Level 2 NVQ Certificate in Non-Destructive Rail Testing (7597-32)

September 2011 Version 1.0
## Qualification at a glance

<table>
<thead>
<tr>
<th>Subject area</th>
<th>Rail Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>City &amp; Guilds number</td>
<td>7597-32</td>
</tr>
<tr>
<td>Age group approved</td>
<td>16-18, 19+</td>
</tr>
<tr>
<td>Entry requirements</td>
<td>None</td>
</tr>
<tr>
<td>Assessment</td>
<td>Portfolio</td>
</tr>
<tr>
<td>Fast track</td>
<td>Automatic approval available</td>
</tr>
<tr>
<td>Support materials</td>
<td>Centre handbook</td>
</tr>
<tr>
<td>Registration and certification</td>
<td>Consult the City &amp; Guilds website for information</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Title and level</th>
<th>City &amp; Guilds number</th>
<th>Accreditation number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2 NVQ Certificate in Non-destructive rail testing</td>
<td>7597-32</td>
<td>600/0663/8</td>
</tr>
</tbody>
</table>
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1 Introduction

This document tells you what you need to do to deliver the qualifications:

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who are the qualifications for?</td>
<td>They are for anyone working in railways engineering, including those preparing for a specialised role or management responsibility.</td>
</tr>
<tr>
<td>What do the qualifications cover?</td>
<td>These qualifications prove competence of industrial performance, knowledge and understanding and recognise the ability of individuals working in traction and rolling stock within the rail sector.</td>
</tr>
<tr>
<td>Are the qualifications part of a framework or initiative?</td>
<td>The Level 1 is part of the Rail Engineering Apprenticeship Framework.</td>
</tr>
<tr>
<td>What opportunities for progression are there?</td>
<td>Candidates who are successful will be able to progress in employment or to a range of further education and professional body qualifications. For example:</td>
</tr>
<tr>
<td></td>
<td>• (7597) Level 2 NVQs in Rail Engineering Track Maintenance</td>
</tr>
<tr>
<td></td>
<td>• Institute of Leadership and Management qualifications</td>
</tr>
</tbody>
</table>

Qualification structure

To achieve the Level 2 Certificate in Non-destructive Rail Testing, learners must achieve 23 credits from the mandatory units.

<table>
<thead>
<tr>
<th>Unit accreditation number</th>
<th>City &amp; Guilds unit</th>
<th>Unit title</th>
<th>Credit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>F/601/7815</td>
<td>201</td>
<td>Prepare to undertake duties in the rail industry</td>
<td>2</td>
</tr>
<tr>
<td>L/502/6507</td>
<td>202</td>
<td>Contribute to the security of the work environment in the rail industry</td>
<td>1</td>
</tr>
<tr>
<td>L/502/6376</td>
<td>214</td>
<td>Carry out non-destructive testing of rails</td>
<td>13</td>
</tr>
<tr>
<td>F/502/6374</td>
<td>208</td>
<td>Deal with incidents and contingencies within the railway environment</td>
<td>2</td>
</tr>
<tr>
<td>T/502/6372</td>
<td>207</td>
<td>Prepare small plant, measuring equipment and tools for permanent way renewal or maintenance</td>
<td>1</td>
</tr>
<tr>
<td>Unit accreditation number</td>
<td>City &amp; Guilds unit</td>
<td>Unit title</td>
<td>Credit value</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>K/502/6398</td>
<td>301</td>
<td>Ensure that the rail track is fit for operational purposes following engineering activity</td>
<td>4</td>
</tr>
</tbody>
</table>
2 Centre requirements

This section outlines the approval processes for centres to offer these qualifications and any resources that centres will need in place to offer the qualifications including qualification-specific requirements for the staff delivering the qualifications.

Centres already offering City & Guilds qualifications in this subject area
Centres who wish to offer this qualification must use the standard Qualification Approval Process.

Resource requirements

Assessors and internal verifiers
Assessors' and internal verifiers' requirements have been specified by GoSkills in their assessment strategy. The full document is available from our website.

Centre staff may undertake more than one role, assessor and/or internal verifier, but must never internally verify their own assessments.

The primary responsibility of the assessor is to assess candidates to the required quality and consistency against the national occupational standard. It is important that an assessor can recognise occupational competence as specified by the national standard. Assessors therefore need to have a thorough understanding of assessment and quality assurance practices, as well as in depth technical understanding related to the qualifications for which they are assessing candidates.

It will be the responsibility of the approved centre to select and appoint assessors. Potential assessors should:
- hold (or be working towards) an appropriate qualification, as specified by the appropriate regulatory authority, confirming their competence to assess NVQ candidates,
- have the necessary and sufficient experience of the role for which they intend to undertake assessments and actual experience of the functions described by the occupational standards that comprise the qualification.

A primary responsibility of the internal verifier is to assure the quality and consistency of assessments carried out by the assessors for whom they are responsible. Internal verifiers therefore need to have a thorough understanding of quality assurance and assessment practices, as well as sufficient technical understanding related to the qualifications they are internally verifying.
It will be the responsibility of the approved centre to select and appoint internal verifiers. Potential internal verifiers should:

- hold (or be working towards) an appropriate qualification, as specified by the appropriate regulatory authority, confirming their competence to internally verify NVQ assessments,
- hold (or be working towards) an appropriate qualification, as specified by the appropriate regulatory authority, confirming their competence to verify NVQ candidates,
- have the necessary and sufficient experience of the role for which they intend to verify assessments. This experience will have provided potential verifiers with detailed knowledge of the functions described by the occupational standards that comprise the qualification.

Trainee assessors and internal verifiers must have a plan, which is overseen by the recognised assessment centre, to achieve the internal verifier qualification within an agreed timescale.

**Continuing professional development (CPD)**

Centres are expected to support their staff in ensuring that their knowledge remains current of the occupational area and of best practice in delivery, mentoring, training, assessment and verification, and that it takes account of any national or legislative developments.

**Candidate entry requirements**

Candidates should not be entered for a qualification of the same type, content and level as that of a qualification they already hold.

In addition, centres must ensure that candidates have the potential and opportunity to gain the qualifications successfully.

There are no formal entry requirements for candidates undertaking this qualification.

**Age restrictions**

These qualifications are **not** approved for use by learners under the age of 16 and City & Guilds cannot accept any registrations for candidates in this age group.
3 Course design and delivery

Initial assessment and induction
Centres will need to make an initial assessment of each candidate prior to the start of their programme to ensure they are entered for an appropriate type and level of qualification.

Recommended delivery strategies
Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification before designing a course programme.

Centres may design course programmes of study in any way which:
best meets the needs and capabilities of their candidates
satisfies the requirements of the qualification.

When designing and delivering the course programme, centres might wish to incorporate other teaching and learning that is not assessed as part of the qualification. This might include the following:

- literacy, language and/or numeracy
- personal learning and thinking skills
- personal and social development
- employment rights and responsibilities

Where applicable, this could involve enabling the candidate to access relevant qualifications covering these skills.

Recording forms
Candidates and centres may decide to use a paper-based or electronic method of recording evidence. To support the delivery of vocational qualifications we offer our own e-portfolio, Learning Assistant, an easy-to-use and secure online tool to support and evidence learners’ progress towards achieving qualifications. Further details are available at: www.cityandguilds.com/eportfolios.

Recording forms are available on the City & Guilds website. Centres may devise or customise alternative forms, which must be approved for use by the External Verifier before they are used by candidates and assessors at the centre.
4 Assessment

Summary of assessment methods
Candidates will be required to complete a portfolio of evidence for each unit.

Evidence requirements
The evidence requirements have been specified by GoSkills in their assessment strategy. The full document is available from our website. The evidence requirements have been identified for each of the units in section 5 of this handbook.

Evidence of occupational competence must be generated and collected through performance under workplace conditions. The evidence collected under these conditions must also be as naturally occurring as possible.

The optimum method of collecting evidence of a candidate's competence is by direct observation of naturally occurring activity in the workplace. This observation must be carried out by a qualified assessor. Observation of naturally occurring activity in the workplace may not be practicable. In these cases the method of collecting evidence of a candidate's competence will be by simulation. This observation must be carried out by a qualified assessor.

Simulation is permitted for use in Units 207 and 208
Assessment in simulated conditions is only permissible with the express prior consent of the External Verifier. The External Verifier is likely to allow assessment to take place in simulated conditions due to reasons of:

- Health and Safety
- confidentiality
- operational constraints
- cost
- rarity of opportunity.

Witness testimony can be gathered from a candidate's colleagues, managers, customers, suppliers, etc. They should:

- be specific to the activities or product
- give a brief description of the circumstances of the observation
- give a brief description of the background of the witness and the observed activity
- identify the aspects of the competence demonstrated.
Product evidence must be assessed in order to ensure that:

- the evidence meets the required standard,
- the candidate has followed the correct processes to generate the product,
- the evidence is authentic.

In regards to the acceptability of knowledge evidence, the optimum method of collecting evidence of a candidate’s knowledge is by oral questioning following direct observation in the workplace. This questioning must be carried out by a qualified assessor.

In section 5 of this handbook we have listed all units and identified for each one of them:

- those performance statements for which evidence must be collected by direct observation of naturally occurring activity in the workplace
- those performance statements for which evidence may be collected by a range of alternative assessment methods
- when the use of simulation is allowed.

It is important that the correct asset/component/equipment, in the correct environment, is used when assessing the learner. The rail industry is a live production environment and assessment ‘on the job’ is not suitable in all instances. The industry has provided guidance as to where an alternative is possible. To support the alternatives the following definitions have been used:

**Replication**

The asset, component or equipment is in its normal operating condition/status (as in the live environment) but any task is carried out purely for the purposes of the assessment.

An alternative is where the assessment is undertaken in the live environment but the asset, component or equipment has been modified to allow for the assessment (for example, for the replication of fault conditions).

**Simulation**

The asset component or equipment is reproduced in a protected environment, entirely separate from the live environment (for example, test rig or simulator).
5 Units

Availability of units
Below is a list of the learning outcomes for all the units. If you want to download a complete set of units, go to www.cityandguilds.com

Structure of units
These units each have the following:

- City & Guilds reference number
- unit accreditation number (UAN)
- title
- level
- credit value
- unit aim
- relationship to NOS, other qualifications and frameworks
- endorsement by a sector or other appropriate body
- information on assessment
- learning outcomes which are comprised of a number of assessment criteria
- notes for guidance.
Unit 201  Prepare to undertake duties in the rail industry

UAN: F/601/7815
Level: 2
Credit value: 2
GLH: 18
Relationship to NOS: This unit is linked to National Occupational Standards For Rail Engineering Unit P3 – Undertake Routine Maintenance of the Permanent Way
Endorsement by a sector or regulatory body: This unit is endorsed by GoSkills.

Aim: This unit is about identifying the rules, regulations, instructions and procedures that you must comply with to make sure you are fit for duty. It outlines the requirements that enable you to commence duties in a safe and knowledgeable manner and to ensure safe lines of communication within the working environment.

Learning outcome
The learner will:
1. Be able to complete personal preparation

Assessment criteria
The learner can:
1.1 Meet organisational standards for appearance and conduct
1.2 Comply with organisational procedures relating to fitness for duty
1.3 Possess the required documentation and equipment as specified by the organisation

Learning outcome
The learner will:
2. Know how to complete personal preparation

Assessment criteria
The learner can:
2.1 List the standards of appearance and conduct required by the organisation
2.2 Describe the importance of appearance, conduct and fitness in relation to the role
2.3 Describe organisational procedures relating to fitness for duty
2.4 List the type of equipment required for duty
2.5 Describe how to access and use required equipment
2.6 List the documents required when completing personal preparation
2.7 Describe the standards of behaviour required by the organisation

**Learning outcome**

The learner will:
3. Be able to prepare for duty

**Assessment criteria**

The learner can:
3.1 Communicate to the relevant person any necessary information relating to personal duties
3.2 Access and confirm information relating to the work to be undertaken
3.3 Comply with organisational procedures relating to personal safety
3.4 Complete preparations for duty within the allocated time
3.5 Complete required documents accurately and process them correctly

**Learning outcome**

The learner will:
4. Know how to prepare for duty

**Assessment criteria**

The learner can:
4.1 Describe organisational procedures relating to booking on and booking off duty
4.2 List the duties that are to be undertaken and describe organisational procedures relating to them
4.3 Describe organisational and legal requirements relevant to personal duties
4.4 List the people within the organisation who are relevant to the work role
4.5 Describe the relevant documentation completion requirements within the organisation, responsibility and those of others involved.
Unit 202  Contribute to the security of the work environment in the rail industry

UAN: L/502/6507
Level: 2
Credit value: 1
GLH: 5
Relationship to NOS: This unit is linked to GoSkills National Occupational Standard Unit 2 Contribute to the Security of the Work Environment in the Rail Industry
Endorsement by a sector or regulatory body: This unit is endorsed by GoSkills

Aim: This unit is about making sure you understand the importance of maintaining the security of the work environment. It outlines the rules, regulations and procedures which ensure a secure work environment and identifies how to respond to security breaches and emergencies which may arise.

<table>
<thead>
<tr>
<th>Learning outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>The learner will:</td>
</tr>
<tr>
<td>1. Be able to contribute to the security of the work environment in the rail industry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>The learner can:</td>
</tr>
<tr>
<td>1.1 Comply with security systems and procedures</td>
</tr>
<tr>
<td>1.2 Obtain confirmation of visitor credentials</td>
</tr>
<tr>
<td>1.3 Respond to breaches of security within the limits of own personal authority</td>
</tr>
<tr>
<td>1.4 Report any actions taken to the relevant person(s) in line with organisational procedures</td>
</tr>
<tr>
<td>Learning outcome</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>The learner will:</td>
</tr>
<tr>
<td>2. Know how to contribute to the security of the work environment in the rail industry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>The learner can:</td>
</tr>
<tr>
<td>2.1 Describe how to maintain a secure work environment</td>
</tr>
<tr>
<td>2.2 Describe organisational security procedures</td>
</tr>
<tr>
<td>2.3 List the types of security breaches that may occur</td>
</tr>
<tr>
<td>2.4 Describe the organisation's emergency situation procedures in relation to security</td>
</tr>
<tr>
<td>2.5 Describe the security systems and procedures in the local facilities and work areas</td>
</tr>
<tr>
<td>2.6 Describe the organisation’s policy for receiving visitors</td>
</tr>
<tr>
<td>2.7 Describe the limits of own authority in relation to security</td>
</tr>
</tbody>
</table>
Unit 207  Prepare small plant, measuring equipment and tools for permanent way renewal or maintenance

<table>
<thead>
<tr>
<th>UAN:</th>
<th>T/502/6372</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level:</td>
<td>2</td>
</tr>
<tr>
<td>Credit value:</td>
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</tr>
<tr>
<td>GLH:</td>
<td>7</td>
</tr>
<tr>
<td>Relationship to NOS:</td>
<td>This unit is directly linked to the GoSkills Rail Engineering NOS Unit P 8 – Prepare small plant, measuring equipment and tools for Permanent Way renewal or maintenance</td>
</tr>
<tr>
<td>Endorsement by a sector or regulatory body:</td>
<td>This unit is endorsed by GoSkills</td>
</tr>
</tbody>
</table>

Aim: The purpose of this unit is for learners to demonstrate occupational competency in preparing small plant, measuring equipment and tools for Permanent Way renewal or maintenance

Learning outcome

The learner will:
1. Be able to prepare small plant, measuring equipment and tools for permanent way renewal or maintenance

Assessment criteria

The learner can:
1.1 Set up a safe system of work in line with organisational procedures and work to the system
1.2 Obtain all the required equipment and ensure that it is in safe and usable condition
1.3 Carry out the necessary preparations to equipment in line with own organisation's procedures
1.4 Make sure that required safety arrangements are in place to protect other workers from activities likely to disrupt normal working
1.5 Report completion of preparations in line with own organisation's procedures
1.6 Deal promptly and effectively with problems within own control
1.7 Report problems that cannot be resolved in line with organisational procedures
<table>
<thead>
<tr>
<th>Learning outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>The learner will:</td>
</tr>
<tr>
<td>2. Know how to prepare small plant, measuring equipment and tools for permanent way renewal or maintenance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>The learner can:</td>
</tr>
<tr>
<td>2.1 List the organisation's procedures that define the appropriate safe system of work for the activity</td>
</tr>
<tr>
<td>2.2 Describe the methods and techniques for small plant, measuring equipment and tool preparation relevant to own role</td>
</tr>
<tr>
<td>2.3 List the types of manual, mechanical or hydraulic equipment available</td>
</tr>
<tr>
<td>2.4 Describe own organisation's procedures for the use, care and control of tools and equipment including calibration</td>
</tr>
<tr>
<td>2.5 Describe the implications of not following the policies and procedures for the use, care and control of tools and equipment</td>
</tr>
<tr>
<td>2.6 Describe the relevant reporting lines and procedures as approved by own organisation</td>
</tr>
<tr>
<td>2.7 Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity</td>
</tr>
<tr>
<td>2.8 Explain the limits of own authority and responsibility and those of others involved in the activity.</td>
</tr>
</tbody>
</table>
Unit 207  Prepare small plant, measuring equipment and tools for permanent way renewal or maintenance

Supporting information

The learner will be required to carry out equipment safety and preparation checks which will be concerned with establishing:
- Certification/calibration validity
- Wear and defects
- Suitability for task
- Environmental acceptability
- Quarantine requirements
- Fuel and lubricant levels
- Defect reporting

The equipment may be manual, mechanical, hydraulic or electrical.

The types of equipment to be prepared may include, as appropriate:
- Small powered plant (e.g. rail cutting, drilling and adjusting devices)
- Hand held permanent way tools
- Measuring equipment (gages)
- Application devices (e.g. brushes, sprays)
- Lifting tackle
- Rail tensioning equipment
- Temporary lighting
- Rail mounted plant (e.g. rail grinder, trolley, iron man)

For the assessment of 2.3 the equipment includes as appropriate:
- Hand tools
- Small plant
- Measuring equipment
- Application devices
- Lifting tackle

When assessing the unit the following points should be covered as appropriate:

**Assessment criteria 2.1**
- The organisation's safety management system
- Relevant sections of the health and safety at work act
- Control of substances hazardous to health (COSHH)
- Track access restrictions
- Track work instructions
- Task risk control sheets
- Current rule book
- Regulations for working under overhead line equipment (OHLE) and in vicinity of direct current (DC) lines
- Manual handling regulations
- Reporting of injuries, diseases and dangerous occurrences regulations (RIDDOR)
- Safety sign regulations
- Personal protective equipment (PPE)
- Health and safety at work act (HASWA)
# Unit 208

**Deal with incidents and contingencies within the railway environment**

<table>
<thead>
<tr>
<th>UAN:</th>
<th>F/502/6374</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level:</td>
<td>2</td>
</tr>
<tr>
<td>Credit value:</td>
<td>2</td>
</tr>
<tr>
<td>GLH:</td>
<td>4</td>
</tr>
<tr>
<td><strong>Relationship to NOS:</strong></td>
<td>This unit is directly linked to the GoSkills Rail Engineering NOS Unit P10 – Deal with incidents and contingencies within the railway environment</td>
</tr>
<tr>
<td><strong>Endorsement by a sector or regulatory body:</strong></td>
<td>This unit is endorsed by GoSkills</td>
</tr>
<tr>
<td><strong>Aim:</strong></td>
<td>The purpose of this unit is for learners to demonstrate occupational competency in dealing with incidents and contingencies within the railway environment</td>
</tr>
</tbody>
</table>

## Learning outcome

The learner will:
1. Be able to deal with incidents and contingencies within the railway environment

## Assessment criteria

The learner can:
1.1 Set up a safe system of work in line with organisational procedures and work to the system
1.2 Call for expert help in the event of contingencies occurring in line with organisational procedures
1.3 Take prompt and appropriate action to minimise risk of personal and third party injury as a first priority and then damage to property and equipment
1.4 Follow shutdown and evacuation procedures promptly and correctly
1.5 Deal safely with dangers that can be contained using appropriate equipment and materials, in line with organisational procedures
<table>
<thead>
<tr>
<th><strong>Learning outcome</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The learner will:</td>
</tr>
<tr>
<td>2. Know how to deal with incidents and contingencies within the railway environment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Assessment criteria</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The learner can:</td>
</tr>
<tr>
<td>2.1 List the organisation’s procedures that define the appropriate safe system of work for the activity</td>
</tr>
<tr>
<td>2.2 Describe the relevant first aid procedures that are approved by own organisation</td>
</tr>
<tr>
<td>2.3 List the relevant evacuation procedures that are approved by own organisation</td>
</tr>
<tr>
<td>2.4 Describe how to deal with the various incidents and contingencies in line with own organisation’s procedures, including:</td>
</tr>
<tr>
<td>- the advice and support to give when dealing with requests for rapid response</td>
</tr>
<tr>
<td>- communicating effectively with others</td>
</tr>
<tr>
<td>2.5 Describe how to obtain feedback on the support and advice provided</td>
</tr>
<tr>
<td>2.6 Describe own organisation’s procedures for incident and contingency reporting</td>
</tr>
<tr>
<td>2.7 Describe the relevant reporting lines and procedures as approved by own organisation</td>
</tr>
<tr>
<td>2.8 Explain the limits of own authority and responsibility and those of others involved</td>
</tr>
</tbody>
</table>
Unit 208 Deal with incidents and contingencies within the railway environment

Supporting information

The types of contingencies will be those affecting:
- Safety of the line
- Safety of life
- Safety of the environment

The actions to be taken will follow approved procedures, including as appropriate, those for:
- Broken rails
- Track distortion
- Bridge strikes
- Obstructions
- Security alert
- Fencing defects
- Unstable embankments/cuttings
- Trespass
- Contacting of emergency services
- Implementing flood procedures
- Oil spillage
- Fire
- Leaf fall procedures
- Fumes
- Adverse weather arrangements (Heat duties, Manual de-icing)
- Implement Speed Restrictions

When assessing the unit the following points should be covered as appropriate:

Assessment criterion 2.1
- The organisation's safety management system
- Relevant sections of the health and safety at work act
- Control of substances hazardous to health (COSHH)
- Track access restrictions
- Track work instructions
- Task risk control sheets
- Current rule book
- Regulations for working under overhead line equipment (OHLE) and in vicinity of direct current (DC) lines
- Manual handling regulations
- Reporting of injuries, diseases and dangerous occurrences regulations (RIDDOR)
- Safety sign regulations
- Personal protective equipment (PPE)
- Health and safety at work act (HASWA)
Unit 214 Carry out non-destructive testing of rails

UAN: L/502/6376
Level: 2
Credit value: 13
GLH: 68
Relationship to NOS: This unit is directly linked to the GoSkills Rail Engineering NOS Unit P 13 – Carry out non-destructive testing of rails
Endorsement by a sector or regulatory body: This unit is endorsed by GoSkills

Aim: The purpose of this unit is for learners to demonstrate occupational competency in carrying out non-destructive testing of rails

Learning outcome
The learner will:
1. Be able to carry out non-destructive testing of rails

Assessment criteria
The learner can:
1.1 Set up a safe system of work in line with organisational procedures and work to the system
1.2 Follow all relevant diagrams and specifications when carrying out non-destructive testing of rails
1.3 Identify the type of tests to be carried out and the types of tools and equipment to be used
1.4 Ensure equipment is calibrated as required prior to use
1.5 Follow the appropriate procedures for use of tools and equipment to carry out the required tests
1.6 Set up and carry out the tests using the correct procedures and within agreed timescales
1.7 Record the results of the tests in the appropriate format
1.8 Deal promptly with problems within own control and report those which cannot be resolved in line with organisational procedures
### Learning outcome

The learner will:

2. Know how to carry out non-destructive testing of rails

### Assessment criteria

The learner can:

2.1 List the organisation's procedures that define the appropriate safe system of work for the activity
2.2 Explain how to access and follow the relevant engineering diagrams and specifications
2.3 Describe the types of test equipment and their application(s) and limitation(s) as approved by own organisation for the testing of rails
2.4 Describe own organisation's procedures for the calibration of equipment
2.5 Describe own organisation's procedures for the care and use of tools and equipment
2.6 Describe the methods and procedures for setting up and carrying out non-destructive testing of rails
2.7 Describe the relevant reporting lines and procedures as approved by own organisation
2.8 Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity
2.9 Explain the limits of own authority and responsibility and those of others involved in the activity.
Unit 214 Carry out non-destructive testing of rails

Supporting information

The learner will know the types of tools and equipment available for rail integrity testing either by ultra-sonic or other means.

The type and complexity of tests to be carried out will be approved by their organisation and may include, as appropriate:

- The use of handheld testing equipment
- The use of trolley mounted testing equipment
- The use of train mounted testing equipment
- Reading and assessing data
- Specialised techniques
- Reporting defects

When assessing the unit the following points should be covered as appropriate:

Assessment criterion 2.1

- The organisation’s safety management system
- Relevant sections of the health and safety at work act
- Control of substances hazardous to health (COSHH)
- Track access restrictions
- Track work instructions
- Task risk control sheets
- Current rule book
- Regulations for working under overhead line equipment (OHLE) and in vicinity of direct current (DC) lines
- Manual handling regulations
- Reporting of injuries, diseases and dangerous occurrences regulations (RIDDOR)
- Safety sign regulations
- Personal protective equipment (PPE)
- Health and safety at work act (HASWA)
# Unit 301
Ensure that the rail track is fit for operational purposes following engineering activity

<table>
<thead>
<tr>
<th>UAN:</th>
<th>K/502/6398</th>
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<tbody>
<tr>
<td>Level:</td>
<td>3</td>
</tr>
<tr>
<td>Credit value:</td>
<td>4</td>
</tr>
<tr>
<td>GLH:</td>
<td>30</td>
</tr>
<tr>
<td>Relationship to NOS:</td>
<td>This unit is directly linked to the GoSkills Rail Engineering NOS Unit P33 - Ensure that the track is fit for operational purposes</td>
</tr>
<tr>
<td>Endorsement by a sector or regulatory body:</td>
<td>This unit is endorsed by GoSkills</td>
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</tbody>
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## Aim:
The purpose of this unit is for learners to demonstrate occupational competency in ensuring that the rail track is fit for operational purposes.

## Learning outcome
The learner will:
1. Be able to ensure that the rail track is fit for operational purposes following engineering activity.

## Assessment criteria
The learner can:
1.1 Set up a safe system of work in line with organisational procedures and work to the system.
1.2 Confirm that everyone involved accepts the asset is in a satisfactory condition for the hand-over to take place.
1.3 Identify and confirm any unusual features of the condition of the asset.
1.4 Make the hand-over and obtain agreement between everyone involved on the precise moment of transfer of responsibility.
1.5 Make sure that clear, accurate and complete records of the hand-over are made in line with organisational procedures.
1.6 Deal effectively with problems within the limits of own authority in line with organisational procedures.
1.7 Report the problems that cannot be resolved to the appropriate person in line with organisational procedures.
<table>
<thead>
<tr>
<th><strong>Learning outcome</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The learner will:</td>
</tr>
<tr>
<td>2. Know how to ensure that the rail track is fit for operational purposes following engineering activity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Assessment criteria</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The learner can:</td>
</tr>
<tr>
<td>2.1 List the organisation's procedures that define the appropriate safe system of work for the activity</td>
</tr>
<tr>
<td>2.2 Describe how to source and interpret engineering specifications as approved by own organisation</td>
</tr>
<tr>
<td>2.3 Explain the hand-over procedures as approved by own organisation</td>
</tr>
<tr>
<td>2.4 Explain the procedures and systems for records and documentation as approved by own organisation</td>
</tr>
<tr>
<td>2.5 Describe own organisation's methods and techniques for effective communication including the appropriate method for communicating changes</td>
</tr>
<tr>
<td>2.6 Describe the relevant reporting lines and procedures as approved by own organisation</td>
</tr>
<tr>
<td>2.7 Describe the likely impact of own work on the operations of other departments and the impact of their work on the activity</td>
</tr>
<tr>
<td>2.8 Explain the limits of own authority and responsibility and those of others involved</td>
</tr>
</tbody>
</table>
Unit 301 Ensure that the rail track is fit for operational purposes following engineering activity

Supporting information

The scale of the work could range from minor maintenance to major renewal/repair activities. This may include as appropriate:

- Raising/removing speed restrictions
- Temporary and permanent situations
- Major geometrical repair
- Removal of environmental hazards
- Maintenance works or inspections
- Track infrastructure
- Emergency inspections

When assessing the unit the following points should be covered as appropriate:

Assessment criterion 2.1

- The organisation's safety management system
- Relevant sections of the health and safety at work act
- Control of substances hazardous to health (COSHH)
- Track access restrictions
- Track work instructions
- Task risk control sheets
- Current rule book
- Regulations for working under overhead line equipment (OHLE) and in vicinity of direct current (DC) lines
- Manual handling regulations
- Reporting of injuries, diseases and dangerous occurrences regulations (RIDDOR)
- Safety sign regulations
- Personal protective equipment (PPE)
- Health and safety at work act (HASWA)

Assessment Criterion 2.3: the situations include as appropriate:

- Raising/removing speed restrictions
- Temporary and permanent situations
- Major geometrical repair
- The removal of environmental hazards
Appendix 1 Relationships to other qualifications

Literacy, language, numeracy and ICT skills development

This qualification can develop skills that can be used in the following qualifications:

- Functional Skills (England) – see www.cityandguilds.com/functionalskills
- Essential Skills (Northern Ireland) – see www.cityandguilds.com/essentialskillsni
- Essential Skills Wales – see www.cityandguilds.com/esw
Appendix 2  Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the Centres and Training Providers homepage on www.cityandguilds.com.

Centre Manual - Supporting Customer Excellence contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve ‘approved centre’ status, or to offer a particular qualification, as well as updates and good practice exemplars for City & Guilds assessment and policy issues. Specifically, the document includes sections on:

- The centre and qualification approval process
- Assessment, internal quality assurance and examination roles at the centre
- Registration and certification of candidates
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Management systems
- Maintaining records
- Assessment
- Internal quality assurance
- External quality assurance.

Our Quality Assurance Requirements encompasses all of the relevant requirements of key regulatory documents such as:

- Regulatory Arrangements for the Qualifications and Credit Framework (2008)
- SQA Awarding Body Criteria (2007)
- NVQ Code of Practice (2006)
and sets out the criteria that centres should adhere to pre and post centre and qualification approval.

Access to Assessment & Qualifications provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.
The centre homepage section of the City & Guilds website also contains useful information such as:

- **Walled Garden**: how to register and certificate candidates on line
- **Qualifications and Credit Framework (QCF)**: general guidance about the QCF and how qualifications will change, as well as information on the IT systems needed and FAQs
- **Events**: dates and information on the latest Centre events
- **Online assessment**: how to register for e-assessments.

*Centre Guide – Delivering International Qualifications* contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve ‘approved centre’ status, or to offer a particular qualification. Specifically, the document includes sections on:

- The centre and qualification approval process and forms
- Assessment, verification and examination roles at the centre
- Registration and certification of candidates
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Frequently asked questions.
Useful contacts

UK learners
General qualification information
T: +44 (0)844 543 0033
E: learnersupport@cityandguilds.com

International learners
General qualification information
T: +44 (0)844 543 0033
F: +44 (0)20 7294 2413
E: intcg@cityandguilds.com

Centres
Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results
T: +44 (0)844 543 0000
F: +44 (0)20 7294 2413
E: centresupport@cityandguilds.com

Single subject qualifications
Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change
T: +44 (0)844 543 0000
F: +44 (0)20 7294 2413
F: +44 (0)20 7294 2404 (BB forms)
E: singlesubjects@cityandguilds.com

International awards
Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports
T: +44 (0)844 543 0000
F: +44 (0)20 7294 2413
E: intops@cityandguilds.com

Walled Garden
Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems
T: +44 (0)844 543 0000
F: +44 (0)20 7294 2413
E: walledgarden@cityandguilds.com

Employer
Employer solutions, Mapping, Accreditation, Development Skills, Consultancy
T: +44 (0)121 503 8993
E: business@cityandguilds.com

Publications
Logbooks, Centre documents, Forms, Free literature
T: +44 (0)844 543 0000
F: +44 (0)20 7294 2413

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City & Guilds Group
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