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| <b>Title</b> | <b>Operate a mobile harbour crane for cargo exchange</b> |                |           |
| <b>Level</b> | <b>4</b>   | <b>Credits</b> | <b>20</b> |

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| <b>Purpose</b> | People credited with this unit standard are able to: describe factors affecting the operation of a mobile harbour crane; prepare for cargo exchange with the mobile harbour crane; carry out cargo exchange with the mobile harbour crane; and conclude operations with the mobile harbour crane. |
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| <b>Classification</b> | Stevedoring and Ports Industry > Port Machinery Operations |
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| <b>Available grade</b> | Achieved |
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| <b>Prerequisites</b> | Unit 3787, <i>Demonstrate knowledge of regulatory requirements relating to cranes</i> ; and Unit 20053, <i>Demonstrate knowledge of the care and handling of cargo lifting equipment and safe slinging of loads</i> ; or demonstrate equivalent knowledge and skills. |
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### Guidance Information

- Legislative and regulatory requirements relevant to this unit standard include – Health and Safety at Work Act 2015; Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999; Local Government Act 2002; *Approved Code of Practice for Health and Safety in Port Operations*, available at [Health and safety in port operations | WorkSafe](#); *New Zealand Port and Harbour Marine Safety Code*, available at [New Zealand Port and Harbour Marine Safety Code - Maritime NZ](#).
- Assessment  
All outcomes are to be assessed in a workplace environment(s) or equivalent. While every assessment situation may not provide opportunity for evidence of every performance criterion, evidence may be obtained over a period of time on the job, over several assessment opportunities, or through other means such as attestation and the use of questioning.
- Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

- 4 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with company requirements, legislative requirements and regulatory requirements.
- 5 Definitions  
*Company requirements* refer to instructions to staff on policy and procedures that are available in the workplace. These requirements may include – company policies and procedures, work instructions and legislative requirements.  
*Fluidly*, with reference to load movements, means smoothly, with direct load path, and with simultaneous use of controls.  
*Heavy loads* are heavy as defined by crane manufacturer.  
*Irregular loads* refer to loads which include but are not limited to the following characteristics – unequal weight distribution, irregular shape and proportions, with or without set lifting points.  
*Regulatory requirements* refer to regulations set by but not limited to the New Zealand Customs Service, Ministry for Primary Industries and WorkSafe New Zealand.
- 6 Reference  
 Crane Association of New Zealand (Inc), *Crane Safety Manual for Operators/Users*, (Lower Hutt: Crane Association, 2016), available at <http://www.cranes.org.nz>.

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## Outcomes and performance criteria

### Outcome 1

Describe factors affecting the operation of a mobile harbour crane.

### Performance criteria

- 1.1 Positioning of the crane is described.
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| Range | local rules of operation – location, positioning of outriggers, clearances;<br>load curve configurations and outrigger settings;<br>travelling – settings, communication, safety, designated pathways, clearances;<br>levelling and level tolerance. |
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- 1.2 The effect of crane's level on load curve accuracy, slewing, and weight distribution is described.
- 1.3 The uses and limitations of mobile harbour crane attachments for cargo exchange are described.
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| Range | ISO spreaders (telescopic, twin lift, single lift, manual), out-gauge frame, overheight frame, grab, hook, rotator. |
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- 1.4 Non-cargo exchange activities involving mobile harbour cranes are described.

- 1.5 Communication processes and procedures are described.
- Range documentation, radio, hand signals, emergency.
- 1.6 Response to weather and sea conditions are described.
- Range reading local wind speed, maximum wind strength for operations, visibility, lightning, ship movement.
- 1.7 The operating environment is described.
- Range ship layouts, stevedoring roles, ship personnel roles, mobile machinery operations, cargo securing systems, cargo exchange work plans.
- 1.8 Hazards relating to mobile harbour crane operations and their controls are described.
- Range personnel, ships and all fittings, terminal equipment, stuck ISO container, stuck spreader, radio interference, fire and evacuation.
- 1.9 Emergency stopping in terms of uses and risks are described.
- 1.10 Applicable load chart/s are described.
- 1.11 Out of service condition is described.
- Range slew lock, hoist position, outrigger position, park position, jib position, shore power supply, night lighting.
- 1.12 Crane maintenance and who is responsible for this is described.

## Outcome 2

Prepare for cargo exchange with the mobile harbour crane.

### Performance criteria

- 2.1 Requirements of the operation are identified from briefing information provided.
- Range cargo to be lifted; type of lifting equipment to be used; movements; personnel, including person in charge; any handover requirements; communication.
- 2.2 Communication procedures are established.
- Range radio;  
may include – hand signals.
- 2.3 Shore power is unplugged where applicable.

2.4 Visual inspection is carried out and necessary corrective actions taken.

Range oil and water levels, power supply, wheels and tyres, structure, access, drives and brakes, ropes, leaks, anemometer, log book, fire extinguisher, visibility, hazards, lighting, attachment/s.

2.5 Pre-operational check and pre-travel actions are carried out.

Range may include – engine start; main switch; main pump; engine functions; limit functions; lighting; error reports; camera; new hazards; communication equipment; lifting attachment; pinning and locking; radius for travelling; system prerequisites; status and actions as required; outriggers, supports, and arms for travel; communication check with guide person.

2.6 Crane is driven to work position.

2.7 Outrigger and pads are positioned.

### Outcome 3

Carry out cargo exchange with the mobile harbour crane.

#### Performance criteria

3.1 At the beginning of each lift from the vessel the load is checked to be free.

3.2 Regular ISO containers are moved to and from the wharf and vessel safely, fluidly, efficiently, and with controlled sway.

3.3 Lids are moved safely, fluidly, and with controlled sway.

3.4 Heavy and/or irregular loads are moved to and from the wharf and vessel safely, with no sway.

3.5 The ability to operate with no line of sight is demonstrated.

Range lift and/or place, move.

3.6 Ability to kill a swing is demonstrated.

3.7 Emergency stopping is demonstrated.

3.8 Loads are placed on the vessel safely and efficiently as directed.

Range load orientation, placement.

3.9 Loads are placed on the wharf safely and efficiently.

Range load orientation, placement.

- 3.10 Coordination and communication with personnel is maintained throughout operations.

#### Outcome 4

Conclude operations with the mobile harbour crane.

#### Performance criteria

- 4.1 Jib is positioned.
- 4.2 Lifting attachment/s is/are set at specified height and/or removed and stored.
- 4.3 Pre-travel actions are carried out.
- Range may include – slew lock; radius for travelling; outriggers, supports, and arms for travel; communication check with guide person.
- 4.4 Crane is driven to parking position.
- 4.5 Crane is parked and put into out of service condition.
- Range may include – outrigger arms, outrigger pads, power down, access secured, shore power.
- 4.6 Documentation requirements are completed.
- Range may include – log book, fault report/s, damage report/s.

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| <b>Planned review date</b> | 31 December 2024 |
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#### Status information and last date for assessment for superseded versions

| Process      | Version | Date              | Last Date for Assessment |
|--------------|---------|-------------------|--------------------------|
| Registration | 1       | 26 January 2004   | 31 December 2023         |
| Revision     | 2       | 25 September 2006 | 31 December 2023         |
| Rollover     | 3       | 17 September 2015 | 31 December 2023         |
| Review       | 4       | 24 February 2022  | N/A                      |

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| <b>Consent and Moderation Requirements (CMR) reference</b> | 0014 |
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

#### Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council [qualifications@hangaarorau.nz](mailto:qualifications@hangaarorau.nz) if you wish to suggest changes to the content of this unit standard.