

# Perform advanced rigging operations

Code OHSCER224A

Workplace Health and Safety Queensland is moving to a new learning and assessment system for certificates to work in prescribed occupations. Learning and assessment will now be conducted in the Vocational Education and Training (VET) sector in which units of competency set out the knowledge and skills needed to demonstrate competent performance in a prescribed occupation.

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**CODE:** OHSCER224A

**TITLE:** Perform advanced rigging operations

**DESCRIPTOR:** This unit of competency covers the functions required to undertake advanced rigging to meet minimum training and assessment standards for the purposes of certification. This unit has been developed in accordance with the licensing and assessment requirements of NOHSC:1006 [2001].

This unit involves planning, preparing and completing rigging work.

ELEMENT	PERFORMANCE CRITERIA
<b>1.0 Plan and prepare work</b>	
1.1 Plan job	1.1.1 Site plans and drawings and industry practices are interpreted as necessary. 1.1.2 <i>Work specifications</i> are interpreted in conjunction with drawings as necessary. 1.1.3 Potential <i>hazards</i> are identified from the plans, drawings and specifications. 1.1.4 Basic line drawings are prepared as necessary. 1.1.5 Any basic marking plans and material schedules are interpreted. 1.1.6 Potential <i>hazards</i> associated with the use of cranes and other load moving equipment are identified and measures to eliminate or control these hazards are planned. 1.1.7 <i>Site</i> information is obtained as necessary. 1.1.8 Potential <i>hazards</i> are identified. 1.1.9 Optimum prevention/control measures are selected. 1.1.10 Adequate site access and egress is identified. 1.1.11 Site sketches are drawn and dimensions taken as necessary. 1.1.12 Coordination requirements with other site personnel are determined. 1.1.13 Determine or confirm appropriate mass and dimensions of load. 1.1.14 Appropriate materials, tools and <i>equipment</i> are identified.

ELEMENT	PERFORMANCE CRITERIA
1.1 Plan work (cont'd)	<p>1.1.15 Check for appropriate approvals for work and for persons.</p> <p>1.1.16 The job method and sequence is developed, to include hazard prevention, control measures and safety procedures.</p> <p>1.1.17 The job feasibility and schedule are checked with the client, and other persons as necessary.</p> <p>1.1.18 The job is developed to include hazard prevention/control measures and to applicable Australian Standards, codes of practice and to equipment manufacturers specifications.</p> <p>1.1.19 The existence of appropriate instructions from the load designer is checked. The designer is consulted for appropriate instructions for more complex load movement tasks where written instructions are provided.</p>
1.2 Select, inspect and if necessary repair material and tools	<p>1.2.1 Appropriate <i>rigging</i> equipment, materials and tooling are inspected and damaged or worn items are labelled and rejected.</p> <p>1.2.2 Rejected <i>equipment</i>, materials and tooling are repaired or sent for repair or destroyed. Records are maintained of inspection or repair as required.</p> <p>1.2.3 Alter or arrange alteration of standard equipment, materials and tooling for the job.</p> <p>1.2.4 Develop any special <i>equipment</i> required for the job. The special equipment is manufactured or arrangements are made for the manufacture.</p> <p>1.2.5 Select and assemble sets of lifting gear to Australian Standards and codes of practice where appropriate.</p> <p>1.2.6 Where appropriate, safe working load is calculated to Australian standards.</p> <p>1.2.7 <i>Rigging</i> gear is prepared in accordance with codes of practice.</p>
1.3 Co-ordinate transport of equipment to site as necessary	<p>1.3.1 Sequence loading of equipment and tooling on transport in order suitable for job method.</p> <p>1.3.2 Arrange load to avoid injury or damage.</p>

ELEMENT	PERFORMANCE CRITERIA
<b>2.0 Complete rigging work</b>	
2.1 Prepare site for rigging work	2.1.1 The <i>site</i> is isolated using barriers as necessary. 2.1.2 Safety procedures are implemented, including necessary signage. 2.1.3 Where appropriate, assemble and erect lifting or pulling device.
2.2 Move loads	2.2.1 Load moving is performed in accordance with planned hazard prevention and control measures, to approved safe work practices, and to Australian Standards, codes of practice and manufacturer's specifications. 2.2.2 <i>Work</i> is performed safely at heights and/or on uncompleted structures and/or within uncompleted structures and/or in confined and enclosed spaces.
2.3 Plan and secure the load	2.3.1 Appropriate materials for fixing and anchoring the load are checked and selected. 2.3.2 Appropriate fixing methods are used to secure the load. Load securing may include both temporary and permanent methods including appropriate temporary bracing and load supports. 2.3.3 Temporary securing is installed where hazards and weather conditions may vary during the load movement and/or construction. 2.3.4 The load is lowered safely using appropriate equipment and communication methods. 2.3.5 Appropriate designer's specifications are followed during the placement and securing of the load.

ELEMENT	PERFORMANCE CRITERIA
2.4 Ensure continuing stability	<p>2.4.1 Load movement procedure is followed to ensure load and/or structural stability.</p> <p>2.4.2 Any temporary bracing and/or load support is maintained until continuing stability is ensured.</p> <p>2.4.3 Manufacturer's and/or designer's specifications relating to load stability are followed.</p> <p>2.4.4 The load and/or structure is completed to manufacturer's, designers specifications and to appropriate Australian Standards.</p> <p>2.4.5 Local conditions which may affect the continuing stability are identified and measures taken to ensure continuing stability</p>
2.5 Dismantle and remove loadshifting equipment	<p>2.5.1 Loadshifting equipment is dismantled in a safe and orderly manner.</p> <p>2.5.2 Appropriate steps are taken to dismantle and remove items brought on site during preparation.</p>

## Range of Variable

The range of variables explains the range of contexts within which the performance and knowledge requirements of this standard may be assessed. The assessment must determine that there is sufficient skill and knowledge for the operator to take the licence and operate in a new workplace. The assessment must be adjustable but prescriptive to ensure transferability.

What may be involved in routine pre-operational *checks*?

Pre-operational checks is to include but not be limited to:

- worksite inspection
- equipment defect identification
- assessment of conditions and hazards
- determination of work requirements.

What range of *rigging* may be performed?

The scope of work with this level is rigging work, associated with:

- movement of plant and equipment
- steel erections
- particular hoists
- placement of pre-cast concrete
- safety nets and static lines
- mast climbers
- perimeter safety screens
- shutters
- cantilever crane loading platforms.

What *workplace specifications* may apply to this standard?

Workplace specifications may include but are not limited to:

- standard operating procedures
- industry standards
- production schedules
- material safety data sheets
- work notes and plans
- product labels
- manufacturers specifications
- enterprise policies and procedures (Including waste disposal, recycling guidelines)
- supervisors oral and written instructions
- current state/territory occupational health and safety legislation
- Australian standards
- codes of practice or advisory standards.

What *hazards* may be encountered in the workplace?

Hazards may include but not be limited to:

- overhead power lines
- trees
- overhead service lines such as steam, gas, water, telephone
- underground services
- uneven and/or unstable ground
- other workers and persons
- surrounding buildings
- vessels/structures equipment
- hazardous materials
- corrosive substances
- barricades
- explosive materials
- inadequate lighting
- radio interference
- inclement weather.

What *site/occupational health and safety requirements* may be relevant to this standard?

Occupational health and safety requirements are to include but not be limited to:

- be in accordance with legislation/regulation/codes of practice/advisory standards
- organisational safety policies and procedures and safety plan
- protective clothing and equipment
- use of tools and equipment
- workplace environment and safety
- handling of materials
- use of fire fighting equipment
- organisational first aid
- hazard control and hazardous materials
- weather conditions.

Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice/advisory standards and workplace policies and practices.

Safe operating procedures are to include but not be limited to:

- conduct of operational risk assessment and treatments associated with power cables (including overhead service trays, cables and conduits)
- lighting
- earth leakage boxes
- trips hazards
- working with dangerous materials
- working in confined spaces
- surrounding structures
- restricted access barriers
- working at heights.

Emergency procedures related to equipment operation are to include but not be limited to:

- organisational first aid requirements
- evacuation.

What permits may be relevant to this standard?

Permit may include but not be limited to:

- footpath closures
- road closures
- traffic requirements
- confined spaces
- rail
- local government
- utility providers
- permits from service providers
- local authorities
- industry specific requirements.

What *work* area may be relevant to this standard?

Work areas may include but not be limited to:

- factories
- wharfs
- ships
- warehouses
- manufacturing plants
- building sites
- road construction
- demolition sites
- quarries
- mine sites
- swinging stages.

What personal protective *equipment* may be relevant to this standard?

This may include but not be limited to:

- boots
- hat/hard hat
- overalls
- gloves
- protective eyewear
- hearing protection
- respirator or face mask
- sun protection
- task specific personal protective equipment
- fall protection.

How might the rigging be demonstrated in a safe, controlled and correct manner?

The *rigging* is to be undertaken in accordance with manufacturer's specifications and appropriate Australian standards, current state/territory occupational health and safety legislation, codes of practice and advisory standards.

What types of *equipment* may be associated with rigging?

Equipment may include but are not limited to:

- slings
- ropes
- shackles
- bolts
- spreader beams and equalising gear
- clamps
- pulley systems
- chain blocks and pull lifts
- jacks
- skids
- skates and sliding shoes
- rollers
- cradle timbers
- chocks and wedges
- packers
- fish-plates and blots
- feeler gauges
- rigging screws
- turfers
- turn buckles
- hand tools and gear
- I bolts
- collared I bolts

What records may need to be kept or updated?

Records may include but not limited to:

- inspection and labelling records
- plans
- drawings or specifications
- legislative requirements
- completion and inspection certificates.

## Evidence Guide

### What evidence is required to demonstrate competence for this standard as a whole?

The evidence guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the performance criteria, the range statement and the assessment guidelines.

Competence in this standard requires evidence of the ability to undertaking rigging operations without damage or injury to property or people. It requires the ability to plan job, select and inspect material and tools and move loads.

### What **critical aspects** of evidence are required to demonstrate competency in this unit?

- Location, interpretation and application of relevant information, standards and specifications.
- Compliance with the site safety plan and occupational health and safety legislation/regulations/codes of practice/advisory standards applicable to workplace operations.
- Compliance with organisational policies and procedures including quality requirements.
- Safe and effective operational use of tools, plant and equipment.
- Communication and working effectively and safely with others.

### What **specific knowledge** is needed to achieve the performance criteria?

- Operating principles and operating methods to rigging
- Legislative requirements with regard to licensing.
- General construction terminology
- Principles of the safe removal of obstacles and hazards from the workplace.
- The hierarchy of hazard control measures with elimination of substitution, isolation and engineering control measures being selected before safe work practices and personal protective equipment.
- Workplace communication procedures.
- Demonstrate safe and environmentally responsible workplace practices.
- Riggings techniques and equipment
- Processes for the calculation of material requirements.
- Ability to read plans, drawings and specifications.
- Understanding limitations of equipment
- Specifications of equipments and how they relate to loads

### What **specific skills** are needed to achieve the performance criteria?

- Readily familiarise self with local conditions.
- Demonstrate emergency operating procedures.
- Read and interpret site planning, manufacturers' specifications, work and maintenance plans and material safety data sheets.
- Comprehend and apply task instructions.
- Working with other plant operators.
- Ability to work at heights
- Emergency situations
- Able to listen and understand job requirement.
- Understand written documents for job processes.
- Understand tables and figures for job procedures.
- Understand interrelationship among workplace processes and procedures in the English language.
- Understand and interpret signals and instructions in the English language.
- Hand/eye co-ordination.

What **methods of** assessment should apply?

- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge.
- Assessment must include as a minimum the achievement of competence to the standard established in the NOHSC assessment instrument. Additional requirements may need to be achieved to comply with the AQTF including key competencies.
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge.
- Assessment must be applied in a real work environment or replicated industrial workplace.

In what **context** should the assessment occur?

- The application of competency is to be assessed in the workplace or replicated industrial workplace.
- Assessment is to occur using standard and authorised work practices including safety equipment and environmental constraints.
- Assessment of essential underpinning knowledge, other than the confirmatory questions, will usually be conducted in an off-site context.
- Assessment is to comply with relevant regulatory requirements including specific Australian Standards.

What are the **specific resource requirements** for this unit?

- Workplace location or replicated work facility in accordance with the OHS instrument relating to the OHS jurisdiction.
- Tools and equipment appropriate to rigging
- Specifications and work instructions
- Appropriate rigging equipment
- Communication equipment (radios/whistles) (where applicable)
- Occupational Health and Safety Certification Training and Assessment Delivery Guide
- Occupational health and safety assessment instruments
- Occupational health and safety authority learner guide
- Occupational health and safety authority trainer guide.

## What key competencies should be applied to this unit of competency?

There are a number of processes that are learnt throughout work and life which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these covered by the key competencies, although other may be added. The questions below highlight how these processes are applied in this competency standard. Following each question is the number in brackets indicates the level to which the key competency needs to be demonstrated where:

0 = not required

1 = perform the process

2 = perform and administer the process

3 = performance, administer and design the process

1. How can communication of ideas and information be applied)	<p>Collect, organise, interpret and understand the information required for performing rigging, including work instructions, plans/sketches/diagrams/safety instructions, signage, labels, quality procedures, manufacturers instructions, material safety data sheets and equipment instructions.</p> <p>This may involve the application of communication and co-operation between riggers and other relevant persons to ensure the application of the principles of the hierarchy of control in the co-ordination of work activity.</p> <p style="text-align: right;">Level 1</p>
3 How can information be collected, analysed and organised?	<p>Communicate ideas and information orally and in writing in simple English to enable confirmation of work requirements, passage of information and requests to other workers during operations and the reporting and recording of work outcomes.</p> <p style="text-align: right;">Level 1</p>
4 How can activities be planned and organised?	<p>Conduct activities associated with performing advanced rigging, including the coordination and use of equipment, materials and tools to avoid backtracking and rework.</p> <p style="text-align: right;">Level 1</p>
5 How can team work be applied?	<p>Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.</p> <p style="text-align: right;">Level 1</p>
6 How can the use of mathematical ideas and techniques be applied?	<p>Use mathematical ideas and techniques to correctly calculate time to complete tasks, estimate measurements, distances and levels, calculate material requirements and establish quality checks.</p> <p style="text-align: right;">Level 1</p>
7 How can problem solving skills be applied?	<p>Establish safe and effective work processes which anticipate likely problems and blockages and systematically work around these to avoid or minimise reworking and avoid wastage.</p> <p style="text-align: right;">Level 1</p>
8. How can the use of technology be applied?	<p>Use workplace technology related to performing rigging including the use of calculators, the use of communication devices and the reporting/recording of results.</p> <p style="text-align: right;">Level 1</p>

Are there any other competency standards that could be assessed with this one?

This competency standard could be assessed on its own or in combination with the other units of competency relevant to the job function.

It is strongly recommended people wishing to undertake this unit, possess dogging competencies and relevant current industry experience. This may be demonstrated through a log book or record of training.

There is essential information about assessing this competency standard for the consistent performance and where and how it may be assessed in the Assessment Guideline developed by the National Occupational Health and Safety Commission. All users of this competency standard must have access to this guideline.