



National Unit Specification: general information

UNIT Using Cranes to Lift and Transfer Loads – An Introduction
(SCQF level 5)

CODE F6RE 11

SUMMARY

This Unit provides an introduction to using cranes to lift and transfer a specified load safely and securely within a construction environment. It will develop the candidate's understanding and practical skills in using cranes to lift and transfer loads. On completion of this Unit, candidates will be able to identify the correct equipment, check and prepare the work area before then lifting and transferring loads in a secure and stable manner. They will carry this out whilst understanding and complying at all times with the relevant safety requirements. This Unit is suitable for candidates working towards a Modern Apprenticeship in the Construction Operative and Specialist suite.

OUTCOMES

- 1 Establish correct equipment required for lifting and moving a specified load using a crane.
- 2 Conduct pre-operational checks of the crane and the work area to prepare for lifting and transferring loads.
- 3 Lift and transfer the specified load, setting it down stably and securely.

RECOMMENDED ENTRY

While entry to this Unit is at the discretion of the centre, candidates undertaking a National Progression Award at SCQF level 5, as part of a Modern Apprenticeship, must meet the necessary criteria which includes being employed in the relevant industry.

CREDIT VALUE

2 credits at SCQF level 5 (12 SCQF credit points at level 5*).

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Administrative Information

Superclass: TK

Publication date: May 2009

Source: Scottish Qualifications Authority

Version: 01

© Scottish Qualifications Authority 2009

This publication may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged.

Additional copies of this Unit Specification can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre, telephone 0845 279 1000.

National Unit Specification: general information (cont)

UNIT Plant Operations: Using Cranes to Lift and Transfer Loads – An Introduction (SCQF level 5)

CORE SKILLS

There is no automatic certification of Core Skills in this Unit.

This Unit provides opportunities for candidates to develop aspects of the following Core Skills:

- ◆ *Numeracy* (SCQF level 3)
- ◆ *Communication* (SCQF level 3)
- ◆ *Working with Others* (SCQF level 3)
- ◆ *Problem Solving* (SCQF level 3)

National Unit Specification: statement of standards

UNIT Plant Operations: Using Cranes to Lift and Transfer Loads – An Introduction (SCQF level 5)

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit Specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME 1

Establish correct equipment required for lifting and moving a specified load using a crane.

Performance Criteria

- (a) Identify the type and weight of the load to be transferred.
- (b) Select the crane most appropriate for lifting and transferring the load.
- (c) Identify the basic components and controls of the crane selected for the task.
- (d) Select appropriate personal protective equipment (PPE) for the specified task, in accordance with organisational requirements.

OUTCOME 2

Conduct pre-operational checks of the crane and the work area to prepare for lifting and transferring loads.

Performance Criteria

- (a) Identify any potential hazards, including underground and overhead utilities apparatus to avoid within the work area.
- (b) Inspect and confirm the selected crane is safe for operational use.

OUTCOME 3

Lift and transfer the specified load, setting it down stably and securely.

Performance Criteria

- (a) Trial lift to check if the load is balanced accurately.
- (b) Conform with the plant operator's handbook and/or manufacturer's guidelines to safely lift and transfer the load.
- (c) Set down the load in the new location so that it will remain stable on release.
- (d) Comply with all current workplace safety and legislative requirements.
- (e) Dispose of waste in accordance with legislative requirements.

National Unit Specification: statement of standards (cont)

UNIT Plant Operations: Using Cranes to Lift and Transfer Loads – An Introduction (SCQF level 5)

EVIDENCE REQUIREMENTS FOR THIS UNIT

Candidates are required to produce evidence to confirm that they have achieved all Outcomes and Performance Criteria outlined in this Unit.

Performance evidence is required for Outcomes 1, 2 and 3 to show the candidate has achieved the standard as set out in the Outcomes and Performance Criteria. Performance evidence must be supplemented with an assessor observation/operational checklist and produced at an appropriate interval in training, under supervised conditions, once the candidate has developed the necessary skills and knowledge required to carry out the work.

Performance evidence should be demonstrated by the candidate using one of the following:

- ◆ Crawler crane (all sizes)
- ◆ Tower crane trolley jib
- ◆ Tower crane luffing jib
- ◆ Mobile crane

The candidate should be required to use the correct terminology at all times when identifying components and controls of machinery, and carrying out any practical assignments (Outcomes 1, 2 and 3).

As part of the assessment for this Unit, the candidate will also submit written product evidence such as a works checklist or completed risk assessment form. Oral evidence of knowledge and understanding may be demonstrated by the candidate during practical assignments set for all Outcomes and noted at the time by the observer.

National Unit Specification: support notes

UNIT Plant Operations: Using Cranes to Lift and Transfer Loads – An Introduction (SCQF level 5)

This part of the Unit Specification is offered as guidance. The support notes are not mandatory.

While the exact time length allocated to this Unit is at the discretion of the centre, the notional design length is 80 guided learning hours.

GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT

The Outcomes and Performance Criteria for this Unit can be demonstrated by the candidate using one of the following:

- ◆ Crawler crane (all sizes)
- ◆ Tower crane trolley jib
- ◆ Tower crane luffing jib
- ◆ Mobile crane

The content and context of this Unit has been set at an introductory level so that the candidate can develop a basic knowledge and ability in lifting and transferring loads within a construction environment.

Health and Safety are vital to working practices within the construction industry and therefore, emphasis will be placed wherever appropriate during the delivery of this Unit on the correct application of Health and Safety principles and processes, in accordance with current codes of practice and legislation.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

These notes are for guidance purposes only, but are not to be considered as complete guidance to learning and teaching approaches.

Opportunities for integrated delivery of this Unit may be possible if candidates are also taking the NPA in Plant Operations optional Unit in *Slings and Signalling the Movement of Loads*, or *Guiding Moving Loads or Machinery*. Delivery may also be integrated with all mandatory Units.

The introductory training for this Unit should take place in a separate training area independent of the productive work environment and using dedicated equipment and resources. This should cover underpinning principles before any practical application of knowledge is carried out by candidates.

The delivery of this Unit should ensure that candidates acquire the knowledge required to enable them to use the various pieces of plant and machinery correctly and safely, before carrying out any practical-based assignments within the workplace environment.

This will include ensuring candidates develop awareness of, and adhere to, relevant Health and Safety regulations and legislation relating both to working practices within the construction environment, as well as those specific to any practical task they are requested to carry out (such as emphasising the importance of selecting and using the correct PPE at all times).

National Unit Specification: support notes (cont)

UNIT Plant Operations: Using Cranes to Lift and Transfer Loads – An Introduction (SCQF level 5)

E-learning approaches may be appropriate to help tailor delivery to suit the individual needs or learning styles of candidates. This might include, for example, encouraging learners to use electronic resources to conduct research into a specific knowledge area.

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

Critical Thinking, Planning and Organising (components of the Core Skill of *Problem Solving* SCQF level 3) will be developed by candidates as they undertake this Unit. Candidates will need to consider a number of factors and create a suitable plan when deciding upon the appropriate action to take and equipment to use during the given task (Outcomes 1 and 2).

Candidates will also need to apply the Core Skill of *Numeracy* (SCQF level 3), such as measuring and weighing, in order to accurately calculate the size of the load to be lifted and decide upon the appropriate machinery required to bear the load (Outcomes 1 and 2).

The opportunity for the Core Skill of *Working with Others* (SCQF level 3) will be provided as candidates investigate whether equipment has been inspected by others for safe use, as well as ensuring the safety of others as they comply with codes of practice and working regulations (all Outcomes). Throughout this Unit, candidates will be expected to use the Core Skill of *Communication* (SCQF level 3) within the work environment, for example to inform others of any safety considerations, using the correct terminology and a tone appropriate to the workplace environment. In addition, assessment processes may enable candidates the opportunity to develop their Written Communication skills.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Centres may use the Instruments of Assessment they consider to be most appropriate, and the following notes are given as guidance only.

Opportunities for integrated assessment of this Unit may be possible if candidates are also taking the NPA in Plant Operations optional Unit in *Slinging and Signalling the Movement of Loads*, or *Guiding Moving Loads or Machinery*. Assessment may also be integrated with all mandatory Units.

Underpinning knowledge of lifting and transferring loads should be assessed before any practical assignments are carried out by candidates. This will include assessment of a candidate's ability to select the correct machinery for a specified task. Assessment of practical performance should take place under supervised conditions and confirm a candidate's ability to carry out basic lifting and transferring tasks using the machinery correctly and safely, whilst adhering to Health and Safety regulations and legislation.

Outcomes 1, 2 and 3 may be assessed by centres setting candidates a series of appropriate practical assignments carried out under supervised conditions and recorded in an assessor's observation/operational checklist. Practical assignments undertaken by a candidate will be assessed according to their ability to carry out the task safely, using appropriate machinery according to manufacturer's guidelines.

National Unit Specification: support notes (cont)

UNIT Plant Operations: Using Cranes to Lift and Transfer Loads – An Introduction (SCQF level 5)

Adherence to appropriate working regulations and Health and Safety procedures will be observed during the practical exercise carried out by the candidates towards all Outcomes.

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

DISABLED CANDIDATES AND/OR THOSE WITH ADDITIONAL SUPPORT NEEDS

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements