



Australian Government

**Assessment Requirements for TLILIC0016
Licence to operate a bridge and gantry
crane**

Release: 1

Assessment Requirements for TLILIC0016 Licence to operate a bridge and gantry 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 and interpreting crane manufacturer requirements and data, including load charts, to enable crane to be configured for load
- applying relevant crane movements, including:
 - catching load swing appropriately
 - positioning and using lifting attachment and lifting gear to connect to load safely
 - raising and lowering hoist
- applying relevant communication signals from associated personnel
- applying relevant mathematical calculations in conjunction with the Rated Capacity (RC) to determine relevant lifting gear to perform work/task
- complying with Commonwealth, state and territory work health and safety (WHS)/occupational health and safety (OHS) legislation and safe work procedures
- communicating with other workplace personnel through using appropriate worksite protocols, including:
 - two-way radio
 - listening
 - making and interpreting hand signals
 - questioning to confirm understanding
 - signage
 - verbal language
 - visual aids
 - whistles
 - written instructions
- completing pre-start checks, including:
 - presence of correct logbook
 - evidence of damage
 - pendant wiring not frayed or damaged (if applicable)
 - fluid leaks
 - lights work effectively

- locating, identifying and confirming all controls
- emergency evacuation rescue plan in place
- mirrors and seat are adjusted appropriately
- safety equipment checks
- fire extinguisher
- signage and labels to ensure they are visible and legible
- checking for signs of paint separation and stressed welds indicating potential structural weakness
- tyres/wheels for damage/wear and rail conditions are serviceable
- visual damage or equipment faults
- completing 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 operating requirements
 - hazard warning systems, safety, audible and visual warning devices, including travel alarms, lights and horns are functional
 - start-up is in accordance with manufacturer requirements and workplace procedures
 - there are no unusual noises
 - long and cross travel, transmission and brake functions comply with operating requirements
- conducting and applying risk and hazard assessment strategies, including:
 - confirming work area operating surface suitability based on crane and task requirements
 - travelling surfaces are clear of debris and in serviceable condition
 - overloading
 - lifting and placing of load
 - asymmetric loads
 - overhead hazards
 - restricted and poorly ventilated areas
 - risk of collision with people, moving plant and fixed structures
 - adequate lighting
 - weather conditions
- confirming and following traffic management plan procedures relevant to their role in the work area
- identifying hazards and using appropriate risk controls and safety measures and equipment relevant to slinging loads
- selecting and inspecting appropriate lifting gear and applying slinging techniques appropriate to the type of load, its mass and centre of gravity
- identifying the WLL tags of the lifting equipment and gear and calculating the deration of the WLL resulting from the slinging techniques applied
- using lifting gear, including flexible steel wire rope (FSWR) sling, synthetic sling, chain sling

(including shortener), spreader bar or lifting beam, tag line, shackles and eyebolts, and using bends and hitches when slinging, including:

- single sheet bend
- clove hitch
- bowline
- controlling the load and attachments (where fitted), including:
 - long and cross travel
 - positioning crane in relevant area for next task
- determining any defects or faults with operation of crane and reporting to relevant personnel
- ensuring risk control measures within the work area are effective in accordance with workplace procedures
- ensuring stability of load and avoidance of hazards, including:
 - lifting attachment and lifting gear as low as possible
 - carrying load near to ground surface
 - accelerating and braking to minimise load swing
 - lowering load onto appropriate dunnage safely taking into consideration swing and restrictions of area
 - minimum speed
 - using handheld tag lines
- inputting crane configuration into crane computer (where fitted) and checking operation to accurately reflect crane configuration
- interpreting and acting on communication signals, including:
 - hoist down - hand, whistle and radio
 - hoist up - hand, whistle and radio
 - traverse (trolley) travel - hand, whistle and radio
 - long (bridge) travel - hand, whistle and radio
 - creep - hand, whistle and radio
 - stop - hand, whistle and radio
- interpreting and confirming relevant documentation for the work task and relevant area
- maintaining three points of contact whilst accessing crane and ensuring rungs/steps are free of hazards (if applicable)
- monitoring load disconnection from hook/lifting gear is safe and ensuring no movement of controls
- operating a bridge or gantry crane configured to lift and move four different loads using the main hook through an obstacle course using all crane operational controls while the load is in full view of the crane operator. Loads must consist of:
 - a load at least 5% of the RC of the crane
- positioning the crane for safe operation for:
 - application of the task
 - manoeuvring in the workplace
 - stability of the 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 bridge or gantry crane in accordance with manufacturer requirements and workplace 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 two-way radio communication during movement of load.

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 workplace communication procedures, including:
 - bells
 - buzzers
 - listening
 - hand signals
 - questioning techniques
 - signage
 - two-way radios
 - written instructions
 - whistles
- bridge or gantry crane characteristics and capabilities
- crane and lifting gear load chart/s and manufacturer requirements
- crane configuration mathematical calculations to:
 - estimate loads
 - determine relevant lifting accessories to perform work/task
- 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
- traffic, including pedestrians, vehicles and other plant
- operations on unusual, uneven or difficult terrains
- lift impacting factors, including:
 - centre of gravity
 - dynamic nature of load
 - flex/deflexion of load
 - length
 - weight
- manufacturer requirements and instructions on shutting down crane
- pre-start and operational checks required for a bridge or gantry crane
- problems and application of appropriate response procedures to unplanned and/or unsafe situations and environmental conditions, including:
 - wind, lightning and storms
 - failure of equipment
 - failure/loss of control, including brakes
 - obstacles and obstructions
- relevant documentation requirements and procedures for recording, reporting and maintaining workplace records and information
- relevant workplace instructions, safety information and emergency procedures
- 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 in accordance with legislative obligations of WHS/OHS requirements and safe work/workplace procedures
- hazards commonly encountered while slinging:
 - instability of landing surfaces
 - overhead and underground hazards
 - insufficient lighting
 - traffic

- weather
- pedestrian traffic
- work at heights
- selection, inspection, care, handling, application, limitations and storage of lifting equipment and gear:
 - FSWR sling
 - synthetic sling
 - chain sling (including shortener)
 - spreader bar or lifting beam
 - tag line
 - shackles
 - eyebolts
 - plate clamps
 - load moving attachments, including magnetic, vacuum and grab
- methods of making temporary connections to loads using fibre and synthetic ropes:
 - single sheet bend
 - clove hitch
 - bowline
- starting procedure of crane in accordance with manufacturer requirements
- weather bureau forecasts and associated information and environmental conditions that could impact operation, including:
 - lightning
 - rain
 - wind
 - water impacted ground
 - ultraviolet (UV) exposure
- workplace standards, requirements, policies and procedures for conducting operations for the bridge or gantry crane.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

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 it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

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

Resources for assessment must include access to:

- access to a bridge or gantry crane in safe/serviceable working order and have the following characteristics:
 - bridge crane, that consists of a bridge beam or beams, that are to end carriages, at each end and is capable of travelling along elevated runways and has one or more hoisting mechanisms arranged to traverse across the bridge, or if remote controlled, the crane must have more than three powered operations, or
 - gantry crane, that consists of a bridge beam or beams supported at one or both ends by legs mounted to end carriages and is capable of travelling on supported surfaces or deck levels, whether fixed or not, and has a crab with one or more hoisting units arranged to travel across the bridge, or if remote controlled, the crane must have more than three powered operations
- communication equipment, including:
 - bells
 - buzzers
 - two-way radios
 - whistles
- relevant personal protective equipment (PPE)
- safety devices, including:
 - audible and visual travel devices
 - horns/sirens
 - lights
- applicable documentation, including:
 - approved codes of practice and relevant guidance material
 - relevant Australian technical standards
 - manufacturer guidelines (instructions, requirements or checklists), relevant industry standards and operating procedures (where applicable).

Links

Companion Volume Implementation Guides are found in VETNet -

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