

<b>Domain</b>	<b>RIGGING</b>	<b>Unit ID: 981</b>
<b>Title:</b>	<b>Operate a tower crane</b>	
<b>Level: 2</b>		<b>Credits:20</b>

### **Purpose**

This unit standard specifies the competencies required to operate a tower crane. It includes demonstrating knowledge of the functions of a tower crane, identifying the safety and suitability of the crane, applying the recognised methods for inspecting and recording the operational fitness of all components of the crane and applying procedures for operating a tower crane. This unit standard is intended for those who work in lifting machine operations environment.

### **Special Notes**

1. Entry information:  
Prerequisite:
  - 937 - *Apply safety rules and regulations in lifting machine operations or demonstrated equivalent knowledge and skills.*
2. This unit standards is in the range of a rated capacity of up to 50 Tons and is limited to work carried out on a standard crane, or with standardised fittings.
3. The operator should be declared physically fit and have completed an eyesight test (such as the Orthorator test) and industry recognised depth perception and hand-eye coordination test.
4. Factors influencing safety and suitability of a crane may include but are not limited to stability, suitability, state of repair and proximity of other machines and workers.
5. Statutory requirements include but are not limited to relevant Code of practice, Safety, Health & Environmental legislation and Local Provincial authority requirements.
6. Appropriate checklist is any one or a combination of the following: Manufacturer's checklist, pre-operational checklist, daily checklist, weekly checklist and site-specific checklist.
7. Inspecting and recording the operational fitness of all components of the crane should cover: structural components, mechanical and electrical systems, cab, controls & levers, mast sections chassis and ballast and hoist ropes, trolley and hook block.
8. Assessment evidence may be collected from a real workplace, or an appropriate simulated realistic environment in which lifting machine operations are carried out.

9. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' specifications, guidelines and instructions.
10. 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 of the functions of a tower crane**

#### **Range**

Major components may include but is not limited to chassis, tower and jib, counter weight hoist, jib and cab, hoist and slew systems, brakes and transmission and trolley and hook block.

#### **Performance Criteria**

- 1.1 The main functions of a tower crane's are explained in terms of manufacturer's specifications.
- 1.2 The operation of all major components is explained in terms of their functions.
- 1.3 All safety features and warning devices on the crane are identified, and their purposes explained in line with manufacturer's specifications
- 1.4 The maximum operating capacities are explained in terms of the designed crane capabilities.
- 1.5 Warnings from crane indicators and gauges are explained in line with manufacturer's specifications.

- 1.6 Corrective actions are described or demonstrated in terms of neutralising warnings received.

## **Element 2: Identify the safety and suitability of the crane**

### **Performance Criteria**

- 2.1 The ability to identify the suitability of the crane prior to utilisation is demonstrated.
- 2.2 Ability to assess operational capability of lifting equipment (e.g. correct SWL of slings etc) is demonstrated.
- 2.3 Knowledge of the influence of load/range characteristics, manufacturers' requirements and environmental conditions is demonstrated.
- 2.4 Knowledge of what constitutes safety in the broader working environment, and when operating a tower crane in compliance with statutory regulations is demonstrated.

## **Element 3: Apply the recognised methods for inspecting and recording the operational fitness of all components of the crane.**

### **Performance Criteria**

- 3.1 Pre-operational checks are carried out according to appropriate checklist.
- 3.2 Daily and weekly operator maintenance is performed in line with appropriate post-operational checklist and recordkeeping using a logbook.
- 3.3 Checklist is completed according to worksite procedures and corrective action taken if required, ensuring compliance with manufacturer's specifications.
- 3.4 Appropriate measures used to rectify and/or prevent basic faults and defects in the mechanical function of the crane are identified.

## **Element 4: Apply procedures for operating a tower crane.**

### **Performance Criteria**

- 4.1 The purpose of the various controls is explained in accordance with their designed use.
- 4.2 Functions of the various controls are demonstrated in line with the manufacturer's specifications.
- 4.3 Controls are used to effectively manoeuvre the crane within manufacturer's specifications.

- 4.4 Safe working procedures are followed according to manufacturer's specifications, site specific and statutory requirements.
- 4.5 Crane performance is monitored and corrective action is taken when necessary, in line with manufacturer's specifications.
- 4.6 Crane is operated without risk of damage or loss to machine or property, or injury to people.
- 4.7 Hazards specific to operating tower crane's and ways to minimise these are explained in terms of potential damage to machine and property, and injury to people.
- 4.8 Start-up and shutdown procedures are followed in line with manufacturer's specifications.
- 4.9 Crane is set up according to manufacturer's and company requirements.

### **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