

Title	Sling varied regular loads and safely direct a crane during crane operations		
Level	3	Credits	15

Purpose	<p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – apply knowledge of risk management, hazard control, and rigging planning to slinging regular loads; – demonstrate knowledge of the difference between regular loads and irregular loads; – demonstrate crane industry communication methods; and – prepare and sling regular loads, and safely direct a crane during crane operations.
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Classification	Cranes > Crane Operation
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Available grade	Achieved
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Prerequisite	Unit 30072, <i>Demonstrate and apply knowledge of slinging regular loads safely</i> , or demonstrate equivalent knowledge and skills.
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Guidance Information

- 1 Unit 3789 is the second of a series of three standards about slinging loads – Unit 30072, Unit 3789 and Unit 3801.

This unit standard is required by the *Approved Code of Practice for Cranes* to operate as a Dogman slinging loads.

This unit standard is also a pre-requisite unit standard for the cranes unit standards: 3794, 3795, 24511, 27676, and 3801.

- 2 Definitions

Crane – the definition as given in the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999.

Industry good practice – practice that meets the requirements of the Approved Code of Practice for Cranes, Approved Code of Practice for Load-lifting Rigging, and the Crane Safety Manual.

Regular loads have the following characteristics – uniform weight distribution; concentric loading or regular proportions; known lifting points; repetitively lifted.

3 Assessment

- A crane capable of slewing and luffing is required for assessment. Therefore, pendant-controlled and cab-controlled overhead cranes may not be used for practical assessment.
- Assessment must be carried out in a crane workplace or other non-simulated environment. Non-simulated environment means; working with the skill sets required in authentic experience in an organisational context, with commercial competence and the expectations and possible consequences of that context.
- The lift plan supplied may be either written or oral, and defines the following – the load, lifting order and lay down procedure, movement of the crane, choice of lifting equipment, communication methods, and roles of those involved in the lift.
- Evidence used for assessment against this unit standard must meet the following requirements:
 - a. verified experiences using one or more of the following proving experiences: authorised verifier documented observed lifts, company documents. Minimum of 40 lifts (slinging and directing placement of load) with at least six variations of lifting operations that may include site, crane, loads, and communication methods.
 - b. at least two assessor observed lifts.

4 All tasks are to be carried out in accordance with the equipment manufacturer requirements, applicable company procedures, and industry good practice found in the following sources:

- a company quality management systems;
- b requirements and guidelines consistent with the Health and Safety at Work Act 2015;
- c equipment manufacturer operating instructions;
- d government and local government legislation, regulations, and bylaws;
- e *Crane Safety Manual*, version 3 or higher, available from <http://shop.cranes.org.nz/>;
- f *Approved Code of Practice for Cranes*, and/or the *Approved Code of Practice for Load-lifting Rigging* available from <http://www.business.govt.nz/worksafe/information-guidance/all-guidance-items> and/or the *LEENZ Code of Practice for the Safe Use of Lifting Equipment*.

Outcomes and performance criteria

Outcome 1

Apply knowledge of risk management, hazard control, and rigging planning to slinging regular loads.

Performance Criteria

1.1 Identify, implement, and document controls to lower the risk for site specific hazards and foreseeable hazards.

Range	may include but is not limited to – vehicles; equipment; ground condition; underground services; power sources; overhead service lines; trees, buildings, and structures; unauthorised people; adverse weather conditions; simultaneous operations; hazards to the environment; pinch points.
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- 1.2 Identify and implement controls to lower the risk relating to foreseeable load hazards.

Range includes – risk to people, load, equipment, environment; may also include but is not limited to – failure of lifting points/load, sharp edges, regular and irregular load differences, load support, loose objects on the load, hazardous goods, load security, effects of weather, structural strength of the load.

- 1.3 Explain the rigging plan, appropriate to the load, in relation to the people involved and people in the area of operations.

Outcome 2

Demonstrate knowledge of the difference between regular loads and irregular loads when using a sling.

Performance Criteria

- 2.1 Differentiate regular and irregular loads using examples that demonstrate the characteristics of each.
- 2.2 Explain the importance of load equalisation on slings using examples.
- 2.3 Explain centre of gravity and changed location of centre of gravity in terms of effect on rigging and load stability.
- 2.4 Identify individual scope of authority and process of escalation for given load situations.

Outcome 3

Demonstrate crane industry communication methods.

Performance Criteria

- 3.1 Demonstrate recognised hand signals for control of crane load movements.
- 3.2 Demonstrate recognised backing signals for guiding crane positioning.
- 3.3 Carry out audible communication used to direct a crane during lifting operations in accordance with recognised terminology.

Range includes but is not limited to – radio, telephone, verbal.

Outcome 4

Prepare and sling regular loads, and safely direct a crane during crane operations.

Performance Criteria

- 4.1 Confirm the lift plan with the people actively involved in the lift, and people in the area of operations.
- Range includes but is not limited to – communication methods, hazard assessment, risk assessment, responsibilities.
- 4.2 Calculate weights and centres of gravity of regular loads to select lifting equipment, and apply sling and lifting gear to the load.
- Range may include but is not limited to – ropes, chains, web slings, lifting beams, spreader bars, slings, shackles, eyebolts, lifting devices.
- 4.3 Select and apply packing and dunnage to crane loads.
- 4.4 Identify hazards that arise from, and apply controls for, load movement.
- Range may include but not limited to – swinging loads, crush points, power sources, falling objects, boom strike, structures, failure of lifting points/load, sharp edges, regular and irregular load differences, load support, loose objects on the load, hazardous goods, load security, effects of weather, proximity to others, simultaneous activities.
- 4.5 Direct crane and control loads when slewed or articulated, luffed, lowered, and lifted in accordance with the lift plan.
- Range includes – at least two loads, one where the crane operator cannot see the load and is directed by radio communication that ensures safety, and one where the operator can see the load and is directed by hand signals.
- 4.6 Remove lifting equipment from load without injury to persons, or damage to load or equipment.

Planned review date	31 December 2022
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	9 April 1995	31 December 2016
Review	2	22 May 1997	31 December 2016
Review	3	27 March 2000	31 December 2016
Review	4	20 June 2006	31 December 2016
Revision	5	25 September 2006	31 December 2016
Rollover and Revision	6	22 October 2010	31 December 2016
Review	7	15 March 2012	31 December 2016
Review	8	16 July 2015	31 December 2018
Review	9	28 September 2017	N/A

Consent and Moderation Requirements (CMR) reference

0003

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.