

<b>Domain</b>	<b>RIGGING</b>	<b>Unit ID: 992</b>
<b>Title:</b>	<b>Direct the operation of an overhead crane</b>	
<b>Level: 2</b>		<b>Credits:3</b>

### **Purpose**

This unit standard specifies the competencies required to direct the operation of an overhead crane. It includes demonstrating knowledge relating to crane directing operations, demonstrating knowledge and applying rules, principles and laws used in crane operations, preparing to direct crane operations, directing crane operations and demonstrating procedures and techniques related to direct crane operations. This unit standard is intended for those who work in lifting machine operations environment.

### **Special Notes**

1. This unit standard has been designed as part of a progression. It is one of a series of unit standards for learners in the mechanical handling or related engineering environment. The credits allocated to this unit standard also assume that a learner has already learned to use hand tools, and manual lifting equipment and tackle and is able to work safely.
2. For the purpose of learning and assessment, overhead cranes include, but are not limited to: cab-controlled overhead cranes, pendant-controlled overhead cranes and gantry cranes.
2. Safe procedures, control and storage include Occupational Health and Safety requirements, maintaining a record of usage and care and general storage methods.
3. Assessment evidence may be collected from a real workplace, or an appropriate simulated realistic environment in which lifting machines operations are carried out.
4. Regulations and legislation relevant to this unit standard include the following:
  - Labour Act, No. 11, 2007
  - Regulations relating to the Health and Safety of employees at work, 1997 and all subsequent amendment.
  - Road Traffic and Transport Regulations No. 266, 2000

### **Quality Assurance Requirements**

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the

Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority on [www.nta.com.na](http://www.nta.com.na).

## **Elements and Performance Criteria**

### **Element 1: Demonstrate knowledge relating to crane directing operations**

#### **Performance Criteria**

- 1.1 The types of overhead cranes and their application are identified and explained.
- 1.2 The characteristics of different types of overhead cranes are described.
- 1.3 Procedures for using overhead cranes are explained, and their purpose is discussed in terms of safety legislation and work-site practice.
- 1.4 The legal and specified requirements pertaining to a safe, healthy work environment in the crane directing process are explained and consequences of not adhering to the above are explained.
- 1.5 The consequences of the unsafe use of overhead cranes, is explained in terms of load specifications, nature of the load and available accident statistics.
- 1.6 Hazards and associated risks, pertaining to the crane directing process are identified through specified risk assessment procedures and the actions to be taken, should they be encountered are explained.
- 1.7 The specified colour coding and symbolic signs pertaining to the crane operating area are explained.
- 1.8 Terms and definitions used are consistent with generally accepted mechanical handling terminology.
- 1.9 Communication methods are explained in terms of generally accepted industry practice.

### **Element 2: Demonstrate knowledge and apply rules, principles and laws used in crane operations**

#### **Performance Criteria**

- 2.1 Basic lifting theory related to the use of overhead crane is described.
- 2.2 Calculations related to safe working load (SWL) and working load limit (WLL) are carried out.

- 2.3 Standard formulas for calculation of mass of final loads on the hook are applied.
- 2.4 Safety principles governing the use of overhead cranes are implemented.

### **Element 3: Prepare to direct crane operations**

#### **Performance Criteria**

- 3.1 Personal protective and safety equipment is verified, examined and used in line with specified requirements.
- 3.2 Tools and equipment required are verified and examined in line with specified requirements and consequences of non-compliance are explained.
- 3.3 Workplace hazards and associated risks are dealt with in line with specified requirements.
- 3.4 Lifting attachments are examined and substandard conditions are dealt with in line with specified requirements and the consequences of non-compliance are explained.
- 3.5 Safety precautions towards self and others are maintained in line with specified requirements.

### **Element 4: Direct crane operations**

#### **Performance Criteria**

- 4.1 Personal protective and safety equipment is used in line with specified requirements.
- 4.2 Safe and optimum production is ensured through effective communication.
- 4.3 Crane activities are monitored and controlled in line with specified requirements.
- 4.4 Tools, equipment and lifting attachments required are used in line with specified requirements and consequences of non-compliance are explained.
- 4.5 Work-related hazards and associated risks are dealt with in line with specified requirements.
- 4.6 Problems encountered are dealt with in line with specified requirements. In the absence of problems the action to be taken should they be encountered are explained.

## **Element 5: Demonstrate procedures and techniques related to direct crane operations**

### **Performance Criteria**

- 5.1 Preparation procedures for using overhead cranes in assisting to lift and move a load are demonstrated.
- 5.2 Procedures and techniques related to the safe use of overhead cranes are described.
- 5.3 Preparation procedures of the load are demonstrated.
- 5.4 Procedures for maintaining overhead cranes and accessories are explained.
- 5.5 Quality procedures are demonstrated.
- 5.6 Recording and reporting procedures are demonstrated in line with specified requirements.
- 5.7 Methods and measures for the safe control of loads during lifting procedure are demonstrated.
- 5.8 Materials and methods used for fixing, anchoring, bracing, supporting and securing load are demonstrated.

### **Registration Data**

<b>Subfield:</b>	Lifting, Shifting and Secure Loads
<b>Date first registered:</b>	27 September 2012
<b>Date this version registered:</b>	27 September 2012
<b>Anticipated review:</b>	2015
<b>Body responsible for review:</b>	Namibia Training Authority