a portal boom crane
- starting procedure of crane as per manufacturer requirements
- weather bureau forecasts and environmental conditions that could impact operation including:
  - lightning
  - wind
  - water impacted ground
  - Ultra Violet (UV) exposure
- problems and appropriate response procedures to unplanned and/or unsafe situations and environmental conditions
- stability of load and avoidance of hazards using best portal boom crane practice including:
  - allowing for boom deflection
  - boom/jib as low as possible
  - boom/jib in line with crane

- carrying load near to ground surface
- crane stability
- gently accelerating and braking to minimise load swing
- lowering load safely onto appropriate dunnage taking into consideration swing and restrictions of area
- minimum boom/jib length
- minimum speed
- using handheld taglines
- identification of incorrect sling of load
- typical routine problems encountered operating crane and equipment, and adjustments required for correction.
- workplace standards, requirements, policies and procedures for conducting operations for the portal boom crane

## Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

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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.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

- Simulators must not be used in the assessment of this unit of competency.

As a minimum, resources for assessment must include access to:

- portal boom crane in safe/serviceable working order in accordance with manufacturers specifications
- appropriate loads as outlined in the performance evidence requirements
- appropriate personnel to sling and direct loads including:
  - dogger or rigger
- communications equipment including:
  - two-way radios
  - whistles
- relevant personal protective equipment (PPE)
- relevant documentation for operating a portal boom crane including:
  - approved codes of practice and guidance
  - Australian Standards

- checklists
- safe work operating procedures
- relevant industry standards (where applicable)
- logbook
- manufacturer guidelines (instructions, specifications or checklists)
- relevant workplace documentation

## **Links**

Companion Volume Implementation Guide -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>