

# Level 2 and 3 NVQs in Rail Engineering Track Maintenance (Permanent way) (7597)

September 2019 Version 2.0



## Qualification at a glance

<b>Subject area</b>	<b>Rail Engineering</b>
<b>City &amp; Guilds number</b>	7597-02, 12, 52, 07, 17, 27
<b>Age group approved</b>	16-18, 19+
<b>Entry requirements</b>	None
<b>Assessment</b>	Portfolio
<b>Fast track</b>	Automatic approval available
<b>Support materials</b>	Centre handbook
<b>Registration and certification</b>	Consult the City & Guilds website for information

<b>Title and level</b>	<b>GLH</b>	<b>TQT</b>	<b>City &amp; Guilds number</b>	<b>Accreditation number</b>
Level 2 NVQ Award in Rail Engineering Track Maintenance			7597-02	600/1242/0
Level 2 NVQ Certificate in Rail Engineering Track Maintenance	62	150	7597-12	600/0963/9
Level 2 NVQ Diploma in Rail Engineering Track Maintenance			7597-52	600/1076/9
Level 3 NVQ Award in Rail Engineering Track Maintenance			7597-07	600/0784/9
Level 3 NVQ Certificate in Rail Engineering Track Maintenance			7597-17	600/1195/6
Level 3 NVQ Diploma in Rail Engineering Track Maintenance			7597-27	600/1100/2

<b>Version and date</b>	<b>Change detail</b>	<b>Section</b>
1.1 Jan 2012	Amendment to RoC	<b>Introduction</b>
1.2 Feb 2012	Amendment to Centre Approval text	<b>Centre Requirements</b>
1.3 Feb 2012	Amendment to Unit 301 Credit Value	<b>Units</b>
2.0 September 2019	GLH & TQT added	To qualification





# Contents

<b>1</b>	<b>Introduction</b>	<b>6</b>
	Qualification structure	6
<b>2</b>	<b>Centre requirements</b>	<b>11</b>
	Resource requirements	11
	Candidate entry requirements	12
<b>3</b>	<b>Delivering the qualification</b>	<b>14</b>
	Initial assessment and induction	14
	Recommended delivery strategies	14
<b>4</b>	<b>Assessment</b>	<b>15</b>
	Summary of assessment methods	15
	Evidence requirements	15
<b>5</b>	<b>Units</b>	<b>17</b>
<b>Unit 201</b>	<b>Prepare to undertake duties in the rail industry</b>	<b>18</b>
<b>Unit 101</b>	<b>Undertake routine manual maintenance of the permanent way</b>	<b>20</b>
<b>Unit 102</b>	<b>Carry out corrective manual adjustments to permanent way assets</b>	<b>24</b>
<b>Unit 104</b>	<b>Reinstate the work site after permanent way engineering activities</b>	<b>27</b>
<b>Unit 202</b>	<b>Contribute to the security of the work environment in the rail industry</b>	<b>30</b>
<b>Unit 203</b>	<b>Carry out routine inspection of the permanent way</b>	<b>32</b>
<b>Unit 204</b>	<b>Assist in preparing resources for permanent way activities</b>	<b>35</b>
<b>Unit 205</b>	<b>Undertake replacement of permanent way assets and components</b>	<b>38</b>
<b>Unit 206</b>	<b>Restore track geometry faults to operational condition by the manual repair of permanent way assets and components</b>	<b>43</b>
<b>Unit 207</b>	<b>Prepare small plant, measuring equipment and tools for permanent way renewal or maintenance</b>	<b>47</b>
<b>Unit 208</b>	<b>Deal with incidents and contingencies within the railway environment</b>	<b>52</b>
<b>Unit 209</b>	<b>Lift and move permanent way materials, components and equipment</b>	<b>56</b>
<b>Unit 210</b>	<b>Monitor the performance and condition of permanent way assets</b>	<b>60</b>
<b>Unit 211</b>	<b>Restore plain line track geometry to operational condition</b>	<b>64</b>

Unit 212	Restore rail switches and crossings to operational condition	67
Unit 213	Prepare work site for permanent way engineering activities	70
Unit 228	Secure the work area during and following permanent way activities as site person in charge	73
Unit 243	Employment rights and responsibilities in the passenger transport sector	76
Unit 301	Ensure that the rail track is fit for operational purposes following engineering activity	79
Unit 303	Assess and prepare permanent way materials, components and equipment for moving on site	82
Unit 304	Undertake detailed inspection of the permanent way infrastructure	85
Unit 305	Analyse the performance and condition of permanent way assets	89
Unit 306	Gather and interpret information needed for specific permanent way engineering activities	93
Unit 307	Plan permanent way activities	96
Unit 308	Establish rail track geometry and position	100
Unit 309	Supervise the obtaining and preparing of materials and components needed for the renewal or maintenance of the permanent way	104
Unit 310	Supervise the preparation of small plant, measuring equipment and tools for permanent way renewal and maintenance	108
Unit 311	Allocate and monitor resources for specific permanent way engineering activities	112
Unit 312	Supervise the permanent way engineering work of a team on site	116
Unit 325	Implement and monitor safe working systems for permanent way activities as a protection master	119
Appendix 1	Relationships to other qualifications	123
Appendix 2	Sources of general information	124



# 1 Introduction

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

Area	Description
Who are the qualifications for?	They are for anyone working in railways engineering, including those preparing for a specialised role or management responsibility.
What do the qualifications cover?	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.
Are the qualifications part of a framework or initiative?	The Level 1 is part of the Rail Engineering Apprenticeship Framework.
What opportunities for progression are there?	Candidates who are successful will be able to progress in employment or to a range of further education and professional body qualifications. For example: <ul style="list-style-type: none"> <li>• (7597) Level 2 NVQs in Rail Engineering Track Maintenance</li> <li>• Institute of Leadership and Management qualifications</li> </ul>

## Qualification structure

To achieve the **Level 2 NVQ Award in Rail Engineering Track Maintenance**, learners must achieve **2** credits from the mandatory units and a minimum of **10** credits from the Optional Groups 1 and 2, however with no more than 3 credits from Group 1

To achieve the **Level 2 NVQ Certificate in Rail Engineering Track Maintenance**, learners must achieve **2** credits from the mandatory units and a minimum of **13** credits from the Optional Groups 1 and 2, however with no more than 6 credits from Group 1. Learners can undertake the elective Unit 243, but any credit achieved will not count towards the required minimum for the qualification.

To achieve the **Level 2 NVQ Diploma in Rail Engineering Track Maintenance**, learners must achieve **2** credits from the mandatory units and a minimum of **35** credits from the Optional Groups 1 and 2. Learners can undertake the elective Unit 243, but any credit achieved will not count towards the required minimum for the qualification.

Unit accreditation number	City & Guilds unit	Unit title	Credit value
<b>Mandatory</b>			
F/601/7815	201	Prepare to undertake duties in the rail industry	2
<b>Optional</b>		<b>Group 1</b>	
M/502/6368	101	Undertake routine manual maintenance of the permanent way	3
T/502/6369	102	Carry out corrective manual adjustments to permanent way assets	3
Y/502/6395	104	Reinstate the work site after Permanent way engineering activities	3
<b>Optional</b>		<b>Group 2</b>	
L/502/6507	202	Contribute to the security of the work environment in the rail industry	1
H/502/6366	203	Carry out routine inspection of the Permanent way	6
K/502/6370	204	Assist in preparing resources for Permanent way activities	5
K/502/6370	205	Undertake replacement of Permanent way assets and components	4
D/502/6723	206	Restore track geometry faults to operational condition by the manual repair of Permanent way assets and components	3
T/502/6372	207	Prepare small plant, measuring equipment and tools for Permanent way renewal or maintenance	1
F/502/6374	208	Deal with incidents and contingencies within the railway environment	2
J/502/6375	209	Lift and move permanent way materials, components and equipment	3
M/502/6385	210	Monitor the performance and condition of Permanent way assets	5
J/502/6389	211	Restore plain line track geometry to operational condition	5
A/502/6390	212	Restore rail switches and crossings to operational condition	5
F/502/6391	213	Prepare work site for Permanent way engineering activities	2
K/502/6398	301	Ensure that the rail track is fit for operational purposes following engineering activity	4

R/502/6394	325	Implement and monitor safe working systems for Permanent way activities as a Protection Master	8
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To achieve the **Level 3 NVQ Award in Rail Engineering Track Maintenance**, learners must achieve **3** credits from the mandatory units and a minimum of **9** credits from the Optional Groups 1 and 2, with no more than 4 credits from Group 1

To achieve the **Level 3 NVQ Certificate in Rail Engineering Track Maintenance**, learners must achieve **3** credits from the mandatory units and a minimum of **12** credits from the Optional Groups 1 and 2, with no more than 5 credits from Group 1. Learners can undertake the elective Unit 243, but any credit achieved will not count towards the required minimum for the qualification.

To achieve the **Level 3 NVQ Diploma in Rail Engineering Track Maintenance**, learners must achieve **3** credits from the mandatory units and a minimum of **34** credits from the Optional Groups 1 and 2, with no more than 15 credits from Group 1. Learners can undertake the elective Unit 243, but any credit achieved will not count towards the required minimum for the qualification.

Unit accreditation number	City & Guilds	Unit title	Credit value
<b>Mandatory</b>			
F/601/7815	201	Prepare to undertake duties in the rail industry	2
L/502/6507	202	Contribute to the security of the work environment in the rail industry	1
<b>Optional</b>		<b>Group 1</b>	
H/502/6366	203	Carry out routine inspection of the Permanent way	6
K/502/6370	205	Undertake replacement of Permanent way assets and components	4
D/502/6723	206	Restore track geometry faults to operational condition by the manual repair of Permanent way assets and components	3
F/502/6374	208	Deal with incidents and contingencies within the railway environment	2
M/502/6385	210	Monitor the performance and condition of Permanent way assets	5
J/502/6389	211	Restore plain line track geometry to operational condition	5



<b>Unit accreditation number</b>	<b>City &amp; Guilds</b>	<b>Unit title</b>	<b>Credit value</b>
A/502/6390	212	Restore rail switches and crossings to operational condition	5
F/502/6391	213	Prepare work site for Permanent way engineering activities	2
D/502/6396	228	Secure the work area during and following Permanent way activities as site person in charge	3
K/502/6398	301	Ensure that the rail track is fit for operational purposes following engineering activity	4
<b>Optional</b>		<b>Group 2</b>	
H/502/6724	303	Assess and prepare Permanent way materials, components and equipment for moving on site	6
K/502/6725	304	Undertake detailed inspection of the Permanent way infrastructure	7
Y/502/6378	305	Analyse the performance and condition of Permanent way assets	7
T/502/6386	306	Gather and interpret information needed for specific Permanent way activities	4
A/502/6387	307	Plan Permanent way activities	5
F/502/6388	308	Establish track geometry and position	5
J/502/6392	309	Supervise the obtaining and preparing of materials and components needed for the renewal or maintenance of the Permanent way	3
L/502/6393	310	Supervise the preparation of small plant, measuring equipment and tools for Permanent way renewal and maintenance	3
H/502/6397	311	Allocate and monitor resources for specific Permanent way engineering activities	2
M/502/6726	312	Supervise the engineering work of the team on site	6
R/502/6394	325	Implement and monitor safe working systems for Permanent way maintenance or renewal activities as a Protection Master	8
<b>Elective Unit</b>			

<b>Unit accreditation number</b>	<b>City &amp; Guilds</b>	<b>Unit title</b>	<b>Credit value</b>
L/602/5934	243	Employment rights and responsibilities in the passenger transport sector	3



## 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 approved for the current Level 2 NVQ in Railway Engineering (Permanent Way Renewals) Level 2 NVQ in Railway Engineering (Permanent Way Maintenance) which have been active during the last two years have already been automatically approved for this qualification so they can start registering candidates under these new qualifications immediately.

For any other cases, our general qualification approval process applies.

**Centres who wish to deliver unit 7597-325 Level 3 Implement and monitor safe working systems for permanent way maintenance or renewal activities as a protection master (8 credits) must contact their External Verifier before registering any candidates.**

### **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 Delivering the qualification

### 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.



## 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.

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

The units in these qualifications are written in a standard format and comprise 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.

<b>UAN:</b>	<b>F/601/7815</b>
<b>Level:</b>	2
<b>Credit value:</b>	2
<b>GLH:</b>	18
<b>Relationship to NOS:</b>	This unit is directly related to GoSkills National Occupational Standard Unit P1 – Maintain and develop personal knowledge, understanding and skills in the rail industry
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	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.

<b>Learning outcome</b>
The learner will:
1. Be able to complete personal preparation
<b>Assessment criteria</b>
The learner can:
1. Meet organisational standards for appearance and conduct
2. Comply with organisational procedures relating to fitness for duty
3. Possess the required documentation and equipment as specified by the organisation

<b>Learning outcome</b>
The learner will:
2. Know how to complete personal preparation
<b>Assessment criteria</b>
The learner can:
1. List the standards of appearance and conduct required by the organisation

2. Describe the importance of appearance, conduct and fitness in relation to the role
3. Describe organisational procedures relating to fitness for duty
4. List the type of equipment required for duty
5. Describe how to access and use required equipment
6. List the documents required when completing personal preparation
7. Describe the standards of behaviour required by the organisation

<b>Learning outcome</b>
The learner will: 3. Be able to prepare for duty
<b>Assessment criteria</b>
The learner can: 1. Communicate to the relevant person any necessary information relating to personal duties 2. Access and confirm information relating to the work to be undertaken 3. Comply with organisational procedures relating to personal safety 4. Complete preparations for duty within the allocated time 5. Complete required documents accurately and process them correctly

<b>Learning outcome</b>
The learner will: 4. Know how to prepare for duty
<b>Assessment criteria</b>
The learner can: 1. Describe organisational procedures relating to booking on and booking off duty 2. List the duties that are to be undertaken and describe organisational procedures relating to them 3. Describe organisational and legal requirements relevant to personal duties 4. List the people within the organisation who are relevant to the work role 5. Describe the relevant documentation completion requirements within the organisation

## Unit 101

# Undertake routine manual maintenance of the permanent way

<b>UAN:</b>	<b>M/502/6368</b>
<b>Level:</b>	<b>1</b>
<b>Credit value:</b>	<b>3</b>
<b>GLH:</b>	<b>16</b>
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P3 – Undertake Routine Maintenance of the Permanent Way
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills.
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in undertaking routine maintenance of the Permanent Way

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to undertake routine manual maintenance of the permanent way</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Follow the relevant maintenance schedules to carry out the required work</li><li>3. Carry out the maintenance activities within the limits of own personal authority</li><li>4. Carry out the maintenance activities in the specified sequence and in an agreed time scale</li><li>5. Report any instances where the maintenance activities cannot be fully met or where there are identified defects outside the planned schedule to the appropriate person</li><li>6. Complete relevant maintenance records accurately and pass them on to the appropriate person.</li></ol>

<b>Learning outcome</b>
The learner will: 2. Know how to undertake routine manual maintenance of the permanent way
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe how to follow the organisation's approved maintenance schedules and related specifications 3. List the types of maintenance activities that could be required 4. Describe how to identify and confirm the assets, equipment or components to be maintained 5. List organisational methods, techniques and procedures for maintenance of the permanent way 6. Describe the organisation's procedures for the : • recording of work carried out • component and equipment care and control 7. Describe the implications of not following the policies and procedures for the care and control of components and equipment 8. Describe how to check the maintenance activity to ensure compliance with the original specification 9. Describe the relevant approved reporting lines and procedures 10. Describe the likely impact of own work on the operations of other departments and the impact of their work on the activity 11. Explain the limits of own authority and responsibility and those of others involved.

# Unit 101 Undertake routine manual maintenance of the permanent way

## Supporting information

The learner will be expected to work within their organisation's procedures and also within the limits of their own responsibility. The assets or equipment to be maintained will be aspects of the track and its associated infrastructure. It could include the maintenance requirements for plain line, switches, drains and vegetation.

The types of maintenance activities involved will follow set procedures and must take account of track access limitations. The activities include, as appropriate:

- Tightening bolts, nuts and screws to specific requirements
- Filling and replenishing lubricators
- Cleaning out ditches, drains and catch pits
- Fixing, fitting or refitting pads, insulators, rail fastenings, fishplates and bolts
- Applying lubricants – point oiling/fishplate greasing
- Cutting back/clearing vegetation
- Removing and disposing of waste
- Boxing in ballast.

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 2.5** the methods, techniques and procedures include as appropriate:

- Method statements
- Hot weather restrictions
- Extreme weather plans
- Track work instructions
- Task risk control sheets

## Unit 102

## Carry out corrective manual adjustments to permanent way assets

<b>UAN:</b>	T/502/6369
<b>Level:</b>	1
<b>Credit value:</b>	3
<b>GLH:</b>	16
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P4 – Carry out Routine Adjustments to Permanent Way Assets
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency to carry out routine adjustments to Permanent Way assets

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to carry out corrective manual adjustments to permanent way assets</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work for the activity in line with organisational procedures and work to the system</li><li>2. Follow the appropriate schedules and related specifications for the asset/component being adjusted</li><li>3. Carry out required adjustments in the specified sequence and in an agreed timescale within limits of own authority in line with organisational requirements</li><li>4. Confirm that the adjusted asset/component meets the required operating specification</li><li>5. Report instances where the asset/component fails to meet the required operational specification after adjustments or where there are identified defects outside the required adjustments</li><li>6. Ensure all required documentation is processed accurately in line with organisational procedures</li></ol>



<b>Learning outcome</b>
The learner will: 2. Know how to carry out corrective manual adjustments to permanent way assets
<b>Assessment criteria</b>
The learner can: 1. List the relevant Health and Safety legislation, regulations and safe working practices appropriate to the activity and organisation 2. Describe how to follow maintenance schedules and related specifications as approved by own organisation 3. Describe the methods, techniques and procedures for the adjustment of permanent way assets and components including <ul style="list-style-type: none"> <li>• method statements</li> <li>• risk assessments</li> <li>• hot weather precaution plans</li> <li>• extreme weather plans</li> <li>• emergency preparedness plans</li> </ul> 4. Describe the types of maintenance records and documentation procedures required by own organisation 5. Describe the organisation's procedures for the use, care and control of tools and equipment including calibration and the implications of not following these procedures 6. Describe the waste disposal procedures and whom to apply to for authorisation 7. Describe the relevant reporting lines and procedures relating to carrying out routine adjustments to permanent way assets within own organisation 8. Describe the impact of the activity on the operations of other departments and their impact on the activity 9. Explain the limits of own authority and responsibility when carrying out routine adjustments to permanent way assets

## Unit 102                      Carry out corrective manual adjustments to permanent way assets

### Supporting information

The type of asset or component to be worked on will be that associated with plain line switches and crossings involving a single stage process.

The type and complexity of adjustments to be made, including as appropriate:

- Rail adjustment and regulation
- Adjustment switch setting
- Sleeper spacing and squaring
- Ballast re-profiling and boxing-in
- Operational support for Stressing rails
- Operational support for Straightening of rail ends
- Operational support for point testing
- Conductor rail (pots, anchors)

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 104

## Reinstate the work site after permanent way engineering activities

<b>UAN:</b>	Y/502/6395
<b>Level:</b>	1
<b>Credit value:</b>	3
<b>GLH:</b>	16
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards for Rail Engineering Unit P29 - Secure the Work Area During and Following Permanent Way Maintenance or Renewal Activities
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in reinstating the work area after Permanent Way engineering activities

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to reinstate the work site after permanent way engineering activities</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Reinstate the work site to a safe condition in accordance with agreed requirements and schedules</li><li>3. Separate equipment, components, and materials for re-use from waste items and materials</li><li>4. Store reusable materials and equipment in an appropriate location</li><li>5. Identify, mark and secure any scrap material that cannot be removed immediately in such a way that the safe operation of the railway is maintained</li><li>6. Check that all materials and equipment that cannot be removed are secured and stored where they do not interfere with the safe operation of the railway</li><li>7. Dispose of waste materials in line with own organisation's procedures</li></ol>

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| 8. Deal with problems within own control promptly and report those that can not be resolved in line with organisational procedures |
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<b>Learning outcome</b>
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The learner will:
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| 2. Know how to reinstate the work site after permanent way engineering activities |
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<b>Assessment criteria</b>
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The learner can:
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| 1. List the organisation's procedures that define the appropriate safe system of work for the activity  |
| 2. Describe the requirements for reinstating the work site  |
| 3. Describe how to identify items for re-use and/or waste items   |
| 4. List the types of materials and equipment that can be stored   |
| 5. Describe own organisation's methods and procedures for storing materials and equipment   |
| 6. Describe the different types and methods of waste disposal procedures in own organisation  |
| 7. Describe reporting lines and procedures that are approved by own organisation including knowing whom to approach for authorisation to dispose of waste |
| 8. Explain the limits of own authority and responsibility and those of others involved in the activity  |

## Unit 104 Reinstatement the work site after permanent way engineering activities

### Supporting information

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 202

## Contribute to the security of the work environment in the rail industry

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

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to contribute to the security of the work environment in the rail industry</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Comply with security systems and procedures</li><li>2. Obtain confirmation of visitor credentials</li><li>3. Respond to breaches of security within the limits of own personal authority</li><li>4. Report any actions taken to the relevant person(s) in line with organisational procedures</li></ol>

<b>Learning outcome</b>
The learner will: 2. Know how to contribute to the security of the work environment in the rail industry
<b>Assessment criteria</b>
The learner can: 1. Describe how to maintain a secure work environment 2. Describe organisational security procedures 3. List the types of security breaches that may occur 4. Describe the organisation's emergency situation procedures in relation to security 5. Describe the security systems and procedures in the local facilities and work areas 6. Describe the organisation's policy for receiving visitors 7. Describe the limits of own authority in relation to security

## Unit 203

## Carry out routine inspection of the permanent way

<b>UAN:</b>	H/502/6366
<b>Level:</b>	2
<b>Credit value:</b>	6
<b>GLH:</b>	40
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P1 – Carry Out Routine Inspection of the Permanent Way Infrastructure
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in carrying out routine inspection of the rail permanent way infrastructure.

<b>Learning outcome</b>
The learner will: 1. Be able to carry out routine inspection
<b>Assessment criteria</b>
The learner can: 1. Set up a safe system of work in line with organisational procedures and work to the system 2. Follow the correct specification for the product or equipment being inspected 3. Identify and confirm the inspection checks to be made and acceptance criteria to be used 4. Carry out all required visual inspections safely 5. Identify any defects or variations from the specification of the product or equipment being inspected 6. Record the results of the inspection in the appropriate format 7. Deal with problems within own area of control promptly in line with organisational procedures 8. Report problems that cannot be resolved to the appropriate person



<b>Learning outcome</b>
The learner will: 2. Know how to carry out routine inspection
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe what constitutes the track or line side environment as defined by own organisation 3. Describe the operational and environmental constraints on the organisation that could occur whilst undertaking visual inspections including: Open to traffic, Closed to traffic, Restricted track access, Day work/night work 4. Describe the organisation's methods and techniques for inspection relevant to own role 5. Describe what constitutes a defect or variation to the permanent way infrastructure 6. Describe how to identify defects and variations in products, equipment or systems by visual means 7. Describe the circumstances in which immediate action is required 8. Describe what quality control systems and documentation procedures are required by own organisation 9. Describe the relevant reporting lines and procedures as approved by own organisation

## Unit 203                      Carry out routine inspection of the permanent way

### Supporting information

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 204

## Assist in preparing resources for permanent way activities

<b>UAN:</b>	K/502/6367
<b>Level:</b>	2
<b>Credit value:</b>	5
<b>GLH:</b>	12
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P2 - Assist in Preparing Resources For Permanent Way Activities
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in assisting in planning resources for permanent way activities

<b>Learning outcome</b>
The learner will: 1. Be able to prepare resources to meet a plan
<b>Assessment criteria</b>
The learner can: 1. Set up a safe system of work for the activity in line with organisational procedures and work to this system 2. Identify the resources to be used to meet the plan 3. Demonstrate sufficient resources are available to meet the plan 4. Prepare resources for permanent way activities in line with the plan 5. Take action when changes to the planned use of resources arise 6. Report completion of activities in line with the organisation's procedures

<b>Learning outcome</b>
The learner will: 2. Know how to prepare resources to meet a plan
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe the types of resources available for permanent way

activities including:

- documentation
  - tools and equipment
  - materials, assets components
  - communications equipment
  - personnel
3. Describe how to obtain up to date information on engineering activities and the resources required
  4. Explain how to obtain up to date documentation on the resources to be used
  5. Describe own organisation's procedures on the care and use of resources including:
    - Identification
    - Calibration
  6. Describe how to follow schedules and instructions when preparing resources to meet a plan
  7. Describe how the planned use of resources could alter and the implications that may follow
  8. Describe the relevant reporting lines and procedures as approved by own organisation when preparing resources to meet a plan
  9. Explain the limits of own authority and those of others involved in preparing resources

## **Unit 204            Assist in preparing resources for permanent way activities**

### Supporting information

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 205

## Undertake replacement of permanent way assets and components

<b>UAN:</b>	K/502/6370
<b>Level:</b>	2
<b>Credit value:</b>	4
<b>GLH:</b>	24
<b>Relationship to NOS:</b>	This unit is linked to the National Occupational Standards For Rail Engineering Unit P5 – Undertake Replacement of Permanent Way Assets and Components
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in undertaking replacement of Permanent Way assets and components

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to undertake replacement of permanent way assets and components</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work for the activity in line with organisational procedures and work to the system</li><li>2. Follow the appropriate engineering diagrams and related specifications for the components/asset being replaced</li><li>3. Obtain all the required components and ensure that they are in a suitable condition for replacement and fit for purpose</li><li>4. Ensure that any replacement components used meet the required specification</li><li>5. Prevent damage to components, tools and equipment during replacement</li><li>6. Replace the components in the correct sequence using appropriate tools and techniques</li><li>7. Make necessary settings or adjustments to the components to ensure they will function correctly</li><li>8. Deal promptly with problems within own control and report those that cannot be resolved</li></ol>

9. Maintain documentation in line with own organisation's procedures

<b>Learning outcome</b>
The learner will: 2. Know how to undertake replacement of permanent way assets and components
<b>Assessment criteria</b>
The learner can: 1. List the relevant health and safety legislation, regulations and safe working practices appropriate to the activity and organisation 2. Describe how to follow engineering diagrams and related specifications as approved by own organisation 3. Describe the methods and techniques for component and asset replacement appropriate to own role 4. Describe the methods and techniques for ensuring that components meet the required specification 5. Explain how defects in components can affect the performance of the permanent way assets 6. Describe the methods and techniques for handling equipment including: <ul style="list-style-type: none"> <li>• manual handling</li> <li>• mechanical handling</li> <li>• use of small tools</li> <li>• equipment handling</li> </ul> 7. Describe the organisation's procedures for the use, care and control of tools and equipment including calibration 8. Describe the organisation's approved relevant reporting lines and procedures 9. Describe the impact of the activity on other departments and the impact of their actions on the activity 10. Explain the limits of own authority and responsibility and those of others involved



# Unit 205 Undertake replacement of permanent way assets and components

## Supporting information

The type of asset to be worked on will be either plain line or switches and crossings equipment and associated fastenings. The type of components to be replaced in respect of either plain line or switches and crossings, including as appropriate:

- Ballast (wet beds)
- Rails
- Sleeper/bearers
- Drains
- Fastenings
- Insulations
- Chairs and base plates
- Fish-plated joints
- Welded joints (preparatory work)
- Lubricators

The assembly methods and techniques to be used will either be manual and mechanical methods and may include the use of small plant and equipment. The complexity of the assembly operations will be influenced by:

- Track configuration
- Using variable/diverse sources of information
- Track stability
- Environmental procedures

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 206

# Restore track geometry faults to operational condition by the manual repair of permanent way assets and components

<b>UAN:</b>	D/502/6723
<b>Level:</b>	2
<b>Credit value:</b>	3
<b>GLH:</b>	18
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P7 - Restore Track Geometry to Operational Condition by the Manual Repair of Permanent Way Assets
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in restoring track geometry to operational condition by the manual repair of Permanent Way assets and components

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to restore track geometry faults to operational condition by the manual repair of permanent way assets and components</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Identify the asset to be restored</li><li>3. Follow the relevant specifications for the track to be repaired</li><li>4. Prepare the track for repair</li><li>5. Carry out the repairs within agreed timescale using approved materials and components, methods and procedures</li><li>6. Ensure that the repaired track meets the specified operating conditions</li><li>7. Produce accurate and complete records of all repair work carried out in line with organisational procedures</li></ol>

<b>Learning outcome</b>
The learner will: 2. Know how to restore track geometry faults to operational condition by the manual repair of permanent way assets and components
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe how to access and follow the related engineering specifications as approved by own organisation for the components concerned 3. Describe the methods and techniques for track repair including those that are temporary and permanent 4. Describe own organisation's procedures for the use, care and control of tools and equipment including calibration 5. Describe how incorrectly repaired track can affect the safety and performance of the permanent way 6. Describe the maintenance recording and documentation procedures for track as approved by own organisation, including paper based records, computer based records 7. Describe the relevant reporting lines and procedures as approved by own organisation 8. Describe the likely impact of the work on the operations of other departments and the impact of their work on the activity 9. Explain the limits of own authority and responsibility and those of others involved in the activity

## Unit 206                      Restore track geometry faults to operational condition by the manual repair of permanent way assets and components

### Supporting information

The learner will be expected to work to within their organisation's approved procedures and specifications and will be responsible for the quality of their work within the limits of their responsibility.

The type of asset to be repaired will be on plain line

The learner will be able to deal with basic manual track repairs as defined by the organisations standards and procedures

The complexity of repairs to be carried out will be influenced by geometrical tolerances and clearances.

This will involve measuring using tapes and gauges. The repairs may include, as appropriate:

- Manual lifting and packing
- Restoring gauge
- Restoring alignment
- Fitting packings

The quality standards and accuracy to be achieved will be as approved by the learners organisation and the manufacturer and must include restoring components to within operational tolerances.

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 207

## Prepare small plant, measuring equipment and tools for permanent way renewal or maintenance

<b>UAN:</b>	T/502/6372
<b>Level:</b>	2
<b>Credit value:</b>	1
<b>GLH:</b>	7
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P8 - Prepare Small Plant, Measuring Equipment and Tools for Permanent Way Renewal or Maintenance
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	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

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to prepare small plant, measuring equipment and tools for permanent way renewal or maintenance</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Obtain all the required equipment and ensure that it is in safe and usable condition</li><li>3. Carry out the necessary preparations to equipment in line with own organisation's procedures</li><li>4. Make sure that required safety arrangements are in place to protect other workers from activities likely to disrupt normal working</li><li>5. Report completion of preparations in line with own organisation's procedures</li><li>6. Deal promptly and effectively with problems within own control</li><li>7. Report problems that cannot be resolved in line with organisational procedures</li></ol>





<b>Learning outcome</b>
The learner will: 2. Know how to prepare small plant, measuring equipment and tools for permanent way renewal or maintenance
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe the methods and techniques for small plant, measuring equipment and tool preparation relevant to own role 3. List the types of manual, mechanical or hydraulic equipment available 4. Describe own organisation's procedures for the use, care and control of tools and equipment including calibration 5. Describe the implications of not following the policies and procedures for the use, care and control of tools and equipment 6. Describe the relevant reporting lines and procedures as approved by own organisation 7. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity 8. Explain the limits of own authority and responsibility and those of others involved in the activity.

## 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 (eg rail cutting, drilling and adjusting devices)
- Hand held permanent way tools
- Measuring equipment (gauges)
- Application devices (eg brushes, sprays)
- Lifting tackle
- Rail tensioning equipment
- Temporary lighting
- Rail mounted plant (eg 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 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 208

## Deal with incidents and contingencies within the railway environment

<b>UAN:</b>	<b>F/502/6374</b>
<b>Level:</b>	2
<b>Credit value:</b>	2
<b>GLH:</b>	4
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P10 - Deal with Incidents and Contingencies within the Railway Environment
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in dealing with incidents and contingencies within the railway environment

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to deal with incidents and contingencies within the railway environment</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Call for expert help in the event of contingencies occurring in line with organisational procedures</li><li>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</li><li>4. Follow shutdown and evacuation procedures promptly and correctly</li><li>5. Deal safely with dangers that can be contained using appropriate equipment and materials, in line with organisational procedures</li></ol>

<b>Learning outcome</b>
The learner will: 2. Know how to deal with incidents and contingencies within the railway environment
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe the relevant first aid procedures that are approved by own organisation 3. List the relevant evacuation procedures that are approved by own organisation 4. Describe how to deal with the various incidents and contingencies in line with own organisation's procedures, including: <ul style="list-style-type: none"> <li>• the advice and support to give when dealing with requests for rapid response</li> <li>• communicating effectively with others</li> </ul> 5. Describe how to obtain feedback on the support and advice provided 6. Describe own organisation's procedures for incident and contingency reporting 7. Describe the relevant reporting lines and procedures as approved by own organisation 8. Explain the limits of own authority and responsibility and those of others involved

# 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 209

## Lift and move permanent way materials, components and equipment

<b>UAN:</b>	<i>J/502/6375</i>
<b>Level:</b>	2
<b>Credit value:</b>	3
<b>GLH:</b>	20
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P12 - Lift and Move Permanent Way Materials, Components and Equipment
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in lifting and moving Permanent Way materials, components and equipment

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to lift and move permanent way materials, components and equipment</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Confirm all necessary documentation is in place prior to movement of the load</li><li>3. Check the moving equipment to ensure the weight of the load is evenly distributed</li><li>4. Attach the appropriate handling equipment securely to the load, using approved methods to eliminate slippage</li><li>5. Confirm that the load is secure before moving</li><li>6. Move the load over the selected, suitable route</li><li>7. Position and release the load safely in its intended final location</li></ol>



<b>Learning outcome</b>
The learner will: 2. Know how to lift and move permanent way materials, components and equipment
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Explain how to confirm the documentation required for the movement of a load is in place 3. Describe how to check for, and what constitutes, an uneven load 4. Describe the methods and techniques for securing loads, including, how to eliminate slippage 5. List the methods and techniques for moving loads 6. Describe how to identify and use relevant lifting, moving and handling equipment 7. Describe the methods and techniques for load assessment 8. Describe the methods and techniques to determine a suitable route 9. Describe own organisation's procedures for the use, care and control of handling equipment, including calibration requirements 10. Describe how to check and confirm the load is safely in its final location 11. Describe the methods and techniques for the safe release of the load 12. Describe the relevant reporting lines and procedures as approved by own organisation 13. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity 14. Explain the limits of own authority and responsibility and those of others involved

## Unit 209                    Lift and move permanent way materials, components and equipment

### Supporting information

The moving methods and techniques to be used are manual or mechanical with the aid of lifting devices and considerations must be given to the nature of the load and its final destination. In order to lift, move and handle loads and equipment the learner must understand the level and extent of their authority and responsibility. The type of moving, lifting and handling equipment to be used must be appropriate for the load to be moved.

The type and characteristics of the load to be moved are those associated with loads of an unwieldy nature, with an uneven weight distribution, and of irregular shape. Some will be robust and some will be fragile, including as appropriate:

- Rails
- Switches and crossings
- Bearers
- Sleepers
- Ballast
- Associated fastenings

The final location of the load will be in the approved safe location. This location must ensure that there is little or no chance of damage to the load and that the load does not cause a hazard to people and train/vehicle movements.

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 2.2**

The documentation includes as appropriate:

- Licence and/or permit
- Lifting plan

**Assessment criterion 2.5**

The equipment includes as appropriate:

- Chains
- Straps
- Beams
- Sleeper lifting devices

**Assessment criterion 2.7**

The assessments methods/techniques include as appropriate:

- Observational means
- Load assessment devices
- Weight charts
- Tolerance devices
- Gauging devices

**Assessment criterion 2.8**

The methods include as appropriate:

- Visual inspection
- Clearances and tolerances
- Load bearing capacities
- Angle of repose

## Unit 210

# Monitor the performance and condition of permanent way assets

<b>UAN:</b>	<b>M/502/6385</b>
<b>Level:</b>	2
<b>Credit value:</b>	5
<b>GLH:</b>	32
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P17 - Monitor the Performance and Condition of Permanent Way Assets
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in monitoring the performance and condition of Permanent Way assets

<b>Learning outcome</b>
The learner will: 1. Be able to monitor the performance and condition of permanent way assets
<b>Assessment criteria</b>
The learner can: 1. Set up a safe system of work in line with organisational procedures and work to the system 2. Set up correctly and check the monitoring equipment in line with organisation procedures, including calibrating as appropriate 3. Carry out the monitoring activities effectively with minimum disruption to normal activities 4. Record and review the outcomes and take action in line with organisational procedures

<b>Learning outcome</b>
The learner will: 2. Know how to monitor the performance and condition of permanent way assets
<b>Assessment criteria</b>
The learner can:

1. List the organisation's procedures that define the appropriate safe system of work for the activity
2. Describe how to source and interpret information and document systems relevant to the engineering activity
3. Describe how to access and interpret the performance requirements of engineering assets
4. Describe the methods and procedures for monitoring engineering assets including how to minimise disruption to the operation of the railway
5. Explain when and why the monitoring of the performance and condition of the permanent way takes place
6. List the range of monitoring equipment available
7. Describe the methods and techniques for analysing the types of monitoring information obtained
8. Describe own organisation's procedures for the care and control of equipment including calibration
9. Explain the importance of equipment calibration and authorisation procedures for the care and use of the equipment
10. Describe own organisation's procedures for the setting, care and control of monitoring equipment
11. Describe the relevant reporting lines and procedures as approved by own organisation
12. Explain the limits of own authority and responsibility and those of others involved in the activity.

## Unit 210                      Monitor the performance and condition of permanent way assets

### Supporting information

The types of assets to be monitored may include as appropriate:

- Plain line (eg side-wear, corrosion)
- Switches and crossings
- Track substructure
- Off track structures

The manual measuring methods may include the use of gauges and other relevant equipment for:

- Measurement
- Static and dynamic tests
- Friction monitoring

The monitoring conditions or operating environment may include as appropriate:

- Open to traffic
- Closed to traffic
- Restricted track access
- Daytime
- Night time

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 211

# Restore plain line track geometry to operational condition

<b>UAN:</b>	<b>J/502/6389</b>
<b>Level:</b>	2
<b>Credit value:</b>	5
<b>GLH:</b>	24
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P21 - Restore Plain Line Track Geometry to Operational Condition
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in restoring plain line track geometry to operational condition

<b>Learning outcome</b>
The learner will: 1. Be able to restore plain line track geometry to operational condition
<b>Assessment criteria</b>
The learner can: 1. Set up a safe system of work in line with organisational procedures and work to the system 2. Source and interpret the relevant specifications 3. Prepare the worksite for repair 4. Carry out the repairs within agreed timescales using approved materials and components, methods and procedures 5. Ensure that the repaired asset meets the specified operating conditions 6. Produce accurate and complete records of all repair work carried out



<b>Learning outcome</b>
The learner will: 2. Know how to restore plain line track geometry to operational condition
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe how to source and interpret engineering specifications as approved by own organisation 3. Describe the methods, techniques and procedures for worksite repair as approved by own organisation including those that are both temporary and permanent 4. Describe how incorrectly repaired plain line can affect the safety and performance of the permanent way 5. Describe own organisation's procedures for the care and control of mechanised equipment, including calibration requirements 6. Describe own organisation's procedures for recording maintenance activities, including both paper based and computer based 7. Describe own organisation's methods and techniques for ensuring that repaired assets meet the specified operational conditions 8. Describe the importance of carrying out repair activities in the specified sequence and agreed timescale 9. Describe the relevant reporting lines and procedures as approved by own organisation 10. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity 11. Explain the limits of own authority and responsibility and those of others involved

## Unit 211                      Restore plain line track geometry to operational condition

### Supporting information

The learner must be able to mark out and carry out repairs on all types of track including those with steel, concrete and wood bearers. Dimensional clearances must be taken into account at all times. The nature of the repairs using manual equipment may include as appropriate:

- Top
- Alignment
- Cross level
- Track gauge

The type of assets to be repaired will be:

- Plain line

The quality standards and accuracy to be achieved will be approved by the learner's organisation and the manufacturer and must include restoring components to within operational tolerances.

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 212

## Restore rail switches and crossings to operational condition

<b>UAN:</b>	A/502/6390
<b>Level:</b>	2
<b>Credit value:</b>	5
<b>GLH:</b>	24
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P22 - Restore Switches and Crossings to Operational Condition
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in restoring rail switches and crossings to operational condition

<b>Learning outcome</b>
The learner will: 1. Be able to restore rail switches and crossings to operational condition
<b>Assessment criteria</b>
The learner can: 1. Set up a safe system of work in line with organisational procedures and work to the system 2. Source and interpret the relevant specifications 3. Prepare the worksite for repair 4. Carry out the repairs within agreed timescales using approved materials and components, methods and procedures 5. Ensure that the repaired asset meets the specified operating conditions 6. Produce accurate and complete records of all repair work carried out

<b>Learning outcome</b>
The learner will: 2. Know how to restore rail switches and crossings to operational condition
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe how to source and interpret engineering specifications as approved by own organisation 3. Describe the methods, techniques and procedures for worksite repair as approved by own organisation including those that are both temporary and permanent 4. Describe how incorrectly repaired switches and crossings can affect the safety and performance of the permanent way 5. Describe own organisation's procedures for the care and control of mechanised equipment, including calibration requirements 6. Describe own organisation's procedures for recording maintenance activities, including both paper based and computer based 7. Describe own organisation's methods and techniques for ensuring that repaired assets meet the specified operational conditions 8. Describe the importance of carrying out repair activities in the specified sequence and agreed timescale 9. Describe the relevant reporting lines and procedures as approved by own organisation 10. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity 11. Explain the limits of own authority and responsibility and those of others involved

## Unit 212                    Restore rail switches and crossings to operational condition

### Supporting information

The learner must be able to mark out and carry out repairs on all types of track including those with steel, concrete and wood bearers. Dimensional clearances must be taken into account at all times. The nature of the repairs using manual equipment may include as appropriate:

- Top
- Alignment
- Cross level
- Track gauge

The type of assets to be repaired will be:

- Switches and crossings

The quality standards and accuracy to be achieved will be approved by the learner's organisation and the manufacturer and must include restoring components to within operational tolerances.

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 213

## Prepare work site for permanent way engineering activities

<b>UAN:</b>	<b>F/502/6391</b>
<b>Level:</b>	2
<b>Credit value:</b>	2
<b>GLH:</b>	12
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P23 - Prepare Work Areas for Permanent Way Engineering Activities
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in preparing work areas for Permanent Way engineering activities

<b>Learning outcome</b>
The learner will: 1. Be able to prepare work site for permanent way engineering activities
<b>Assessment criteria</b>
The learner can: 1. Set up a safe system of work in line with organisational procedures and work to the system 2. Ensure that the work environment is suitable for the work activities to be undertaken 3. Ensure that all necessary service supplies are connected and ready for use 4. Prepare the work site so that they are ready for the engineering activities to be carried out 5. Make sure that required safety arrangements are in place to protect other workers from activities likely to disrupt normal working 6. Report completion of preparations in line with organisational procedures 7. Deal promptly with problems within own control in line with organisational procedures 8. Report the problems which cannot be resolved in line with organisational procedures

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>2. Know how to prepare work site for permanent way engineering activities</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. List the organisation's procedures that define the appropriate safe system of work for the activity</li><li>2. Describe the methods and procedures for preparing the work site</li><li>3. Describe the consequences of not preparing work site correctly</li><li>4. Describe own organisation's procedures relating to service supply and connection</li><li>5. Describe the relevant reporting lines and procedures as approved by own organisation</li><li>6. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity</li><li>7. Explain the limits of own authority and responsibility and those of others involved in the activity</li></ol>

# Unit 213 Prepare work site for permanent way engineering activities

## Supporting information

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 2.2

The methods and procedures include as appropriate:

- Your organisation's procedures
- Local policies and procedures
- Site security and safety
- Surface preparation
- Site access and egress
- Safety signs
- Water provision
- Power and lighting
- Toilets and hygiene facilities
- Storage areas
- Accommodation
- Identification and protection arrangements for all services including those that are buried
- Notifying neighbouring residents and businesses



## Unit 228

# Secure the work area during and following permanent way activities as site person in charge

<b>UAN:</b>	D/502/6396
<b>Level:</b>	2
<b>Credit value:</b>	3
<b>GLH:</b>	18
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P29 - Secure the Work Area During and Following Permanent Way Maintenance or Renewal Activities
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in securing the work area during and following Permanent Way activities

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to secure the work area during and following permanent way activities as site person in charge</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Confirm the work area is secure during maintenance or renewal activities</li><li>3. Establish and maintain a secure environment where tools, equipment and materials can be stored</li><li>4. Establish a safe and secure storage area for the placement of waste materials for later collection</li><li>5. Restore the work areas to a safe and suitable condition in accordance with agreed requirements and schedules</li><li>6. Withdraw safely all possession and protection measures in line with organisational procedures</li><li>7. Confirm the work area is secured on completion of the work</li><li>8. Deal promptly with problems within own control in line with</li></ol>

organisational procedures 9. Report the problems that cannot be resolved to the appropriate person in line with organisational procedures
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<b>Learning outcome</b>
The learner will: 2. Know how to secure the work area during and following permanent way activities as site person in charge
<b>Assessment criteria</b>
The learner can: 1. List the organisation’s procedures that define the appropriate safe system of work for the activity 2. Explain the relevant railway possession and protection arrangements for the work site and equipment to provide a safe system of work 3. Explain how to check the relevant railway possession and protection arrangements for the work site have been withdrawn 4. Describe the work area security requirements and how to confirm that these are in place 5. Describe the implications of not securing the work area. 6. Describe the requirements for work area restoration as approved by own organisation 7. Describe own organisation’s procedures for storing material and equipment 8. Describe own organisation’s procedures for the disposal of waste materials 9. Describe the relevant reporting lines and procedures as approved by own organisation 10. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity 11. Explain the limits of own authority and responsibility and those of others involved

## Unit 228                      Secure the work area during and following permanent way activities as site person in charge

### Supporting information

The learner's assessed activities must include the marking and locating of waste material for later collection, and the securing and segregating of plant and equipment.

The nature and complexity of work areas to be secured will be within the boundaries of the site and must take account of:

- Access and egress requirements (to include isolated and distant locations)
- Location of the site (rural and urban issues)
- Restricted spaces (eg tunnels, bridges)

The resources to be stored may include:

- Tools, plant and equipment
- Materials
- Consumables

The disposal of hazardous and non-hazardous materials will include all handleable items that require storage and/or removal at a later date.

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 243

## Employment rights and responsibilities in the passenger transport sector

<b>UAN:</b>	L/602/5934
<b>Level:</b>	2
<b>Credit value:</b>	3
<b>GLH:</b>	18
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate understanding of employer and employee statutory rights and responsibilities within own organisation and industry under Employment Law.

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Know employment rights and responsibilities of the employee and employer</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Identify the main points of legislation affecting employers and employees and their purpose relevant to own role, organisation and within own industry</li><li>2. Identify where to find information and advice on employment rights and responsibilities both internally in own organisation and externally</li><li>3. Identify sources of information and advice on own industry, occupation, training and own career pathway</li><li>4. Identify sources of information on the different types of representative bodies related to own industry and their main roles and responsibilities</li><li>5. Identify any issues of public concern that may affect own organisation and own industry</li></ol>

<b>Learning outcome</b>
The learner will: 2. Understand employment rights and responsibilities and how these affect organisations
<b>Assessment criteria</b>
The learner can: 1. Describe organisational procedures, policies and codes of practice used by own organisation on employment rights and responsibilities 2. Explain the purpose of following health, safety and other procedures and the effect on own organisation if they are not followed 3. Describe employer and employee responsibilities for equality and diversity within own organisation 4. Explain the benefits of making sure equality and diversity procedures are followed 5. Describe the career pathways available within own organisation and own industry

## **Unit 243            Employment rights and responsibilities in the passenger transport sector**

### **Supporting information**

#### **Evidence requirements**

You must provide your assessor with evidence for all the learning outcomes and assessment criteria. The evidence must be provided in the following ways taking into account any of the special considerations below.

#### **Special considerations:**

This unit should be assessed predominately in the workplace. Observation, witness testimony, questioning, professional discussion, written and product evidence are all sources of evidence which can be used.

## Unit 301

# Ensure that the rail track is fit for operational purposes following engineering activity

<b>UAN:</b>	K/502/6398
<b>Level:</b>	3
<b>Credit value:</b>	4
<b>GLH:</b>	30
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P33 - Ensure that the Track is Fit for Operational Purposes
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in ensuring that the rail track is fit for operational purposes

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to ensure that the rail track is fit for operational purposes following engineering activity</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Confirm that everyone involved accepts the asset is in a satisfactory condition for the hand-over to take place</li><li>3. Identify and confirm any unusual features of the condition of the asset</li><li>4. Make the hand-over and obtain agreement between everyone involved on the precise moment of transfer of responsibility</li><li>5. Make sure that clear, accurate and complete records of the hand-over are made in line with organisational procedures</li><li>6. Deal effectively with problems within the limits of own authority in line with organisational procedures</li><li>7. Report the problems that cannot be resolved to the appropriate person in line with organisational procedures</li></ol>

<b>Learning outcome</b>
The learner will: 2. Know how to ensure that the rail track is fit for Operational purposes following engineering activity
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe how to source and interpret engineering specifications as approved by own organisation 3. Explain the hand-over procedures as approved by own organisation 4. Explain the procedures and systems for records and documentation as approved by own organisation 5. Describe own organisation's methods and techniques for effective communication including the appropriate method for communicating changes 6. Describe the relevant reporting lines and procedures as approved by own organisation 7. Describe the likely impact of own work on the operations of other departments and the impact of their work on the activity 8. Explain the limits of own authority and responsibility and those of others involved



# 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

## Unit 303

## Assess and prepare permanent way materials, components and equipment for moving on site

<b>UAN:</b>	H/502/6724
<b>Level:</b>	3
<b>Credit value:</b>	6
<b>GLH:</b>	26
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P11 - Assess and Prepare Permanent Way Materials, Components and Equipment for Moving
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in assessing and preparing Permanent Way materials, components and equipment for moving

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to assess and prepare permanent way materials, components and equipment for moving on site</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Calculate the weight of the load to be moved</li><li>3. Determine the characteristics of the load to be moved</li><li>4. Define the method and select suitable equipment to move the load</li><li>5. Assess the equipment to be used to confirm it is capable of moving the load safely</li><li>6. Establish a suitable route for moving the load minimising risk to people and property on site</li><li>7. Ensure that the load can be secured and protected before moving</li><li>8. Resolve planning problems within own control</li><li>9. Report the planning problems which cannot be resolved.</li></ol>

<b>Learning outcome</b>
The learner will: 2. Know how to assess and prepare permanent way materials, components and equipment for moving on site
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. List what information is required prior to moving materials, components and equipment 3. Explain the range of methods and techniques for lifting, moving and handling components, assets and/or equipment approved by own organisation 4. Explain how to identify the different characteristics of the loads to be moved 5. Describe how to calculate the weight of loads 6. Explain the methods and techniques for slinging and lifting 7. Describe the methods and techniques for securing and protecting a load 8. Explain the methods and techniques for route planning on site 9. Explain own organisation's procedures for the use, care and control of lifting equipment 10. Explain the relevant reporting lines and procedures as approved by own organisation 11. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity 12. Explain the limits of own authority and responsibility and those of others involved

## Unit 303                      Assess and prepare permanent way materials, components and equipment for moving on site

### Supporting information

The learner will need to know the types of moving methods and techniques required for lifting. These methods and techniques may be manual or mechanical and considerations must be given to the nature of the load and its final destination. In order to lift, move and handle equipment the learner must understand the level and extent of their responsibility.

The type of lifting, moving and handling equipment to be used may include as appropriate:

- Rail/timber nips
- Jacks
- Grabs
- Slings
- Iron men
- Trolleys
- Rail scooters/skates
- Cranes
- Road/rail vehicles

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 304

## Undertake detailed inspection of the permanent way infrastructure

<b>UAN:</b>	<i>K/502/6725</i>
<b>Level:</b>	3
<b>Credit value:</b>	7
<b>GLH:</b>	48
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P15 - Undertake Detailed Inspection of the Permanent Way Infrastructure
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in undertaking detailed inspection of the Permanent Way infrastructure

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to undertake detailed inspection of the permanent way infrastructure</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Access and interpret the relevant diagrams and specifications for the product or equipment being inspected</li><li>3. Ensure equipment is calibrated as required prior to use</li><li>4. Select and use the correct equipment to carry out the inspection</li><li>5. Identify and confirm the inspection checks to be made and acceptance criteria to be used</li><li>6. Carry out all required inspections as approved by own organisation</li><li>7. Identify and analyse any defects or variations from the specification</li><li>8. Record the results of the inspection in the appropriate format</li><li>9. Deal promptly with problems within own control and report those that cannot be resolved in line with organisational procedures</li></ol>

<b>Learning outcome</b>
The learner will: 2. Know how to undertake detailed inspection of the permanent way infrastructure
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe how to access and interpret the relevant diagrams and engineering specifications 3. Explain how and when to confirm the specification is accurate 4. Explain what constitutes the permanent way infrastructure and how it integrates with other aspects of the rail engineering industry 5. Describe the operational and environmental constraints that could occur whilst undertaking an inspection 6. Explain the methods and techniques for inspection as approved by own organisation 7. Describe the types of equipment required for the inspection and how to ensure it is calibrated as appropriate 8. Explain how to ensure authorisation is obtained for both the inspection and the use of equipment 9. Explain organisational procedures for the care and control of inspection equipment 10. Explain what constitutes a defect or variation of the permanent way infrastructure 11. Explain how to identify and analyse defects in the permanent way infrastructure 12. Explain the importance of reporting a defect or variation, including when immediate action is required 13. Describe the impact of a defect or variation on the operational performance and safety of the permanent way 14. Explain the relevant reporting lines and procedures as approved by own organisation 15. Explain the limits of own authority and responsibility and those of others involved in the activity.

## Unit 304 Undertake detailed inspection of the permanent way infrastructure

### Supporting information

The checks may include as appropriate:

- Visual checks
- Detailed checks
- Maintenance quality checks
- Ultrasonic testing
- Data from track recording vehicles

Excluded from the checks are full engineering surveys

The inspection methods and techniques to be used will be approved by their organisation and may include the use of vehicle trolley or pedestrian means. The types of equipment to be used may include gauges, and the equipment or assets to be inspected may include, as appropriate:

- Cross levels (dynamic and static)
- Track gauges
- Rail profile/condition
- Cast crossings
- Switches
- Crossings
- Clearances
- Tunnels
- Buffer stops
- Longitudinal timbers

The quality standards and accuracy to be achieved will be approved by the learner's organisation and the manufacturer and must take account of the approved tolerances. The inspection must be undertaken in a thorough and timely fashion.

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 2.5**

The constraints include as appropriate:

- Open to traffic
- Closed to traffic
- Restricted track access
- Day work/night work

#### **Assessment criterion 2.10**

The methods include as appropriate:

- Visual means
- Measured means
- Calculated means



## Unit 305

## Analyse the performance and condition of permanent way assets

<b>UAN:</b>	Y/502/6378
<b>Level:</b>	3
<b>Credit value:</b>	7
<b>GLH:</b>	36
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P16 - Assess the Performance and Condition of Permanent Way Assets
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in assessing the performance and condition of Permanent Way assets

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to analyse the performance and condition of permanent way assets</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Ensure the necessary test data on which to conduct the analysis is appropriate</li><li>3. Carry out the analysis using all relevant data and approved methods</li><li>4. Check that the analysis provides clear and accurate information</li><li>5. Compare current performances and condition data with that from previous analysis</li><li>6. Identify and report the implications arising from the analysis</li><li>7. Record the results of the analysis in line with organisational procedures</li></ol>

<b>Learning outcome</b>
The learner will: 2. Know how to analyse the performance and condition of permanent way assets
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Explain the methods and procedures for monitoring equipment including ensuring consistency of data retrieval 3. Explain how to analyse information received from equipment 4. Describe the methods and techniques for analysing the performance and condition of permanent way assets as approved by own organisation and the manufacturer(s) 5. Explain how to source and interpret approved manuals and related information 6. Explain how and when the data and/or information received may be compromised 7. Explain the relevant reporting documentation and control procedures as approved by own organisation 8. Explain the relevant reporting lines and procedures as approved by own organisation 9. Explain the limits of own authority and responsibility and those of others involved in the activity

# Unit 305 Analyse the performance and condition of permanent way assets

## Supporting information

The assets may include:

- Plain line
- Switches and crossings
- Track substructure
- Off track structures such as bridges, tunnels, embankments and cuttings

The type of data to be analysed may relate to:

- Track geometry (vehicular records including On Track Machine reports, manual, historic and current information)
- Track inspection records
- Rail, ballast and sleeper integrity testing reports
- Rail defect analysis
- Survey information
- Dynamic/static readings
- Off track information
- Environmental information
- Ultrasonic testing records

The analysis methods to be used will include both calculation and comparison

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

### **Assessment criterion 1.5**

The methods will include

- Reading data
- Calculation
- Comparison

### **Assessment criterion 2.1**

The following should be covered as appropriate:

- 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 306

## Gather and interpret information needed for specific permanent way engineering activities

<b>UAN:</b>	<b>T/502/6386</b>
<b>Level:</b>	<b>3</b>
<b>Credit value:</b>	<b>4</b>
<b>GLH:</b>	<b>16</b>
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P18 - Gather and Interpret Information Needed for Permanent Way Engineering Activities
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in gathering and interpreting information needed for Permanent Way engineering activities

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to gather and interpret information needed for specific permanent way engineering activities</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Obtain the required diagrams and specifications as approved by own organisation</li><li>2. Interpret correctly the relevant diagrams and specifications</li><li>3. Identify, extract and analyse the required information</li><li>4. Use the information obtained to ensure that work output meets the specification</li><li>5. Deal promptly any problems within own control and report those which cannot be resolved in line with organisational procedures</li><li>6. Report any inaccuracies or discrepancies in diagrams and specifications in line with organisational procedures</li></ol>

<b>Learning outcome</b>
The learner will: 2. Know how to gather and interpret information needed for specific permanent way engineering activities
<b>Assessment criteria</b>
The learner can: 1. Explain how to source and interpret information and documentation systems approved by own organization 2. Explain how to ensure that information and documentation is current, complete and accurate 3. Explain how to interpret the conventions, symbols and abbreviations approved by own organisation in its engineering diagrams and specifications 4. Explain how to access and analyse wider sources of information which must include those from: <ul style="list-style-type: none"> <li>• Line Manager</li> <li>• Power suppliers</li> <li>• Other infrastructure disciplines</li> <li>• Manufacturers</li> </ul> 5. Explain how to identify and select the required data, including for: <ul style="list-style-type: none"> <li>• Dimensions</li> <li>• Components, specification/types</li> </ul> 6. Explain organisational document care and control procedures and why it is important to follow them 7. Explain the relevant reporting lines and procedures as approved by own organisation

## **Unit 306**                    **Gather and interpret information needed for specific permanent way engineering activities**

### **Supporting information**

The learner will be able to make full use of the information obtained and seek advice from other relevant people or sources as necessary. They will understand the level and extent of their responsibility

The type and complexity of diagrams and specifications may include those for:

- Plain line
- Switches and crossings
- Drainage
- Structures (Bridges/Tunnels/Platforms)
- Track substructure

The information to be extracted from the diagrams and specifications will relate to:

- Clearances
- Tolerances
- Limits
- Component specifications
- Quantities and dimensions

#### **Assessment criterion 2.1**

The systems include as appropriate:

- Drawing numbering systems
- Document control systems
- Filing/Library procedures
- Electronic document systems

<b>UAN:</b>	A/502/6387
<b>Level:</b>	3
<b>Credit value:</b>	5
<b>GLH:</b>	16
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P19 - Plan Permanent Way Activities
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in planning Permanent Way activities

<b>Learning outcome</b>
The learner will:
1. Be able to plan permanent way activities
<b>Assessment criteria</b>
The learner can:
1. Identify and analyse the information required for the activity
2. Identify health and safety issues and safe working practices and procedures that must be followed
3. Identify the activities to be carried out and determine their sequence
4. Establish which methods are required and what resources are to be used for the permanent way activities
5. Identify any special requirements for the permanent way activities and incorporate them in the plan
6. Identify where technical documentation, resources, equipment, materials or tools are not available and deal with the deficiency in accordance with own organisation's procedures
7. Estimate timescales required for the permanent way activities
8. Prepare and record the plan for the permanent way activities
9. Make a record of agreed work plans and communicate the plans to all involved
10. Deal effectively with problems within the limits of own authority and report those that cannot be resolved in line with organisational procedures
11. Discuss and agree with line manager effective and efficient alternatives where planned activities cannot be achieved.



<b>Learning outcome</b>
The learner will: 2. Know how to plan permanent way activities
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Explain the types of resources to be used and how to check their availability 3. Explain the relevant planning methods and techniques 4. Explain the types of information and document systems approved by own organisation 5. Explain how to prioritise work activities to achieve objectives whilst taking into account cost and efficiency 6. Explain how to source and interpret information and whom to approach for clarification 7. Explain own organisation's procedures for specifying requirements 8. Explain how to present information to the required standard using set proformas and templates 9. Explain the relevant reporting lines and procedures as approved by own organisation 10. Explain how and when planned activities cannot be achieved 11. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity 12. Explain the limits of own authority and responsibility and those of others involved.

## Unit 307 Plan permanent way activities

### Supporting information

The learner will know the type and range of plans to be produced and will ensure that the information gathered is relevant to the work to be carried out. They will be able to take into account the activities to be undertaken and the limitations of the work environment. The complexity of the plan will depend on the nature or size of the activity to be undertaken.

The type of maintenance activities to be planned may include dismantling, replacing, adjusting and maintaining the permanent way infrastructure and may include as appropriate:

- Replacement of ballast profile (wet beds)
- Dealing with clogged and contaminated ballast
- Replacing and adjusting sleepers and bearers
- Replacing and adjusting rails (including clips, pads and insulators)
- Restoring track geometry
- Maintaining and clearing drains and vegetation
- Removing waste material
- Routine preventative maintenance

The type of permanent way renewal activities may include dismantling, installing and renewing the permanent way infrastructure and may include as appropriate:

- Earthworks, formations, structures and drainage
- Ballast
- Sleepers and bearers
- Rails and associated fastenings
- Restoration of track geometry

The type of plans to be produced will be those associated with maintaining the permanent way and may include as appropriate:

- Method statements
- Contingency plans
- Bar charts/norm times
- Critical activity milestones
- Lines open/blocked to traffic
- AC and DC line working and isolations
- Lead times
- Site facilities (eg accommodation, toilets)
- Lifting plans

The types of resources to be used may include:

- People (including skill requirements)
- Plant
- Equipment
- Materials

## Unit 308

## Establish rail track geometry and position

<b>UAN:</b>	<b>F/502/6388</b>
<b>Level:</b>	3
<b>Credit value:</b>	5
<b>GLH:</b>	36
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P20 - Establish Track Geometry and Position
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in establishing rail track geometry and position

<b>Learning outcome</b>
The learner will: 1. Be able to establish rail track geometry and position
<b>Assessment criteria</b>
The learner can: 1. Identify and clearly confirm the objectives to be achieved 2. Assess and analyse the work circumstances and their technical implications 3. Identify technical requirements that could deliver the specified objectives 4. Select and specify for implementation the most appropriate technical requirements to achieve the objectives 5. Identify, analyse and report those requirements which cannot be achieved in line with organisational procedures 6. Take action to mitigate non-compliance of rail track geometry and position within own authority and responsibility

<b>Learning outcome</b>
The learner will: 2. Know how to establish rail track geometry and position
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity

2. Explain the principles of geometrical engineering and how they are applied to the track
3. Explain how to source and interpret information and document systems as approved by own organisation
4. Explain how and who to contact to clarify information
5. Describe the different types of specifications relevant to own role and how they are structured
6. Explain the requirements for presenting information as approved by own organisation, including as appropriate, using set proformas and templates
7. Explain the relevant reporting lines and procedures as approved by own organisation
8. Explain the likely impact of the activity on the operations of other departments and the impact of their work on the activity
9. Explain the limits of own authority and responsibility and those of others involved

# Unit 308            Establish rail track geometry and position

## Supporting information

The learner will establish track geometry and position through a variety of engineering activities, including as appropriate:

- Gathering information
- Setting out
- Measuring
- Data analysing
- Marking up
- Calculating

The complexity of the activities may involve:

- Calculating by the use of formulas
- Using variable/diverse sources of information
- Track configuration
- Deciding the optimum courses of action

The range of geometry and positioning issues may include:

- Top, cross level, alignment and gauge
- Dynamic movement of the track
- Drainage, position and gradient
- Structural clearances

The level and extent of responsibility includes acquiring the technical knowledge required. Advice from other relevant people should be sought where needed. The learner will be able to take responsibility for the quality of their work.

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 information and documents include as appropriate:

- Work plans
- Method statements
- Skill data bases

**Assessment criterion 2.5**

the specifications include as appropriate

- Organisation's procedures
- Manufacturers' specifications and instructions
- Local instructions

## Unit 309

# Supervise the obtaining and preparing of materials and components needed for the renewal or maintenance of the permanent way

<b>UAN:</b>	J/502/6392
<b>Level:</b>	3
<b>Credit value:</b>	3
<b>GLH:</b>	14
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P24 - Supervise the Obtaining and Preparing of Materials and Components Needed for the Renewal or Maintenance of the Permanent Way
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	This unit is about supervising the obtaining and preparing of materials and components needed for the renewal or maintenance of the permanent way to ensure that correct and adequate materials and components are available.

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to supervise the obtaining and preparing of materials and components needed for the renewal or maintenance of the permanent way</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Ensure the required materials and components are obtained and check their quantity and quality</li><li>3. Clarify how the materials and components need to be prepared for the renewal or maintenance of the permanent way</li><li>4. Ensure the preparations are carried out using suitable equipment</li><li>5. Review the preparation of materials and components</li><li>6. Report completion of preparations in line with own organisation's</li></ol>



<p>procedures</p> <p>7. Deal promptly with problems within own control in line with organisational procedures</p> <p>8. Report the problems which cannot be resolved in line with organisational procedures</p>
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<p><b>Learning outcome</b></p> <p>The learner will:</p> <p>2. Know how to supervise the obtaining and preparing of materials and components needed for the renewal or maintenance of the permanent way</p>
<p><b>Assessment criteria</b></p> <p>The learner can:</p> <ol style="list-style-type: none"> <li>1. List the organisation's procedures that define the appropriate safe system of work for the activity</li> <li>2. Explain the methods and requirements for work area preparation</li> <li>3. Describe the types of materials and components that are required for the renewal or maintenance of the permanent way</li> <li>4. Explain how to source and interpret information relating to materials and components</li> <li>5. Explain how to check the quality and quantity of materials and components</li> <li>6. Explain the types of defects that may occur on materials and components that can be identified by visual means</li> <li>7. Explain the methods and techniques for material/component handling</li> <li>8. Explain the types of problems that can occur when obtaining materials and components and how these can be overcome</li> <li>9. Explain own organisation's procedures and methods for monitoring the preparation of materials and components</li> <li>10. Explain own organisation's procedures for the care and control of tools and equipment</li> <li>11. Explain the relevant reporting lines and procedures as approved by own organisation</li> <li>12. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity</li> <li>13. Explain the limits of own authority and responsibility and those of others involved in the activity.</li> </ol>

## Unit 309 Supervise the obtaining and preparing of materials and components needed for the renewal or maintenance of the permanent way

### Supporting information

The types of components and materials may include as appropriate:

- Ballast
- Sleepers/bearers
- Chairs and base plates
- Insulations
- Fastenings
- Rails
- Switch and crossing (S&C) components
- Drainage materials and components
- Consumables
- Gas bottles (non-welding)

The type and complexity of components and material preparations relate to rails, sleepers, ballast and drainage, and associated components, and may involve:

- Handling, stacking and storage
- Pretreatment
- Access and surface constraints (eg in tunnels, on slopes, bridges, S&C) - Some of the S&C components may be vulnerable to damage by incorrect handling

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 310

# Supervise the preparation of small plant, measuring equipment and tools for permanent way renewal and maintenance

<b>UAN:</b>	L/502/6393
<b>Level:</b>	3
<b>Credit value:</b>	3
<b>GLH:</b>	18
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P25 - Supervise the Preparation of Small Plant, Measuring Equipment and Tools for Permanent Way Renewal and Maintenance
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	This unit is about supervising the preparation of small plant, measuring equipment and tools for permanent way renewal or maintenance activities, to ensure that correct small plant and equipment are available and are in a suitable condition.

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to supervise the preparation of small plant, measuring equipment and tools for permanent way renewal and maintenance</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Identify the small plant, measuring equipment and tools required for permanent way renewal and maintenance</li><li>3. Confirm all the required small plant, measuring equipment and tools are in a safe and usable condition</li><li>4. Ensure the necessary preparations have been carried out to small plant, measuring equipment and tools in line with work requirements</li><li>5. Monitor the preparation of small plant, measuring equipment and tools</li></ol>

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|---|
| <ol style="list-style-type: none"> <li>6. Make sure that required safety arrangements are in place to protect other workers from activities likely to disrupt normal working</li> <li>7. Confirm completion of preparations in line with organisational procedures</li> <li>8. Deal promptly with problems within own control in line with organisational procedures</li> <li>9. Report the problems which cannot be resolved in line with organisational procedures</li> </ol> |
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<b>Learning outcome</b>
The learner will:
<ol style="list-style-type: none"> <li>2. Know how to supervise the preparation of small plant, measuring equipment and tools for permanent way renewal and maintenance</li> </ol>
<b>Assessment criteria</b>
The learner can:
<ol style="list-style-type: none"> <li>1. List the organisation's procedures that define the appropriate safe system of work for the activity</li> <li>2. Describe the range of equipment to be used for permanent way renewal and maintenance</li> <li>3. Explain how to check and confirm the small plant, measuring equipment and tools are suitable</li> <li>4. Explain how to source and interpret information relating to small plant, measuring equipment and tools</li> <li>5. Explain own organisation's procedures for monitoring the preparation of small plant, measuring equipment and tools</li> <li>6. Describe the types of problems that can occur when preparing small plant, measuring equipment and tools and how these can be overcome</li> <li>7. Explain own organisation's procedures for the care and control of small plant, measuring equipment and tools</li> <li>8. Explain the relevant reporting lines and procedures as approved by own organisation</li> <li>9. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity</li> <li>10. Explain the limits of own authority and responsibility and those of others involved in the activity</li> </ol>

## Unit 310                    Supervise the preparation of small plant, measuring equipment and tools for permanent way renewal and maintenance

### Supporting information

The types of equipment to be prepared may be manual, mechanical, hydraulic or electrical, including as appropriate:

- Small powered plant (eg rail cutting, drilling and adjusting devices)
- Hand held permanent way tools
- Measuring equipment
- Application devices (eg brushes, sprays)
- Lifting tackle
- Fuel and lubricant levels plus ensuring the availability of further supplies
- Rail tensioning equipment
- Temporary lighting

The equipment safety and preparation checks may be conducted by:

- Visual checks
- Manual tests
- System checks/ pre use

They may be concerned with gathering information about:

- Certification/calibration validity
- Quality assurance criteria
- Certification/registration
- Wear and defects
- Suitability for task
- Environmental acceptability
- Quarantine requirements
- Management of the equipment

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

#### **Assessment criterion 2.1**

The following should be covered as appropriate:

- 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 2.2**

The equipment includes as appropriate:

- Manual equipment
- Mechanical equipment
- Hydraulic equipment
- Hand tools
- Small plant
- Measuring equipment
- Application devices
- Lifting tackle

## Unit 311

# Allocate and monitor resources for specific permanent way engineering activities

<b>UAN:</b>	H/502/6397
<b>Level:</b>	3
<b>Credit value:</b>	2
<b>GLH:</b>	12
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P30 - Allocate and Monitor Resources For Permanent Way Engineering Activities
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in allocating and monitoring resources for Permanent Way engineering activities

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to allocate and monitor resources for specific permanent way engineering activities</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Ensure sufficient resources are available for permanent way engineering activities</li><li>3. Ensure resource information and documentation is up-to-date and in line with own organisation's procedures</li><li>4. Monitor the use of resources for permanent way engineering activities</li><li>5. Identify when changes to the planned use of resources may occur</li><li>6. Take prompt action to deal with actual and predicted changes to the planned use of resources</li><li>7. Advise the appropriate person(s) where changes to resources have occurred or are likely to occur and the implications involved</li><li>8. Make sure that those using resources are aware of their responsibilities for the care and use of the resources</li><li>9. Record details on the use of resources including where appropriate</li></ol>



any changes that have occurred

**Learning outcome**

The learner will:

2. Know how to Allocate and monitor resources for specific permanent way engineering activities

**Assessment criteria**

The learner can:

1. List the organisation's procedures that define the appropriate safe system of work for the activity
2. Describe the types of resources available for permanent way engineering activities
3. Explain own organisation's methods and techniques for resource planning
4. Explain how to obtain up-to-date information on engineering activities and the resources required
5. Explain how to source and interpret the information and document systems as approved by own organisation
6. Describe the types of problems that can occur when obtaining resources and how these problems can be overcome
7. Explain how the planned use of resources could alter and the implications that may follow
8. Explain own organisation's methods and techniques for effective monitoring of resources
9. Explain own organisation's procedures for the care and use of resources, including tools and equipment identification and calibration
10. Explain own organisation's methods and techniques for effective communication including the appropriate method for communicating changes, including, when a plan may need changing
11. Explain the relevant reporting lines and procedures as approved by own organisation
12. Describe the likely impact of the activity on the operations of other departments and the impact of their work on the activity
13. Explain the limits of own authority and responsibility and those of others involved in the activity.

## Unit 311            Allocate and monitor resources for specific permanent way engineering activities

### Supporting information

The learner will be aware of their own responsibility for the care and use of resources and will be able to advise team members of their responsibilities for the care and use of resources. The learner will take into account the time the system will be available for the task when considering resources and also any influencing factors such as, environmental, site conditions and the additional requirements for working on operational railway equipment. Identifying inaccuracies and the non-availability of resources and being able to take appropriate remedial action are key to this element.

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 2.2**

The resources include as appropriate:

- People (skilled and unskilled)
- Plant
- Equipment
- Materials
- Time
- Transportation
- Permits and legal documentation

### **Assessment Criterion 2.3**

The techniques include as appropriate:

- Computerised
- Diagrammatic
- The use of estimating tools

## Unit 312

## Supervise the permanent way engineering work of a team on site

<b>UAN:</b>	<b>M/502/6726</b>
<b>Level:</b>	3
<b>Credit value:</b>	6
<b>GLH:</b>	20
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P31 - Supervise the Engineering Work of the Team
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in supervising the Permanent Way engineering work of the team

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to supervise the permanent way engineering work of a team on site</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Source and interpret work plans and schedules</li><li>3. Identify, plan and record work methods and activities which make optimum use of resources</li><li>4. Prioritise work activities to achieve objectives cost-effectively and efficiently</li><li>5. Agree and record individual roles and group responsibilities in line with organisational procedures</li><li>6. Seek advice from others to help resolve problems</li><li>7. Identify when changes to the plans may occur</li><li>8. Record the agreed work plans and communicate the plans to all involved in line with organisational procedures</li><li>9. Identify and communicate changes to the plans to the team</li><li>10. Ensure all required documentation is complete, accurate, formatted and processed in line with organisational procedures</li></ol>

<b>Learning outcome</b>
The learner will: 2. Know how to supervise the permanent way engineering work of a team on site
<b>Assessment criteria</b>
The learner can: 1. List the organisation's procedures that define the appropriate safe system of work for the activity 2. Describe how to source and interpret relevant work plans and schedules 3. Explain the methods and techniques for supervising the work activities of the team 4. Explain the information systems and procedures as approved by own organisation relevant to the work activities of the team 5. Explain how to develop and maintain working relationships in order to promote good teamwork 6. Explain own organisation's methods and techniques for effective communication including: <ul style="list-style-type: none"> <li>• the appropriate method for communicating changes</li> <li>• communicating when a plan may need changing</li> </ul> 7. Explain the relevant reporting lines and procedures as approved by own organisation 8. Describe the likely impact of own work on the operations of other departments and the impact of their work on the activity 9. Explain the limits of own authority and responsibility and those of others involved in the activity

## Unit 312                      Supervise the permanent way engineering work of a team on site

### Supporting information

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 325

## Implement and monitor safe working systems for permanent way activities as a protection master

<b>UAN:</b>	<b>R/502/6394</b>
<b>Level:</b>	3
<b>Credit value:</b>	8
<b>GLH:</b>	40
<b>Relationship to NOS:</b>	This unit is linked to National Occupational Standards For Rail Engineering Unit P27 - Implement and Monitor Safe Working Systems for Permanent Way Maintenance or Renewal Activities
<b>Endorsement by a sector or regulatory body:</b>	This unit is endorsed by GoSkills
<b>Aim:</b>	The purpose of this unit is for learners to demonstrate occupational competency in implementing and monitoring safe working systems for Permanent Way activities

<b>Learning outcome</b>
The learner will: <ol style="list-style-type: none"><li>1. Be able to implement and monitor safe working systems for permanent way activities as a protection master</li></ol>
<b>Assessment criteria</b>
The learner can: <ol style="list-style-type: none"><li>1. Set up a safe system of work in line with organisational procedures and work to the system</li><li>2. Source and interpret approved system procedures and information relating to the work area/site</li><li>3. Identify and set access controls to meet agreed and approved system procedures</li><li>4. Check that the requirements for safe access meet own organisation's requirements</li><li>5. Ensure the requirements for safe access to work are implemented</li><li>6. Ensure that system records are accurate, up-to-date and complete and are stored correctly in line with organisational procedures</li><li>7. Advise other person(s) as required of the requirements for safe access</li><li>8. Communicate system requirements and the responsibilities of</li></ol>

<p>individuals to the appropriate person in line with organisational procedures</p> <p>9. Review systems operations regularly and forward suggestions for improvement to the appropriate person in line with organisational procedures</p> <p>10. Deal with problems within own control promptly and report those that can not be resolved in line with organisational procedures</p>
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<p><b>Learning outcome</b></p> <p>The learner will:</p> <p>2. Know how to implement and monitor safe working systems for permanent way activities as a protection master</p>
<p><b>Assessment criteria</b></p> <p>The learner can:</p> <ol style="list-style-type: none"> <li>1. List the organisation's procedures that define the appropriate safe system of work for the activity</li> <li>2. Explain how to source and interpret own organisation's approved system procedures and information relating to the work area/site</li> <li>3. Explain own organisation's methods and techniques for conducting safety assessments</li> <li>4. Explain own organisation's procedures and guidelines for obtaining resources for permanent way activities</li> <li>5. Explain own organisation's procedures for setting access controls and how to monitor these are in place</li> <li>6. Explain how to monitor safe working systems during maintenance or renewal activities</li> <li>7. Explain the implications of not implementing and monitoring a safe working system</li> <li>8. Explain how to present relevant information using set proformas and templates as used by own organisation</li> <li>9. Explain the relevant reporting lines and procedures as approved by own organisation</li> <li>10. Explain the limits of own authority and responsibility and those of others involved in the activity.</li> </ol>



## Unit 325      Implement and monitor safe working systems for permanent way activities as a protection master

### Supporting information

The learner is protecting other people from the effects of the engineering work and from the movement of rail vehicles.

The type and complexity of the environment will be that associated with being on or about the permanent way and must take account of, as appropriate:

- Lines open/closed to operational traffic
- Maintenance or renewals activities
- Requirements for depots, sidings, and the mainline including bi-directional operations
- Day/night working
- Noise
- Weather

The learner will know and understand the level and extent of their responsibility, including both their own safety and that of work colleagues. Where necessary, authorisation must be obtained before work is carried out and the learner will be expected to work within their organisation's procedures and specifications

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)



## 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](http://www.cityandguilds.com/functionalskills)
- Essential Skills (Northern Ireland) – see [www.cityandguilds.com/essentialskillsni](http://www.cityandguilds.com/essentialskillsni)
- Essential Skills Wales – see [www.cityandguilds.com/esw](http://www.cityandguilds.com/esw)

There might also be opportunities to develop skills and/or portfolio evidence if candidates are completing any Key Skills alongside these qualifications.



## 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](http://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 on such things 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

<b>UK learners</b> General qualification information	<b>T: +44 (0)844 543 0033</b> <b>E: learnersupport@cityandguilds.com</b>
<b>International learners</b> General qualification information	T: +44 (0)844 543 0033 F: +44 (0)20 7294 2413 E: <b>intcg@cityandguilds.com</b>
<b>Centres</b> 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: <b>centresupport@cityandguilds.com</b>
<b>Single subject qualifications</b> 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: <b>singlesubjects@cityandguilds.com</b>
<b>International awards</b> 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: <b>intops@cityandguilds.com</b>
<b>Walled Garden</b> 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: <b>walledgarden@cityandguilds.com</b>
<b>Employer</b> Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	T: +44 (0)121 503 8993 E: <b>business@cityandguilds.com</b>
<b>Publications</b> Logbooks, Centre documents, Forms, Free literature	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413

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## About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. We offer over 500 qualifications across 28 industries through 8500 centres worldwide and award around two million certificates every year. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

## City & Guilds Group

The City & Guilds Group operates from three major hubs: London (servicing Europe, the Caribbean and Americas), Johannesburg (servicing Africa), and Singapore (servicing Asia, Australia and New Zealand). The Group also includes the Institute of Leadership & Management (management and leadership qualifications), City & Guilds Land Based Services (land-based qualifications), the Centre for Skills Development (CSD works to improve the policy and practice of vocational education and training worldwide) and Learning Assistant (an online e-portfolio).

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