



Australian Government

PMASUP305 Operate offshore cranes

Release: 1

PMASUP305 Operate offshore cranes

Modification History

Release 1. Supersedes and is equivalent to PMASUP305A Operate offshore cranes

Application

This unit of competency covers the skills and knowledge required to operate a crane on an offshore facility.

This unit of competency applies to the transfer of equipment to and from the support vessel, transfer of personnel between the facility and another vessel using appropriate approved equipment, and safe management of loads during diving operations.

This unit of competency applies to operators who are required to ensure all equipment and materials for the job are available and meet specifications, establish lifting/discharge sequence, ensure that lifts are conducted within operational, safety and environmental limits, and liaise and cooperate with other members of the facility onboard team.

This unit of competency applies to any type of crane used in offshore facilities. Examples include:

- Derrick
- Slewing pedestal
- Bridge and gantry
- Knuckleboom
- Mobile slewing crane.

Some jurisdictions may require the holder of this unit to be licensed or certified and users should check with the relevant authorities.

Pre-requisite Unit

Nil

Competency Field

Support

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

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

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| 1 | Plan and prepare for lift | 1.1 | Determine job requirements, including potential hazards |
| | | 1.2 | Identify and apply environmental requirements for the lift in accordance with company procedures and crane limitations |
| | | 1.3 | Check suitability of load to be lifted |
| | | 1.4 | Identify, obtain and inspect materials, equipment and resources to satisfy the job requirements |
| | | 1.5 | Follow safety and environmental requirements in accordance with site-specific procedures |
| | | 1.6 | Discuss contingency plans with lifting team members, including supply vessel crew |
| | | 1.7 | Check work location for safe working area requirements |
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| 2 | Conduct routine checks of the crane | 2.1 | Carry out routine pre-operational equipment checks in accordance with company procedures |
| | | 2.2 | Commence start-up procedures and check crane controls for correct operation and ease of movement |
| | | 2.3 | Check communication systems are fully operational |
| | | 2.4 | Check emergency safety devices are fully operational |
| | | | |
| 3 | Communicate with work group | 3.1 | Establish and communicate job sequencing schedule with team and/or crew members to ensure an appropriate level of coordination |
| | | 3.2 | Advise team members of changes to lifting schedule as required |
| | | 3.3 | Identify and use communication methods in accordance with company procedures |
| | | | |
| 4 | Operate crane offshore | 4.1 | Determine the load destination and check integrity of the landing area |
| | | 4.2 | Conduct a trial lift |

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|---|--|---|
| | 4.3 | Lift, move and place load safely to required destination |
| | 4.4 | Respond to changes to lifting schedule when warranted |
| | 4.5 | Use appropriate communication methods to coordinate safe movement of the load |
| 5 | Shut down crane and review operations | |
| | 5.1 | Clear work area and dispose of or deal with materials in accordance with procedures and job specification |
| | 5.2 | Shut down crane in accordance with company procedures |
| | 5.3 | Apply work completion procedures and notify relevant personnel that work is finished |
| | 5.4 | Review operations, report and record learnings and significant findings |

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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.

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| Regulatory framework | <p>The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used, and include one or more of the following:</p> <ul style="list-style-type: none"> • legislative requirements, including work health and safety (WHS) • industry codes of practice and guidelines • environmental regulations and guidelines • Australian and other standards • licence and certification requirements • road traffic authority requirements |
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Types of legislation include:

- *AS 2550.1-2011 Cranes, hoists and winches - Safe use - General requirements*
- *Norsok Standard R-003 - Safe use of lifting equipment*
- *Offshore Petroleum Act 2006*
- *National Offshore Petroleum Safety Authority Safety Case Guidelines September 2004*
- *Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulations 1996*
- *Statutory Rules 1996 No. 298 as amended*
- *OMHEC Training Standard (OHMEC TS 11 March 2003)*
- http://www.mms.gov/regcompliance/PDFs/GL-I_2005.pdf
- <http://www.ogp.org.uk/pubs/376.pdf>
- *EN12079*
- *IMO Circular 860*
- *DNV 2.7-1 & 2.7-2.*

Regulatory bodies include:

- National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)
- Australian Maritime Safety Authority (AMSA)
- State/Territory OSH Regulatory bodies
- Department of Infrastructure and Regional Development.

All operations to which this unit applies are subject to stringent health, safety and environment (HSE) requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Procedures All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, include one or more of the following:

- work instructions
- work plans
- equipment specifications
- company-specific lifting standards and safe working procedures

- emergency procedures
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- temporary instructions
- any similar instructions provided for the smooth running of the plant

Hazards

Hazards include one or more of the following:

- electricity
- gas
- gases and liquids under pressure
- structural hazards
- structural collapse
- equipment failures
- industrial (machinery, equipment and product)
- equipment or product mass
- noise, rotational equipment or vibration
- plant services (steam, condensate and cooling water)
- limited head spaces or overhangs
- working at heights, in restricted or confined spaces, or in environments subjected to heat, noise, dusts or vapours
- flammability and explosivity
- hazardous products and materials
- unauthorised personnel
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- extreme weather
- other hazards that might arise

Types of environments

Types of environments include one or more of the following:

- day and night operations
- facilities subject to helicopter operations
- tropical and temperate climatic conditions
- emergency lifts
- multi-crane operations including intersecting radii
- restricted radius
- active hydrocarbon production
- active drilling operations
- exploration activities
- diving support
- blind lifts

- personnel transfer
- engineered lifts
- lifting to/from a surface in continuous, three dimensional motion

Trial lift Trial lifts are conducted to ensure:

- stability of load is not compromised
- load is not near capacity of crane
- load is not of unusual proportions

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875>

Assessment Requirements for PMASUP305 Operate offshore cranes

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Performance Evidence

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

- undertake pre-start checks and start-up and shutdown procedures
- use radio equipment to send and receive information
- manoeuvre and position load shifting equipment
- safely lift and position load
- maintain crane logs
- conduct visual checks of crane operating systems and cables
- check communications systems and emergency and other device are fully operational
- identify faults, defects or abnormalities and correctly report and record these
- recognise abnormal lifting circumstances and safely abort the lift
- recognise early warning signs of equipment/processes needing attention or with potential problems
- determine the most likely cause of routine problems and take action to ensure a timely return to full performance.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- safe working capacity and limits of the equipment
- nature/condition of materials being shifted and the particular hazards of each
- crane safety systems
- safe operating principles
- the impact of weather, climatic conditions or other conditions on lifting practices
- cargo planning
- hierarchy of control.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of an operating plant

- will typically include a supervisor/third-party report or other evidence, focusing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
- must include the use of an appropriate industrial item/s of equipment requiring demonstration of operation, start-up and shutdown procedures and responding to problems
- may use industry based simulation for all of the unit, provided it simulates offshore conditions.
- Assessment should 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 reflecting 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.
- Assessment in a simulated environment should use evidence collected from one or more of:
 - walk-throughs
 - pilot plant operation
 - demonstration of skills
 - industry-based case studies/scenarios
 - 'what ifs'.
- Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept).
- 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.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- In addition, the assessor or anyone acting in subject matter expert role in assessment must demonstrate both technical competency and currency. If the assessor cannot demonstrate technical competency and currency they must assess with a subject matter expert who does meet these requirements.
- Technical competence can be demonstrated through one or more of:
 - relevant VET or other qualification/Statement of Attainment
 - appropriate workplace experience undertaking the type of work being assessed under routine and non-routine conditions

- appropriate workplace experience supervising/evaluating the type of work being assessed under routine and non-routine conditions
- Currency can be demonstrated through one or more of:
 - being currently employed undertaking the type of work being assessed
 - being employed by the organisation undertaking the type of work being assessed and having maintained currency in accordance with that organisation's policies and procedures
 - having consulted/had contact with an organisation undertaking the type of work being assessed within the last twelve months, the consultation/contact being related to assessment
 - conducting on-the-job training/assessments of the type of work being assessed
 - being an active member of a relevant professional body and participating in activities relevant to the assessment of this type of work.

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