

Title	Describe safety requirements, and operate a vessel mounted crane in a marine environment		
Level	4	Credits	25

Purpose	People credited with this unit standard are able to, in a marine environment: describe hazards and actions to minimise hazards during a lift using a vessel mounted crane; describe the impact on vessel stability and centre of gravity during transfer of loads using a vessel mounted crane; prepare a vessel mounted crane and lifting equipment to lift and sling a load; lift and move a load using a vessel mounted crane; and secure and stow crane and lifting equipment, and complete documentation on completion of the lift.
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Classification	Seafood > Seafood Vessel Operations
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Available grade	Achieved
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Guidance Information

- 1 All evidence presented in this unit standard must be in accordance with: Workplace procedures and company quality management systems; Health and Safety at Work Act 2015; Hazardous Substances and New Organisms Act 1996; Maritime Transport Amendment Act 2013 and relevant NZ Maritime Rules; Resource Management Act 1991; Crane Safety Manual, available from <http://shop.cranes.org.nz/>; Approved Code of Practice for Cranes, and/or the Approved Code of Practice for Load lifting Rigging and/or the LEENZ Code of Practice for the Safe Use of Lifting Equipment available from: http://www.worksafe.govt.nz/worksafe/informationguidance/all_guidance_items; and any subsequent amendments.
- 2 Definitions
Crane has the same meaning as given in the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999, and in this unit standard, is limited to equipment with current certification used in a marine application, such as hydraulic knuckleboom cranes, winch operated fixed and sliding boom cranes, and lifting appliances.
The *vessel* used in the marine environment refers to a vessel that is operating a Maritime Operator Safety System (MOSS) that is recognised by Maritime New Zealand and meets the requirements of the Maritime Transport Operator Certificate and/or Plan.

- 3 Company pre-assessment observations on operating a vessel mounted crane in a marine environment must be completed on a minimum of 20 lifts prior to assessment.
- 4 For the purposes of assessment:
 - the crane used in this assessment must be a vessel mounted crane in a marine environment.
 - the assessor must observe two lifts being performed on a vessel mounted crane in a marine environment.

Outcomes and performance criteria

Outcome 1

Describe hazards and actions to minimise hazards during a lift using a vessel mounted crane in a marine environment.

Performance criteria

- 1.1 Identify potential workplace hazards in a marine crane environment and the controls for these hazards.

Range evidence of five hazards is required.
- 1.2 Describe crane rating and its relationship to vessel stability and the consequences if crane rating was extended during a lift.
- 1.3 Identify potential load related hazards and their controls.

Range evidence of five hazards is required.
- 1.4 Describe the workplace procedures in the event of a hazardous substance spill.
- 1.5 Describe what causes a vessel to heel and list, and how they may affect the safe use of a vessel mounted crane.
- 1.6 Describe the certification and testing requirements for a marine crane and its lifting equipment.
- 1.7 Describe the information you should consider before attempting to lift a load safely.

Range includes but is not limited to – load, vessel and environmental factors.
- 1.8 Describe the precautions that should be taken with the vessel to maintain safe lifting when underway at sea.
- 1.9 Describe the actions to be taken to avoid excessive load swing in adverse conditions.

- 1.10 Describe how to minimise the destabilising effect of two cranes working simultaneously.

Outcome 2

Describe the impact on vessel stability and centre of gravity during transfer of loads using a vessel mounted crane in a marine environment.

Performance criteria

- 2.1 Describe the transfer of the centre of gravity of the load and the vessel and the effects it has on the vessel when lifting a load.
- 2.2 Describe how vessel stability is maintained during load transfers.
- 2.3 Describe how vessel movement changes which indicates a mono-hulled vessel's stability is compromised.
- 2.4 Describe how and why stability varies for different types of vessels when loading cargo.
- Range types of vessels include but are not limited to – monohull, barge, multi hull.
- 2.5 Describe the effects of lifting a submerged load and the impact on the lift being performed.

Outcome 3

Prepare a vessel mounted crane and lifting equipment to lift and sling a load in a marine environment.

Performance criteria

- 3.1 Describe the purpose of, and complete, a pre-operation check on a vessel mounted crane and equipment.
- 3.2 Calculate the weight of the load.
- Range includes but is not limited to – use of relative density charts.
- 3.3 Select equipment appropriate for the lift.
- 3.4 Check and confirm the equipment is within the rating for the lift.
- Range includes but not limited to – use of sling rating charts.
- 3.5 Sling the load.

Outcome 4

Lift and move a load using a vessel mounted crane in a marine environment.

Performance criteria

- 4.1 Lift and move the load safely.
- 4.2 Follow directions when lifting and moving the load using verbal, hand signals or radio.

Outcome 5

Secure and stow crane and lifting equipment, and complete documentation on completion of the lift in a marine environment.

Performance criteria

- 5.1 Secure the crane and stow lifting equipment safely.
- 5.2 Complete lift documentation.

Planned review date	31 December 2028
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 June 2002	31 December 2020
Review	2	18 December 2002	31 December 2020
Review	3	11 December 2009	31 December 2020
Review	4	27 June 2019	31 December 2023
Review	5	2 March 2023	N/A
Rollover	6	29 February 2024	N/A

Consent and Moderation Requirements (CMR) reference	0123
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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 Muka Tangata – People, Food, and Fibre Workforce Development Council qualifications@mukatangata.nz if you wish to suggest changes to the content of this unit standard.